

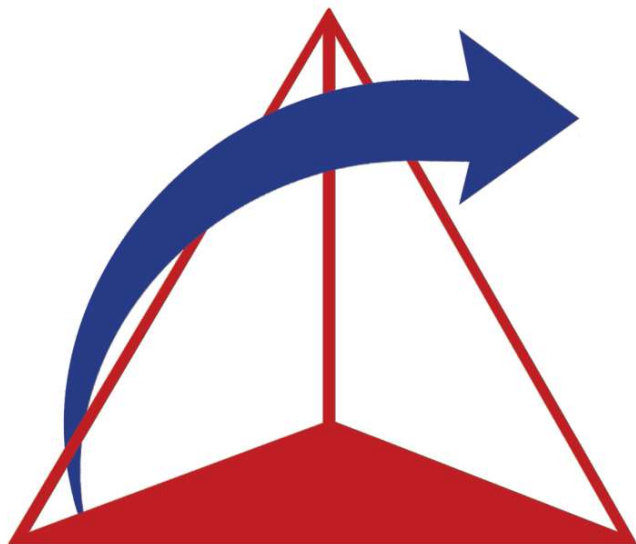
Prism Research Glass



Product Catalog ~ 2023



Prism Research Glass



Billing Address

P.O. Box 14187
Research Triangle Park, NC 27709

Shipping Address

6004 Triangle Drive
Raleigh, NC 27617

(919) 571-0078
(800) 771-6773
Fax (919) 571-0337
Fax (866) 309-5653

www.prismresearchglass.com



Prism Research Glass, Inc.'s
glassware is handcrafted in the
United States of America.

Please note that the prices listed in this catalog
are accurate at time of publication. For current
pricing and quotes please contact Steve Foscatto
at sfoscatto@prismresearchglass.com.

Catalog Code: FC00608023



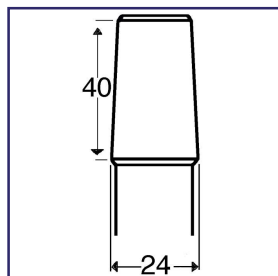


SECTION	PAGE	SECTION	PAGE
Technical Information.....	3 - 7	Microscale Apparatus.....	415 - 462
Adapters.....	8 - 43	Adapters.....	415 - 422
Airless Apparatus.....	44 - 49	Bubblers.....	423
Arsine Generator.....	50	Condensers.....	424 - 426
Beakers.....	51	Distillation.....	427 - 435
Bottles.....	52 - 55	Extraction.....	436 - 437
Bubblers.....	56 - 57	Flask.....	438 - 447
Cell Culture.....	58 - 64	Funnels.....	448 - 452
Chromatography.....	65 - 75	Gas Apparatus.....	453
Clamps.....	76 - 85	Stirrers.....	454 - 456
Condensers.....	86 - 102	Stoppers.....	457
Dissolution Vessels.....	103	Sublimation.....	458
Distillation Apparatus.....	104 - 136	Thermometers.....	459 - 460
Environmental.....	137 - 152	Traps.....	461
Filtration Apparatus.....	153 - 164	Tubes.....	462
Flasks.....	165 - 192	Pilot Plant.....	463 - 718
Funnels.....	193 - 211	Pilot Plant Systems.....	463 - 468
Gas Apparatus.....	212 - 239	Reaction Vessels.....	469 - 495
Collections.....	212	Chillers.....	496 - 511
Gas Sampling.....	212	Circulators.....	512 - 557
Gas Washing.....	236 - 238	Temperature Control Systems.....	558 - 570
Impingers.....	219 - 224	Water Baths.....	571 - 577
Method Five.....	213 - 214	Condensers.....	578 - 588
Modified Method Five.....	215 - 221	Gas Apparatus.....	589 - 590
Method Six.....	232 - 234	Filtration Apparatus.....	591 - 595
Method Twenty-Six.....	232 - 234	Distillation.....	596 - 608
Orsat.....	231	Immersion Apparatus.....	609 - 612
Vost.....	235 - 236	Process Pipe.....	613 - 618
Heating.....	240 - 256	Adapters.....	619 - 626
Joints.....	257 - 279	Heating Mantles.....	627 - 643
O-Rings.....	280 - 284	Stirrers.....	644 - 701
Pipets.....	285	Clamps.....	702 - 710
Process Pipe.....	286 - 291	Frames and Rods.....	711 - 713
Reaction Vessels.....	292 - 314	Connectors.....	714 - 715
Sleeves.....	315	Flow Control.....	716 - 718
Stirrers.....	316 - 373	Lab Lifts.....	718
Stopcocks.....	374 - 379	Distributorships.....	719 - 963
Stoppers.....	380 - 381	Caframo.....	719 - 749
Sublimation Apparatus.....	382	Cowie.....	750 - 775
Supports.....	383 - 397	Glas-Col.....	776 - 785
Thermometers.....	398 - 401	Heidolph.....	786 - 813
Vacuum Apparatus.....	402 - 407	J-Kem Scientific.....	814 - 822
Quartz Products.....	408 - 414	Julabo.....	823 - 939
		Ohaus.....	940 - 963
		Index.....	964 - 1002

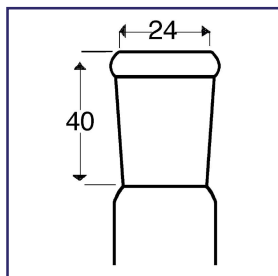




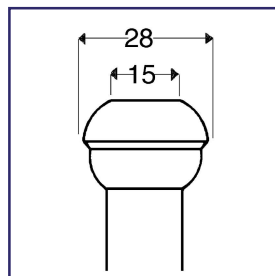
SYMBOLS



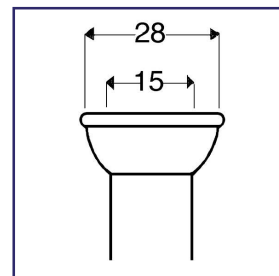
24/40
Inner Joint



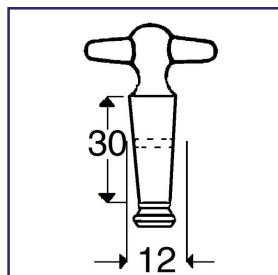
24/40
Outer Joint



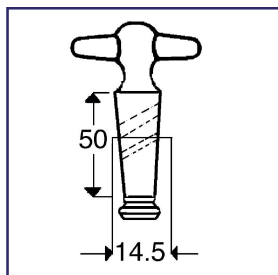
28/15
Ball Joint



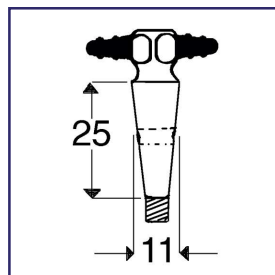
28/15
Socket Joint



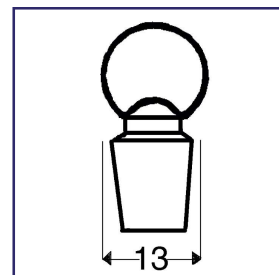
12/30
Stopcock Plug



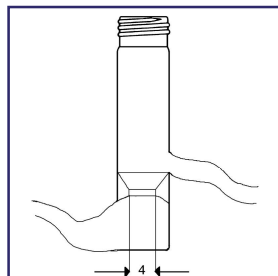
14.5/50
Stopcock Plug



11/25
Teflon® Stopcock Plug



#13
Stopper



0-4 mm
High Vacuum
Valve

Standard Taper Joint

The J symbol indicated interchangeable joints, stopcocks, and stoppers complying with the requirements of Commercial Standard CS-21 of the National Bureau of Standards.

Spherical Joint

The S symbol indicated spherical joints complying with the requirements of CS-21.

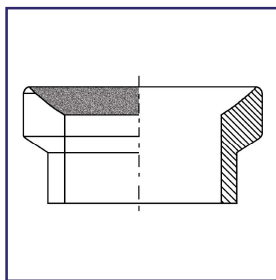
Product Standard

The P symbol indicated stopcock plugs made of Teflon® complying with the requirements of the National Bureau of Standards, Voluntary Product Standard PS23-70.



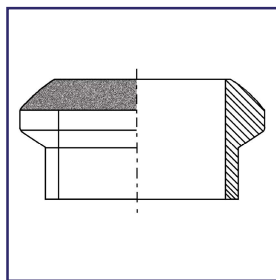


Schott Process Systems

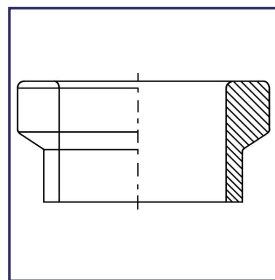


KF Socket

KF Socket and Ball ends have shallow ground spherical finish with heavy tooled shoulders. They allow 3° of misalignment and require a Teflon® seal between the mating surfaces.

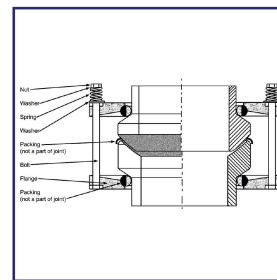


KF Ball



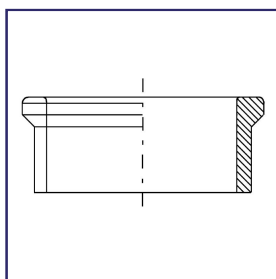
KF Plain

KF Plain Ends have a flat ground face and heavy tooled shoulder.



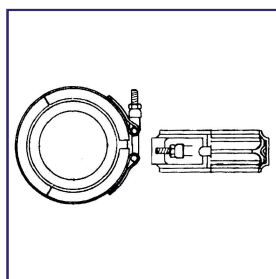
KF Coupling

KF Series Couplings are often used to fix apparatus to support structures.



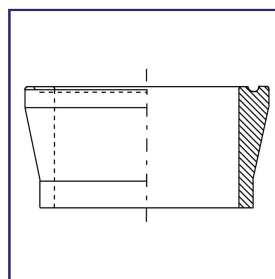
Beaded Pipe

Beaded Pipe ends have a flat tooled face and soft transitional radius corners to 45° back taper. They allow 3° of misalignment.



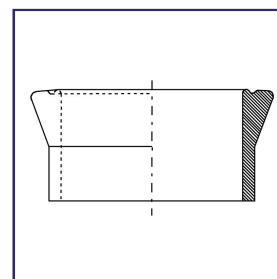
Beaded Pipe Coupling

Stainless steel outer band with Viton® liner and Teflon® seal ring.



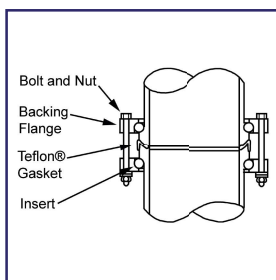
QVF Process Systems Conical Pipe (Domestic)

This conical profile has an angle of 9° on sizes up to and including 3". The outer edge is flush with the angled surface. The groove provides bite into the Teflon® sealing gasket.



QVF Process Systems Conical Pipe (Domestic)

This conical profile has an angle of 21° on sizes of 4" and 6". The outer edge has a full radius. The inner front surfaces is raised to provide excellent sealing with Teflon® sealing gaskets.



QVF Process Systems Conical Pipe Couplings

Couplings are often used to fix apparatus to support structures.

Physical Working Properties

Annealing Point
Strain Point
Softening Point
Refractive Index
Coefficient of Expansion x 10⁻⁷
Density
Temperature Limits

Maximum Thermal Shock

Temperature Conversions

°C = (°F - 32) 5/9
°F = (°C + 32) 9/5

	PYREX® Borosilicate	GE® Quartz
Annealing Point	560°C	1215°C
Strain Point	510°C	1120°C
Softening Point	821°C	1683°C
Refractive Index	1.473	1.4585
Coefficient of Expansion x 10 ⁻⁷	32.5	5.5
Density	2.23	2.2
Temperature Limits	490°C (extreme) 230°C (normal)	
Maximum Thermal Shock	160°C	

OHMs LAW

I = E/R
E = IR
R = E/I
P = IE

I = amps
E = volts
R = ohms
P = watts

Example: If 120 volts applied to circuit, then :

$$I = 120/115 = 1.04 \text{ amps}$$

$$(\text{volts})(\text{amps}) = \text{watts}$$

$$(120)(1.04) = 125$$

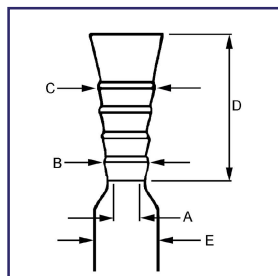
$$I^2(R) = P$$

$$1.04^2(115) = 125$$





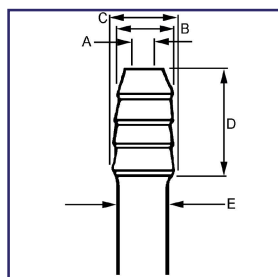
HOSE CONNECTIONS



Direct seal hose connections, double ended. 8" overall length.

Barb Size	No. of Rings	A	B	C	D	E	CODE	Price
#1	3	3.2	8.0	10.2	17	8.0	-01	8.71
#2	4	3.4	8.2	10.0	23	8.0	-02	8.88
#3	4	3.4	9.6	10.9	21	10.0	-03	9.17
#4	3	4.6	10.0	12.0	18	10.0	-04	9.25
#5	5	5.5	13.0	15.4	31	12.0	-05	14.87
#6	7	10.2	19.0	26.0	45	19.0	-06	20.80

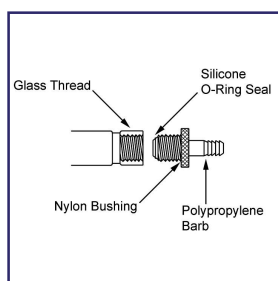
PRG-553
DIRECT SEAL HOSE
CONNECTIONS



Reverse seal hose connections. Sold double ended.

Barb Size	No. of Rings	A	B	C	D	E	CODE	Price
#7	4	3.0	8.7	10.2	20	10	-01	8.88
#8	5	5.5	13.0	15.4	31	12	-02	16.47

PRG-554
REVERSE SEAL
HOSE CONNECTIONS



Flow rate @10lbs. H₂O

Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72

PRG-220
DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD



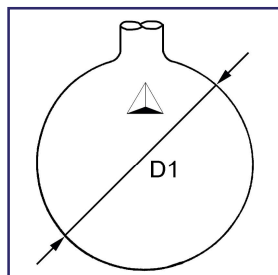
**GLASS FRIT POROSITIES**

Porosity Grade	Designation	Pore Size Microns	Principal Uses
Fine	F	4.0 - 5.5	Filtration and Extraction
Medium	M	10 - 26	Filtration and Extraction
Coarse	C	40 - 60	Gas dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas dispersion, washing absorption. Coarse filtration.

New filters should be cleaned by suction with hot hydrochloric acid followed by a water rinse. Used filters can usually be cleaned by rinsing with water, passed through the underside of the filter disc at pressure not exceeding 15 lbs. per square inch. There are some precipitates that tend to clog the pores of a fritted filter. Listed below are suggestions for cleaning precipitates that must be removed by chemical means.

Material	Cleaning Agent
Albumen	Hot ammonia or hydrochloric acid
Aluminous and Siliceous Residues	2% hydrofluoric acid followed by concentrated sulfuric acid. Rinse immediately with water until no trace of acid can be detected
Copper or Iron Oxides	hot hydrochloric acid plus potassium chlorate
Glucose	hot mixed acid ($H_2SO_4 + HNO_3$)
Fatty Materials	carbon tetrachloride
Mercury Sulfide	hot nitric acid
Mercury	hot concentrated cleaning solution, or hot concentrated sulfuric acid with a few drops of sodium nitrite
Organic Matter	ammonium of sodium hyposulfide

WARNING: Under no circumstances should the MAXIMUM pressure exceed 15 lbs. per square inch. Fritted glassware is designed for low pressure vacuum filtration or gas flow. Fritted ware should not be exposed to excessive temperature change or direct exposure to flame due to the fact that it has less resistance to thermal shock than standard borosilicate glassware.

**ROUND BOTTOM FLASK CAPACITY / DIAMETER**

Capacity ML	D1 MM	Capacity ML	D1 MM	Capacity ML	D1 MM
5	25	200	76	5000	221
10	31	250	83	12,000	295
15	35	300	87	22,000	350
20	38	500	102	50,000	457
25	42	1000	130	72,000	520
50	48	2000	161	100,000	610
100	60	3000	185	200,000	750
125	65				

TRADEMARKS

BIO-STIR® Wheaton Science Products
 CLEAR SEAL™ Wheaton Science Products
 DeLONG™ Belco Glass, Inc.
 DURON® Schott Glass Works
 GE® General Electric
 IKA® Ika
 KALREZ® E.I. DuPont™
 KIMAX® Kimble Glass Company

MICRO-STIR® Wheaton Science Products
 MIDI-VAP™ BSL Company
 PYREX® Corning Glassworks
 SCIENCEWARE® Bel-Art Products
 SIMAX™ Kavalier
 SVL® Bibby Science Products
 TEFLON® E.I. DuPont™
 VITON™ E.I. DuPont™

PATENTS

Prism Greaseless Seal

PATENTS PENDING

Prism Pilot Plant Support Stand
 "Big Bear" Rotary Feed Through Bearing





GUARANTEE

All Prism Research Glass products are manufactured by skilled craftspersons, using only quality material. Prism Research Glass will replace any product that does not meet your satisfaction.

REPAIRS AND MODIFICATIONS

We offer a complete repair service for partial breakage. Items should be packed carefully to prevent further damage. Upon receipt of merchandise, we will notify you of the repairability of the item with an estimate of the repair charges.

Modifications to existing products are also offered. Detailed specifications should be included with all modification requests.

CUSTOM CAPABILITIES

Glassware not listed in our catalog can be customized according to your specific needs. Detailed specifications and a drawing should be included with all custom orders.

ORDERING INFORMATION

TERMS

Standard terms are NET 30 Days from date of invoice; F.O.B. shipping point, unless otherwise approved. For your convenience, VISA, MasterCard, and American Express are accepted. Prices are subject to change without notice.

ORDER BY CODE

All 3 or 4 digit catalog number are preceded by CLC, CLS, CW, HEI, JB, JK, NEPS, OH, PRG, or PG. Following the catalog number is a 2 digit code specifying the component.

Example: PRG-5185-03

DISCOUNTS

Prism Research Glass offers educational and industrial discounts for qualifying customers.

SHIPMENT

Most shipments will be made promptly. Due to demand, we cannot guarantee that every product will be available for immediate shipment. In the event of a back-order, shipment will be made as soon as possible. Shipping method will be "best way" unless otherwise instructed.

BREAKAGE

Prism Research Glass makes every effort in packaging to prevent breakage during shipment. Should breakage occur, please report the damage to the carrier immediately. Do not discard packaging.

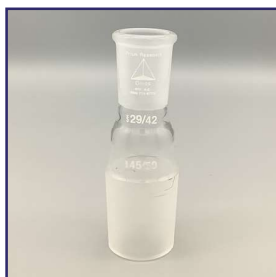
SHORTAGE

Should a shortage in your shipment occur, contact Prism Research Glass immediately. Claims must be made within 10 working days of receipt of order.

RETURNS

Returned items must have prior approval from Prism Research Glass. Please state reason for the return, invoice number, and date. Special orders are not returnable.





**PRG-1000
REDUCING**

Standard taper top outer joint with a larger standard taper lower inner joint. For micro applications see PG-9006.

Top Outer	Lower Inner	CODE	Price
10/30	14/35	-01	32.93
10/30	24/40	-02	34.26
10/30	29/42	-03	38.11
10/30	34/45	-04	43.11
10/30	45/50	-05	56.56
10/30	55/50	-06	78.51
12/30	24/40	-07	37.52
12/30	29/42	-08	40.94
12/30	34/45	-09	48.00
12/30	45/50	-10	62.36
12/30	55/50	-11	78.51

Top Outer	Lower Inner	CODE	Price
14/35	24/40	-12	38.02
14/35	29/42	-13	35.73
14/35	34/45	-14	48.43
14/35	45/50	-15	65.61
14/35	55/50	-16	77.80
19/38	24/40	-17	35.70
19/38	29/42	-18	42.32
19/38	34/45	-19	48.90
19/38	45/50	-20	59.39
24/40	29/42	-21	38.23
24/40	34/45	-22	43.23
24/40	45/50	-23	60.56
24/40	55/50	-24	78.51

Top Outer	Lower Inner	CODE	Price
29/42	34/45	-25	55.49
29/42	45/50	-26	68.38
29/42	55/50	-27	80.09
34/45	45/50	-28	79.19
34/45	55/50	-29	94.84
45/50	55/50	-30	117.63
45/50	71/60	-31	135.12
55/50	71/60	-32	154.47
55/50	145/60	-34	359.12



**PRG-1005
ENLARGING**

Standard taper top outer joint with a smaller standard taper lower inner joint. For micro applications see PG-9006.

Top Outer	Lower Inner	CODE	Price
19/38	10/30	-01	31.85
19/38	12/30	-02	32.53
19/38	14/35	-03	35.01
24/40	10/30	-04	35.01
24/40	12/30	-05	35.01
24/40	14/35	-06	33.88
24/40	19/38	-07	35.48

Top Outer	Lower Inner	CODE	Price
29/42	10/30	-08	34.81
29/42	12/30	-09	35.68
29/42	14/35	-10	36.40
29/42	19/38	-11	38.94
29/42	24/40	-12	40.50
34/45	10/30	-13	37.07
34/45	12/30	-14	38.02
34/45	14/35	-15	39.15
34/45	19/38	-16	48.26
34/45	24/40	-17	45.50
34/45	29/42	-18	48.88

Top Outer	Lower Inner	CODE	Price
45/50	24/40	-19	77.80
45/50	29/42	-20	78.34
55/50	24/40	-21	86.20
55/50	29/42	-22	93.08
55/50	34/45	-23	97.61
55/50	45/50	-24	108.67
71/60	45/50	-25	148.63
71/60	55/50	-26	166.86



**PRG-1010
STRAIGHT, INNER**

Both standard taper inner joints are the same size.

Length Between Joints in mm	24/40 CODE	24/40 Price	29/42 CODE	29/42 Price
30	-01	44.76	-05	45.98
70	-02	45.08	-06	45.98
120	-03	45.92	-07	45.98
170	-04	45.92	-08	49.15





PRG-1015
STRAIGHT, OUTER

Both standard taper outer joints are the same size.

Length Between Joints in mm	24/40		29/42	
	CODE	Price	CODE	Price
30	-01	34.59	-05	39.15
70	-02	35.01	-06	39.59
120	-03	35.48	-07	40.27
170	-04	35.95	-08	40.76



PRG-1020
STRAIGHT

Both standard taper joints are the same size.

Length Between Joints in mm	24/40		29/42		71/60	
	CODE	Price	CODE	Price	CODE	Price
30	-01	35.73	-05	40.50	—	—
70	-02	35.95	-06	40.76	—	—
120	-03	36.40	-07	41.41	—	—
175	-04	37.07	-08	41.89	—	—
200	—	—	—	—	-20	173.17



PRG-1025
**ENLARGING OR
REDUCING**

Socket joint at one end and a ball joint at the other.

Enlarging				Reducing			
Top Socket	Bottom Ball	CODE	Price	Top Socket	Bottom Ball	CODE	Price
18/9	12/5	-01	40.02	12/5	18/9	-09	40.02
28/12	12/5	-02	42.54	12/5	28/12	-10	43.47
28/12	18/9	-03	43.91	12/5	35/20	-11	47.32
35/20	12/5	-04	47.32	18/9	28/12	-12	41.41
35/25	18/9	-05	47.76	18/9	35/25	-13	48.43
35/25	28/12	-06	52.56	28/15	35/25	-14	47.08
50/30	35/25	-07	80.38	35/25	50/30	-15	81.90
65/40	35/25	-08	106.92	35/25	65/40	-16	105.34





**PRG-1030
COMBINATION**

Standard taper outer joint at the top and a ball joint at the bottom.

<u>Top</u>	<u>Bottom</u>	<u>CODE</u>	<u>Price</u>
<u>Outer</u>	<u>Ball</u>		
24/40	28/15	-01	40.35
24/40	35/20	-02	43.91
24/40	35/25	-03	44.60
24/40	65/40	-04	127.87
29/42	28/15	-05	44.60
29/42	35/20	-06	52.78
29/42	35/25	-07	52.78
29/42	65/40	-08	132.62



**PRG-1035
COMBINATION**

A socket joint at the top and a standard taper inner join at the bottom.

<u>Top</u>	<u>Bottom</u>	<u>CODE</u>	<u>Price</u>
<u>Socket</u>	<u>Inner</u>		
18/9	24/40	-01	40.02
28/15	24/40	-02	40.76
28/15	29/42	-03	43.91
35/20	24/40	-04	43.91
35/25	24/40	-05	43.91
35/25	29/42	-06	43.91
65/40	24/40	-07	127.87
65/40	29/42	-08	132.44



**PRG-1040
BUSHING**

Compact bushing style borosilicate glass adapter for taper glass apparatus. For micro applications see PG-9016.

<u>Outer</u>	<u>Inner</u>	<u>CODE</u>	<u>Price</u>	<u>Outer</u>	<u>Inner</u>	<u>CODE</u>	<u>Price</u>	<u>Outer</u>	<u>Inner</u>	<u>CODE</u>	<u>Price</u>
14/35	10/30	-01	38.17	29/42	10/30	-07	47.41	45/50	24/40	-17	90.05
19/38	10/30	-02	40.02	29/42	14/35	-08	47.92	45/50	29/42	-18	87.95
19/38	14/35	-03	37.67	29/42	19/38	-09	44.82	45/50	34/45	-19	85.10
				29/42	24/40	-10	42.41	45/50	40/50	-20	CALL
24/40	10/30	-04	44.08	34/45	19/38	-11	55.07	50/50	34/50	-21	CALL
24/40	14/35	-05	41.94	34/45	24/40	-12	54.84	50/50	45/50	-22	CALL
24/40	19/38	-06	37.86	34/45	29/42	-13	69.85				
				40/50	24/40	-14	CALL	55/50	29/42	-23	111.11
				40/50	29/42	-15	CALL	55/50	34/45	-24	109.65
				40/50	34/45	-16	CALL	55/50	45/50	-25	106.30
								55/50	50/50	-26	CALL



**PRG-1045
BUSHING, TEFLON**

Compact bushing style teflon adapter for taper glass apparatus.

<u>Outer</u>	<u>Inner</u>	<u>CODE</u>	<u>Price</u>
24/40	19/38	-01	40.77
29/42	24/40	-02	55.34
34/45	29/42	-03	82.75
45/50	34/45	-04	194.32



**PRG-1050
CLAISEN**

Both top outer standard tapered joints and lower inner standard tapered joint are the same size. For micro applications see PG-9018.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	68.96
29/42	-02	76.40
45/50	-04	157.26



With a GL-18 threaded thermocouple port on center neck. The upper outer standard taper joint and lower standard taper joint are the same size. Supplied with plastic cap (PRG-203) and Teflon seal ring (PRG-204).

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	62.36
29/42	-02	65.31

PRG-1055
CLAISEN, MODIFIED



With a thermometer standard taper joint on Center Neck. The upper outer standard taper joint and the lower inner standard taper joint are the same size. For micro applications see PG-9020.

<u>Joint</u>	<u>Thermometer Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	10/30	-01	62.36
29/42	10/30	-02	65.31

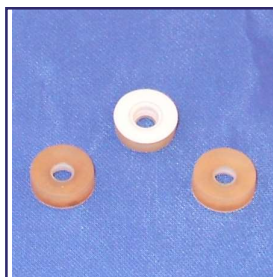
PRG-1060
CLAISEN, DISTILLATION



Open top screw caps are made from red melamine and are autoclaveable to 180°C.

<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	2.68
18	-02	3.52
25	-03	3.39
32	-04	4.00
45	-05	7.11

PRG-203
CAPS WITH HOLE, FOR GL THREADS



Silicone with a PTFE washer.

<u>GL Cap Size</u>	<u>Fits Tubing O.D. mm</u>	<u>CODE</u>	<u>Price</u>
14	5.5 - 6.5	-01	5.14
18	5.5 - 6.5	-02	7.89
18	9.0 - 11.0	-03	5.73
25	11.0 - 13.0	-04	9.20
25	7.5 - 9.0	-05	9.20
32	11.0 - 13.0	-06	14.31
32	14.0 - 15.0	-07	14.19
45	25.0 - 27.0	-08	24.63

PRG-204
SILICONE SEALING RINGS



**PRG-1065
CLAISEN**

Three outer standard taper top joints; one at 45° angle and the other two in vertical position. Top and lower inner standard taper joints are the same size. For micro applications see PG-9022.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	114.69
29/42	-02	120.62



**PRG-1070
CLAISEN,
MODIFIED**

Side tube has a port with a #18 GL Thread to fit a 6-7mm thermometer. All outer and inner standard taper joints are the same size. Supplied with plastic cap and teflon seal ring.

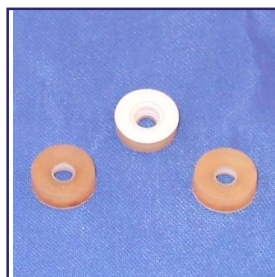
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	107.41
29/42	-02	113.93



**PRG-203
CAPS WITH HOLE,
FOR GL THREADS**

Open top screw caps are made from red melamine and are autoclaveable to 180°C.

<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	2.68
18	-02	3.52
25	-03	3.39
32	-04	4.00
45	-05	7.11



**PRG-204
SILICONE SEALING
RINGS**

Silicone with a PTFE washer.

<u>GL Cap Size</u>	<u>Fits Tubing O.D. mm</u>	<u>CODE</u>	<u>Price</u>
14	5.5 - 6.5	-01	5.14
18	5.5 - 6.5	-02	7.89
18	9.0 - 11.0	-03	5.73
25	11.0 - 13.0	-04	9.20
25	7.5 - 9.0	-05	9.20
32	11.0 - 13.0	-06	14.31
32	14.0 - 15.0	-07	14.19
45	25.0 - 27.0	-08	24.63



**PRG-1075
CLAISEN,
DISTILLATION**

Side tube has a 10/30 joint to fit a 75mm immersion thermometer. All outer and inner standard taper joints are the same size. Supplied with plastic cap and teflon seal ring. For micro applications see PG-9028.

<u>Joint</u>	<u>Thermometer Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	10/30	-01	100.40
29/42	10/30	-02	104.76





**PRG-1080
CLAISEN,
MODIFIED**

Top tubes have a port with a #18 GL thread to fit a 6-7mm thermometer. Both standard taper inner joints are the same size. Supplied with plastic cap and teflon seal ring.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	129.51
29/42	-02	134.03



**PRG-1085
CLAISEN,
TAKE-OFF**

Top of the main tube has a #18 GL thread. Bottom take-off tube has a 4mm teflon stopcock and drip tip. All other joints are the same size. Supplied with plastic cap and teflon seal ring.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	240.32
29/42	-02	242.80



**PRG-1090
CLAISEN,
DISTILLATION**

Has 4mm glass stopcock for vacuum isolation, 10/30 thermometer standard taper joint. Other outer and inner standard taper joints are same size.

<u>Joint</u>	<u>Thermometer Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	10/30	-01	231.18
29/42	10/30	-02	235.46



**PRG-1095
CONNECTING**

Side distilling port is at 75° angle. All outer and inner standard taper joints are the same size. For micro applications see PG-9034.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	64.38
29/42	-02	68.96



**PRG-1100
CONNECTING,
THREE-WAY**

Side outer standard taper joint is at 105° angle. All outer and inner standard taper joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	66.36
29/42	-02	68.96

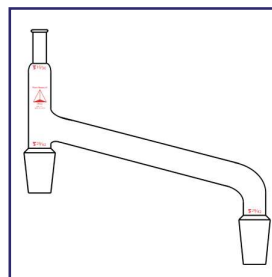




**PRG-1105
CONNECTING**

200mm between the joints and angle at 75°. Both inner standard taper joints are the same size. For micro applications see PG-9042.

Joint	CODE	Price
24/40	-01	58.03
29/42	-02	61.43



**PRG-1110
DISTILLING,
THERMOMETER**

200mm between the joints and angle at 75°, top of vertical tube has a 10/30 standard taper thermometer joint. Lower inner standard taper joints are the same size.

Joint	CODE	Price
24/40	-01	80.49
29/42	-02	86.00



**PRG-1115
DISTILLING**

Standard taper outer joint with 1/2" O.D. Exit drip stem at 105° angle. For micro applications see PG-9000.

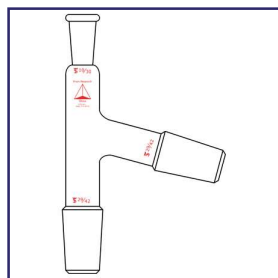
Joint	CODE	Price
24/40	-01	31.38
29/42	-02	34.81



**PRG-1120
DISTILLING,
75° ANGLE**

Inner standard taper joints of the same size bent at 75° angle. For micro applications see PG-9008.

Joint	CODE	Price
24/40	-01	38.92
29/42	-02	41.89
45/50	-04	81.65



**PRG-1125
DISTILLING**

Side inner standard taper joint is angled at 75°. 10/30 top thermometer joint for 75mm immersion. Inner standard taper joints are the same size. For micro applications see PG-9032.

Joint	Thermometer Joint	CODE	Price
24/40	10/30 for 75 mm Immersion	-01	58.03
29/42	10/30 for 75 mm Immersion	-02	61.67





**PRG-1130
DISTILLING**

Side inner standard taper joint is angled at 75°. GL #18 thread with a septa seal cap at top. Lower inner standard taper joints are the same size.

<u>GL Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	62.00
29/42	-02	67.47



**PRG-1135
DISTILLING**

Side port is angled at 75°. GL-18 threaded top with PTFE faced septa seal and cap supplied. Lower inner standard taper joints are the same size.

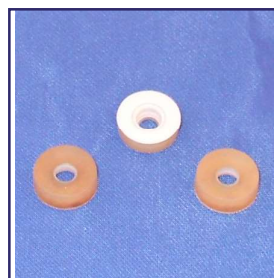
<u>GL Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	81.83
29/42	-02	88.77
45/50	-04	170.10



**PRG-203
CAPS WITH HOLE,
FOR GL THREADS**

Open top screw caps are made from red melamine and are autoclaveable to 180°C.

<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	2.68
18	-02	3.52
25	-03	3.39
32	-04	4.00
45	-05	7.11



**PRG-204
SILICONE SEALING
RINGS**

Silicone with a PTFE washer.

<u>GL Cap Size</u>	<u>Fits Tubing O.D. mm</u>	<u>CODE</u>	<u>Price</u>
14	5.5 - 6.5	-01	5.14
18	5.5 - 6.5	-02	7.89
18	9.0 - 11.0	-03	5.73
25	11.0 - 13.0	-04	9.20
25	7.5 - 9.0	-05	9.20
32	11.0 - 13.0	-06	14.31
32	14.0 - 15.0	-07	14.19
45	25.0 - 27.0	-08	24.63



**PRG-1140
DISTILLING TRAP,
KJELDAHL**

150ml bulb with 8mm O.D. exit tube 150mm long angled 75° down, lower inner standard taper joint.

<u>GL Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	66.52
29/42	-02	68.64

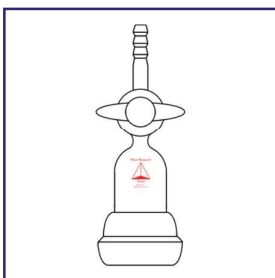
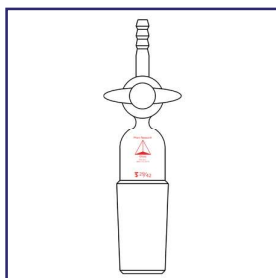




With 125ml bulb size. Both standard taper joints are same size. For micro applications see PG-9048.

<u>Joint</u>	<u>Bulb Size</u>	<u>CODE</u>	<u>Price</u>
24/40	125 mL	-01	69.24
29/42	125 mL	-02	72.08
24/40	250 mL	-03	75.38

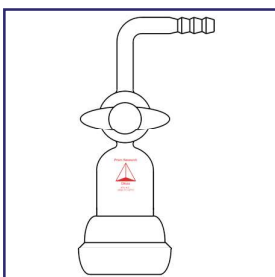
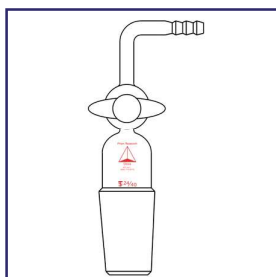
PRG-1145
DISTILLING TRAP



Hose connection at top, 2mm glass stopcock, standard taper inner joint or ball joint at the bottom.

<u>Inner Joint</u>	<u>CODE</u>	<u>Price</u>	<u>Ball Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	61.68	28/15	-03	64.00
29/42	-02	70.26	35/25	-04	73.07

PRG-1150
FLOW CONTROL, STRAIGHT

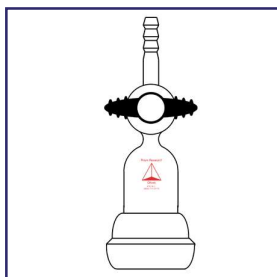
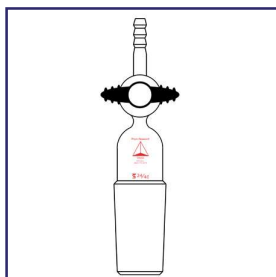


Hose connection at top angled at 90°, 2mm glass stopcock, standard taper inner joint or ball joint at the bottom. For micro applications see PG-9062.

<u>Inner Joint</u>	<u>CODE</u>	<u>Price</u>	<u>Ball Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	65.31	28/15	-03	68.96
29/42	-02	73.73	35/25	-04	78.06

PRG-1155
FLOW CONTROL, 90°

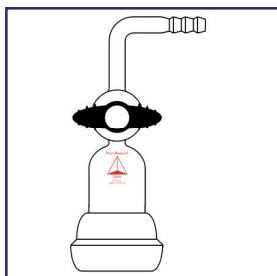
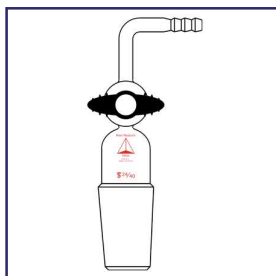




Hose connection at top, 2mm teflon stopcock, standard taper inner joint or ball joint at the bottom.

I Inner Joint	CODE	Price	d Ball Joint	CODE	Price
24/40	-01	87.84	28/15	-03	96.24
29/42	-02	90.05	35/25	-04	99.43

PRG-1160
FLOW CONTROL, STRAIGHT, TEFLON



Hose connection at top angled at 90°, 2mm teflon stopcock, standard taper inner joint or ball joint at the bottom. For micro applications see PG-9064.

I Inner Joint	CODE	Price	d Ball Joint	CODE	Price
24/40	-01	92.80	28/15	-03	101.02
29/42	-02	94.64	35/25	-04	103.98

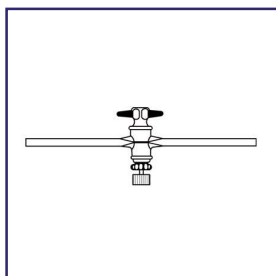
PRG-1165
FLOW CONTROL, 90°, TEFLON



With adjustable flow metering 2mm teflon stopcock all standard taper joints are the same size.

I Joint	CODE	Price
24/40	-01	166.98
29/42	-02	172.47

PRG-1170
ADJUSTABLE FLOW CONTROL, TEFLON



Teflon plug with through hole and flow control needle valve.

Bore mm	Plug Size	CODE	Price	Plug Only CODE	Price
2	11/25	-01	95.31	-11	63.97
4	15.2/30	-02	116.29	-12	66.72
6	16/35	-03	121.32	-13	69.66

PRG-315
TEFLON STOPCOCK



PRG-1175
SPHERICAL JOINT,
INLET, OUTLET, with
3/8" HOSE BARB

Socket, Ball O-Ring or Ball joint with 3/8" Hose Barb

Joint Size	O-Ring Ball Joint		Standard Ball Joint		Socket Joint	
	CODE	Price	CODE	Price	CODE	Price
12/5	-17	27.78	-07	26.03	-21	26.03
18/9	-13	28.78	-03	27.05	-22	27.05
28/12	-14	32.73	-04	30.82	-23	30.82



PRG-1176
SPHERICAL JOINT,
INLET, OUTLET, with
TUBE STUD

Socket Joint, Ball O-Ring Joint or Standard Ball Joint with a Tube Stud

Joint Size	Tube O.D.	O-Ring Ball Joint		Standard Ball Joint		Socket Joint	
		CODE	Price	CODE	Price	CODE	Price
18/9	3/8"	—	—	-16	34.60	-30	34.60
28/12	1/4"	-01	36.36	-11	34.60	-21	34.60
28/12	5/16"	-02	36.36	-12	34.60	-22	34.60
28/12	3/8"	-03	36.36	-13	34.60	-23	34.60
28/12	1/2"	-05	36.36	-15	34.60	-25	34.60
28/12	5/8"	-04	36.36	-14	34.60	-24	34.60



PRG-1180
INLET, OUTLET, with
3/8" HOSE BARB

Standard Taper Outer or Inner Joint with 3/8" Hose Barb Connection. For micro applications see PG-9052 and PG-9056.

Joint	Outer Joint		Inner Joint	
	CODE	Price	CODE	Price
24/40	-01	33.75	-03	29.31
29/42	-02	37.68	-04	32.91
34/45	-06	42.41	-08	40.90
45/50	-07	46.71	-09	43.47

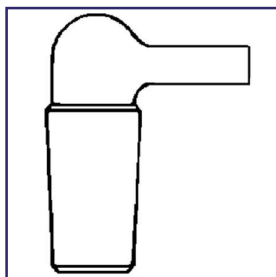




PRG-1181
INLET, OUTLET, 90°
BEND HOSE
CONNECTION

Standard Taper Outer or Inner Joint with Hose Barb Connection at a 90° Angle. For micro applications see PG-9054 and PG-9058.

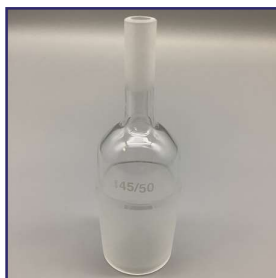
	Outer Joint		Inner Joint	
<u>Joint</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	33.75	-03	29.31
29/42	-02	37.68	-04	32.91
34/45	-06	42.28	-08	40.90
45/50	-07	46.71	-09	43.47



PRG-1182
VACUUM

Vacuum Adapter

<u>Joint Size</u>	<u>Connection</u>	<u>CODE</u>	<u>Price</u>
14/20	Fritted Inlet	-14	54.15
29/42	38mm Tubulation at 90°	-15	29.00
45/50	38mm Tubulation at 90°	-19	41.47
45/50	Stainless Steel Flange Fitting at 90°	-21	236.73
71/60	Stainless Steel Flange Fitting at 90°	-23	257.37



PRG-1183
STRAIGHT,
STANDARD TAPER
JOINT to TUBE STUD

Adapter, Straight, Standard Taper Joint to Tube Stud

<u>Joint Size</u>	<u>Tube Stud Size</u>	<u>CODE</u>	<u>Price</u>
24/40	1/2"	-01	36.40
24/40	3/4"	-02	41.73
45/50	1/2"	-03	48.20
45/50	3/4"	-04	53.01



Adapter, 90°, Standard Taper Joint to Tube Stud

Joint Size	Tube Stud Size	CODE	Price
24/40	1/2"	-01	39.12
24/40	3/4"	-02	44.34
45/50	1/2"	-03	52.05
45/50	3/4"	-04	53.87

PRG-1184
90°, STANDARD
TAPER JOINT to TUBE
STUD



Socket, Ball O-Ring or Standard Ball Joint with Hose Barb Connection Bent at a 90° Angle

Joint Size	O-Ring Ball Joint		Standard Ball Joint		Socket Joint	
	CODE	Price	CODE	Price	CODE	Price
12/5	-17	27.78	-07	26.03	-21	26.03
18/9	-13	28.78	-03	27.05	-22	27.05
28/12	-14	32.57	-04	30.82	-23	30.82
35/25	---	---	-05	35.48	---	---

PRG-1185
SPHERICAL JOINT,
INLET, OUTLET, with
3/8" HOSE BARB at
90° BEND



Outlet tube allows for use of a compression fitting.

Tube O.D.	O-Ring Ball Joint		Standard Ball Joint		Socket Joint	
	CODE	Price	CODE	Price	CODE	Price
1/4"	-01	36.36	-11	34.60	-21	34.60
5/16"	-02	36.36	-12	34.60	-22	34.60
3/8"	-03	36.36	-13	34.60	-23	34.60
1/2"	-05	36.36	-15	34.60	-25	34.60
5/8"	-04	36.36	-14	34.60	-24	34.60

PRG-1186
SPHERICAL JOINT,
INLET, OUTLET, 90°
TUBE STUD





PRG-1190
INERT GAS, DUAL
INLINE HOSE BARBS

Two hose connections allow for inert gas flow over apparatus to maintain oxygen free system.

<u>Inner Joint</u>	<u>CODE</u>	<u>Price</u>	<u>Ball Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	40.33	18/9	-03	41.58
29/42	-02	45.11	28/15	-04	44.29
45/50	-06	57.83	35/25	-05	47.23



PRG-1191
90°, STANDARD
TAPER INNER JOINT
x "DUAL" TUBE STUD

Adapter, 90°, Standard Taper Inner Joint x "Dual" Tube Stud

<u>Joint Size</u>	<u>Tube Stud Size</u>	<u>CODE</u>	<u>Price</u>
24/40	1/2"	-01	41.96
24/40	3/4"	-02	47.63
45/50	1/2"	-03	55.57
45/50	3/4"	-04	57.83



PRG-1195
INLET, with SIDE 3/8"
HOSE BARB

Top standard taper outer joint and lower standard taper inner joint are the same size, 3/8" side hose barb.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	50.29
29/42	-02	53.94



PRG-1200
INLET, 200mm
EXTENDED TUBE
BELOW SIDE 3/8"
HOSE BARB

Inlet tube extends 200mm below the bottom standard taper inner joint. Both joints are the same size. 3/8" side hose barb.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	58.23
29/42	-02	62.80





**PRG-1205
OFFSET**

Top standard taper outer joint and lower standard taper inner joint are the same size. For micro applications see PG-9010.

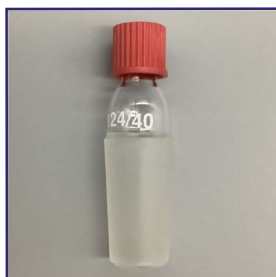
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	40.94
29/42	-02	52.36
34/45	-03	101.54
45/50	-04	123.67



**PRG-1210
SAMPLING**

For removal of condensation through use of 2mm teflon stopcock. All other standard taper joints are the same size.

<u>Capacity mL</u>	<u>§ 24/40</u>	<u>Price</u>	<u>§ 29/42</u>	<u>Price</u>
125	-01	188.63	-04	192.25
250	-02	194.74	-05	198.18
500	-03	200.65	-06	204.07



**PRG-1215
SYRINGE**

Liquid or gases may be added or withdrawn by inserting standard syringe needles through the self-healing septa. Septa supplied.

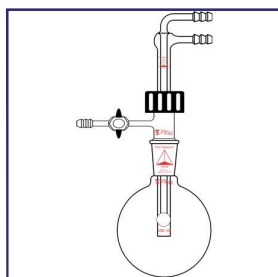
<u>§ Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	39.92
29/42	-02	43.57
Septa (12/pkg)	-03	51.54



**PRG-1220
SYRINGE, ADDITION**

Provides access to apparatus when septa is pierced with syringe needle. Liquids or gases may be added or withdrawn.

<u>§ Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	56.67
29/42	-02	61.33
Septa (12/pkg)	-03	51.54



**PRG-1225
SUBLIMATOR**

Sublimator consist of two pieces. A vacuum adapter allows the cold finger to move up or down in the flask. A 2mm teflon stopcock provides a vacuum source. Sublimation occurs in the flask. Adapter uses a cap and sealing ring for cold finger mobility.

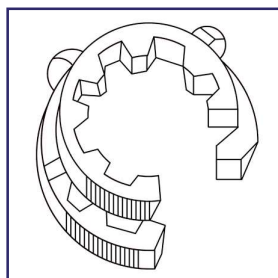
<u>Joint Size</u>	<u>For Use with Joint Size</u>	<u>Complete</u>		<u>Vacuum Adapter</u>		<u>Cold Finger</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/25	24/25, 24/40	-01	158.79	-03	105.60	-05	57.57
29/26	29/26, 29/42	-02	162.72	-04	119.67	-06	57.57



**PRG-1230
THERMOCOUPLE,
TEFLON**

With compression nut and O-ring for an air tight seal between an adapter and thermocouple.

<u>Joint Size</u>	<u>Thermocouple</u>		<u>CODE</u>	<u>Price</u>
	<u>O.D. Inches</u>			
10/18	1/8	-01	24.45	
14/20	1/8	-02	29.85	
14/20	1/4	-03	29.85	
24/40	1/8	-04	35.56	
24/40	1/4	-05	35.56	
29/42	1/8	-06	45.11	
29/42	1/4	-07	45.11	



**PRG-1700
KECK CLIPS**

Made of Delrin Plastic. Non corrosive, Safe to 140°C. Sold in Packs of 10

<u>Size</u>	<u>Fits Joint Size</u>	<u>CODE</u>	<u>Price</u>
10	10/18, 10/30	-01	66.23
12	12/18, 12/30	-02	76.43
14	14/20, 12/30	-03	29.71
19	14/20, 14/35	-04	39.69
24	24/25, 24/40	-05	39.69
29	29/26, 29/42	-06	42.64
34	34/28, 34/45	-07	81.87
40	40/25, 40/50	-08	95.71
45	45/50	-09	82.78





**PRG-1240
THERMOMETER**

Standard taper inner joint or standard ball joint at the bottom, threaded at the top with a compression fitting. For micro applications see PG-9068.

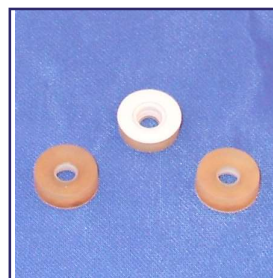
<u>Inner Joint</u>	<u>Thread Size</u>	<u>CODE</u>	<u>Price</u>	<u>Ball Joint</u>	<u>Thread Size</u>	<u>CODE</u>	<u>Price</u>
24/40	GL-18	-01	51.37	28/15	GL-18	-05	60.00
29/42	GL-18	-02	58.02	35/20	GL-18	-06	62.18
34/45	GL-18	-03	61.36	35/25	GL-18	-07	62.18
45/50	GL-18	-04	64.68				



**PRG-203
CAPS WITH HOLE,
FOR GL THREADS**

Open top screw caps are made from red melamine and are autoclaveable to 180°C.

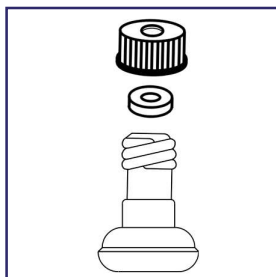
<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	2.68
18	-02	3.52
25	-03	3.39
32	-04	4.00
45	-05	7.11



**PRG-204
SILICONE SEALING
RINGS**

Silicone with a PTFE washer.

<u>GL Cap Size</u>	<u>Fits Tubing O.D. mm</u>	<u>CODE</u>	<u>Price</u>
14	5.5 - 6.5	-01	5.14
18	5.5 - 6.5	-02	7.89
18	9.0 - 11.0	-03	5.73
25	11.0 - 13.0	-04	9.20
25	7.5 - 9.0	-05	9.20
32	11.0 - 13.0	-06	14.31
32	14.0 - 15.0	-07	14.19
45	25.0 - 27.0	-08	24.63



**PRG-1245
THERMOMETER,
OFFSET**

Standard taper inner joint or standard ball joint at the bottom, GL-18 thread at the top with 1/4" compression fitting.

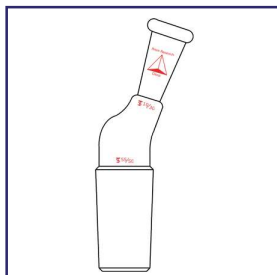
<u>Inner Joint</u>	<u>CODE</u>	<u>Price</u>	<u>Ball Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	53.54	28/15	-05	62.18
29/42	-02	60.18	35/20	-06	63.02
34/45	-03	63.50	35/25	-07	63.02
45/50	-04	66.85			



**PRG-1250
THERMOMETER, SIDE
HOSE CONNECTION**

Standard taper inner joint or standard ball joint at the bottom, GL-18 thread at the top, side hose barb.

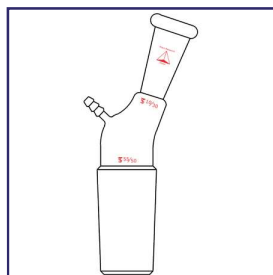
<u>Inner Joint</u>	<u>CODE</u>	<u>Price</u>	<u>Ball Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	62.18	28/15	-05	70.83
29/42	-02	68.86	35/20	-06	71.66
34/45	-03	73.44	35/25	-07	71.87
45/50	-04	77.50			



Standard taper inner joint at the bottom, offset 10/30 standard taper outer joint at the top.

Joint Size	CODE	Price
24/40	-01	47.08
29/42	-02	50.45
34/45	-03	52.82
45/50	-04	56.16
55/50	-05	59.18

PRG-1260
THERMOMETER



Standard taper inner joint at the bottom, a side vacuum port, offset 10/30 standard taper outer joint at the top.

Joint Size	CODE	Price
24/40	-01	76.35
29/42	-02	79.80
34/45	-03	82.48
45/50	-04	85.98
55/50	-05	91.15

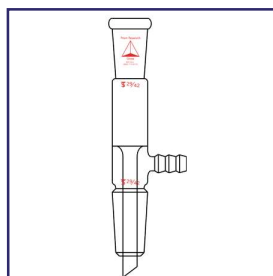
PRG-1265
THERMOMETER



Provides precise pouring of liquid from joined apparatus. Also helps to eliminate spillage and droplet run back.

Joint Size	CODE	Price
24/40	-01	35.37
29/42	-02	37.76

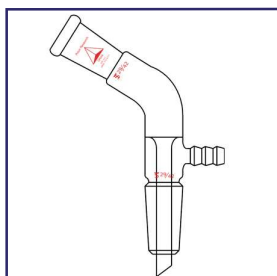
PRG-1270
TRANSFER



With sealed drip tip and hose connection. All standard taper joints are the same size. For micro applications see PG-9078.

Joint Size	CODE	Price
24/40	-01	64.83
29/42	-02	71.66

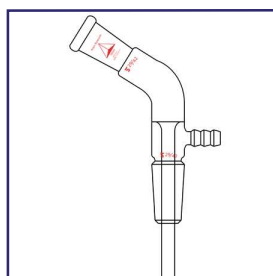
PRG-1275
VACUUM, STRAIGHT



With sealed drip tip, side hose connection. Top joint is angled 105°. All standard taper joints are the same size. For micro applications see PG-9082.

Joint Size	CODE	Price
24/40	-01	63.24
29/42	-02	72.59
45/50	-04	153.09

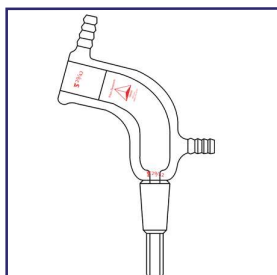
PRG-1280
VACUUM, 105°



With extended drip tube, side hose connection. Top joint is angled 105°. All standard taper joints are the same size. For micro applications see PG-9084.

Joint Size	CODE	Price
24/40	-01	67.65
29/42	-02	78.14

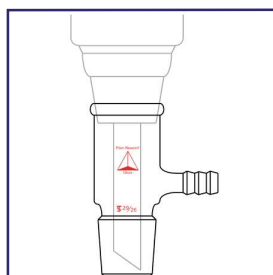
PRG-1285
VACUUM, 105° EXTENDED



Water jacket completely surrounds adapter. Used for highly volatile condensates.

Joint Size	CODE	Price
24/40	-01	272.24
29/42	-02	288.76
45/50	-04	430.92

PRG-1290
DISTILLATION, BENT, 105° JACKETED

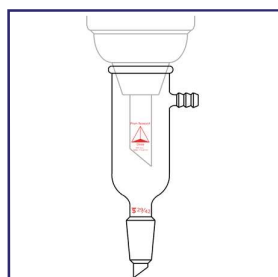


#3 pluro stopper top, standard taper lower inner joint, 3/8" hose barb. Accepts 15 through 150ml buchner funnels.

Joint Size	CODE	Price
24/25	-01	56.29
29/26	-02	60.32

PRG-1295
VACUUM FILTRATION, SMALL

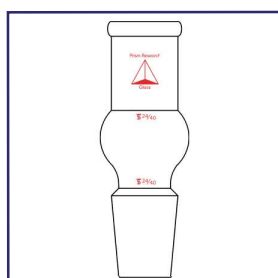




#6 stopper top, standard taper lower inner joint, 3/8" hose barb. Accepts a 250ml to 300ml buchner funnel. Top is tooled for a #5 or #6 pluro stopper.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	78.16
29/42	-02	82.22

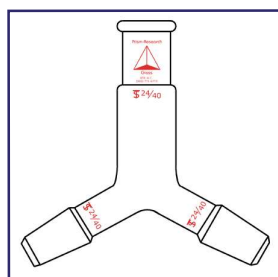
PRG-1297
VACUUM FILTRATION,
LARGE



Straight adapter with a standard taper top outer joint and a standard taper bottom inner joint.

<u>Bottom Joint</u>	<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	40.82
14/20	24/40	-02	41.86
24/40	24/40	-03	44.87
24/40	14/20	-04	44.36

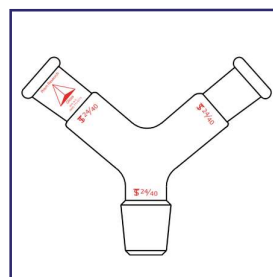
PRG-1300
STRAIGHT, ENLARG-
ING and REDUCING



Three way adapter with a standard taper top outer joint and two standard taper bottom inner joints. All joints are the same size.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	66.21
24/40	-02	73.48
29/42	-03	99.79
45/50	-05	181.44

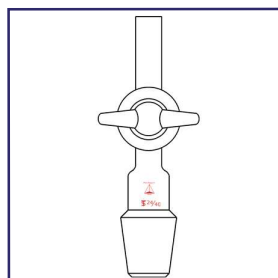
PRG-1305
CONNECTING



Three way adapter with two standard taper top outer joints and a standard taper bottom inner joint. All joints are the same size.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	68.87
24/40	-02	75.88

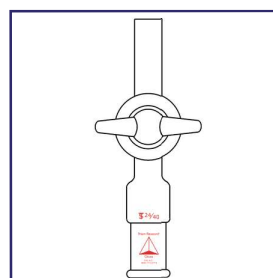
PRG-1310
CONNECTING



Inlet adapter with standard taper inner joint and a 2mm glass stopcock.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	59.80
24/40	-02	60.81

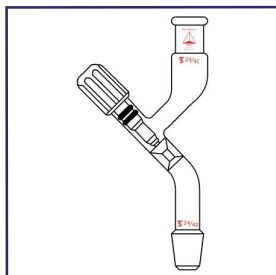
PRG-1320
INLET, INNER JOINT



Inlet adapter with standard taper outer joint and a 2mm glass stopcock.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	61.81
24/40	-02	62.99

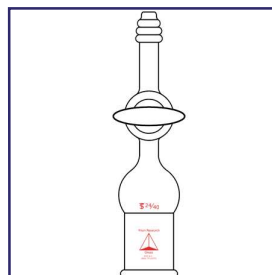
PRG-1325
INLET, OUTER JOINT



**PRG-1330
CONNECTING**

Threaded 0-4mm valve between a standard taper inner and a standard taper outer joint. Both joints are the same size.

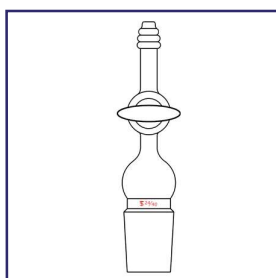
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	104.82
24/40	-02	114.11
29/42	-03	314.57
45/50	-04	362.88



**PRG-1335
PRESSURE/VACUUM
STOPCOCK, OUTER**

Adapter with a bottom standard taper outer joint, 2mm glass stopcock, and 3/16" hose barb top.

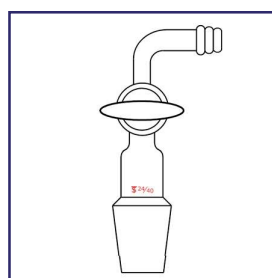
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	75.00
24/40	-02	76.59



**PRG-1340
PRESSURE/VACUUM
STOPCOCK, INNER**

Adapter with bottom standard taper inner joint, 2mm glass stopcock, and 3/16" hose barb top used for evacuation and addition of inert gases.

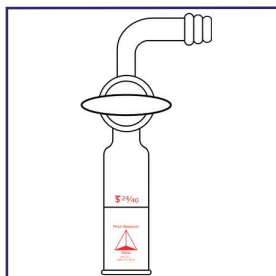
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	74.82
24/40	-02	76.59



**PRG-1345
PRESSURE/VACUUM
STOPCOCK, INNER,
90°**

Adapter with standard taper inner joint, 2mm glass stopcock, and 3/16" hose barb top bent at a 90° angle.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	78.29
24/40	-02	79.91

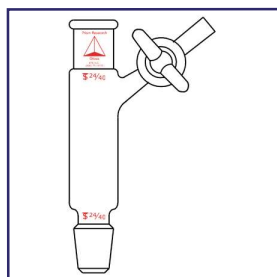


**PRG-1350
PRESSURE/VACUUM
STOPCOCK, OUTER,
90°**

Adapter with standard taper outer joint, 2mm glass stopcock, and 3/16" hose barb top bent at a 90° angle.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	78.13
24/40	-02	79.91

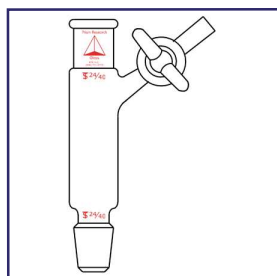




**PRG-1355
CONNECTING**

Adapter with a top standard taper outer joint, lower standard taper inner joint, and an offset 2mm stopcock.

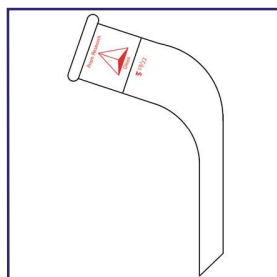
<u>Joint Size</u>	<u>Glass Stopcock</u>		<u>2mm Pressure Stopcock</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	89.59	-11	98.03
24/40	-02	94.84	-12	102.79



**PRG-1360
TRANSFER**

Effectively helps in the transfer of solids into drying ampoules. Adapter with top standard taper outer joint and lower 10mm tube, with an offset side tube containing a 2mm stopcock.

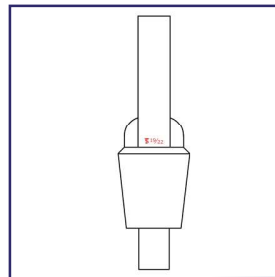
<u>Joint Size</u>	<u>Glass Stopcock</u>		<u>2mm Pressure Stopcock</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	62.73	-11	77.60
24/40	-02	64.94	-12	78.14



**PG-9000
MICRO, 105° BEND**

Micro scale adapter with 105° bend. Connection is a standard taper joint. For larger sizes see PRG-1115.

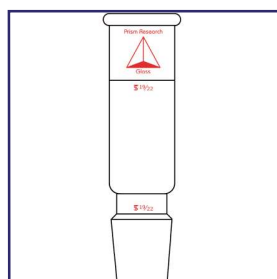
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	27.02
19/22	-02	27.34



**PG-9002
MICRO, STRAIGHT**

Straight micro scale adapter with standard taper joint.

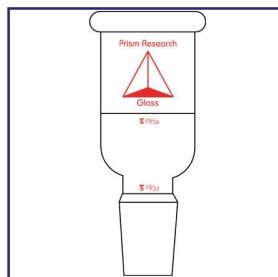
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	27.21
19/22	-02	28.18



**PG-9004
MICRO, STRAIGHT,
90mm**

Micro scale adapter for straight through connections. 90mm between the two standard taper joints.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	42.28
19/22	-02	43.53



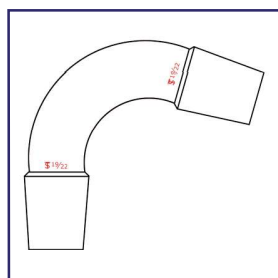
PG-9006
**REDUCING AND EN-
LARGING TYPES**

Micro scale adapter for reducing or enlarging connections. All joints are standard taper. For larger sizes see PRG-1000 and PRG-1005.

Top Outer	Lower Inner	CODE	Price
10/30	14/20	-01	32.45
10/30	19/22	-02	33.10
14/20	10/30	-03	32.45
14/20	19/22	-04	33.10
14/20	19/38	-05	33.10
14/20	24/25	-06	33.61
14/20	24/40	-07	34.18
14/20	29/26	-08	37.60
14/20	29/42	-09	37.60
14/20	34/45	-10	46.23

Top Outer	Lower Inner	CODE	Price
19/22	14/20	-11	34.18
19/22	19/38	-12	36.14
19/22	24/25	-13	37.23
19/22	24/40	-14	37.48
19/22	29/26	-15	39.07
19/22	29/42	-16	39.07
19/22	34/45	-17	45.20
19/38	14/20	-18	34.17
19/38	19/22	-19	37.00

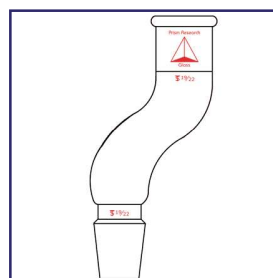
Top Outer	Lower Inner	CODE	Price
24/25	14/20	-20	35.08
24/25	19/22	-21	42.78
24/25	19/38	-22	42.78
24/40	14/20	-23	35.78
24/40	19/22	-24	37.80
29/26	14/20	-25	37.60
29/26	19/22	-26	39.07



PG-9008
MICRO, 75° BEND

Adapter, 75° bend, same size standard taper inner joints at both ends, micro scale. For larger sizes see PRG-1120.

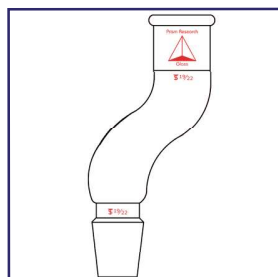
Joint	CODE	Price
14/20	-01	35.69
19/22	-02	39.29



PG-9010
MICRO, OFFSET

Adapter, off-set. One standard taper inner joint and one standard taper outer joint of the same size. For larger sizes see PRG-1205.

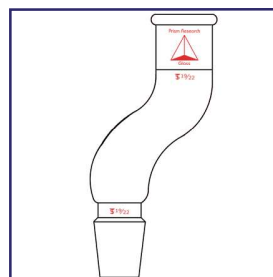
Joint	CODE	Price
14/20	-01	38.64
19/22	-02	39.07



PG-9012
MICRO, 105° BEND

Adapter, 105° bend, one standard taper inner joint and one standard taper outer joint of the same size.

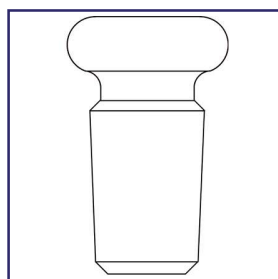
Joint	CODE	Price
14/20	-01	39.28
19/22	-02	39.91



PG-9014
**MICRO, 105° BEND,
DRIP TIP**

Adapter, 105° bend with a standard taper inner joint with a sealed-in drip tip at one end and a standard taper outer joint at the other. Both joints are the same size.

Joint	CODE	Price
14/20	-01	45.65
19/22	-02	41.00

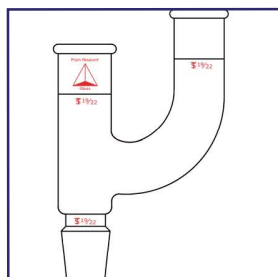


PG-9016
MICRO, BUSHING

For larger sizes see PRG-1040.

Outer	Inner	CODE	Price
14/20	10/18	-01	32.97
14/20	10/30	-02	32.97
19/22	14/20	-03	32.97

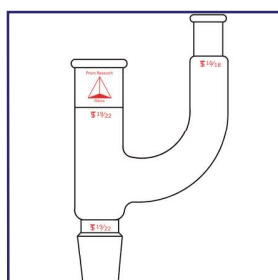




Three-way Claisen adapter with all standard taper joints the same size. For larger sizes see PRG-1050.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	63.75
19/22	-02	65.76

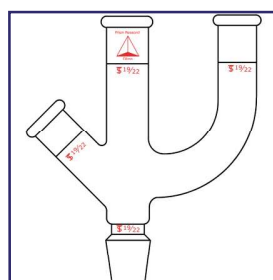
PG-9018
MICRO, CLAISEN,
THREE-WAY



Adapter, three-way, standard taper joints, side arm has a 10/18 outer joint. The side tube will accept a 25mm immersion thermometer. For larger sizes see PRG-1060.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	79.66
19/22	-02	81.77

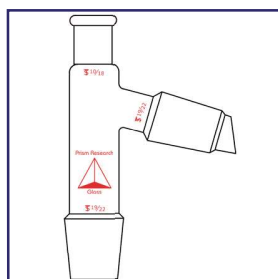
PG-9020
MICRO, THREE-WAY



Adapter, Claisen, three top standard taper outer joints and one lower standard taper inner joint. All joints are the same size. For larger sizes see PRG-1065.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	97.21
19/22	-02	98.09

PG-9022
MICRO, CLAISEN

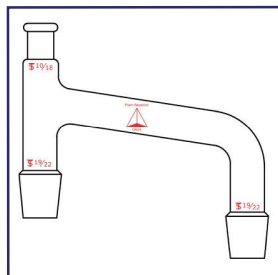


Adapter, three-way, standard taper joints, side tube at 75° angle with drip tip, thermometer top joint.

<u>Joint</u>	<u>Thermometer Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	10/18	-01	58.32
19/22	7/12	-02	59.50
19/22	10/18	-03	60.54

PG-9024
MICRO, THREE-WAY,
75° SIDE TUBE

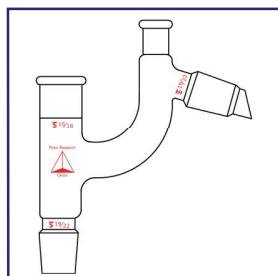




Adapter, connecting, 75° angle side arm, upper joint will accept a 25mm immersion thermometer. Both lower inner joints are the same size.

Joint	CODE	Price
14/20	-01	64.69
19/22	-02	66.99

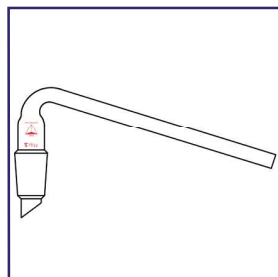
PG-9026
MICRO, CONNECT-
ING, 75° SIDE ARM



Adapter, Claisen, side take-off arm is at a 75° angle with a top outer joint for an immersion thermometer. For larger sizes see PRG-1075.

Joint	Thermometer Joint	CODE	Price
14/20	10/18	-01	108.38
19/22	7/12	-02	109.54
19/22	10/18	-03	111.71

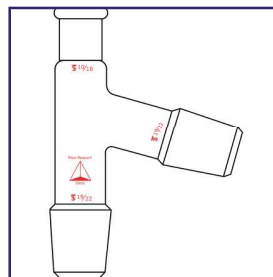
PG-9028
MICRO, CLAISEN, 75°
SIDE ARM



Adapter, distilling, micro apparatus.

Joint	CODE	Price
14/20	-01	30.68
19/22	-02	31.46

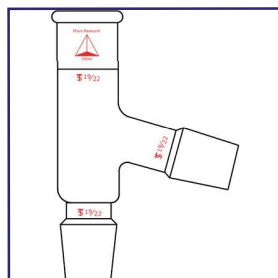
PG-9030
MICRO, DISTILLING



Adapter, three-way, side arm at 75° bend. Inner joints on side arm and bottom are the same size. 10/18 outer joint at the top will accept a 25mm immersion thermometer. For larger sizes see PRG-1125.

Joint	CODE	Price
14/20	-01	50.77
19/22	-02	52.00

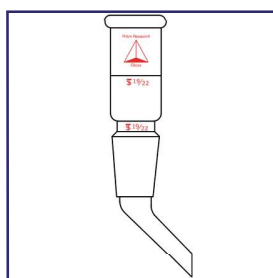
PG-9032
MICRO, 75° BEND



Adapter, three-way, side arm at 75° bend. Top outer joint, inner joint on side arm and inner bottom joint are the same size. For larger sizes see PRG-1095.

Joint	CODE	Price
14/20	-01	52.27
19/22	-02	53.76

PG-9034
MICRO, 75° BEND

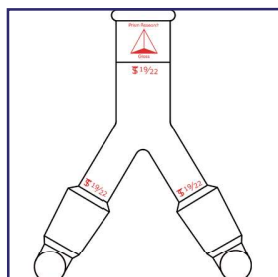


Adapter, addition or distributing. Top outer joint with an angled stem and an inner joint above the stem. Used to distribute liquid into collectors and reaction flasks.

Joint	CODE	Price
14/20	-01	47.71
19/22	-02	48.64

PG-9036
MICRO, ADDITION OR
DISTRIBUTING

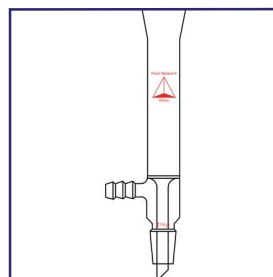




Adapter, three-way. Top outer joint, inner joints on both angled bottom arms with drip tips. All joints are the same size.

Joint	CODE	Price
14/20	-01	71.49
19/22	-02	73.45

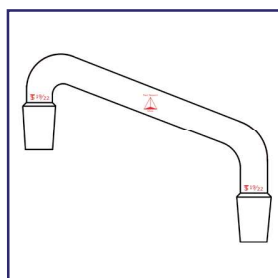
PG-9038
MICRO, THREE-WAY



Adapter, Filtration, Vacuum, Micro Apparatus

Joint	CODE	Price
14/20	-01	62.33
19/22	-02	65.71

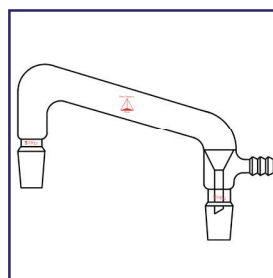
PG-9040
MICRO, FILTRATION, VACUUM



Adapter, connecting. Parallel connecting inner joints are at a 75° angle. Micro scale. For larger sizes see PRG-1105.

Joint	CODE	Price
14/20	-01	54.43
19/22	-02	55.69

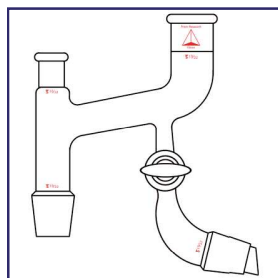
PG-9042
MICRO, CONNECTING



Adapter, Vacuum, Distilling. Parallel connecting inner joints are at a 75° angle. With a vacuum port and inner drip tip.

Joint	CODE	Price
14/20	-01	82.62
19/22	-02	83.47

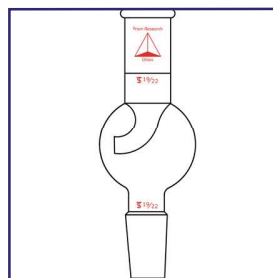
PG-9044
MICRO, VACUUM, DISTILLING



Adapter, Distilling Head. All joints are the same size except for the 10/18 joint located on the uptake for 25mm immersion thermometer. Located underneath the side arm is a 2mm Teflon stop-cock.

Joint	CODE	Price
14/20	-01	169.95
19/22	-02	172.60

PG-9046
MICRO, DISTILLING HEAD

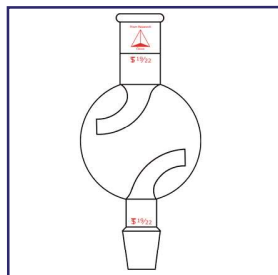


Adapter, Kjeldahl Trap. Top outer joint and bottom inner joint. Both joints are the same size. For larger sizes see PRG-1145.

Joint	CODE	Price
14/20	-01	62.42
19/22	-02	64.36

PG-9048
MICRO, KJELDAHL TRAP

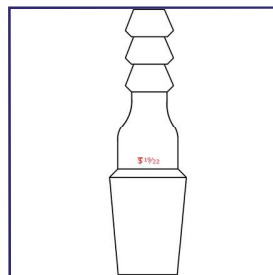




Adapter, Straight, Kjeldahl Trap. Top outer joint and a bottom inner joint. Both joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	103.72
19/22	-02	105.21

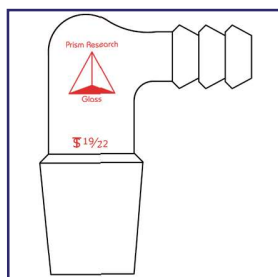
PG-9050
MICRO, KJELDAHL
TRAP



Adapter, Inlet, Bottom Inner Joint, Hose Barb Connection at the Top. For larger sizes see PRG-1180.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	21.86
19/22	-02	22.94

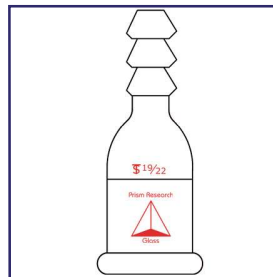
PG-9052
MICRO, INLET, STAND-
ARD TAPER JOINT,
WITH HOSE BARB
CONNECTION



Adapter, Inlet, 90° Bend at Top with a Hose Barb Connection, Standard Taper Inner Joint at the Bottom. For larger sizes see PRG-1181.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	21.78
19/22	-02	22.86

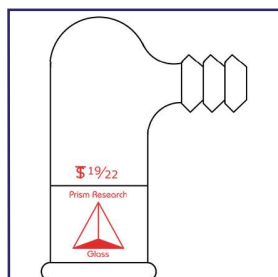
PG-9054
MICRO, INLET, 90°
BEND WITH HOSE
CONNECTION, STAND-
ARD TAPER JOINT



Adapter, Outlet, Bottom Outer Joint, Hose Barb Connection at the Top. For larger sizes see PRG-1180.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	23.42
19/22	-02	24.36

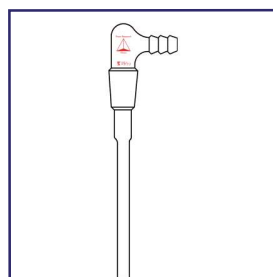
PG-9056
MICRO, OUTLET,
STANDARD TAPER
JOINT, WITH HOSE
BARB CONNECTION



Adapter, Outlet, 90° Bend at Top with a Hose Barb Connection, Inner Joint at the Bottom. For larger sizes see PRG-1181.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	26.39
19/22	-02	27.53

PG-9058
MICRO, OUTLET, 90°
BEND WITH HOSE
CONNECTION, STAND-
ARD TAPER JOINT

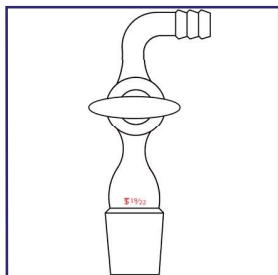


Adapter, Inlet, Extended, 90° Bend at Top with a Hose Barb Connection, Inner Joint with Tapered Tube Extension. Used for ventilation. Allows reactants to be tested below the interior surface.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	33.54
19/22	-02	35.16

PG-9060
MICRO, INLET, EX-
TENDED, 90° BEND
WITH HOSE CONNEC-
TION, STANDARD
TAPER JOINT

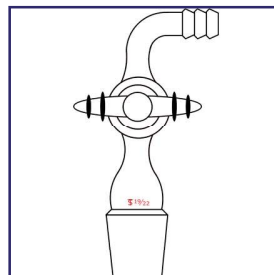




Adapter, Inlet, 90° Bend at Top with a Glass Stopcock and Hose Barb Connection, Standard Taper Inner Joint at the Bottom. For larger sizes see PRG-1155.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	58.80
19/22	-02	61.11

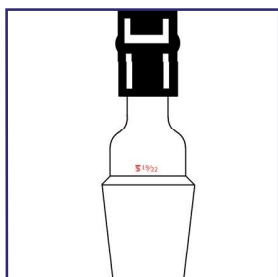
PG-9062
MICRO, INLET, 90°
BEND WITH HOSE
CONNECTION AND
GLASS STOPCOCK



Adapter, Inlet, 90° Bend, 2mm TFE Stopcock and Hose Connection. For larger sizes see PRG-1165.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	79.60
19/22	-02	81.37

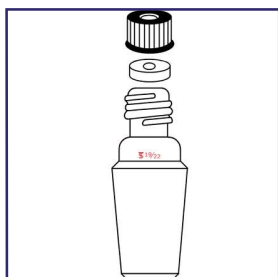
PG-9064
MICRO, INLET, 90°
BEND WITH HOSE
CONNECTION AND
2mm TFE STOPCOCK



Adapter, Thermometer, Standard Taper Inner Joint. Rubber filament is supplied with adapter for thermometer connection.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	20.17
19/22	-02	20.38

PG-9066
MICRO, THERMO-
METER, STRAIGHT,
STANDARD TAPER
JOINT

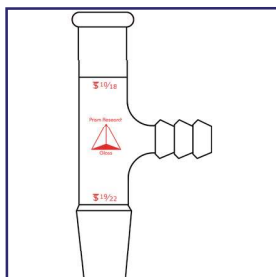


Adapter, Threaded, Standard Taper Inner Joint at the Bottom. #14 GL cap and Teflon seal ring makes a compression seal with thermometers. Used for vacuum testing. For larger sizes see PRG-1240.

<u>Joint</u>	<u>Glass Only</u>		<u>Complete</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	29.20	-03	48.54
19/22	-02	29.85	-04	49.45

PG-9068
MICRO, THREADED,
STANDARD TAPER
JOINT

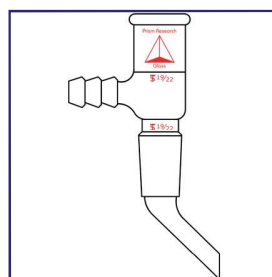




Adapter, Thermometer, Bushing Style. Standard Taper Bottom Inner Joint, 10/18 Standard Taper Top Outer Joint. Side hose connection. Used for vacuum testing.

Joint	CODE	Price
14/20	-01	47.60
19/22	-02	51.43

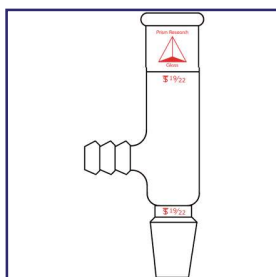
PG-9070
MICRO, THERMO-METER, BUSHING STYLE, STANDARD TAPER JOINT



Adapter, addition or distributing. Top outer joint with side hose connection, setting on an angled stem with inner joint above the stem. Used to distribute liquid into collectors and reaction flasks.

Joint	CODE	Price
14/20	-01	51.28
19/22	-02	52.81

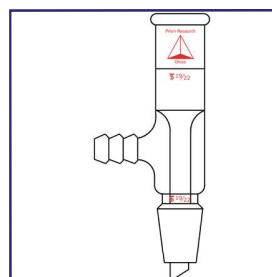
PG-9074
MICRO, ADDITION OR DISTRIBUTING



Adapter, straight with added vacuum port. Standard taper top outer joint and standard taper bottom inner joint are the same size. (Connecting adapter with added vacuum port)

Joint	CODE	Price
14/20	-01	47.60
19/22	-02	51.43

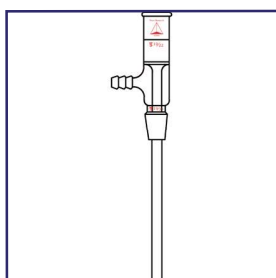
PG-9076
MICRO, STRAIGHT, VACUUM, STANDARD TAPER JOINT



Adapter, straight with added vacuum port and inner drip tip. Standard taper top outer joint and standard taper bottom inner joint are the same size. (Connecting adapter with added vacuum port). For larger sizes see PRG-1275.

Joint	CODE	Price
14/20	-01	51.55
19/22	-02	52.96

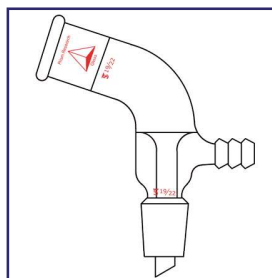
PG-9078
MICRO, STRAIGHT, VACUUM, INNER DRIP TIP, STANDARD TAPER JOINT



Adapter, Straight, Vacuum. Sealed-in inner delivery tube extends 90mm below the end of the bottom inner joint. Top outer joint and bottom inner joint are the same size.

Joint	CODE	Price
14/20	-01	49.47
19/22	-02	50.15

PG-9080
MICRO, STRAIGHT, VACUUM, SEALED IN INNER DELIVERY TUBE, STANDARD TAPER JOINT

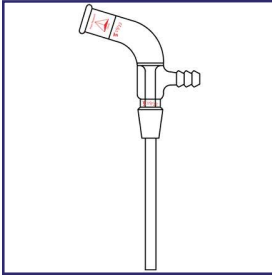


Adapter, 105° bend with added vacuum port and inner drip tip. Top outer joint and bottom inner joint are the same size. For larger sizes see PRG-1280.

Joint	CODE	Price
14/20	-01	53.97
19/22	-02	55.64

PG-9082
MICRO, 105° BEND, VACUUM, INNER DRIP TIP, STANDARD TAPER JOINT

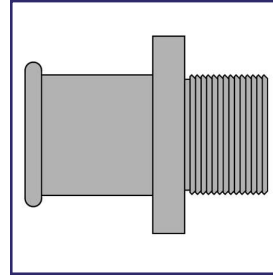




Adapter, 105° Bend, Vacuum. Sealed-in inner delivery tube extends 90mm below the end of the bottom inner joint. Top outer joint and bottom inner joint are the same size. For larger sizes see PRG-1285.

Joint	CODE	Price
14/20	-01	53.89
19/22	-02	55.67

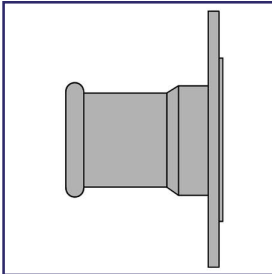
PG-9084
MICRO, 105° BEND,
VACUUM, SEALED-IN
INNER DELIVERY
TUBE, STANDARD
TAPER JOINT



Both beaded pipe and thread are the same nominal size. Other sizes are available upon request.

Beaded Pipe x M-NPT	CODE	Price
1.0"	-01	194.82
1.5"	-02	205.00
2.0"	-03	215.95
3.0"	-04	250.38
4.0"	-05	355.23

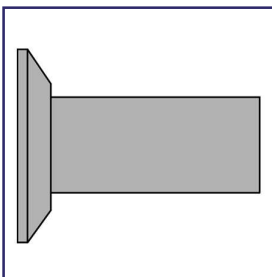
PRG-8027
BEADED PIPE TO
MALE NPT THREAD
(316 S.S.)



Beaded Pipe to ANSI Flange (316 Stainless Steel)

Size	Bolt Circle	Hole Diameter	CODE	Price
1.0"	3 1/8"	5/8"	-01	247.25
1.5"	3 7/8"	5/8"	-02	253.49
2.0"	4 3/4"	3/4"	-03	320.80
3.0"	6.0"	3/4"	-04	388.08
4.0"	7 1/2"	3/4"	-05	514.84
6.0"	9 1/2"	7/8"	-06	594.64

PRG-8028
BEADED PIPE TO
ANSI FLANGE (316
S.S.)

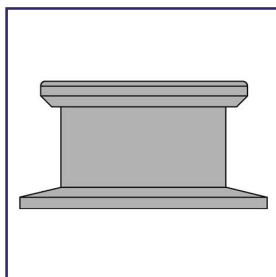


Adapters are ideal for transitioning from glass pipe fitting to compression fittings. Most commonly used to connect circulator ports to transfer lines. Tube stud end can easily be shortened with a common pipe cutter.

B.P. Size	1/2" O.D.	3/4" O.D.	1.0" O.D.
CODE	Price	CODE	Price
1.0"	-01 112.67	-11 120.50	-21 126.75
1.5"	-02 126.75	-12 137.70	-22 145.53
2.0"	-03 147.10	-13 162.74	-23 172.14
3.0"	-04 231.59	-14 247.25	-24 264.45

PRG-8030
BEADED PIPE TO
TUBE STUD (316 S.S.)

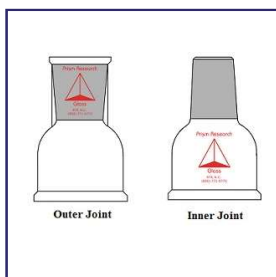




PRG-8032
BEADED PIPE TO NW
OR SANITARY FIT-
TING (316 S.S.)

This adapter mates glass pipe fittings to either NW fitting for vacuum use or a Sanitary fitting for fluid transfer. Both beaded pipe and NW / Sanitary fittings are the same nominal size.

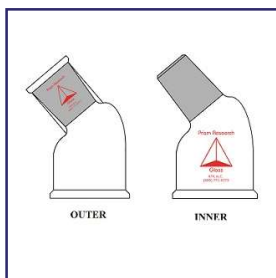
B.P. Size	NW-Fitting		Sanitary Fitting	
	CODE	Price	CODE	Price
1.0"	-01	205.00	-11	205.00
1.5"	-02	240.99	-12	240.99
2.0"	-03	295.76	-13	295.76
3.0"	-04	320.80	-14	320.80



PRG-8042
TAPERED JOINT TO
BEADED PIPE,
STRAIGHT

Adapter, Tapered Joint To Beaded Pipe, Straight

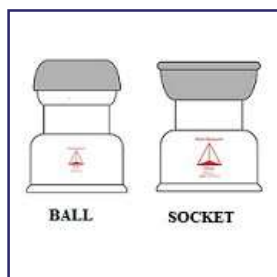
B.P. Size	Joint Type	₹ 24/40		₹ 29/42		₹ 45/50	
		CODE	Price	CODE	Price	CODE	Price
1.0"	Outer	-01	65.58	-02	68.92	-03	71.52
1.5"	Outer	-04	70.81	-05	73.18	-06	77.50
2.0"	Outer	-07	76.01	-08	80.34	-09	83.81
3.0"	Outer	-10	104.02	-11	104.93	-12	111.11
1.0"	Inner	-21	61.86	-22	68.55	-23	69.93
1.5"	Inner	-24	66.92	-25	70.33	-26	74.23
2.0"	Inner	-27	71.77	-28	76.37	-29	80.48
3.0"	Inner	-30	97.10	-31	99.78	-32	109.02



PRG-8044
TAPERED JOINT TO
BEADED PIPE, 45°
ANGLE

Adapter, Tapered Joint To Beaded Pipe, 45° Angle

B.P. Size	Joint Type	₹ 24/40		₹ 29/42		₹ 45/50	
		CODE	Price	CODE	Price	CODE	Price
1.0"	Outer	-01	92.39	-02	97.01	-03	110.87
1.5"	Outer	-04	99.19	-05	105.82	-06	117.89
2.0"	Outer	-07	105.89	-08	111.18	-09	125.65
3.0"	Outer	-10	112.33	-11	118.91	-12	92.99
1.0"	Inner	-21	89.12	-22	93.59	-23	107.23
1.5"	Inner	-24	95.54	-25	101.50	-26	114.45
2.0"	Inner	-27	100.08	-28	106.63	-29	118.49
3.0"	Inner	-30	107.16	-31	116.11	-32	130.93



PRG-8046
SPHERICAL JOINT TO
BEADED PIPE,
STRAIGHT

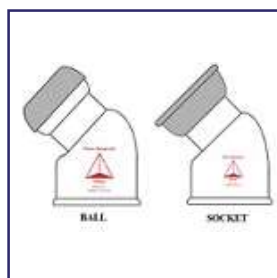
Adapter, Tapered Joint To Beaded Pipe, Straight

Socket Joint

B.P. Size	ø 28/15 CODE	Price	ø 35/25 CODE	Price	ø 50/30 CODE	Price	ø 65/40 CODE	Price	ø 75/50 CODE	Price	ø 102/75 CODE	Price
1.0"	-01	48.42	-02	53.51	-05	92.26	-12	124.29	-13	144.27	-14	152.00
1.5"	-03	52.33	-04	58.64	-08	97.54	-15	130.26	-16	146.72	-17	161.55
2.0"	-06	62.53	-07	61.25	-11	113.12	-18	134.05	-19	155.89	-20	186.23
3.0"	-09	86.43	-10	89.20			-21	145.61	-22	190.75	-23	214.01
4.0"												

Ball Joint

B.P. Size	ø 28/15 CODE	Price	ø 35/25 CODE	Price	ø 50/30 CODE	Price	ø 65/40 CODE	Price	ø 75/50 CODE	Price	ø 102/75 CODE	Price
1.0"	-41	53.42	-42	57.37	-43	95.54						
1.5"	-44	58.80	-45	61.25	-46	103.19	-53	127.73	-54	147.69	-55	166.18
2.0"	-47	67.29	-48	65.22	-49	110.28	-56	134.29	-57	155.21	-58	173.68
3.0"	-50	92.39	-51	91.06	-52	117.44	-59	141.21	-60	162.96	-61	196.71
4.0"							-62	155.00	-63	195.24	-64	224.61



PRG-8048
SPHERICAL JOINT TO
BEADED PIPE, 45°
ANGLE

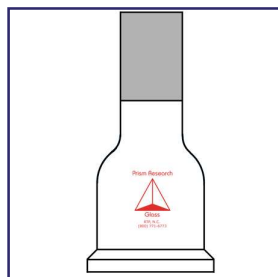
Adapter, Tapered Joint To Beaded Pipe, 45° Angle

Socket Joint

B.P. Size	ø 28/15 CODE	Price	ø 35/25 CODE	Price	ø 50/30 CODE	Price	ø 65/40 CODE	Price	ø 75/50 CODE	Price	ø 102/75 CODE	Price
1.0"	-01	48.42	-02	53.51	-05	92.26	-12	124.29	-13	144.27	-14	152.00
1.5"	-03	52.33	-04	58.64	-08	97.54	-15	130.26	-16	146.72	-17	161.55
2.0"	-06	62.53	-07	61.25	-11	113.12	-18	134.05	-19	155.89	-20	186.23
3.0"	-09	86.43	-10	89.20			-21	145.61	-22	190.75	-23	214.01
4.0"												

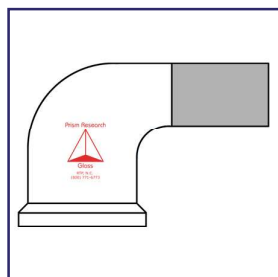
Ball Joint

B.P. Size	ø 28/15 CODE	Price	ø 35/25 CODE	Price	ø 50/30 CODE	Price	ø 65/40 CODE	Price	ø 75/50 CODE	Price	ø 102/75 CODE	Price
1.0"	-41	53.42	-42	57.37	-43	95.54						
1.5"	-44	58.80	-45	61.25	-46	103.19	-53	127.73	-54	147.69	-55	166.18
2.0"	-47	67.29	-48	65.22	-49	110.28	-56	134.29	-57	155.21	-58	173.68
3.0"	-50	92.39	-51	91.06	-52	117.44	-59	141.21	-60	162.96	-61	196.71
4.0"							-62	155.00	-63	195.24	-64	224.61

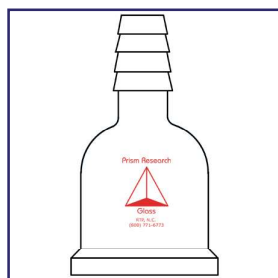


Transitions from a beaded pipe fitting to a heavy wall tube stud. Tube stud ends are nominal standard O.D. sizes to mate with compression fittings. Ends are etched for increased frictional grip. Offered straight or at 90°.

Pipe Fitting I.D.	Tube Size O.D.	Straight		90° Bend	
		CODE	Price	CODE	Price
1/2"	1/2"	-01	CALL	-11	CALL
1/2"	5/8"	-02	CALL	-12	CALL
1/2"	3/4"	-03	CALL	-13	CALL
1.0"	3/4"	-04	60.27	-14	66.76
1.0"	1.0"	-05	60.27	-15	66.76
1.5"	3/4"	-06	88.21	-16	93.15
1.5"	1.0"	-07	88.21	-17	93.15
1.5"	1.25"	-08	91.93	-18	93.77
2.0"	3/4"	-09	102.48	-19	107.16
2.0"	1.0"	-10	102.48	-20	107.16
2.0"	1.25"	-31	102.48	-21	111.70
3.0"	3/4"	-32	114.96	-22	120.29
3.0"	1.0"	-33	114.96	-23	120.29
3.0"	1.25"	-34	114.96	-24	126.32

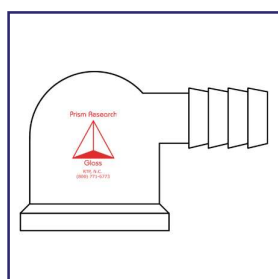


PRG-7451
ADAPTER, BEADED
PIPE TO TUBE STUD



Transition from a beaded pipe connection to a serrated hose barb. The barb diameter measured are the middle serration is either 14mm (5 – serrations) or 24mm (7 – serrations).

Pipe Fitting I.D.	Barb Diameter	Number of Serrations	Straight		90° Bend	
			CODE	Price	CODE	Price
1/2"	14 mm	5	-01	CALL	-11	CALL
1/2"	24 mm	7	-02	CALL	-12	CALL
1.0"	14 mm	5	-03	60.27	-13	66.76
1.0"	24 mm	7	-04	60.27	-14	66.76
1.5"	14 mm	5	-05	88.21	-15	93.15
1.5"	24 mm	7	-06	88.21	-16	93.15
2.0"	14 mm	5	-07	102.48	-17	107.16
2.0"	24 mm	7	-08	102.48	-18	107.16
3.0"	14 mm	5	-09	114.96	-19	120.29
3.0"	24 mm	7	-10	114.96	-20	131.36



PRG-7453
ADAPTER, BEADED
PIPE TO HOSE BARB



Adapter, Internal Thread To Beaded Pipe

Straight

B.P. Size	#7		#11		#15		#18	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-01	CALL	-02	53.51	-03	61.10	-04	92.26
1.5"	-05	52.33	-06	58.64	-07	65.28	-08	92.56
2.0"	-09	62.53	-10	61.25	-11	72.67	-12	97.54
3.0"	-13	86.43	-14	89.20	-15	96.71	-16	113.21

B.P. Size	#25		#36		#50		#80	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-17	94.05	-18	98.96	-19	116.85	---	---
1.5"	-20	97.24	-21	105.96	-22	121.68	-23	229.51
2.0"	-24	103.42	-25	110.87	-26	130.32	-27	247.26
3.0"	-28	108.65	-29	115.65	-30	142.77	-31	255.44
4.0"	-32	133.39	-33	141.29	-34	162.30	-35	306.11
6.0"	-36	142.34	-37	163.79	-38	201.80	-39	351.57

45°

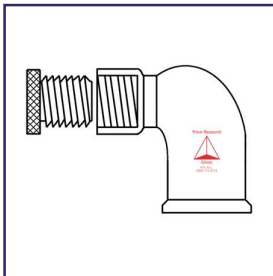
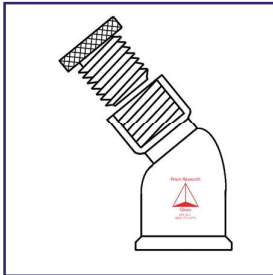
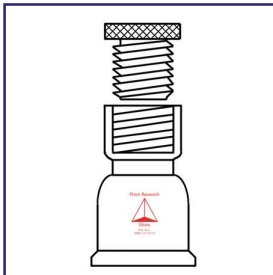
B.P. Size	#7		#11		#15		#18	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-40	52.02	-41	56.77	-42	68.43	-43	92.56
1.5"	-44	56.77	-45	63.36	-46	71.90	-47	98.13
2.0"	-48	65.94	-49	68.26	-50	79.64	-51	101.94
3.0"	-52	91.50	-53	92.56	-54	104.50	-55	120.71

B.P. Size	#25		#36		#50	
	CODE	Price	CODE	Price	CODE	Price
1.5"	-56	102.76	-57	105.96	-58	140.09
2.0"	-59	105.67	-60	111.54	-61	151.20
3.0"	-62	111.70	-63	117.89	-64	171.54
4.0"	-65	137.12	-66	146.72	-67	221.91

90°

B.P. Size	#7		#11		#15		#18	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-68	52.02	-69	56.77	-70	68.43	-71	92.56
1.5"	-72	56.77	-73	63.36	-74	71.90	-75	98.13
2.0"	-76	65.94	-77	68.26	-78	79.64	-79	101.94
3.0"	-80	91.50	-81	92.56	-82	104.50	-83	120.71

B.P. Size	#25		#36		#50	
	CODE	Price	CODE	Price	CODE	Price
1.0"	-84	110.28	---	---	---	---
1.5"	-85	113.41	-86	119.09	---	---
2.0"	-87	122.59	-88	125.42	-89	151.20
3.0"	-90	126.53	-91	132.20	-92	171.54
4.0"	-93	137.12	-94	146.72	-95	221.91



PRG-8044-I INTERNAL THREAD TO BEADED PIPE





CW-010.4
COWIE®, PTFE JOINT-
WARE, FLASK
STOPPERS

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Size</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
8	Grey	CW-010.4.08	7.36
9	Black	CW-010.4.09	7.36
13	Orange	CW-010.4.13	8.95
16	White	CW-010.4.16	10.56
19	Blue	CW-010.4.19	12.48
22	Green	CW-010.4.22	19.05
27	Yellow	CW-010.4.27	21.28
32	Red	CW-010.4.32	39.42
38	Black	CW-010.4.38	49.82



CW-010.11
COWIE®, PTFE JOINT-
WARE, SELF RELEAS-
ING STOPPERS

Self Releasing Stoppers fit standard taper ground glass joints, with sealing rings and self releasing ring for ease of removal.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum

<u>Joint Size</u>	<u>Height mm</u>	<u>CODE</u>	<u>Price</u>
19/38	62	CW-010.1119	29.88
24/40	65	CW-010.1124	38.89
34/45	70	CW-010.1134	49.29
45/50	75	CW-010.1145	86.87


CW-PC704
**COWIE®, PTFE JOINT-
WARE, STANDARD
TAPER COMPRES-
SION FITTINGS**

Compression Fittings fit standard taper ground glass joints to hold items such as temperature probes and sampling tubes securely in place.

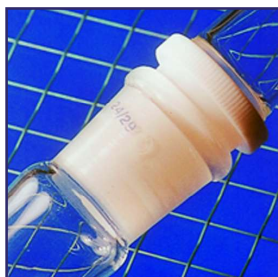
Compression fittings are manufactured from pure PTFE with a PEEK olive to give a secure grip.

PTFE Plugs are available to seal compression fittings without removing the fitting.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

Joint Size	Bore	CODE	Price	Joint Size	Bore	CODE	Price
19/38	1/8"	CW-PC704.1938.125	55.32	34/45	1/2"	CW-PC704.3445.500	89.85
19/38	1/4"	CW-PC704.1938.250	56.65	34/45	9/16"	CW-PC704.3445.560	90.17
19/38	5/16"	CW-PC704.1938.312	56.65	34/45	5/8"	CW-PC704.3445.625	95.63
19/38	1/2"	CW-PC704.1938.500	59.46	34/45	3/4"	CW-PC704.3445.750	92.63
				34/45	1"	CW-PC704.3445.1000	108.05
19/38	3 mm	CW-PC704.1938.03	55.32	34/45	12 mm	CW-PC704.3445.12	89.85
19/38	6 mm	CW-PC704.1938.06	56.65	34/45	14 mm	CW-PC704.3445.14	90.17
19/38	8 mm	CW-PC704.1938.08	56.65	34/45	16 mm	CW-PC704.3445.16	95.63
19/38	12 mm	CW-PC704.1938.12	59.46	34/45	19 mm	CW-PC704.3445.19	92.63
				34/45	25 mm	CW-PC704.3445.25	108.05
24/40	1/4"	CW-PC704.2440.250	64.00				
24/40	5/16"	CW-PC704.2440.312	64.00				
24/40	1/2"	CW-PC704.2440.500	66.81	45/50	1/2"	CW-PC704.4550.500	128.08
24/40	9/16"	CW-PC704.2440.560	67.11	45/50	9/16"	CW-PC704.4550.560	128.42
24/40	5/8"	CW-PC704.2440.625	72.53	45/50	5/8"	CW-PC704.4550.625	133.83
				45/50	3/4"	CW-PC704.4550.750	130.86
24/40	6 mm	CW-PC704.2440.06	64.00	45/50	1"	CW-PC704.4550.1000	141.25
24/40	8 mm	CW-PC704.2440.08	64.00				
24/40	12 mm	CW-PC704.2440.12	66.81	45/50	12 mm	CW-PC704.4550.12	128.08
24/40	14 mm	CW-PC704.2440.14	67.11	45/50	14 mm	CW-PC704.4550.14	128.42
24/40	16 mm	CW-PC704.2440.16	72.53	45/50	16 mm	CW-PC704.4550.16	133.83
				45/50	19 mm	CW-PC704.4550.19	130.86
29/42	1/2"	CW-PC704.2942.500	81.81	45/50	25 mm	CW-PC704.4550.25	141.25
29/42	9/16"	CW-PC704.2942.560	82.13				
29/42	5/8"	CW-PC704.2942.625	87.60				
29/42	3/4"	CW-PC704.2942.750	84.60				
29/42	12 mm	CW-PC704.2942.12	81.81				
29/42	14 mm	CW-PC704.2942.14	82.13				
29/42	16 mm	CW-PC704.2942.16	87.60				
29/42	19 mm	CW-PC704.2942.19	84.60				



CW-020
COWIE®, PTFE JOINT-
WARE, RIGID JOINT
SLEEVES

Rigid Sleeves are grease-free, high vacuum seals for standard taper ground glass joints, with substantial shoulder for ease of handling and repeated use. High vacuum performance (leakage rate is less than 1×10^{-4} torr, litre, sec.⁻¹) is attained using transverse sealing rings. Wall thickness of rigid sleeves is 0.5mm.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	CW-020.110	9.44
14/20	CW-020.114.1	10.00
19/22	CW-020.119.1	12.06
24/40	CW-020.124	15.51
29/42	CW-020.129	21.02
34/45	CW-020.134	23.45
45/50	CW-020.145	40.05
55/50	CW-020.155	47.65



CW-030
COWIE®, PTFE JOINT-
WARE, JOINT
CLAMPS

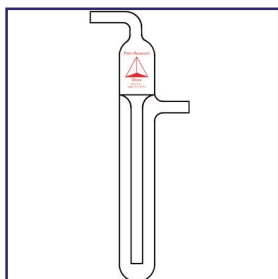
Safe • Reliable • Long Life • Exceptional Value

Joint Clamps are unaffected by all chemical reagents. Totally encapsulated steel spring maintains strength to 280°C. Adjust simply by compression-extension by hand.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

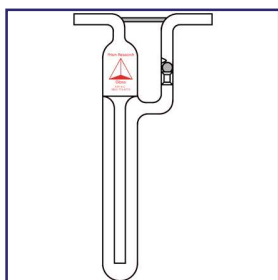
<u>Joint Size</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
10/-	No Color	CW-030.010.1	5.81
10/-	Green	CW-030.010.1.SG	7.25
12/-	No Color	CW-030.012.1	6.09
12/-	Purple	CW-030.012.1.SP	7.60
14/-	No Color	CW-030.014.1	6.63
14/-	Yellow	CW-030.014.1.SY	8.26
19/-	No Color	CW-030.019.1	6.89
19/-	Blue	CW-030.019.1.SB	8.58
24/-	No Color	CW-030.024.1	7.14
24/-	Green	CW-030.024.1.SG	8.91
29/-	No Color	CW-030.029.1	7.58
29/-	Red	CW-030.029.1.SR	9.44
34/-	No Color	CW-030.034.1	8.10
34/-	Orange	CW-030.034.1.SO	10.08
40/-	No Color	CW-030.040.1	8.54
40/-	Yellow	CW-030.040.1.SY	10.64
45/-	No Color	CW-030.045.1	9.32
45/-	Brown	CW-030.045.1.SB	11.61



Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere.

Capacity	O.D. x Effective Length	Inlet/Outlet Arm	CODE	Price
30 ml	28 x 100 mm	8 mm O.D.	-01	46.21
60 ml	35 x 125 mm	1/2" O.D.	-02	64.08

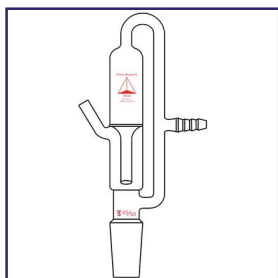
PRG-1365
BUBBLER, MINERAL
OIL



Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere. This bubbler has a ball check valve to prevent the possibility of back flow.

Capacity	O.D. x Effective Length	Inlet/Outlet Arm	CODE	Price
30 ml	28 x 100 mm	8 mm O.D.	-01	96.88
60 ml	35 x 125 mm	1/2" O.D.	-02	116.26
150 ml	40 x 150 mm	1/2" O.D.	-03	230.98
300 ml	50 x 200 mm	5/8" O.D.	-04	281.67

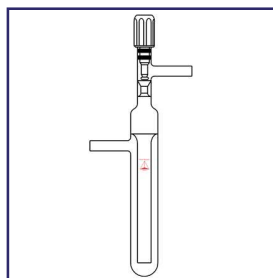
PRG-1366
BUBBLER, MINERAL
OIL, WITH CHECK
VALVE



Used to nitrogen purge the system. This bubbler is easily installed or removed from distillation apparatus.

Joint	CODE	Price
24/40	-01	203.20
29/42	-02	199.70
45/50	-03	213.11

PRG-1370
NITROGEN BUBBLER,
IMPROVED

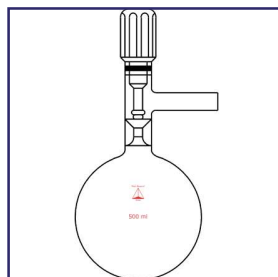


Bubbler with 0-4mm valve to control gas flow.

Capacity	CODE	Price
30 ml	-01	117.16

PRG-1375
BUBBLER, 0-4 mm
GAS CONTROL
VALVE

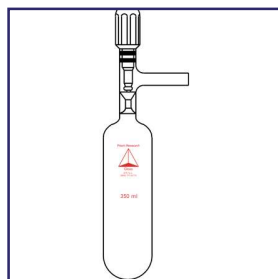




PRG-1380
STORAGE/REACTION
FLASK, 3/8" O.D. SIDE
ARM

Flask equipped with a control valve to control gas flow. Heavy wall tubing used for 3/8" unions.

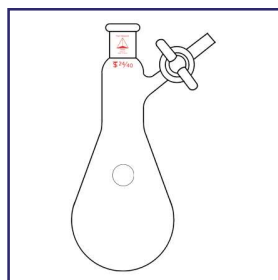
Capacity	Valve Size	CODE	Price
50 ml	0-4 mm	-01	102.06
100 ml	0-4 mm	-02	106.07
250 ml	0-4 mm	-03	109.50
500 ml	0-8 mm	-04	113.55



PRG-1385
STORAGE/REACTION
TUBE, 3/8" O.D. SIDE
ARM

The reaction tube is equipped with a valve to control gas flow. Heavy wall tubing used for 3/8" unions.

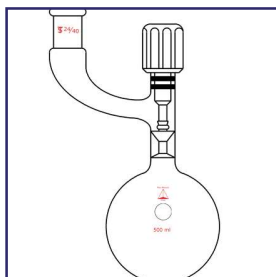
Capacity	Valve Size	CODE	Price
25 ml	0-4 mm	-01	99.04
50 ml	0-4 mm	-02	115.74
100 ml	0-4 mm	-03	131.45
350 ml	0-8 mm	-04	147.14



PRG-1390
STORAGE/REACTION
FLASK

Heating and stirring as well as efficient transfer of liquids and solids is due to the Kjeldahl shape. Fits standard heating mantle.

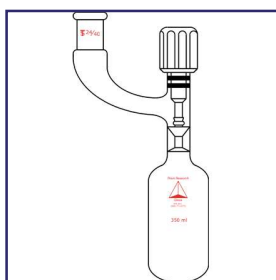
Capacity	J. Joint	Glass Stopcock		2 mm Pressure Stopcock	
		CODE	Price	CODE	Price
10 ml	14/20	-01	68.87	-11	76.90
25 ml	14/20	-02	76.90	-12	84.97
50 ml	14/20	-03	80.50	-13	88.55
100 ml	14/20	-04	84.56	-14	92.61
100 ml	24/40	-05	91.39	-15	99.44
200 ml	14/20	-06	93.61	-16	101.66
200 ml	24/40	-07	95.22	-17	103.30



Flask with a control valve to control gas flow and side arm with standard taper outer joint.

Capacity	Joint	Valve Size	CODE	Price
50 ml	14/20	0-4 mm	-01	104.07
100 ml	14/20	0-4 mm	-02	108.09
250 ml	14/20	0-4 mm	-03	110.51
500 ml	14/20	0-8 mm	-04	113.55
500 ml	24/40	0-8 mm	-05	115.74

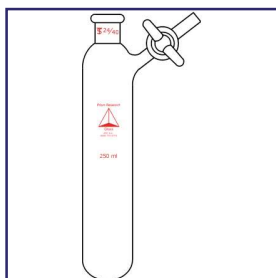
PRG-1395
STORAGE/REACTION
FLASK



Reaction tube with a control valve to control gas flow and side arm with standard taper outer joint. Manufactured with medium wall tubing.

Capacity	Joint	Valve Size	CODE	Price
25 ml	14/20	0-4 mm	-01	101.06
50 ml	14/20	0-4 mm	-02	117.74
100 ml	14/20	0-8 mm	-03	132.45
350 ml	14/20	0-8 mm	-04	151.38
350 ml	24/40	0-8 mm	-05	154.26

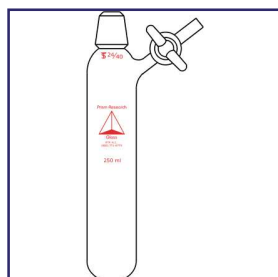
PRG-1400
STORAGE/REACTION
TUBE



Reaction tube with top standard taper outer joint and offset stopcock.

Capacity	Joint	Glass Stopcock		2 mm Pressure Stopcock	
		CODE	Price	CODE	Price
25 ml	14/20	-01	88.55	-11	96.63
50 ml	14/20	-02	88.55	-12	96.63
100 ml	14/20	-03	92.61	-13	100.68
250 ml	24/40	-04	95.02	-14	102.65

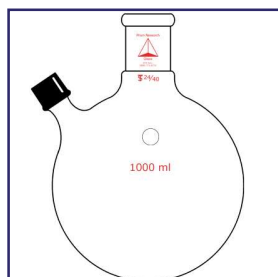
PRG-1405
STORAGE/REACTION
TUBE



PRG-1410
STORAGE/REACTION
TUBE

Reaction tube with top standard taper inner joint and offset stopcock.

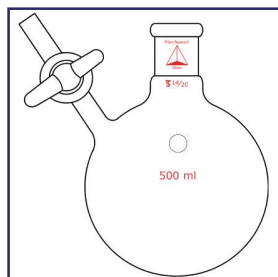
Capacity	J. Joint	CODE	Glass Stopcock		2 mm Pressure Stopcock	
			Price		Price	
25 ml	14/20	-01	88.55		-11	96.63
50 ml	14/20	-02	88.55		-12	96.63
100 ml	14/20	-03	92.61		-13	100.68
250 ml	24/40	-04	95.02		-14	102.65



PRG-1415
STORAGE/REACTION
FLASK, SYRINGE
SAMPLING SIDE
PORT

Round bottom single neck flask with side arm for syringe sampling. Used with PRG-1315-03 rubber septum. (Septa included)

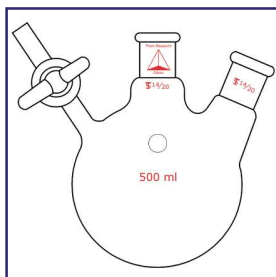
Capacity	J. Joint	CODE	Price
50 ml	14/20	-01	29.60
100 ml	14/20	-02	30.61
100 ml	24/40	-03	31.38
250 ml	14/20	-04	31.62
250 ml	24/40	-05	42.28
500 ml	14/20	-06	44.37
500 ml	24/40	-07	47.49
1000 ml	24/40	-08	54.36



PRG-1420
STORAGE/REACTION
FLASK

Round bottom single neck flask with side arm containing a stopcock.

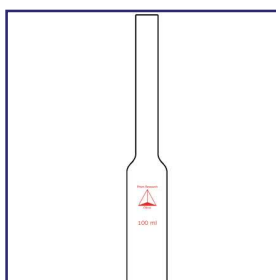
Capacity	J. Joint	CODE	Glass Stopcock		2 mm Pressure Stopcock	
			Price		Price	
50 ml	14/20	-01	106.89		-11	114.94
100 ml	14/20	-02	106.89		-12	114.94
250 ml	14/20	-03	109.09		-13	117.16
250 ml	24/40	-04	123.40		-14	131.45
500 ml	14/20	-05	127.43		-15	135.48



Round bottom two neck flask with side arm containing a stopcock. Both standard taper outer joints are the same size.

Capacity	J. Joint	Glass Stopcock		2 mm Pressure Stopcock	
		CODE	Price	CODE	Price
25 ml	14/20	-01	123.40	-11	131.45
50 ml	14/20	-02	123.59	-12	126.70
100 ml	14/20	-03	123.59	-13	133.48
250 ml	24/40	-04	139.50	-14	147.54
500 ml	14/20	-05	138.19	-15	143.84

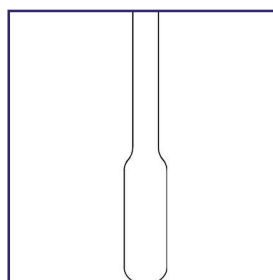
PRG-1425
STORAGE/REACTION
FLASK



Drying ampul with 10mm top stem. Sold in packs of 10.

Capacity	CODE	Price
5 ml	-01	46.47
10 ml	-02	70.26
20 ml	-03	93.02
50 ml	-04	119.56
100 ml	-05	143.92

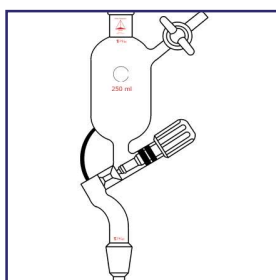
PRG-1430
DRYING AMPUL, FLAT
BOTTOM, 10 mm TOP
STEM



Drying ampul with 10mm top stem. Sold in packs of 10.

Capacity	CODE	Price
5 ml	-01	46.47
10 ml	-02	70.26
20 ml	-03	92.97
50 ml	-04	119.56
100 ml	-05	143.92

PRG-1435
DRYING AMPUL,
ROUND BOTTOM, 10
mm TOP STEM

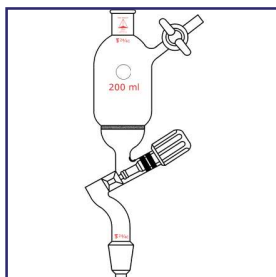


Addition funnel equipped with threaded 0-4mm valve and a sidearm with a stopcock.

Capacity	J. Joint	Glass Stopcock		2 mm Pressure Stopcock	
		CODE	Price	CODE	Price
100 ml	14/20	-01	197.66	-11	205.73
250 ml	24/40	-02	215.20	-12	223.23

PRG-1440
ADDITION FUNNEL

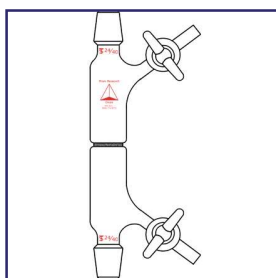




PRG-1445
FILTER FUNNEL, 0-4
mm VALVE

Fritted addition funnel equipped with threaded 0-4mm valve and a sidearm with a stopcock.

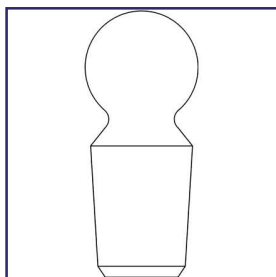
Capacity	J. Joint	Frit Porosity	Glass Stopcock		2 mm Pressure Stopcock	
			CODE	Price	CODE	Price
60 ml	14/20	Coarse	-01	242.96	-11	251.03
60 ml	14/20	Medium	-02	243.15	-12	251.03
60 ml	14/20	Fine	-03	243.15	-13	251.03
200 ml	24/40	Coarse	-04	270.55	-14	278.59
200 ml	24/40	Medium	-05	270.55	-15	278.59
200 ml	24/40	Fine	-06	270.55	-16	278.59



PRG-1450
FILTER TUBE

Filter tube with frit in middle of tube which permits filtration followed by crystals collecting on the other side of the frit.

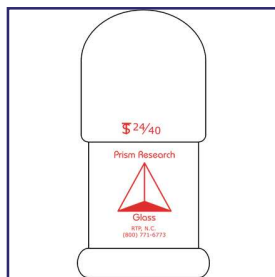
Capacity	J. Joint	Frit Porosity	Glass Stopcock		2 mm Pressure Stopcock	
			CODE	Price	CODE	Price
20 ml	14/20	Coarse	-01	201.91	-11	217.99
20 ml	14/20	Medium	-02	201.91	-12	217.99
20 ml	14/20	Fine	-03	201.91	-13	217.99
30 ml	14/20	Coarse	-04	214.37	-14	230.50
30 ml	14/20	Medium	-05	214.39	-15	230.50
30 ml	14/20	Fine	-06	214.39	-16	230.50
40 ml	24/40	Coarse	-07	252.42	-17	268.53
40 ml	24/40	Medium	-08	252.42	-18	268.53
40 ml	24/40	Fine	-09	252.42	-19	268.53



PRG-1455
STOPPER

Stopper to fit into standard taper joint.

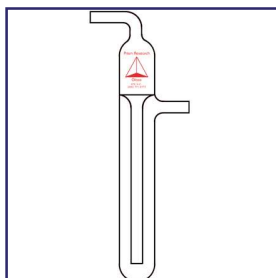
J. Joint	CODE	Price
14/20	-01	14.50
24/40	-02	18.10



PRG-1460
STOPPER, CAP
STYLE

Stopper fits over standard taper joint.

J. Joint	CODE	Price
14/20	-01	18.10
24/40	-02	22.95

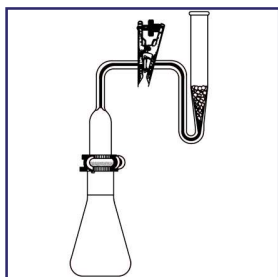


PG-9100
BUBBLER, MINERAL
OIL

Bubbler, mineral oil, 8mm O.D. connections, 40 ml volume below sidearm.

Capacity	Inlet/Outlet Arm	CODE	Price
40 ml	8 mm O.D.	-01	49.58

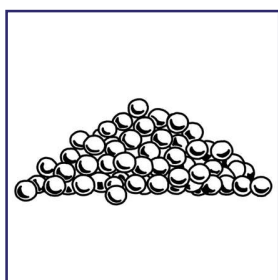




PRG-1475
ARSINE GENERATOR

Sample is converted to arsenic gas. Absorption tube is a two piece unit. As the gas is generated, hydrogen sulfide is removed. This is done by surface contact of glass beads. The absorber tube absorbs the arsine gas and forms a red complex. It is then transferred to a convert and is read on a clorimeter or spectrometer. Glass beads are not part of the complete unit.

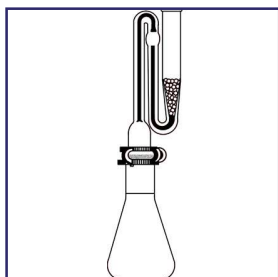
<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete Unit	-01	132.16
Scrubber	-02	62.28
Absorber Tube	-03	59.18
Erlenmeyer Flask	-04	28.27
Pinch Clamp	-05	11.76
Polyacetal	-06	43.39
Glass Beads, 4mm (pkg/lb)	-07	87.81



PRG-1475-07
GLASS BEADS

Glass beads for use in Arsine Generators.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Glass Beads, 4mm (pkg/lb)	-07	87.81

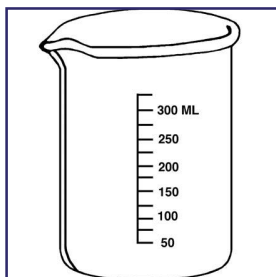


PRG-1480
ARSINE GENERATOR

Sample is converted to arsenic gas. One piece absorption tube style. This improved version uses less space and is easier to clean. Glass beads may be used in the absorber tube for improved mixing of the generated gas. Beads are not part of the complete unit.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete Unit	-01	102.96
Scrubber/Absorber Tube	-02	87.20
Erlenmeyer Flask	-03	28.28
Polyacetal Clamp (pkg/12)	-04	43.39

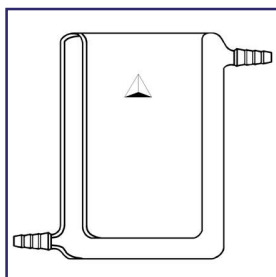




**PRG-1490
LOW FORM**

Double scale white permanent graduation. Meets ASTM E-960 Type 1 specifications.

<u>Capacity</u>	<u>Quantity per Pack</u>	<u>CODE</u>	<u>Price</u>
5 ml	12	-01	54.09
10 ml	12	-02	54.09
25 ml	12	-03	54.09
50 ml	12	-04	54.09
100 ml	12	-05	54.09
150 ml	12	-06	54.09
250 ml	12	-07	54.09
400 ml	12	-08	54.09
600 ml	6	-09	73.65
800 ml	6	-10	76.20
1000 ml	6	-11	84.03
2000 ml	4	-12	70.31
3000 ml	4	-13	199.58
5000 ml	2	-14	139.96
10,000 ml	1	-15	334.72

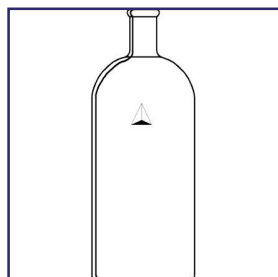


**PRG-1495
JACKETED**

Jacket provides complete circulation for temperature control.

<u>Capacity</u>	<u>O.D. x Height mm</u>	<u>CODE</u>	<u>Price</u>
100 ml	75 x 75	-01	102.30
250 ml	90 x 115	-02	114.26
400 ml	100 x 125	-03	138.26
600 ml	115 x 140	-04	161.66
1000 ml	140 x 155	-05	201.75
2000 ml	180 x 220	-06	347.14

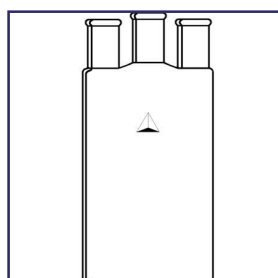




Bottle with single tapered outer joint.

Capacity	O.D. x Height mm	Joint	CODE	Price
250 ml	70 x 132	24/40	-01	46.78
500 ml	86 x 164	24/40	-02	47.91
1000 ml	107 x 201	24/40	-03	53.23
2000 ml	133 x 248	29/42	-04	103.93
4000 ml	165 x 285	29/42	-05	141.95
9000 ml	203 x 406	45/50	-06	225.41

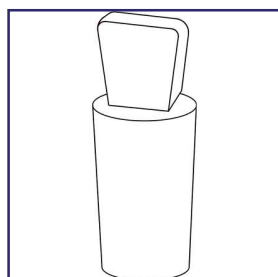
PRG-1500
SINGLE NECK



Bottles have three tapered outer joints in-line. Joints are all the same size. Also known as Woulff bottles.

Capacity	O.D. x Height mm	Joint	CODE	Price
250 ml	70 x 132	24/40	-01	188.85
500 ml	86 x 164	24/40	-02	204.01
1000 ml	107 x 201	24/40	-03	211.65
2000 ml	133 x 248	29/42	-04	276.15
4000 ml	203 x 406	29/42	-05	342.22

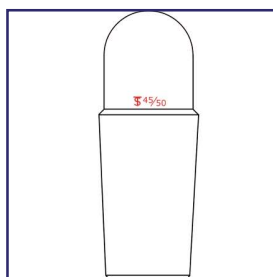
PRG-1505
3-NECK



Hollow, light weight, virgin Teflon.

Joint	CODE	Price
10/30	-01	15.93
12/30	-02	16.78
14/35	-03	20.13
19/38	-04	25.99
24/40	-05	26.81
29/42	-06	32.69
34/45	-07	43.58
45/50	-08	60.36

PRG-6105
STOPPER, FULL
LENGTH, TEFLON

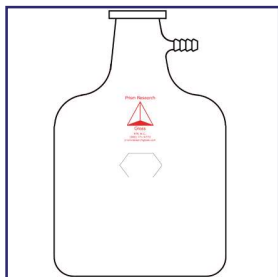


Hollow domed top stopper.

Joint	CODE	Price
10/30	-01	13.37
12/30	-02	13.61
14/35	-03	14.22
19/38	-04	14.22
24/40	-05	20.81
29/42	-06	22.43
34/45	-07	42.89
45/50	-08	62.09
55/50	-09	65.73

PRG-6110
STOPPER, FULL
LENGTH, GLASS

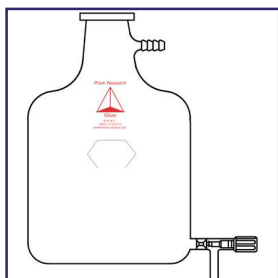




PRG-1510
FILTER, CARBOY

Large capacity bottles have a heavy duty tooled rim top and 1/2" o.d. serrated hose barb side port.

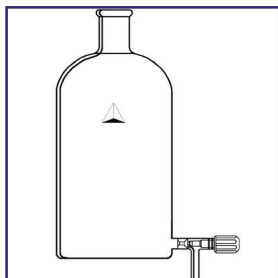
<u>Capacity</u>	<u>O.D. x Height in.</u>	<u>CODE</u>	<u>Price</u>
2.5 Gallons	7 3/8 x 19 1/8	-01	241.51
3.5 Gallons	9 3/8 x 17 5/8	-02	302.40
5.0 Gallons	11 1/2 x 19 3/4	-03	412.49
12.0 Gallons	16 1/8 x 23	-04	940.57



PRG-1515
FILTER, CARBOY, 1/2"
HOSE BARB

Large capacity bottles have a heavy duty tooled rim top and 1/2" o.d. serrated hose barb side port. Lower tefflon valve makes drainage easy.

<u>Capacity</u>	<u>Valve Size</u>	<u>O.D. x Height in.</u>	<u>CODE</u>	<u>Price</u>
2.5 Gallons	0-4 mm	7 3/8 x 19 1/8	-01	401.24
3.5 Gallons	0-4 mm	9 3/8 x 17 5/8	-02	482.31
5.0 Gallons	0-8 mm	11 1/2 x 19 3/4	-03	649.99
12.0 Gallons	0-8 mm	16 1/8 x 23	-04	1,291.22

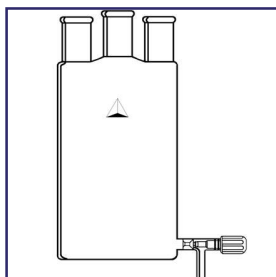


PRG-1520
SINGLE NECK

Bottle has single outer tapered joint on top and a lower tefflon drain valve.

<u>Capacity</u>	<u>Joint</u>	<u>O.D. x Height mm</u>	<u>CODE</u>	<u>Price</u>
250 ml	24/40	70 x 132	-01	130.29
500 ml	24/40	86 x 164	-02	182.70
1000 ml	24/40	107 x 201	-03	223.64
2000 ml	24/40	133 x 248	-04	268.35
4000 ml	29/42	165 x 285	-05	342.18
9000 ml	29/42	203 x 406	-06	368.63

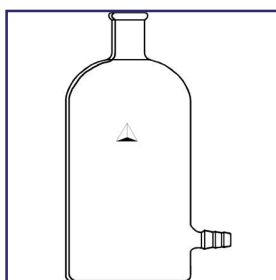




Bottle has three outer tapered joints. All the same size and a lower teflon drain valve.

Capacity	Joint	O.D. x Height mm	CODE	Price
250 ml	24/40	70 x 132	-01	236.03
500 ml	24/40	86 x 164	-02	255.00
1000 ml	24/40	107 x 201	-03	264.58
2000 ml	29/42	133 x 248	-04	344.91
4000 ml	29/42	165 x 285	-05	389.81
9000 ml	29/42	203 x 406	-06	460.17

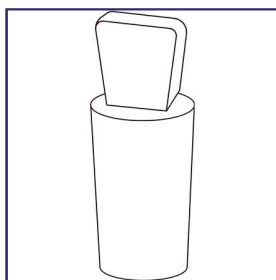
PRG-1525
3-NECK, 0-4 mm
VALVE



Bottles has single outer tapered top joint and a lower serrated hose barb for a 3/8" I.D. tube.

Capacity	O.D. x Height mm	Joint	CODE	Price
250 ml	70 x 132	24/40	-01	77.20
500 ml	86 x 164	24/40	-02	79.01
1000 ml	107 x 201	24/40	-03	106.43
2000 ml	133 x 248	29/42	-04	181.84
4000 ml	165 x 285	29/42	-05	227.13
9000 ml	203 x 406	45/50	-06	254.20

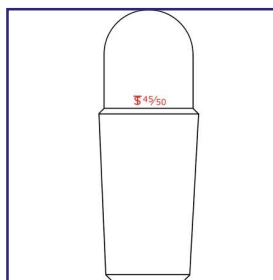
PRG-1530
SINGLE NECK



Hollow, light weight, virgin Teflon.

Joint	CODE	Price
10/30	-01	15.93
12/30	-02	16.78
14/35	-03	20.13
19/38	-04	25.99
24/40	-05	26.81
29/42	-06	32.69
34/45	-07	43.58
45/50	-08	60.36

PRG-6105
STOPPER, FULL
LENGTH, TEFLON

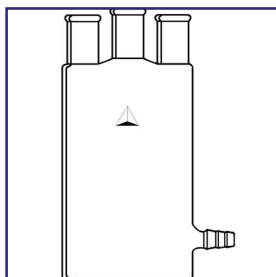


Hollow domed top stopper.

Joint	CODE	Price
10/30	-01	13.37
12/30	-02	13.61
14/35	-03	14.22
19/38	-04	14.22
24/40	-05	20.81
29/42	-06	22.43
34/45	-07	42.89
45/50	-08	62.09
55/50	-09	65.73

PRG-6110
STOPPER, FULL
LENGTH, GLASS

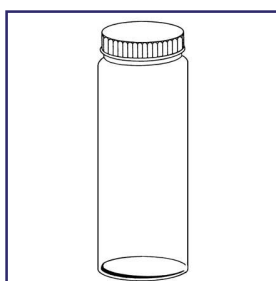




PRG-1535
3-NECK

Bottle have three tapered outer joints in-line. Joints are all the same size. Lower serrated hose barb fits 3/8" I.D. hose.

<u>Capacity</u>	<u>Joint</u>	<u>O.D. x Height mm</u>	<u>CODE</u>	<u>Price</u>
250 ml	24/40	70 x 132	-01	187.46
500 ml	24/40	86 x 164	-02	235.13
1000 ml	24/40	107 x 201	-03	290.97
2000 ml	29/42	133 x 248	-04	350.50
4000 ml	29/42	165 x 285	-05	410.60

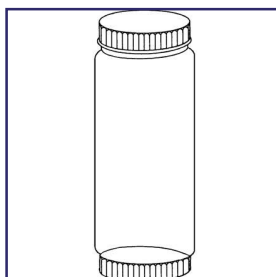


PRG-1540
EXTRACTION, TCLP
COATED

Bottle for EPA Method 1311 for use in Toxicity Characteristic Leaching Procedure. 100/425 thread finish. Cap has a removable PTFE liner. Available with plastic coating.

<u>Capacity</u>	<u>Bottle Length mm</u>	<u>CODE</u>	<u>Price</u>
2000 ml	325	-01	174.77
3000 ml	450	-02	203.36

<u>Replacements</u>	<u>CODE</u>	<u>Price</u>
Cap TFE Liner	-10	16.49

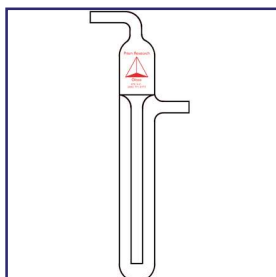


PRG-1541
EXTRACTION, TCLP
COATED, DUAL
100/400 CAPPED END

Bottle for EPA Method 1311 for use in Toxicity Characteristic Leaching Procedure. 100/425 thread finish. Cap has a removable PTFE liner. Available with plastic coating. See PRG-1540 for replacement caps.

<u>Capacity</u>	<u>Bottle Length mm</u>	<u>CODE</u>	<u>Price</u>
2000 ml	325	-01	174.77
3000 ml	450	-02	203.36

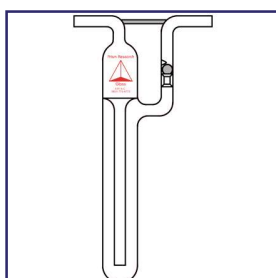




PRG-1365
MINERAL OIL

Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere.

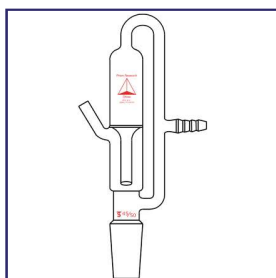
<u>Capacity</u>	<u>O.D. x Effective_</u> <u>Length</u>	<u>Inlet/Outlet Arm</u>	<u>CODE</u>	<u>Price</u>
30 ml	28 x 100 mm	8 mm O.D.	-01	46.21
60 ml	35 x 125 mm	1/2" O.D.	-02	64.08



PRG-1366
MINERAL OIL, WITH
CHECK VALVE

Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere. This bubbler has a ball check valve to prevent the possibility of back flow.

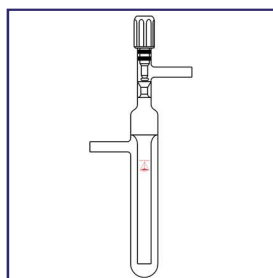
<u>Capacity</u>	<u>O.D. x Effective_</u> <u>Length</u>	<u>Inlet/Outlet Arm</u>	<u>CODE</u>	<u>Price</u>
30 ml	28 x 100 mm	8 mm O.D.	-01	96.88
60 ml	35 x 125 mm	1/2" O.D.	-02	116.26
150 ml	40 x 150 mm	1/2" O.D.	-03	230.98
300 ml	50 x 200 mm	5/8" O.D.	-04	281.67



PRG-1370
NITROGEN BUBBLER,
IMPROVED

Used to nitrogen purge the system. This bubbler is easily installed or removed from distillation apparatus.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	203.20
29/42	-02	199.70
45/50	-03	213.11

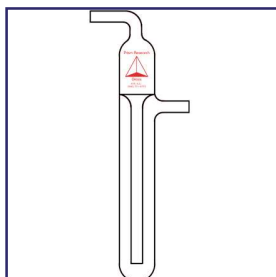


PRG-1375
0-4 mm GAS CON-
TROL VALVE

Bubbler with 0-4mm valve to control gas flow.

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
30 ml	-01	117.16

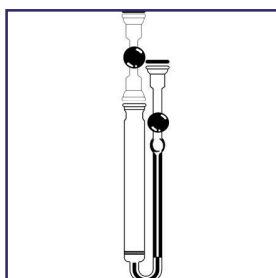




**PG-9100
MINERAL OIL**

Bubbler, mineral oil, 8mm O.D. connections, 40 ml volume below sidearm.

<u>Capacity</u>	<u>Inlet/Outlet Arm</u>	<u>CODE</u>	<u>Price</u>
40 ml	8 mm O.D.	-01	49.58



**PRG-1542
RADON**

Determines Radium -226 in water, air filters, soil, ore samples and mill talings. Approximate 15ml working volume. Complete with three Viton O-Rings. For pinch clamp see PRG-1705-05.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	250.08
Connecting Adapter Only	-02	121.07
Bubbler Section Only	-03	132.45

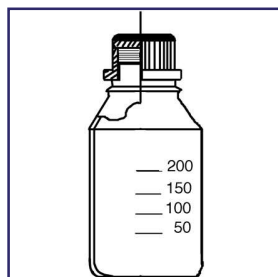


**PRG-1705
PINCH CLAMP, STAIN-
LESS STEEL, FOR
USE WITH
BALL/SOCKET
JOINTS**

Stainless steel clamps are spring loaded for a secure hold with ball/socket joints. Please note - 01 and -03 do not have locking nuts. Sold individually.

<u>Clamp Size</u>	<u>CODE</u>	<u>Price</u>
12	-01	7.42
12-L	-02	10.77
18	-03	7.77
18-L	-04	11.22
28	-05	12.02
35	-06	15.96
40	-07	33.74
50	-08	36.22
65	-09	47.87
75	-10	61.84
102	-11	295.41

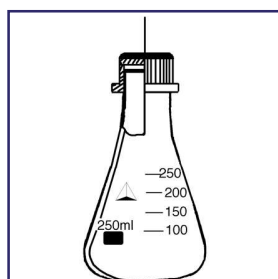




PRG-4005
MEDIA STORAGE
BOTTLE, DURON®

Storage bottles are constructed from a borosilicate glass with a large threaded opening and a linerless cap. Polypropylene ring allows drip free pouring and protects the rim from chipping. See PRG-202 for Teflon lined caps.

<u>Volume</u>	<u>GL Thread</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Package Qty</u>	<u>CODE</u>	<u>Price</u>
25	25	36	70	10	-01	138.21
50	32	46	87	10	-02	138.21
100	45	56	100	10	-03	143.93
250	45	70	138	10	-04	166.83
500	45	86	176	10	-05	208.12
1000	45	101	225	1	-06	29.71
2000	45	136	260	1	-07	68.96
5000	45	182	330	1	-08	289.15
10,000	45	227	410	1	-09	548.13
15,000	45	268	445	1	-10	748.30
20,000	45	288	505	1	-11	1,137.53



PRG-4010
ERLENMEYER FLASK
WITH GL-45
THREADED SCREW
CAP

Erlenmeyer flask is constructed from a borosilicate glass with a linerless cap. Polypropylene ring provides drip free pouring. Ideal for culture and media storage. See PRG-202 for Teflon lined caps.

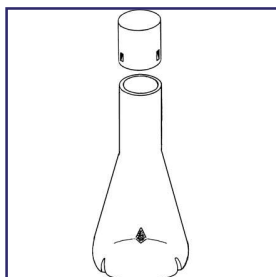
<u>Volume</u>	<u>GL Thread</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Package Qty</u>	<u>CODE</u>	<u>Price</u>
250	45	85	145	10	-01	343.16
500	45	105	175	10	-02	363.83
1000	45	131	220	10	-03	486.17
2000	45	160	260	5	-04	468.69



PRG-202
SOLID CAPS FOR GL
THREADS

Solid screw caps are made from red melamine and are autoclaveable to 180°C. With PTFE protected seals.

<u>GL Thread</u>	<u>CODE</u>	<u>Price</u>
14	-01	3.50
18	-02	4.14
25	-03	4.81
32	-04	7.51
45	-05	11.24

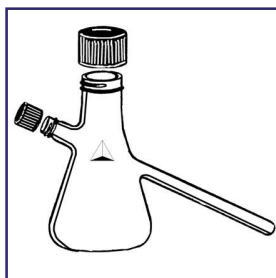


Shaker flask is designed with the DeLong® style neck and furnished with a 38mm stainless closure. Three baffles are added for better agitation. Constructed from borosilicate glass.

Capacity	O.D. mm	Height mm	Package Qty	CODE	Price
250	85	150	12	-01	419.44
500	105	185	12	-02	467.09
1000	131	235	6	-03	483.93
2000	160	305	6	-04	530.64
4000	205	360	1	-05	203.60

PRG-4035

**SHAKER FLASK WITH
TRIPLE BAFFLES, 38
mm STAINLESS
STEEL CLOSURE, BO-
ROSILICATE GLASS**

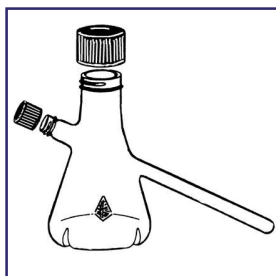


Flasks have a GL-45 top thread and side clean out is a GL-18 thread. Both threads supplied with a Teflon lined cap.

Capacity	Sidearm Size O.D. x Length	Package Qty	CODE	Price
250	12 x 130	4	-01	403.56
250	14 x 130	4	-02	403.56
250	19 x 130	4	-03	409.88
500	12 x 130	4	-04	413.07
500	14 x 130	4	-05	413.07
500	19 x 130	4	-06	419.44
1000	12 x 130	4	-07	424.21
1000	14 x 130	4	-08	424.21
1000	19 x 130	4	-09	430.56

PRG-4040

**NEPHELO CULTURE
FLASK, #45 GL
THREADED CENTER
NECK, #18 GL
THREADED SIDE
NECK**



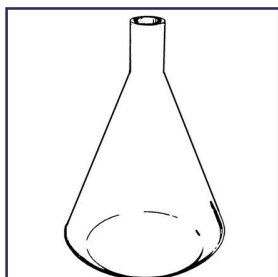
Flasks have a GL-45 top thread and side clean out is a GL-18 thread. Both supplied with a Teflon lined cap. Three baffles equally spaced around the outer perimeter improves agitation.

Capacity	Sidearm Size O.D. x Length	Package Qty	CODE	Price
250	12 x 130	4	-01	413.07
250	14 x 130	4	-02	413.07
250	19 x 130	4	-03	417.87
500	12 x 130	4	-04	422.62
500	14 x 130	4	-05	422.62
500	19 x 130	4	-06	430.56
1000	12 x 130	4	-07	433.73
1000	14 x 130	4	-08	433.73
1000	19 x 130	4	-09	440.11

PRG-4045

**NEPHELO CULTURE
FLASK, WITH TRIPLE
BAFFLES**

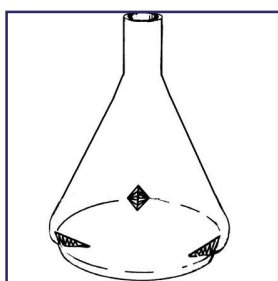




PRG-4050
FERNBACH FLASK

Flasks are constructed from a borosilicate glass. Available with a 38mm DeLong® neck or GL-45 thread with a Teflon lined cap. Large surface area to volume ratio is ideal for culturing organisms.

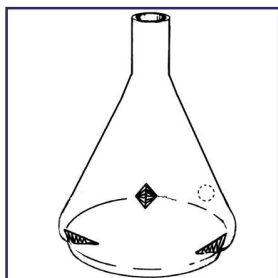
<u>Capacity</u>	<u>Neck Style</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Package Qty</u>	<u>CODE</u>	<u>Price</u>
2800 ml	DeLong®	205	250	4	-01	571.94
2800 ml	#45 GL	205	240	4	-02	591.02



PRG-4055
FERNBACH FLASK
WITH SIDE BAFFLES

Flasks are constructed from a borosilicate glass. Available with a 38mm DeLong® neck or GL-45 thread with a Teflon lined cap. Large surface area to volume ratio is ideal for culturing organisms. Triple side baffles equally spaced around the perimeter improve agitation.

<u>Capacity</u>	<u>Neck Style</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Package Qty</u>	<u>CODE</u>	<u>Price</u>
2800 ml	DeLong®	205	250	4	-01	603.73
2800 ml	#45 GL	205	240	4	-02	622.78

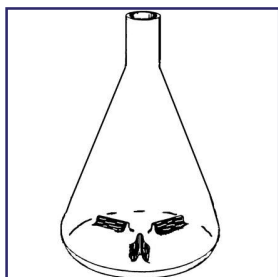


PRG-4057
FERNBACH FLASK
WITH TRIPLE BAF-
FLES

Flasks are constructed from a borosilicate glass. 2800ml capacity. Available with or without a hose barb. Triple side baffles improve agitation.

<u>Capacity</u>	<u>Hose Barbs</u>	<u>CODE</u>	<u>Price</u>
2800 ml	With	-01	150.95
2800 ml	Without	-02	141.40

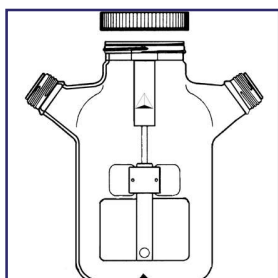




PRG-4060
FERNBACH FLASK
WITH BAFFLES

Flasks are constructed from a borosilicate glass. Available with a 38mm DeLong® neck or GL-45 thread with a Teflon lined cap. Large surface area to volume ratio is ideal for culturing organisms. Triple side baffles improve agitation.

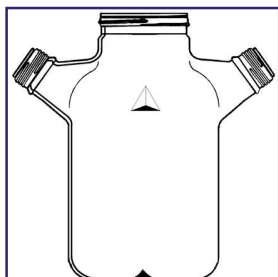
Capacity	Neck Style	O.D. mm	Height mm	Package Qty	CODE	Price
2800 ml	DeLong®	205	250	4	-01	603.73
2800 ml	#45 GL	205	240	4	-02	622.78



PRG-4065
SPINNER FLASK

Spinner flasks are constructed from a heavy wall borosilicate material and are available in 100ml to 36,000ml. The center thread assembly is an enclosed system in which the stir shaft rotates in the bearing located in the cap. This enclosed system decreases the risk of contaminated exterior drive shafts. The threaded side arms provide easy access for sampling or loading. Upon your request, additional side arms can be added for thermocouples, probes or access ports. Unit is completely autoclavable.

Capacity ml	O.D. mm	Height mm	Cap Size Top mm	Cap Size Side GL	CODE	Price
125	72	120	51 - 400	18	-01	415.06
250	83	155	51 - 400	25	-02	421.04
500	110	190	100 - 400	32	-03	602.15
1000	130	215	100 - 400	45	-04	861.11
2000	150	260	100 - 400	45	-13	956.05
3000	180	305	100 - 400	45	-05	1,053.36
6000	205	390	100 - 400	45	-06	1,339.33
8000	260	420	100 - 400	45	-07	1,557.61
15,000	295	450	100 - 400	45	-08	1,601.47
36,000	400	570	100 - 400	45	-09	2,001.83

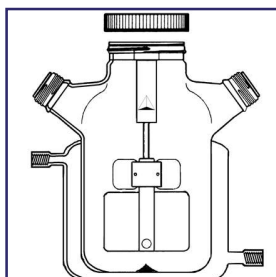


PRG-4066
SPINNER FLASK, RE-
PLACEMENT

Spinner flask replacement.

Capacity ml	O.D. mm	Height mm	Cap Size Top mm	Cap Size Side GL	CODE	Price
125	72	120	51 - 400	18	-01	200.53
250	83	155	51 - 400	25	-02	237.37
500	110	190	100 - 400	32	-03	255.22
1000	130	215	100 - 400	45	-04	340.00
3000	180	305	100 - 400	45	-05	605.16
6000	205	390	100 - 400	45	-06	935.87
8000	260	420	100 - 400	45	-07	1,142.48
15,000	295	450	100 - 400	45	-08	1,267.83
36,000	400	570	100 - 400	45	-09	1,506.14



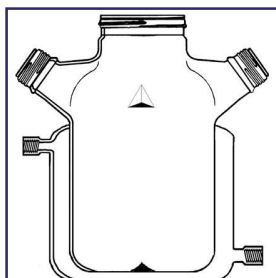


PRG-4070
SPINNER FLASK,
JACKETED

Spinner flasks are constructed from a heavy wall borosilicate material and are available in 100ml to 36,000ml. The center thread assembly is an enclosed system in which the stir shaft rotates in the bearing located in the cap. This enclosed system decreases the risk of contaminated exterior drive shafts. The threaded side arms provide easy access for sampling or loading. Upon your request, additional side arms can be added for thermocouples, probes or access ports. Unit is completely autoclavable.

Water jacket is precisely sized to the flask and hose connections are positioned to allow optimal circulation of fluid. Center cap assembly, also has the all enclosed stir system to reduce the risk of contaminated outside drive shafts. Upon your request additional side arms can be added for thermo-couple, probes, or access ports.

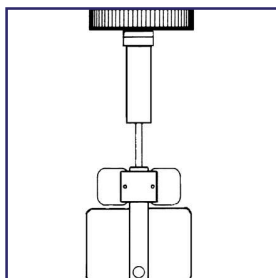
<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Cap Size Top mm</u>	<u>Cap Size Side GL</u>	<u>CODE</u>	<u>Price</u>
125	85	140	51 - 400	25	-01	861.11
250	110	180	51 - 400	25	-02	959.60
500	130	230	100 - 400	32	-03	1,132.79
1000	180	255	100 - 400	45	-04	1,353.60
2000	?????	?????	100 - 400	45	-042	1,983.30
3000	205	345	100 - 400	45	-05	2,364.06
6000	260	435	100 - 400	45	-06	3,274.43
8000	295	470	100 - 400	45	-07	3,911.53
15,000	400	500	100 - 400	45	-08	4,655.07



PRG-4071
SPINNER FLASK,
JACKETED, RE-
PLACEMENT

Jacketed spinner flask replacement.

<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Cap Size Top mm</u>	<u>Cap Size Side GL</u>	<u>CODE</u>	<u>Price</u>
125	85	140	51 - 400	25	-01	561.48
250	110	180	51 - 400	25	-02	656.31
500	130	230	100 - 400	32	-03	741.32
1000	180	255	100 - 400	45	-04	972.31
2000	?????	?????	100 - 400	45	-042	1,571.19
3000	205	345	100 - 400	45	-05	1,762.24
6000	260	435	100 - 400	45	-06	2,459.56
8000	295	470	100 - 400	45	-07	3,012.28
15,000	400	500	100 - 400	45	-08	3,741.52

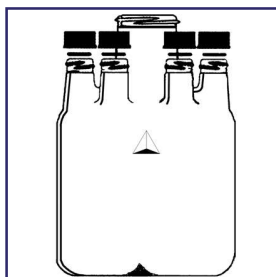


PRG-4068
SPINNER FLASK, RE-
PLACEMENT IM-
PELLER

Impeller is designed to fit spinner flasks.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
125	-01	156.42
250	-02	156.42
500	-03	178.71
1000	-04	199.52
3000	-05	207.75
6000	-06	220.95
8000	-07	233.90
15,000	-08	650.58
36,000	-09	685.28
Glass Shaft	-14	13.42

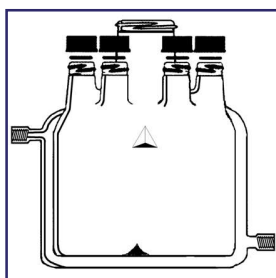




PRG-4080
BIO-REACTOR VES-
SEL, CARBOY

Vessel is made of borosilicate glass and is well suited for culturing and bacterial fermentation applications. The center neck is 100mm thread and side necks are vertical #45 GL thread. Teflon lined caps are furnished with a vessel.

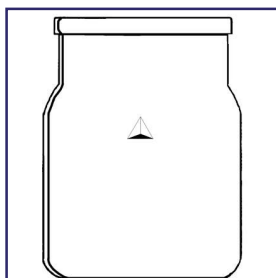
<u>Capacity Liters</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Number of Side Necks</u>	<u>CODE</u>	<u>Price</u>
9	205	425	4	-01	1,218.59
15	240	460	6	-02	1,668.19
19	205	500	6	-03	2,044.23
45	410	600	7	-04	3,256.95



PRG-4085
BIO-REACTOR VES-
SEL, CARBOY, JACK-
ETED

Vessel is made of borosilicate glass and is well suited for culturing and bacterial fermentation applications. The center neck is 100mm thread and side necks are vertical #45 GL thread. Teflon lined caps are furnished with a vessel. With the addition of a water jacket. The proportion of the jacket and positioning of the ports provides optimal circulation of water around the vessel.

<u>Capacity Liters</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Number of Side Necks</u>	<u>CODE</u>	<u>Price</u>
9	240	480	4	-01	1,938.28
15	290	520	6	-02	2,510.23

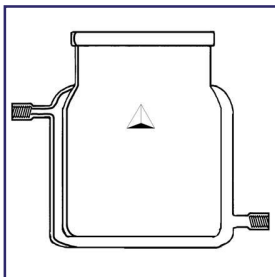


PRG-4090
BIO-REACTOR,
FLANGED VESSEL

The flanged vessel has a large 200mm ID which accepts the stainless steel head plate. The one piece flange clamp easily mates with two surfaces with a leak free seal. The large robust flange provides easy entry for cleaning and greater durability.

<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Vessel Type</u>	<u>CODE</u>	<u>Price</u>
5000	215	250	Flat Bottom	-01	1,584.01
8000	238	400	Flat Bottom	-02	1,779.42
15,000	292	440	Flat Bottom	-03	2,105.10
36,000	410	515	Flat Bottom	-04	3,384.05
5000	215	250	Round Bottom	-05	1,633.25
8000	238	400	Round Bottom	-06	1,771.47
15,000	292	440	Round Bottom	-07	2,081.28
36,000	410	515	Round Bottom	-08	3,463.50

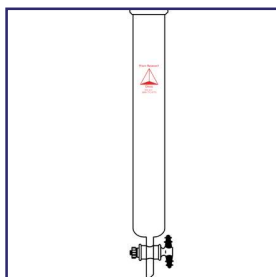




The flanged vessel has a large 200mm ID which accepts the stainless steel head plate. The one piece flange clamp easily mates with two surfaces with a leak free seal. The large robust flange provides easy entry for cleaning and greater durability. With the addition of a water jacket. The jacket size and the position of the ports allow for optimal circulation of fluid.

<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>CODE</u>	<u>Price</u>
5000	238	330	-01	2,335.46
8000	292	470	-02	2,812.12

**PRG-4095
BIO-REACTOR,
FLANGED VESSEL,
JACKETED**

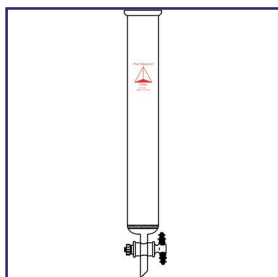


**PRG-1600
COLUMN, TEFLON
STOPCOCK**

General purpose column, has Teflon stopcock and reinforced beaded rim. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

Column I.D.		Effective Length		Stopcock	CODE	Price
in	mm	in	mm	Bore mm		
.50	13	8	20.3	2	-01	92.77
.50	13	10	25.4	2	-02	100.87
.50	13	12	30.5	2	-03	109.64
.50	13	18	45.7	2	-04	137.43
.75	19	8	20.3	2	-05	93.26
.75	19	10	25.4	2	-06	133.21
.75	19	12	30.5	2	-07	117.56
.75	19	18	45.7	2	-08	137.43
1.0	25	8	20.3	2	-09	116.21
1.0	25	10	25.4	2	-10	130.92
1.0	25	12	30.5	2	-11	145.71
1.0	25	18	45.7	2	-12	173.49
1.5	38	8	20.3	2	-13	116.21
1.5	38	10	25.4	2	-14	130.92
1.5	38	12	30.5	2	-15	145.71
1.5	38	18	45.7	2	-16	173.49
2.0	50	8	20.3	2	-17	124.39
2.0	50	10	25.4	2	-18	142.36
2.0	50	12	30.5	2	-19	158.73
2.0	50	18	45.7	2	-20	193.11
2.0	50	24	61.0	2	-21	229.11
2.5	64	8	20.3	4	-22	139.10
2.5	64	10	25.4	4	-23	153.80
2.5	64	12	30.5	4	-24	170.25
2.5	64	18	45.7	4	-25	219.25
2.5	64	24	61.0	4	-26	268.33
3.0	75	8	20.3	4	-27	162.06
3.0	75	10	25.4	4	-28	184.90
3.0	75	12	30.5	4	-29	207.81
3.0	75	18	45.7	4	-30	276.61
3.0	75	24	61.0	4	-31	325.72



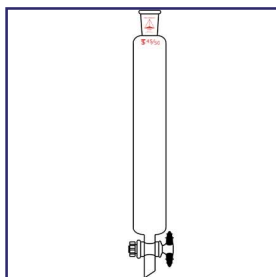


PRG-1605
COLUMN, TEFLON
STOPCOCK, COARSE
FRITTED DISC

General purpose column, has Teflon stopcock, coarse fritted disc and reinforced beaded rim. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

Column I.D.		Effective Length		Stopcock	CODE	Price
in	mm	in	mm	Bore mm		
.50	13	8	20.3	2	-01	109.64
.50	13	10	25.4	2	-02	116.21
.50	13	12	30.5	2	-03	122.71
.50	13	18	45.7	2	-04	144.01
.75	19	8	20.3	2	-05	95.31
.75	19	10	25.4	2	-06	116.21
.75	19	12	30.5	2	-07	122.71
.75	19	18	45.7	2	-08	144.01
1.0	25	8	20.3	2	-09	139.10
1.0	25	10	25.4	2	-10	150.54
1.0	25	12	30.5	2	-11	162.06
1.0	25	18	45.7	2	-12	195.43
1.5	38	8	20.3	2	-13	139.10
1.5	38	10	25.4	2	-14	150.54
1.5	38	12	30.5	2	-15	162.06
1.5	38	18	45.7	2	-16	196.39
2.0	50	8	20.3	2	-17	180.00
2.0	50	10	25.4	2	-18	196.39
2.0	50	12	30.5	2	-19	211.15
2.0	50	18	45.7	2	-20	225.82
2.0	50	24	61.0	2	-21	279.87
2.5	64	8	20.3	4	-22	188.28
2.5	64	10	25.4	4	-23	202.96
2.5	64	12	30.5	4	-24	217.66
2.5	64	18	45.7	4	-25	261.82
2.5	64	24	61.0	4	-26	307.67
3.0	75	8	20.3	4	-27	245.41
3.0	75	10	25.4	4	-28	248.70
3.0	75	12	30.5	4	-29	273.28
3.0	75	18	45.7	4	-30	332.22
3.0	75	24	61.0	4	-31	387.83



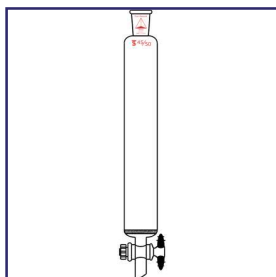


**PRG-1610
COLUMN**

General purpose column has Teflon stopcock and a standard tapered outer joint. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

Column I.D.		Effective Length		Stopcock	Joint	CODE	Price
in	mm	in	mm	Bore mm			
.50	13	8	20.3	2	24/40	-01	116.21
.50	13	10	25.4	2	24/40	-02	122.71
.50	13	12	30.5	2	24/40	-03	129.33
.50	13	18	45.7	2	24/40	-04	155.47
.75	19	8	20.3	2	24/40	-05	116.21
.75	19	10	25.4	2	24/40	-06	122.71
.75	19	12	30.5	2	24/40	-07	129.33
.75	19	18	45.7	2	24/40	-08	155.47
1.0	25	8	20.3	2	24/40	-09	144.01
1.0	25	10	25.4	2	24/40	-10	155.47
1.0	25	12	30.5	2	24/40	-11	166.90
1.0	25	18	45.7	2	24/40	-12	199.63
1.5	38	8	20.3	2	24/40	-13	144.01
1.5	38	10	25.4	2	24/40	-14	155.47
1.5	38	12	30.5	2	24/40	-15	166.90
1.5	38	18	45.7	2	24/40	-16	199.63
2.0	50	8	20.3	2	24/40	-17	183.27
2.0	50	10	25.4	2	24/40	-18	199.63
2.0	50	12	30.5	2	24/40	-19	216.00
2.0	50	18	45.7	2	24/40	-20	240.53
2.0	50	24	61.0	2	24/40	-21	283.10
2.5	64	8	20.3	4	45/50	-22	194.80
2.5	64	10	25.4	4	45/50	-23	209.48
2.5	64	12	30.5	4	45/50	-24	222.58
2.5	64	18	45.7	4	45/50	-25	266.76
2.5	64	24	61.0	4	45/50	-26	309.33
3.0	75	8	20.3	4	45/50	-27	247.12
3.0	75	10	25.4	4	45/50	-28	266.76
3.0	75	12	30.5	4	45/50	-29	286.38
3.0	75	18	45.7	4	45/50	-30	344.52
3.0	75	24	61.0	4	45/50	-31	404.17



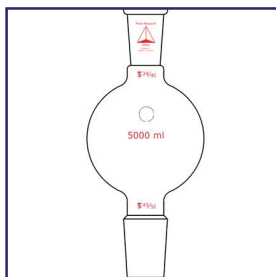


PRG-1615
COLUMN, TEFLON
STOPCOCK, FRITTED
DISC

General purpose column has a Teflon stopcock, coarse fritted disc and standard tapered top joint. Columns are fabricated from a medium wall material. Custom sizes and frit porosities are available upon request.

Column I.D.		Effective Length		Stopcock	Joint	CODE	Price
in	mm	in	mm	Bore mm			
.50	13	8	20.3	2	24/40	-01	132.58
.50	13	10	25.4	2	24/40	-02	139.10
.50	13	12	30.5	2	24/40	-03	147.26
.50	13	18	45.7	2	24/40	-04	173.49
.75	19	8	20.3	2	24/40	-05	132.58
.75	19	10	25.4	2	24/40	-06	139.10
.75	19	12	30.5	2	24/40	-07	147.26
.75	19	18	45.7	2	24/40	-08	173.49
1.0	25	8	20.3	2	24/40	-09	162.06
1.0	25	10	25.4	2	24/40	-10	173.49
1.0	25	12	30.5	2	24/40	-11	184.90
1.0	25	18	45.7	2	24/40	-12	217.66
1.5	38	8	20.3	2	24/40	-13	170.25
1.5	38	10	25.4	2	24/40	-14	181.68
1.5	38	12	30.5	2	24/40	-15	193.11
1.5	38	18	45.7	2	24/40	-16	225.82
2.0	50	8	20.3	2	24/40	-17	211.15
2.0	50	10	25.4	2	24/40	-18	225.82
2.0	50	12	30.5	2	24/40	-19	242.20
2.0	50	18	45.7	2	24/40	-20	266.76
2.0	50	24	61.0	2	24/40	-21	309.33
2.5	64	8	20.3	4	45/50	-22	230.76
2.5	64	10	25.4	4	45/50	-23	243.87
2.5	64	12	30.5	4	45/50	-24	258.59
2.5	64	18	45.7	4	45/50	-25	301.16
2.5	64	24	61.0	4	45/50	-26	343.65
3.0	75	8	20.3	4	45/50	-27	281.52
3.0	75	10	25.4	4	45/50	-28	301.16
3.0	75	12	30.5	4	45/50	-29	320.76
3.0	75	18	45.7	4	45/50	-30	379.62
3.0	75	24	61.0	4	45/50	-31	436.91

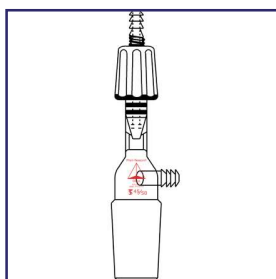




**PRG-1620
RESERVOIR**

Reservoirs are used for columns with standard tapered joints. Reservoirs have a 24/40 top outer joint.

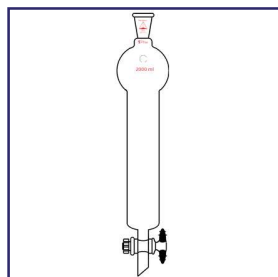
<u>Capacity ml</u>	<u>Lower Inner J. Joint</u>	<u>CODE</u>	<u>Price</u>
100	24/40	-01	65.45
250	24/40	-02	76.91
500	24/40	-03	81.83
1000	24/40	-04	88.40
1000	45/50	-05	98.18
2000	24/40	-06	140.73
2000	45/50	-07	150.55
3000	45/50	-08	162.00
5000	45/50	-09	196.39



**PRG-1625
FLOW CONTROL
ADAPTER, STAND-
ARD TAPER JOINT**

Adapter has a 0-4mm valve to meter flow or vacuum release. Serrated hose barb fits 3/8" I.D. tube.

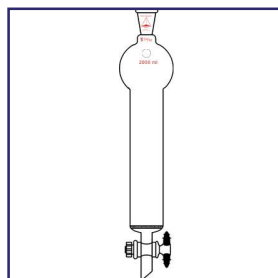
<u>J. Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	85.06
45/50	-02	122.71
Venting Plug	-03	45.51



PRG-1630
COLUMN, WITH RES-
ERVOIR, TEFLON
STOPCOCK

General purpose columns have Teflon stopcock, reservoir and standard tapered joint. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

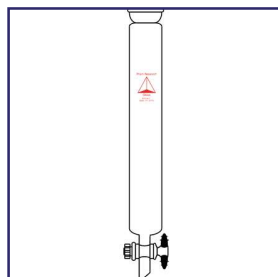
Column I.D.		Effective Length		Reservoir	Stopcock	Joint	CODE	Price
in	mm	in	mm	Capacity ml	Bore mm			
.50	13	8	20.3	100	2	24/40	-01	130.92
.50	13	10	25.4	100	2	24/40	-02	137.51
.50	13	12	30.5	250	2	24/40	-03	148.96
1.0	25	8	20.3	250	2	24/40	-04	163.65
1.0	25	12	30.5	250	2	24/40	-05	186.61
1.0	25	18	45.7	500	2	24/40	-06	222.58
1.5	38	8	20.3	500	2	24/40	-07	166.90
1.5	38	12	30.5	500	2	24/40	-08	189.84
1.5	38	18	45.7	500	2	24/40	-09	222.58
2.0	50	8	20.3	500	2	24/40	-10	204.55
2.0	50	12	30.5	1000	2	24/40	-11	247.12
2.0	50	18	45.7	1000	2	24/40	-12	271.65
2.5	64	8	20.3	1000	4	24/40	-13	225.82
2.5	64	12	30.5	1000	4	24/40	-14	255.32
2.5	64	18	45.7	1000	4	24/40	-15	297.88
3.0	75	8	20.3	2000	4	24/40	-16	292.96
3.0	75	12	30.5	2000	4	24/40	-17	332.22
3.0	75	18	45.7	2000	4	24/40	-18	392.75



PRG-1635
COLUMN, WITH RES-
ERVOIR, TEFLON
STOPCOCK, WITH
FRITTED DISC

General purpose columns have Teflon stopcock, coarse fritted disc, reservoir and standard tapered joint. Columns are fabricated from a medium wall material. Custom sizes and frit porosities are available upon request.

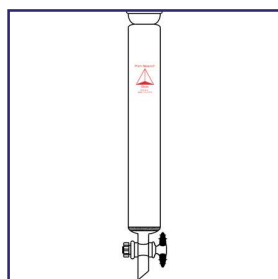
Column I.D.		Effective Length		Reservoir	Stopcock	Joint	CODE	Price
in	mm	in	mm	Capacity ml	Bore mm			
.50	13	8	20.3	100	2	24/40	-01	148.96
.50	13	10	25.4	100	2	24/40	-02	155.47
.50	13	12	30.5	250	2	24/40	-03	165.30
1.0	25	8	20.3	250	2	24/40	-04	181.68
1.0	25	12	30.5	250	2	24/40	-05	202.90
1.0	25	18	45.7	500	2	24/40	-06	240.60
1.5	38	8	20.3	500	2	24/40	-07	193.11
1.5	38	12	30.5	500	2	24/40	-08	216.00
1.5	38	18	45.7	500	2	24/40	-09	248.70
2.0	50	8	20.3	500	2	24/40	-10	232.44
2.0	50	12	30.5	1000	2	24/40	-11	273.28
2.0	50	18	45.7	1000	2	24/40	-12	297.88
2.5	64	8	20.3	1000	4	24/40	-13	261.82
2.5	64	12	30.5	1000	4	24/40	-14	289.63
2.5	64	18	45.7	1000	4	24/40	-15	332.22
3.0	75	8	20.3	2000	4	24/40	-16	327.30
3.0	75	12	30.5	2000	4	24/40	-17	366.60
3.0	75	18	45.7	2000	4	24/40	-18	425.45



PRG-1640
COLUMN, TEFLON
STOPCOCK, SOCKET
JOINT

General purpose column has Teflon stopcock and socket joint. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

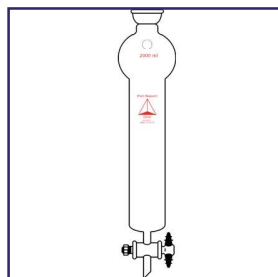
Column I.D.		Effective Length		Stopcock	d_Joint	CODE	Price
in	mm	in	mm	Bore mm			
.50	13	8	20.3	2	35/20	-01	116.22
.50	13	10	25.4	2	35/20	-02	122.71
.50	13	12	30.5	2	35/20	-03	129.33
.50	13	18	45.7	2	35/20	-04	155.47
.75	19	8	20.3	2	35/20	-05	116.21
.75	19	10	25.4	2	35/20	-06	122.71
.75	19	12	30.5	2	35/20	-07	129.33
.75	19	18	45.7	2	35/20	-08	155.47
1.0	25	8	20.3	2	35/20	-09	144.01
1.0	25	10	25.4	2	35/20	-10	155.47
1.0	25	12	30.5	2	35/20	-11	166.97
1.0	25	18	45.7	2	35/20	-12	199.70
1.5	38	8	20.3	2	35/20	-13	144.01
1.5	38	10	25.4	2	35/20	-14	155.47
1.5	38	12	30.5	2	35/20	-15	166.97
1.5	38	18	45.7	2	35/20	-16	199.70
2.0	50	8	20.3	2	50/30	-17	191.45
2.0	50	10	25.4	2	50/30	-18	206.23
2.0	50	12	30.5	2	50/30	-19	222.58
2.0	50	18	45.7	2	50/30	-20	247.12
2.0	50	24	61.0	2	50/30	-21	289.63
2.5	64	8	20.3	4	50/30	-22	201.26
2.5	64	10	25.4	4	50/30	-23	216.00
2.5	64	12	30.5	4	50/30	-24	230.76
2.5	64	18	45.7	4	50/30	-25	273.28
2.5	64	24	61.0	4	50/30	-26	315.84
3.0	75	8	20.3	4	75/50	-27	255.32
3.0	75	10	25.4	4	75/50	-28	274.94
3.0	75	12	30.5	4	75/50	-29	294.56
3.0	75	18	45.7	4	75/50	-30	353.50
3.0	75	24	61.0	4	75/50	-31	412.37



**PRG-1645
COLUMN, TEFLON
STOPCOCK, SOCKET
JOINT, COARSE
FRITTED DISC**

General purpose columns has a Teflon stopcock, coarse fritted disc and socket joint. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

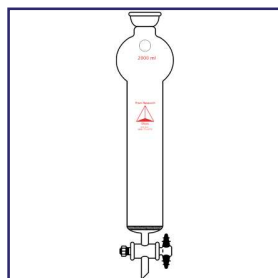
Column I.D.		Effective Length		Stopcock	d _{Joint}	CODE	Price
in	mm	in	mm	Bore mm			
.50	13	8	20.3	2	35/20	-01	132.64
.50	13	10	25.4	2	35/20	-02	139.10
.50	13	12	30.5	2	35/20	-03	147.26
.50	13	18	45.7	2	35/20	-04	175.09
.75	19	8	20.3	2	35/20	-05	132.64
.75	19	10	25.4	2	35/20	-06	139.10
.75	19	12	30.5	2	35/20	-07	147.26
.75	19	18	45.7	2	35/20	-08	175.09
1.0	25	8	20.3	2	35/20	-09	162.06
1.0	25	10	25.4	2	35/20	-10	173.49
1.0	25	12	30.5	2	35/20	-11	184.90
1.0	25	18	45.7	2	35/20	-12	217.66
1.5	38	8	20.3	2	35/20	-13	170.25
1.5	38	10	25.4	2	35/20	-14	181.68
1.5	38	12	30.5	2	35/20	-15	193.11
1.5	38	18	45.7	2	35/20	-16	225.82
2.0	50	8	20.3	2	50/30	-17	217.66
2.0	50	10	25.4	2	50/30	-18	232.75
2.0	50	12	30.5	2	50/30	-19	248.81
2.0	50	18	45.7	2	50/30	-20	273.28
2.0	50	24	61.0	2	50/30	-21	315.84
2.5	64	8	20.3	4	50/30	-22	249.46
2.5	64	10	25.4	4	50/30	-23	265.07
2.5	64	12	30.5	4	50/30	-24	246.29
2.5	64	18	45.7	4	50/30	-25	307.67
2.5	64	24	61.0	4	50/30	-26	351.82
3.0	75	8	20.3	4	75/50	-27	307.59
3.0	75	10	25.4	4	75/50	-28	310.92
3.0	75	12	30.5	4	75/50	-29	330.55
3.0	75	18	45.7	4	75/50	-30	389.48
3.0	75	24	61.0	4	75/50	-31	448.42



PRG-1650
COLUMN, WITH RES-
ERVOIR, TEFLON
STOPCOCK, SOCKET
JOINT

General purpose column has a Teflon stopcock, reservoir and socket joint. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

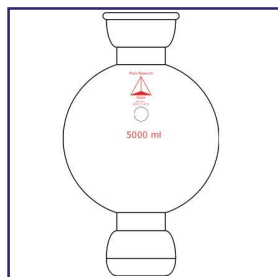
Column I.D.		Effective Length		Reservoir	Stopcock	d_Joint	CODE	Price
in	mm	in	mm	Capacity ml	Bore mm			
.50	13	8	20.3	100	2	35/20	-01	130.92
.50	13	10	25.4	100	2	35/20	-02	137.51
.50	13	12	30.5	250	2	35/20	-03	148.96
1.0	25	8	20.3	250	2	35/20	-04	163.65
1.0	25	12	30.5	250	2	35/20	-05	186.61
1.0	25	18	45.7	500	2	35/20	-06	222.58
1.5	38	8	20.3	500	2	35/20	-07	166.90
1.5	38	12	30.5	500	2	35/20	-08	189.84
1.5	38	18	45.7	500	2	35/20	-09	222.58
2.0	50	8	20.3	500	2	35/20	-10	214.39
2.0	50	12	30.5	1000	2	35/20	-11	253.64
2.0	50	18	45.7	1000	2	35/20	-12	278.19
2.5	64	8	20.3	1000	4	35/20	-13	234.03
2.5	64	12	30.5	1000	4	35/20	-14	261.82
2.5	64	18	45.7	1000	4	35/20	-15	304.39
3.0	75	8	20.3	2000	4	35/20	-16	301.16
3.0	75	12	30.5	2000	4	35/20	-17	340.37
3.0	75	18	45.7	2000	4	35/20	-18	399.34



PRG-1655
COLUMN, WITH RES-
ERVOIR, TEFLON
STOPCOCK, SOCKET
JOINT, COARSE
FRITTED DISC

General purpose columns has a Teflon stopcock, coarse fritted disc and socket joint. Columns are fabricated from a medium wall material. Custom sizes are available upon request.

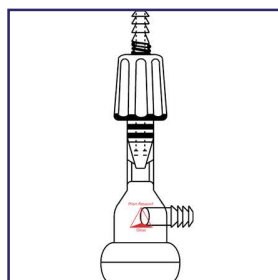
Column I.D.		Effective Length		Reservoir	Stopcock	d_Joint	CODE	Price
in	mm	in	mm	Capacity ml	Bore mm			
.50	13	8	20.3	100	2	35/20	-01	148.96
.50	13	10	25.4	100	2	35/20	-02	153.87
.50	13	12	30.5	250	2	35/20	-03	165.30
1.0	25	8	20.3	250	2	35/20	-04	181.68
1.0	25	12	30.5	250	2	35/20	-05	202.96
1.0	25	18	45.7	500	2	35/20	-06	238.95
1.5	38	8	20.3	500	2	35/20	-07	193.11
1.5	38	12	30.5	500	2	35/20	-08	216.00
1.5	38	18	45.7	500	2	35/20	-09	248.70
2.0	50	8	20.3	500	2	35/20	-10	240.53
2.0	50	12	30.5	1000	2	35/20	-11	279.87
2.0	50	18	45.7	1000	2	35/20	-12	304.39
2.5	64	8	20.3	1000	4	35/20	-13	268.43
2.5	64	12	30.5	1000	4	35/20	-14	296.23
2.5	64	18	45.7	1000	4	35/20	-15	340.37
3.0	75	8	20.3	2000	4	35/20	-16	337.15
3.0	75	12	30.5	2000	4	35/20	-17	376.40
3.0	75	18	45.7	2000	4	35/20	-18	435.32



PRG-1660
RESERVOIR, SOCKET
JOINT

Reservoirs are used with the socket style columns. The top socket joint is a 35/20. Listed are the volumes and lower ball joint options.

Capacity ml	Lower \varnothing Joint	CODE	Price
100	35/20	-01	67.12
250	35/20	-02	76.98
500	35/20	-03	81.83
1000	35/20	-04	90.01
1000	50/30	-05	103.11
2000	35/20	-06	145.71
2000	50/30	-07	155.47
2000	75/50	-08	170.25
3000	75/50	-09	200.53
5000	75/50	-10	228.31

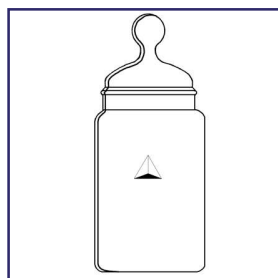


PRG-1665
FLOW CONTROL
ADAPTER, BALL
JOINT

Adapter has 0-4mm Teflon valve to meter flow or break vacuum, serrated hose barb side port fits 3/8" I.D. tube.

\varnothing Joint	CODE	Price
35/20	-01	119.48
50/30	-02	134.25
75/50	-03	150.54

0-4 mm Venting Plug	-04	45.51
---------------------	-----	-------

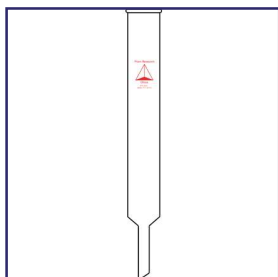


PRG-1670
TLC DEVELOPING
CHAMBER

Cylindrical glass chamber for development of TLC plates. Short tapered joints are used to minimize head space.

For Plate Size		\varnothing Stopper Joint	CODE	Price
mm	IN			
25 x 75	1 x 3"	34/15	-01	71.82
25 x 100	1 x 4"	34/15	-02	117.96
50 x 100	2 x 4"	60/15	-03	160.30
50 x 200	2 x 8"	60/15	-04	202.90

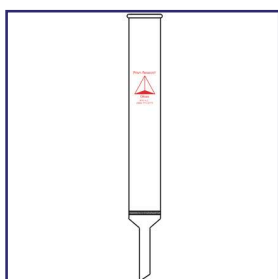




PRG-1675
COLUMN, PLAIN

General purpose columns use glass wool for separation in absorptions and ion exchanges. Drip stem is 10mm O.D. and 40mm long.

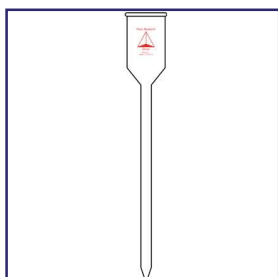
<u>I.D. mm</u>	<u>Effective Length mm</u>	<u>CODE</u>	<u>Price</u>
22	250	-01	22.58
22	300	-02	28.28
22	400	-03	34.47



PRG-1680
COLUMN, COARSE
FRITTED DISC

General purpose column has a coarse fritted disk. Drip stem is 10mm O.D and 40mm long.

<u>I.D. mm</u>	<u>Effective Length mm</u>	<u>CODE</u>	<u>Price</u>
10	300	-01	40.34
19	400	-02	45.92
22	300	-03	57.21
22	400	-04	64.49
25	500	-05	68.15

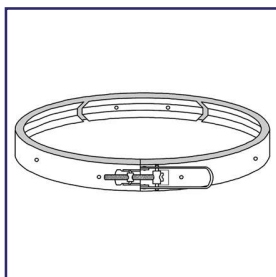


PRG-1685
COLUMN, PLAIN WITH
RESERVOIR

General purpose flow through column. Reservoir is 34mm I.D. and column length is 200mm.

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
6	-01	28.43
7	-02	28.43
9	-03	29.00

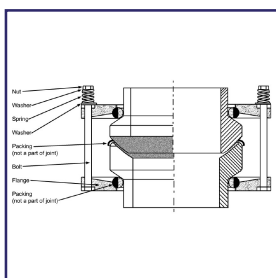




Duron® flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
60 mm	-01	88.27
100 mm	-02	115.23
120 mm	-03	126.21
150 mm	-04	135.50
200 mm	-05	156.11

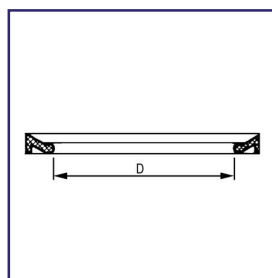
PRG-188
FLANGE CLAMP FOR
REACTION VESSELS



Constructed from a heavy gauge aluminum and can be used to secure vessel to a fixed point. Packing material is a 70 durometer silicone. Comes complete with stainless steel bolts, washers and compression springs.

<u>KF</u>	<u>CODE</u>	<u>Price</u>
KF-25	-25	50.46
KF-40	-40	69.04
KF-50	-50	94.38
KF-80	-80	137.94
KF-100	-100	215.44

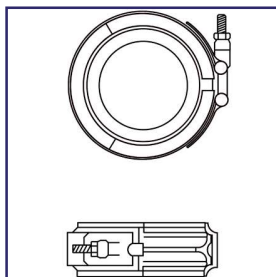
PRG-7070
KF COUPLINGS



PTFE collar gasket is used in conjunction with the 200 and 300 mm flat ground flange for pilot plant. Vessels have an operating temperature up to +200°C. The shape is suitable for high specific surface pressure, which is achieved with relatively low bolting loads.

PRG-7075
KF PTFE GASKET

<u>KF</u>	<u>CODE</u>	<u>Price</u>
KF-15	-15	CALL
KF-25	-25	29.29
KF-40	-40	32.55
KF-50	-50	39.07
KF-80	-80	106.94
KF-100	-100	170.49
KF-150	-150	CALL



Coupling assemblies consist of a .300 series stainless steel outer band with T-Bolt and hex nut; Viton™ liner and TFE seal ring. Designed for temperature service up to 450°F.

<u>Size</u>	<u>Max Torque</u>	<u>CODE</u>	<u>Price</u>
0.5"	TBD	-01	CALL
0.75"	TBD	-02	92.99
1.0"	35 lbs	-03	97.52
1.5"	50 lbs	-04	125.65
2.0"	60 lbs	-05	150.03
3.0"	75 lbs	-06	285.05
4.0"	80 lbs	-07	330.06
6.0"	90 lbs	-08	483.84

PRG-8022
BEADED PIPE COU-
PLING





PRG-1700
JOINT CLIPS, KECK

Made of Delrin Plastic. Non corrosive, Safe to 140°C. Sold in Packs of 10

Size	Fits Joint Sizes	CODE	Price
10	10/18, 10/30	-01	66.23
12	12/18, 12/30	-02	76.43
14	14/20, 14/35	-03	29.71
19	19/22, 19/38	-04	39.69
24	24/25, 24/40	-05	39.69
29	29/26, 29/42	-06	42.64
34	34/28, 34/45	-07	81.87
40	40/25, 40/50	-08	95.71
45	45/50	-09	82.78



PRG-1702
PINCH CLAMP, STANDARD TAPER JOINTS

Stainless steel clamps are spring loaded for a secure hold with tapered joints. Clamps are supplied with a lock screw. Sold individually.

Size	Fits Joint Sizes	CODE	Price
14	14/20, 14/35	-03	54.05
19	19/22, 19/38	-04	60.85
24	24/25, 24/40	-05	66.52
29	29/26, 29/42	-06	72.58
45	45/50	-09	82.96



PRG-1705
PINCH CLAMP, BALL AND SOCKET JOINTS

Stainless steel clamps are spring loaded for a secure hold with ball/socket joints. Please note -01 and -03 do not have locking nuts. Sold individually.

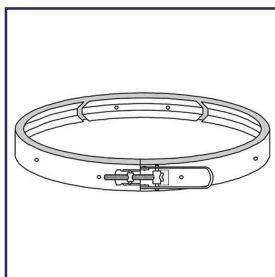
Size	CODE	Price
12	-01	7.42
12-L	-02	10.77
18	-03	7.77
18-L	-04	11.22
28	-05	12.02
35	-06	15.96
40	-07	33.74
50	-08	36.22
65	-09	47.87
75	-10	61.84
102	-11	295.41



PRG-1710
SPRINGS, STAINLESS STEEL

Springs are a 316 stainless steel and closed looped ends. Sold in packs of 10.

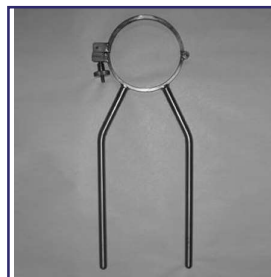
Length of Coil		CODE	Price
mm	In.		
12	1/2"	-01	25.08
19	3/4"	-02	25.08
25	1"	-03	25.08
32	1 1/2"	-04	25.08



PRG-188
FLANGE CLAMP FOR
REACTION VESSELS

Duron® flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

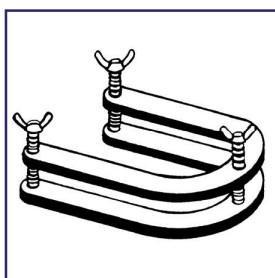
<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
60 mm	-01	88.27
100 mm	-02	115.23
120 mm	-03	126.21
150 mm	-04	135.50
200 mm	-05	156.11



PRG-189
REACTION VESSEL
SUPPORT

Constructed of a heavy gauge stainless steel. Fits most reaction vessels. The dual support rods ensure a rigid fit while in use. It also allows the reactor head to be removed without disturbing the vessel.

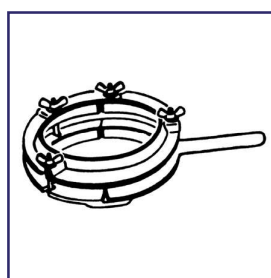
<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
100 mm	-01	278.81
150 mm	-02	306.30
200 mm	-03	372.58



PRG-190
McCarter

Clamp, McCarter

<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
4.5	-01	74.07
5.5	-02	82.71
32	-03	107.41
57	-04	179.89
80	-05	190.48



PRG-197
REACTION FLASK

Manufactured of aluminum, used to connect tops to flasks. The wing nuts are positioned to guarantee good compression.

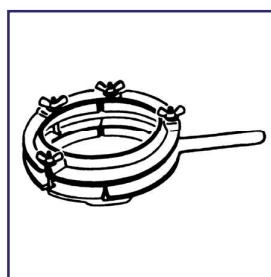
<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
2"	-01	107.57
4"	-02	178.45



PRG-189
REACTION VESSEL
SUPPORT

Constructed of a heavy gauge stainless steel. Fits most reaction vessels. The dual support rods ensure a rigid fit while in use. It also allows the reactor head to be removed without disturbing the vessel.

<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
100 mm	-01	278.81
150 mm	-02	306.30
200 mm	-03	372.58



PRG-197
REACTION FLASK

Manufactured of aluminum, used to connect tops to flasks. The wing nuts are positioned to guarantee good compression.

<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
2"	-01	107.57
4"	-02	178.45

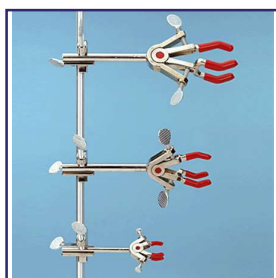




PRG-1720
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

<u>Single Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	1.8 cm	16.6 cm	1.5 cm	-01	68.04
Medium	4.3 cm	23.0 cm	3.5 cm	-02	60.48
Large	5.9 cm	26.6 cm	4.7 cm	-03	59.40



PRG-1722
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, DUAL AD-
JUSTMENT

UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

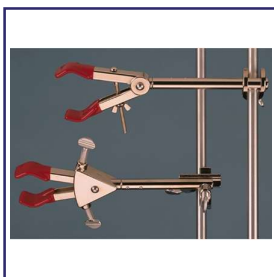
<u>Dual Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	2.8 cm	15.6 cm	1.4 cm	-01	59.40
Medium	6.5 cm	22.2 cm	3.4 cm	-02	60.48
Large	10.0 cm	26.1 cm	4.7 cm	-03	68.04



PRG-1725
LABJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE OR
DUAL ADJUSTMENT

LabJaws™ are available in three sizes. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	2.8 cm	14.8 cm	2.1 cm	-01	52.92
Single / Medium	6.2 cm	21.9 cm	3.4 cm	-02	56.16
Single / Large	8.4 cm	26.5 cm	4.9 cm	-03	58.32
Dual / Small	3.6 cm	16.7 cm	2.1 cm	-11	52.92
Dual / Medium	5.8 cm	22.9 cm	3.5 cm	-12	56.16
Dual / Large	9.3 cm	27.0 cm	4.8 cm	-13	58.32



PRG-1730
LABJAWS™ By
TROEMNER, 2-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	6.5 cm	21.5 cm	2.4 cm	-01	43.20
Single / Large	8.0 cm	23.3 cm	2.4 cm	-02	46.44
Dual / Small	6.5 cm	22.5 cm	2.4 cm	-11	43.20
Dual / Large	8.6 cm	25.0 cm	2.4 cm	-12	46.44



PRG-1735
LABJAWS™ By
TROEMNER, SWIVEL
CLAMPS

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary. Swivel clamps are used to hold apparatus near the frame. The swivel clamps have an integral holder for attaching to a lattice frame or other apparatus. The holding angle of swivel clamps is fully adjustable through 360° of rotation and can be locked in place once desired position is achieved.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	12.6 cm	2.4 cm	-01	43.20
2-Prong Large	8.0 cm	13.8 cm	2.5 cm	-02	45.36
3-Prong Medium	6.5 cm	14.3 cm	3.5 cm	-03	59.40



PRG-1738
LABJAWS™ By
TROEMNER, FIXED
POSITION CLAMPS

Fixed position clamps are used to hold apparatus near the frame where no adjustment is required after set up. Fixed position clamps have an integral holder but can not be rotated after attachment to a lab frame or other apparatus.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	9.5 cm	2.4 cm	-01	41.04
3-Prong Medium	5.8 cm	10.7 cm	3.5 cm	-02	50.76





6.3 cm diameter knob with 3.1 cm slot in the center that will accept thumbscrews supplied with the UltraJaws™ and LabJaws™ multi-purpose clamps. Makes tightening of clamps easier on the hands and wrists.

<u>CODE</u>	<u>Price</u>
-01	42.64

PRG-1740
ULTRAJAWS™ By
TROEMNER, THUMB-
SCREW KNOB



Quick and secure slip-on chain connection with large easy-to-turn adjusting knob. Holds apparatus firmly but gently in place at any angle. Accommodates large round or irregular shaped objects. 14.2 cm extension arm.

<u>Size</u>	<u>Holding Ability</u>	<u>CODE</u>	<u>Price</u>
Small	up to 17 cm diameter	-01	72.36
Large	up to 28 cm diameter	-02	104.76

PRG-1742
LABJAWS™ By
TROEMNER, CHAIN
CLAMP



Ideal for large cylindrical glassware and similar objects. Stainless steel construction, available in four sizes. Holds 64 mm to 165 mm apparatus, with 18 cm extension arm.

<u>Range</u>	<u>CODE</u>	<u>Price</u>
64 - 89 mm	-01	84.24
95 - 114 mm	-02	86.40
121 - 140 mm	-03	87.48
140 - 165 mm	-04	87.48

PRG-1750
LABJAWS™ By
TROEMNER, COLUMN
CLAMP



5.8cm long. Self-tapping screw allows mounting directly to wall. Holds 5mm to 10 mm diameter thermometer or other glass apparatus.

<u>CODE</u>	<u>Price</u>
-01	38.88

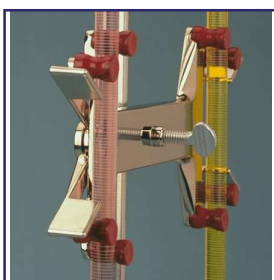
PRG-1752
LABJAWS™ By
TROEMNER, WALL
CLAMP



PRG-1755
LABJAWS™ By
TROEMNER, HEAVY
DUTY TAPERED
CLAMP

Heavy Duty 4-prong double adjustment clamps are designed to hold large vessels with ground glass joint necks. The small clamp can hold up to a size 24/40 joint. The large clamp can hold up to a size 34/45 joint. Extension length on both clamps is 22.8 cm.

<u>Size</u>	<u>Max Joint Size</u>	<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
Small	24/40	35.2 cm	-01	135.17
Large	34/45	38.0 cm	-02	135.17



PRG-1757
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP

Hold one or two burets from micro size to 100 ml. Scissor-like mechanism adjusts simply with a squeeze, yet grips firmly. Attached to standard support rod or frame with built-in hook connector.

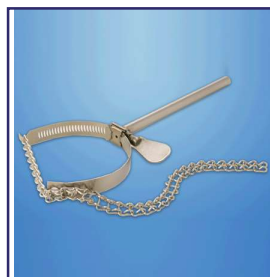
<u>Max Grip Size</u>	<u>Jaw Type</u>	<u>CODE</u>	<u>Price</u>
100 ml	Spring	-01	75.60



PRG-1760
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP &
STAND

Buret clamp stand is a white porcelain base, 34 cm x 18 cm, support is 60 cm high aluminum rod.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Stand	-01	211.68
Clamp & Stand	-02	294.84



PRG-1765
LABJAWS™ By
TROEMNER, NESTER
EXTENSION CLAMP

Securely holds distillation columns and odd-shaped glassware. Holds 3.8 cm to 10.2 cm apparatus.

<u>CODE</u>	<u>Price</u>
-01	91.29

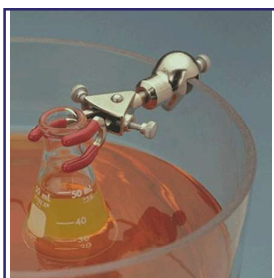




Holds flask and cover together firmly. Three insulated spring-activated clamping arms. Stainless steel springs.

<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
1000 ml	-01	166.02
4000 ml	-02	168.40

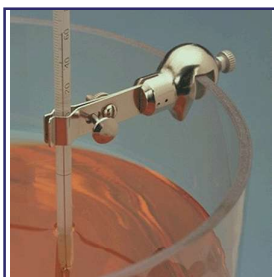
PRG-1767
LABJAWS™ By
TROEMNER, KETTLE
COVER CLAMP



Holds a variety of apparatus, including glass tubes and thermometers, on glass water bath walls of varying thickness. For 5 mm to 9 mm bath walls. Holds irregular-shaped objects.

<u>Maximum Grip Size</u>	<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
3.3 cm	9.3 cm	-01	56.16

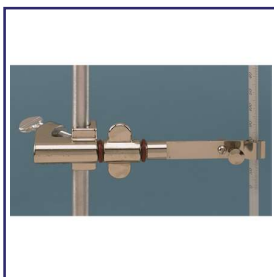
PRG-1770
LABJAWS™ By
TROEMNER, LARGE
WATER BATH CLAMP



For up to 9 mm glass water bath walls. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
6.4 cm	-01	37.80

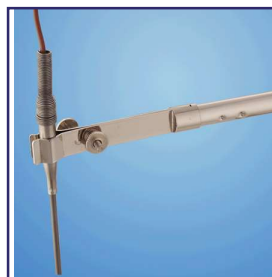
PRG-1771
LABJAWS™ By
TROEMNER, SMALL
WATER BATH CLAMP



PRG-1772
LABJAWS™ By
TROEMNER, THER-
MOMETER SWIVEL
CLAMP

Adjust to any angle. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

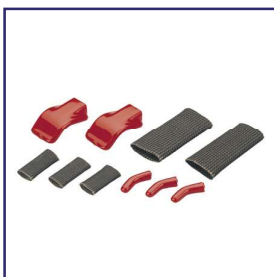
<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
12.2 cm	-01	50.76



PRG-1775
LABJAWS™ By
TROEMNER, THER-
MOMETER EXTEN-
SION CLAMP

Extension length is 12.5 cm. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
21 cm	-01	34.36



PRG-1777
LABJAWS™ By
TROEMNER, RE-
PLACEMENT
SLEEVES FOR
CLAMP

Available in Vinyl or in Fiberglass.

<u>Clamp Size / Style</u>	<u>Sleeve Material</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
Medium 2-Prong	Vinyl	2 / Pack	-01	14.04
Large 2-Prong	Vinyl	2 / Pack	-02	14.04
Medium 2-Prong	Fiberglass	2 / Pack	-03	14.04
Large 2-Prong	Fiberglass	2 / Pack	-04	14.04
Small 3-Prong	Vinyl	3 / Pack	-05	14.04
Medium 3-Prong	Vinyl	3 / Pack	-06	14.04
Large 3-Prong	Vinyl	3 / Pack	-07	14.04
Small 3-Prong	Fiberglass	3 / Pack	-08	14.04
Medium 3-Prong	Fiberglass	3 / Pack	-09	14.04
Large 3-Prong	Fiberglass	2 / Pack	-10	14.04



PRG-1780
LABJAWS™ By
TROEMNER, ELEC-
TRODE SUPPORT
CLAMP

Permits suspension of electrodes at any angle. Designed with an integral holder which accepts up to 2.1 cm diameter.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
14.7 cm	-01	79.92



PRG-1782
LABJAWS™ By
TROEMNER, SUSPEN-
SION CLAMP

Holds thermometers, potash bulbs, drying tubes and other apparatus. Designed with an integral holder which accepts up to 2.1 cm diameter rod.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	38.88

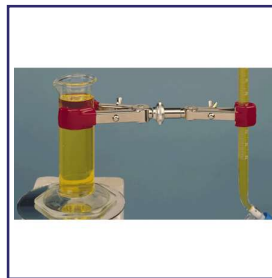




Supports tubing and other apparatus. Designed with an integral holder which accepts up to 21.1 cm diameter rod.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	102.60

PRG-1785
LABJAWS™ By
TROEMNER, SUP-
PORT CLAMP



Locks securely in desired position. Holds two different sized objects: 6.5 cm maximum grip on small two prong and 8.0 cm maximum grip on large two prong. 360° swivel.

<u>Swivels</u>	<u>CODE</u>	<u>Price</u>
360°	-01	54.00

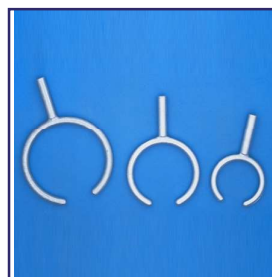
PRG-1787
LABJAWS™ By
TROEMNER, DOUBLE
JAW UTILITY CLAMP



For supporting beakers, mantles and petri dishes. 15.5 cm diameter. Aluminum support plate.

<u>CODE</u>	<u>Price</u>
-01	90.72

PRG-1790
LABJAWS™ By
TROEMNER, SUP-
PORT PLATE

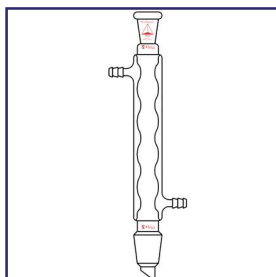


For supporting funnels and boiling flask, open rings allow items easily to pass in and out of support. Arm length is 5.7 cm. Holds 7.6 cm to 12.7 cm apparatus. Rod arm is 1.27 cm diameter.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
7.6 cm	-01	37.80
10.2 cm	-02	48.60
12.7 cm	-03	66.96

PRG-1792
LABJAWS™ By
TROEMNER, OPEN
RINGS

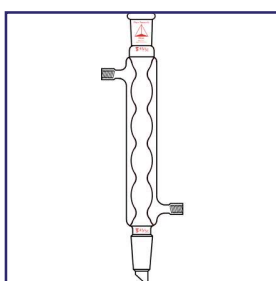




PRG-1900
ALLIHN

Allihn condensers have outer top joint and lower tapered joint drip tip. Joints are the same size.

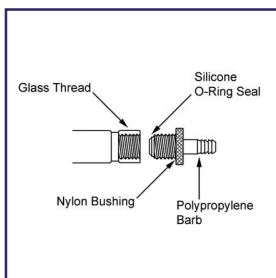
Jacket Length mm	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
200	-01	107.65	-02	111.82	—	—
250	-03	112.45	-04	116.85	—	—
300	-05	119.57	-06	124.01	-23	367.12
400	-07	124.01	-08	128.41	-24	427.27
500	-09	138.72	-10	140.55	-25	487.42
600	-11	147.91	-12	149.82	-26	549.13



PRG-1901
**ALLIHN, DETACH-
ABLE HOSE BARBS**

Allihn condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser using an internal thread. It not only makes connecting and disconnecting easier but safer as well. Condensers with 24/40 and 29-42 joints have a #11 thread for 3/8" I.D. tubing. The 45/50 condensers have a #15 thread and fit a 1/2" I.D. hose.

Jacket Length mm	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
200	-01	127.64	-02	131.70	—	—
250	-03	132.32	-04	136.59	—	—
300	-05	140.03	-06	143.55	-23	390.25
400	-07	143.55	-08	147.81	-24	450.40
500	-09	157.82	-10	159.57	-25	510.57
600	-11	166.73	-12	168.60	-26	572.27

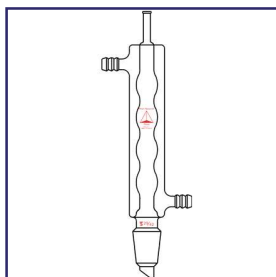


PRG-220
**DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD**

Flow rate @10lbs. H₂O

Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72





Reflux condenser has tubulation on top and lower drip tip joint. Hose barbs fit 3/8" I.D. tube.

<u>Jacket Length mm</u>	<u>£ 24/40 Joint</u>		<u>£ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	100.48	-02	106.18
300	-03	104.50	-04	109.73
400	-05	108.06	-06	113.55

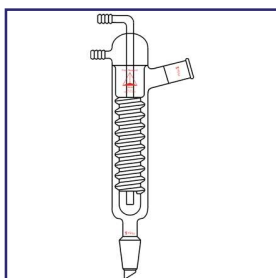
PRG-1905
ALLIHN, CHIMNEY
TOP



Reflux condenser has lower tapered drip tip joint and tubulation chimney top. Ideal for use in reflux applications like soxhlets and continuous extractions.

<u>Jacket Length mm</u>	<u>£ Joint</u>	<u>CODE</u>	<u>Price</u>
190	34/45	-01	111.11
260	45/50	-02	139.21
300	55/50	-03	160.28
350	71/60	-04	280.52
400	103/60	-05	544.00
500	145/60	-06	954.40

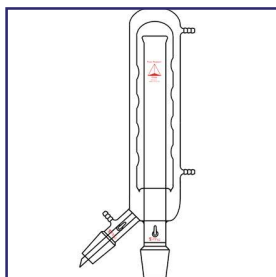
PRG-1910
ALLIHN, REFLUX



Spiral vapor path provides extended contact with cooling chamber, 24/40 outer exit joint is angled at 75°. Lower joint is a tapered drip joint. Serrated barbs fit a 3/8" I.D. hose. Approximate height is 325mm.

<u>£ Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	183.39
29/42	-02	191.35
45/50	-03	210.86
55/50	-04	CALL

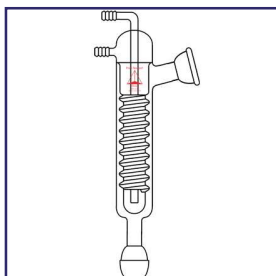
PRG-1915
FRIEDRICHS, STAN-
DARD TAPER JOINT



**PRG-1920
CONCENTRATOR**

For efficient condensing of vapor. Condensate drains through the side tube inner joint into a suitable receiver. Vacuum connection provides for reduced pressure operation, if desired. Condenser is ideal for solvent recovery.

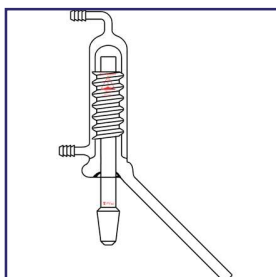
<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
190	24/40	-01	315.55
250	29/42	-02	329.57



**PRG-1925
FRIEDRICHS**

Spiral vapor path provides extended contact with cooling chamber, 35/25 socket exit joint is angled at 75°. Lower joint is a 35/25 ball. Serrated barbs fit a 3/8" I.D. hose. Approximate height is 325mm.

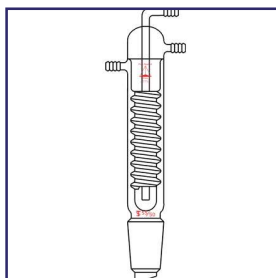
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
35/25	-01	204.77



**PRG-1930
FRIEDRICHS**

Has condensing contour of the Friedrichs, But its exit tube makes it ideal for solvent recovery. Serrated barbs fit 3/8" I.D. hose.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
200	24/40	-01	255.20

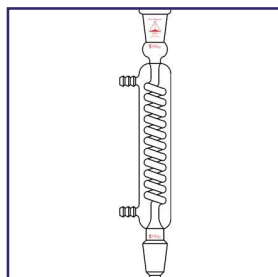


**PRG-1935
FRIEDRICHS**

Spiral vapor path provides extended contact with cooling chamber. Lower taper drip joints, serrated barbs fit a 3/8" I.D. tube.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
190	34/45	-01	176.04
190	45/50	-02	191.59
190	55/50	-03	204.01

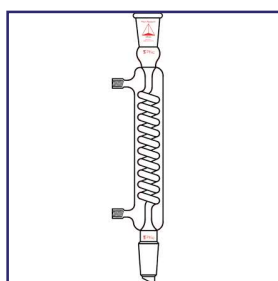




**PRG-1940
GRAHAM**

Both top outer and lower inner drip joints are the same size. The serrated barbs fit a 3/8" I.D. tube.

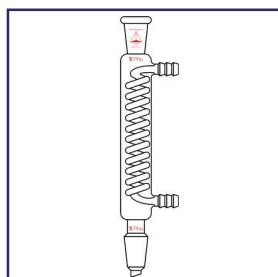
Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	137.85	-02	143.92
300	-03	150.41	-04	156.20
400	-05	162.48	-06	157.55
500	-07	192.00	-08	201.43
600	-09	201.19	-10	211.31



**PRG-1941
GRAHAM, DETACH-
ABLE HOSE BARBS**

Graham condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser using a #11 internal thread. It is a safer and easier means for connecting and disconnecting hosing. Hose barbs fit 3/8" I.D. hose.

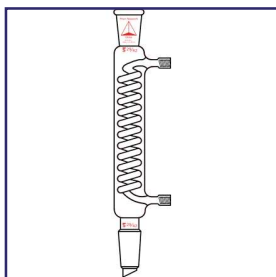
Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	156.98	-02	162.87
300	-03	169.16	-04	174.79
400	-05	180.80	-06	201.64
500	-07	209.55	-08	218.67
600	-09	228.30	-10	228.30



**PRG-1945
COIL**

Both top outer and lower inner drip joint are the same size. Inner coil provides the reflux effect in this condenser. Hose barbs fit 3/8" I.D. hose.

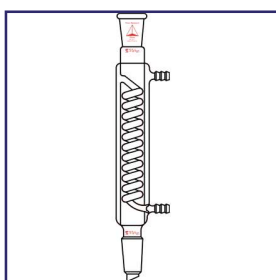
Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	184.65	-02	191.14
300	-03	208.12	-04	214.39
400	-05	219.80	-06	226.24
500	-07	231.43	-08	237.89



PRG-1946
COIL, DETACHABLE
HOSE BARBS

Coil condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser by use of a #11 internal thread. It is a safer and easier means of connecting and disconnecting hosing. Hose barbs fit 3/8" I.D. hose.

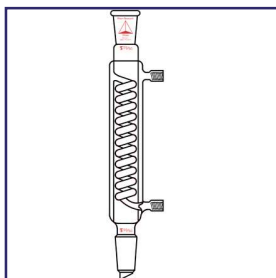
Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	202.41	-02	208.69
300	-03	225.20	-04	215.86
400	-05	234.99	-06	244.33
500	-07	247.81	-08	254.12



PRG-1947
COIL, JACKETED

The jacketed coil condenser is used for extra cooling capacity. As vapor rises, condensing occurs on the inner wall of the jacket and on the exterior surface of the coil. The condensers with the 24/40 and 29/42 joints have a 10mm hose barb. The 45/50 and 55/50 jointed condensers have a 14mm hose barb. Barbs are measured at the middle serration.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint		₹ 45/50 Joint		₹ 55/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
250	-01	320.82	-02	327.00				
300	-03	331.65	-04	345.51	-21	447.31	-22	515.18
400	-05	353.23	-06	362.48	-23	502.85	-24	578.44
500	-07	370.19	-08	391.79	-25	558.37	-26	641.69
600	-09	393.35	-10	404.12	-27	613.92	-28	706.46

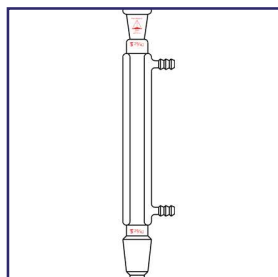


PRG-1948
COIL, JACKETED, DE-
TACHABLE HOSE
BARB

Jacketed coil condenser is fitted with detachable hose barbs. The polypropylene hose barb couple to the condenser with internal threads. The 24/40 and 29/42 condenser have a #11 thread and fit 3/8" I.D. hose. The 45/50 and 55/50 have a #15 thread for 1/2" I.D. hose.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint		₹ 45/50 Joint		₹ 55/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
200	-01	343.96	-02	350.16				
300	-03	354.77	-04	368.66	-21	470.46	-22	538.34
400	-05	376.39	-06	385.63	-23	526.01	-24	601.55
500	-07	393.35	-08	414.93	-25	581.52	-26	664.81
600	-09	416.47	-10	427.27	-27	637.05	-28	729.60

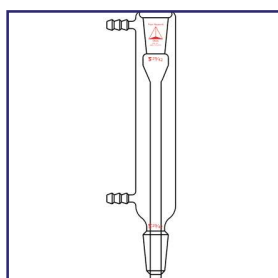




PRG-1950
LIEBIG

Both top outer and lower drip joint are the same size. Serrated barbs fit 3/8" I.D. hose. For micro applications see PG-9114.

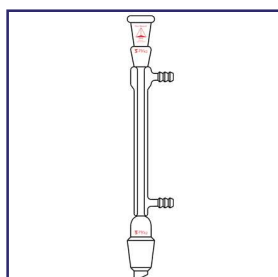
<u>Jacket Length mm</u>	<u>£ 24/40 Joint</u>		<u>£ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	100.91	-02	106.43
250	-03	108.08	-04	114.99
300	-05	107.22	-06	112.91
400	-07	117.11	-08	122.57
500	-09	122.57	-10	128.41
600	-11	129.06	-12	134.71



PRG-1955
LIEBIG, FULL JACKET

Both top outer and lower drip joint are the same size. The circulatory jacket is full length of condenser. Serrated barbs fit 3/8" I.D. tube.

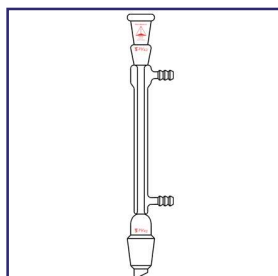
<u>Jacket Length mm</u>	<u>£ 24/40 Joint</u>		<u>£ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	134.92	-02	140.58
300	-03	142.85	-04	148.52
400	-05	154.85	-06	171.60



PRG-1960
WEST

The narrow space between the jacket and inner tube increases the flow rate of the circulatory fluid, making it very effective. Both top outer and lower drip joint are the same size. Serrated barbs fit a 3/8" I.D. tube.

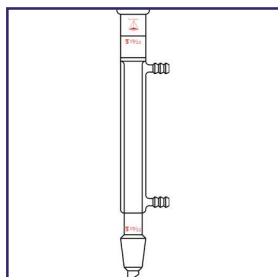
<u>Jacket Length mm</u>	<u>£ 24/40 Joint</u>		<u>£ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	89.10	-02	91.49
250	-03	102.57	-04	104.95
300	-05	103.97	-06	106.18
400	-07	112.08	-08	112.91
500	-09	116.78	-10	118.55
600	-11	118.49	-12	120.83



PRG-1965
WEST

Both top outer and lower drip joint are the same size. The entire length of this condenser is jacketed.

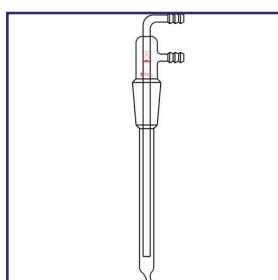
<u>Jacket Length mm</u>	<u>£ 24/40 Joint</u>	
	<u>CODE</u>	<u>Price</u>
430	-01	119.14



The narrow space between the jacket and inner tube increases the flow rate, making it very effective. The condenser I.D. is no hold up, useful for refluxing and distillation assemblies.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
110	14/20	-01	89.39
200	19/22	-02	96.05

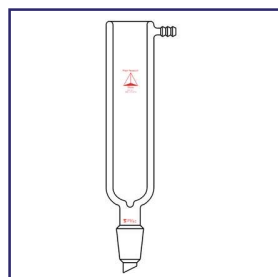
PRG-1970
WEST, OPEN THRU



The jacket length is the distance from the bottom of the inner joint to the drip tip. Serrated barbs fit a 3/8" I.D. tube. For micro applications see PG-9106.

<u>Jacket Length mm</u>	<u>24/40 Joint</u>		<u>29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
150	-01	88.54	-02	93.36
200	-03	92.94	-04	92.13
250	-05	89.17	-06	96.54

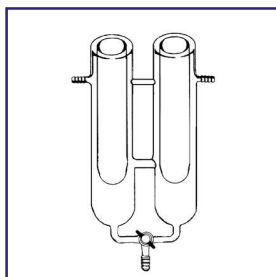
PRG-1975
COLD FINGER



With large opening at the top of condenser for dry ice or liquid nitrogen. Condensation happens rapidly with large surface area. Serrated barb fits a 3/8" I.D. tube. For micro applications see PG-9108.

<u>Inside I.D.</u>	<u>Depth of Condenser</u>	<u>24/40 Joint</u>		<u>29/42 Joint</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
40	200	-01	179.93	-02	185.55
50	250	-03	228.54	-04	234.10
75	300	-05	280.44	-06	286.03

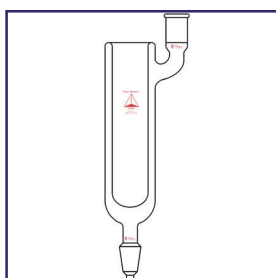
PRG-1980
DEWAR



**PRG-1982
DEWAR**

Twin chamber dry ice has a 500 ml chamber capacity and a 200 ml dry ice capacity. 3/8" ports are located at top of trap to connect to rotary evaporator and to vacuum. Bottom drain stopcock allows drainage from each chamber individually.

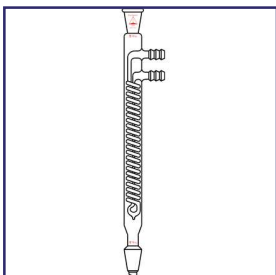
CODE	Price
-01	CALL



**PRG-1985
DEWAR**

With large opening at the top of condenser for dry ice or liquid nitrogen. Condensation happens rapidly with large surface area. Serrated barb fits a 3/8" I.D. tube.

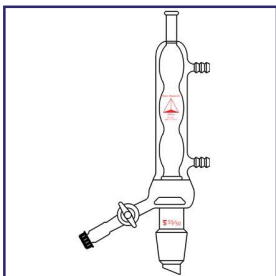
Inside I.D.	Depth of Condenser	§ 24/40 Joint		§ 29/42 Joint	
		CODE	Price	CODE	Price
40	200	-01	179.93	-02	286.03
50	250	-03	251.37	-04	257.51
75	300	-05	308.46	-06	314.62



**PRG-1990
SPIRAL COIL**

Reflux condenser with tightly wrapped coils forces vapor to travel a long circuitous path for maximum cooling. Both top outer and lower drip joints are the same size. Serrated barbs fit a 3/8" I.D. hose.

Jacket Length mm	§ 24/40 Joint		§ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	199.87	-02	206.37
250	-03	222.68	-04	229.18
300	-05	298.79	-06	305.26
400	-07	324.05	-08	330.35

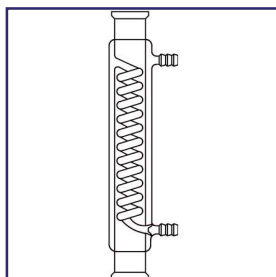


**PRG-1995
SOLVENT RECOVERY**

For solvent recovery after extractions are complete. Drain has a 2mm Teflon stopcock to GL-14 for a 1/4" O.D. hose compression fit.

§ Joint	CODE	Price
24/40	-01	232.72
29/42	-02	235.89
45/50	-03	285.82
55/50	-04	293.84

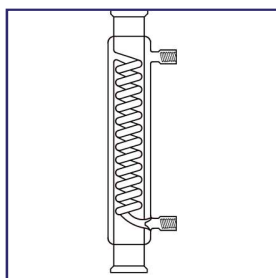




PRG-7400
JACKETED COIL,
BEADED PIPE

The double jacketed coil condenser has beaded pressure pipe connections. Beaded ends are compatible with beaded process pipe fittings. The water ports are 14mm hose barb measured at the middle serration.

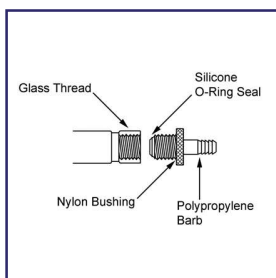
<u>Jacket Length mm</u>	1.5" B. P.		2.0" B. P.		3.0" B. P.	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
300	-01	428.01	-05	554.96	—	—
400	-02	447.54	-06	616.78	-09	779.53
500	-03	481.71	-07	678.64	-10	856.02
600	-04	517.52	-08	742.10	-11	901.60



PRG-7405
JACKETED COIL,
BEADED PIPE, DE-
TACHABLE HOSE
BARBS

Double jacketed coil condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser with a #15 internal thread. It not only makes connection and disconnection easier, but safer as well. The barb has a 14mm O.D. measured at the middle serration.

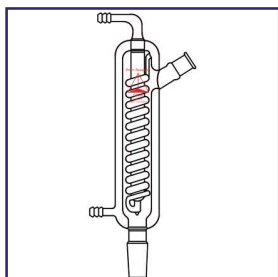
<u>Jacket Length mm</u>	1.5" B. P.		2.0" B. P.		3.0" B. P.	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
300	-01	454.04	-05	554.96	—	—
400	-02	473.59	-06	642.82	-09	805.56
500	-03	507.76	-07	704.67	-10	882.07
600	-04	543.56	-08	786.04	-11	927.63



PRG-220
DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD

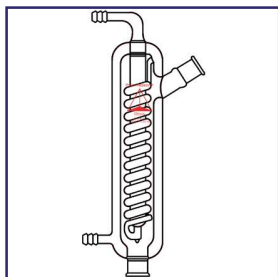
Flow rate @10lbs. H₂O

<u>Thread Size</u>	<u>Fits Tube I.D.</u>	<u>Barb I.D.</u>	<u>Nominal Flow Rate Gal./Min.</u>	<u>CODE</u>	<u>Price</u>
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72



The high speed condenser provides the maximum amount of surface cooling for the space provided. The vapor is condensed on the inner wall of the water jacket and on the interior vapor tube. The vapor tube has a cooling coil wrapped around it for additional cooling and mixing. This multi-cooling surface yields a high efficiency per unit length. Hose barbs measure 14mm at middle serration.

<u>Jacket Length mm</u>	<u>Lower Joint</u>	<u>Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	24/40	24/40	-01	985.45
600	24/40	24/40	-02	1,001.07
700	24/40	24/40	-03	1,014.92



500	29/42	24/40	-11	1,002.78
600	29/42	24/40	-12	1,025.34
700	29/42	24/40	-13	1,049.64

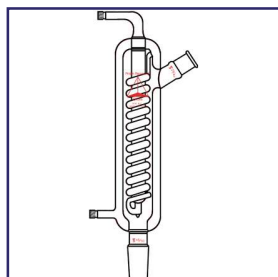
500	45/50	29/42	-21	1,066.98
600	45/50	29/42	-22	1,127.69
700	45/50	29/42	-23	1,183.20

<u>Jacket Length mm</u>	<u>Lower Joint</u>	<u>Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	29/42	-31	1,073.94
600	65/40	29/42	-32	1,134.64
700	65/40	29/42	-33	1,210.96

PRG-7410
HIGH SPEED

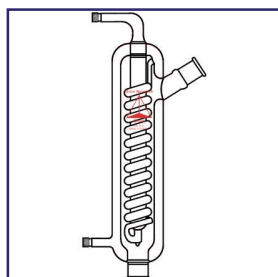
<u>Jacket Length mm</u>	<u>B.P. Lower Joint</u>	<u>B.P. Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	1.0"	-41	1,119.04
600	1.5"	1.0"	-42	1,184.96
700	1.5"	1.0"	-43	1,250.88
500	2.0"	1.5"	-51	1,231.81
600	2.0"	1.5"	-52	1,299.47
700	2.0"	1.5"	-53	1,370.59





High speed condenser is fitted with detachable hose barbs measuring 14mm at middle serration. The polypropylene hose barb couples to the condenser with a #15 internal thread. It not only makes connecting and disconnecting easier, but safer as well. Sold complete with hose barb assembly.

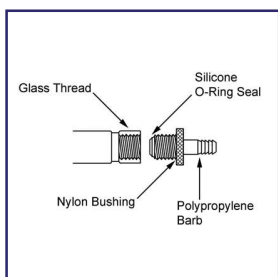
<u>Jacket Length mm</u>	<u>Lower Joint</u>	<u>Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	24/40	24/40	-01	1,011.48
600	24/40	24/40	-02	1,027.08
700	24/40	24/40	-03	1,040.94
500	29/42	24/40	-11	1,027.08
600	29/42	24/40	-12	1,051.37
700	29/42	24/40	-13	1,075.66
500	45/50	29/42	-21	1,092.99
600	45/50	29/42	-22	1,153.74
700	45/50	29/42	-23	1,200.58



<u>Jacket Length mm</u>	<u>Lower Joint</u>	<u>Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	29/42	-31	1,099.96
600	65/40	29/42	-32	1,160.67
700	65/40	29/42	-33	1,236.99

PRG-7415
HIGH SPEED, DE-
TACHABLE HOSE
BARBS

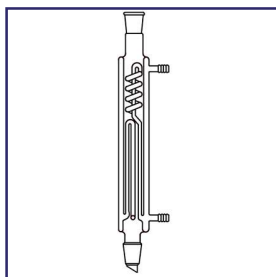
<u>Jacket Length mm</u>	<u>B.P. Lower Joint</u>	<u>B.P. Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	1.0"	-41	1,145.06
600	1.5"	1.0"	-42	1,210.96
700	1.5"	1.0"	-43	1,276.91
500	2.0"	1.5"	-51	1,207.51
600	2.0"	1.5"	-52	1,268.24
700	2.0"	1.5"	-53	1,344.56



Flow rate @10lbs. H2O

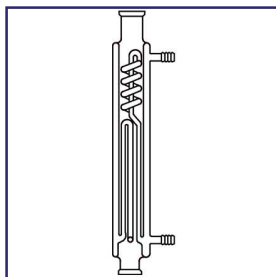
<u>Thread Size</u>	<u>Fits Tube I.D.</u>	<u>Barb I.D.</u>	<u>Nominal Flow Rate Gal./Min.</u>	<u>CODE</u>	<u>Price</u>
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72

PRG-220
DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD



This large capacity, highly efficient condenser is suitable for pre-pilot and pilot scale operations. Upper and lower joints are the same size. Hose barbs are 14mm at middle serration.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
500	29/42	-01	749.49
600	29/42	-02	777.24
500	45/50	-11	1,101.68
600	45/50	-12	1,176.29
750	45/50	-13	1,269.98
1000	45/50	-14	1,518.06



<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	-21	1,110.33
600	65/40	-22	1,184.96
750	65/40	-23	1,278.64
1000	65/40	-24	1,557.96

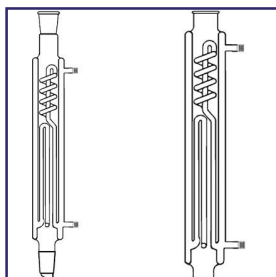
<u>Jacket Length mm</u>	<u>B.P. Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	-31	1,110.33
600	1.5"	-32	1,184.96
750	1.5"	-33	1,278.64
1000	1.5"	-34	1,535.40

PRG-7420

PILOT PLANT, LARGE CAPACITY

500	2.0"	-41	1,131.15
600	2.0"	-42	1,193.61
750	2.0"	-43	1,287.31
1000	2.0"	-44	1,578.79



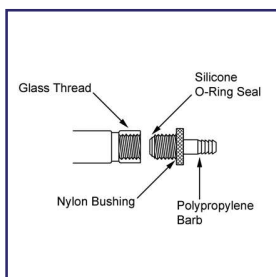

PRG-7425
**PILOT PLANT, LARGE
CAPACITY, DETACH-
ABLE HOSE BARBS**

High efficiency condensers are suitable for pre-pilot and pilot plant scale capacities. Both upper and lower connections are the same size. #15 threaded ports are used to connect polypropylene hose barbs to condenser. Barbs fit .500" i.d. supply lines.

<u>Jacket Length mm</u>	<u>J. Joint</u>	<u>CODE</u>	<u>Price</u>
500	29/42	-01	774.65
600	29/42	-02	802.32
500	45/50	-11	1,126.19
600	45/50	-12	1,201.05
750	45/50	-13	1,295.44
1000	45/50	-14	1,542.81

<u>Jacket Length mm</u>	<u>J. Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	-21	1,135.95
600	65/40	-22	1,210.82
750	65/40	-23	1,303.57
1000	65/40	-24	1,578.61

<u>Jacket Length mm</u>	<u>B.P. Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	-31	1,135.95
600	1.5"	-32	1,210.82
750	1.5"	-33	1,303.57
1000	1.5"	-34	1,560.70
500	2.0"	-41	1,157.12
600	2.0"	-42	1,218.94
750	2.0"	-43	1,313.32
1000	2.0"	-44	1,586.74


PRG-220
**DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD**

Flow rate @10lbs. H2O

<u>Thread Size</u>	<u>Fits Tube I.D.</u>	<u>Barb I.D.</u>	<u>Nominal Flow Rate Gal./Min.</u>	<u>CODE</u>	<u>Price</u>
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72

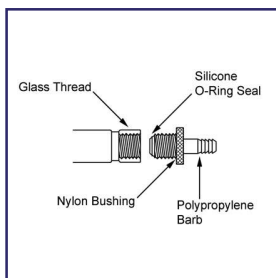


PRG-7448

**"SQUAT" CON-
DENSER, HIGH EFFI-
CIENCY, QUAD-COIL,
DETACHABLE HOSE
BARBS**

"Squat" Condenser is a low profile design with maximum cooling capacity through Four interior coils. Condenser diameter is 165mm with detachable hose barbs. Fits 1.0" i.d. supply lines. See PRG-220 for other sizes barb options.

Overall Height	Coil Length	Cooling Surface	Pipe Connection	CODE	Price
18"	12"	760	1.5"	-01	1,844.42
18"	12"	760	2.0"	-02	1,875.42
18"	12"	766	3.0"	-03	1,906.41
24"	18"	1150	2.0"	-11	2,286.14
24"	18"	1150	3.0"	-12	2,309.41
24"	18"	1150	4.0"	-13	2,340.41



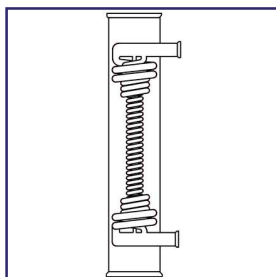
PRG-220

**DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD**

Flow rate @10lbs. H₂O

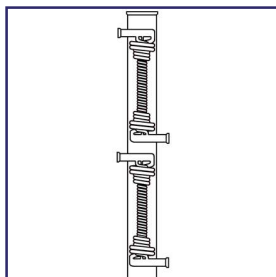
Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72





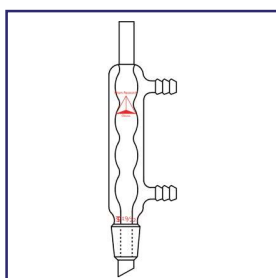
These coil condensers are constructed of borosilicate glass pipe housing with coaxial wound coils. The coils are wound concentrically around a common axis and have ample space between each loop. This spacing allows vapor to move freely through the coils creating turbulence and more vapor contact with cooling surface. The coaxial design gives the condenser a very robust structural quality and has only a small pressure drop between coils.

The condenser has beaded pressure pipe fitting tooled on glass piping. The fitting are compatible with pipe fittings on the market today. Conical ends are available upon request.



Sets of Coils	Pipe Fitting I.D.	Overall Length	Cooling Surface	Coil Port I.D.	CODE	Price
Single	1.5"	12"	1.8 sq. ft.	1/2"	-01	909.75
Double	1.5"	24"	3.9 sq. ft.	1/2"	-11	1,716.93
Single	2.0"	18"	2.5 sq. ft.	1/2"	-02	1,526.53
Double	2.0"	24"	3.9 sq. ft.	1/2"	-12	2,011.49
Single	3.0"	18"	2.6 sq. ft.	1/2"	-03	1,941.53
Double	3.0"	24"	3.9 sq. ft.	1/2"	-13	2,149.84
Single	4.0"	18"	3.9 sq. ft.	1.0"	-04	3,191.38
Single	4.0"	24"	5.4 sq. ft.	1.0"	-05	3,816.33
Double	4.0"	36"	8.4 sq. ft.	1.0"	-14	4,215.06
Single	6.0"	18"	6.4 sq. ft.	1.0"	-06	4,058.80
Single	6.0"	24"	9.3 sq. ft.	1.0"	-07	5,689.48
Double	6.0"	36"	13.7 sq. ft.	1.0"	-15	7,216.02

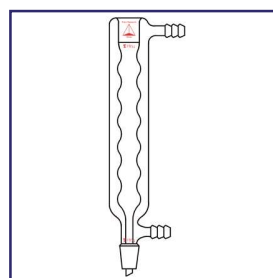
PRG-7450
COIL, HIGH EFFICIENCY, INDUSTRIAL EQUIPMENT



Condenser, Allihn. Water-cooled inner joint at bottom with a drip tip.

Joint	CODE	Price
14/20	-01	84.86
19/22	-02	86.12

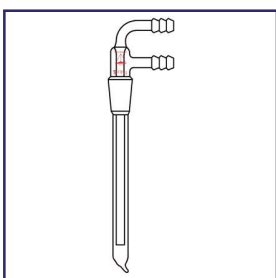
PG-9102
MICRO, ALLIHN, DRIP TIP



Condenser, Allihn. Top outer joint, water-cooled inner joint at bottom with a drip tip. Both joints are the same size.

Joint	CODE	Price
14/20	-01	99.28
19/22	-02	100.29

PG-9104
MICRO, ALLIHN, DRIP TIP

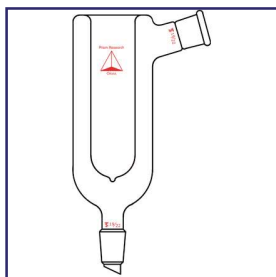


Condenser, cold finger, inner joint near the top and a drip tip at the bottom. For larger sizes see PRG-1975.

Joint	CODE	Price
14/20	-01	69.35
19/22	-02	70.73

PG-9106
MICRO, COLD FINGER, DRIP TIP

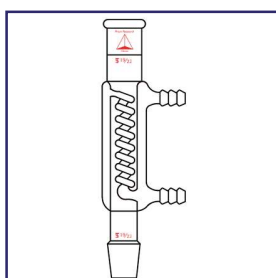




PG-9108
MICRO, DEWAR

Condenser, Dewar. Rapid condensation of gaseous solvents is made possible with a large opening at tip for use with dry ice. For larger sizes see PRG-1980.

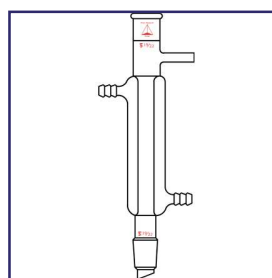
<u>Inside Depth mm</u>	<u>Diameter mm</u>	<u>14/20 Joint</u>		<u>19/22 Joint</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
90	37	-01	179.64	-02	183.17
90	70	-03	179.64	-04	183.17
120	31	-05	191.12	-06	193.01



PG-9110
MICRO, DOUBLE
COOLING

Condenser, double cooling. Top outer joint and bottom inner joint are the same size. Jacket length is 80mm.

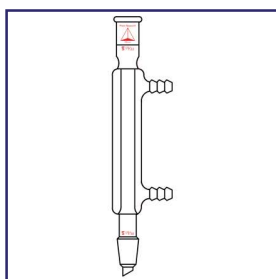
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	142.69
19/22	-02	145.27



PG-9112
MICRO, LIEBIG

Condenser, Liebig, top outer joint, bottom inner joint with drip tip. Both joints are the same size. Jacket length is 110mm. A side tube near the top allows for vacuum attachment.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	87.03
19/22	-02	89.47

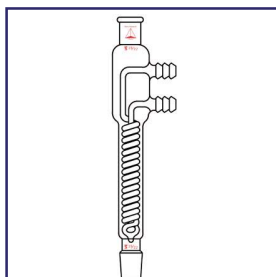


PG-9114
MICRO, LIEBIG, NO
HOLD-UP

Condenser, Liebig, no hold-up, top outer joint and bottom inner joint with drip tip. Jacket length is 100mm. For larger sizes see PRG-1950.

<u>Top Joint</u>	<u>Bottom Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	79.49
14/20	14/35	-02	80.06
19/22	19/22	-03	82.04
19/22	19/38	-04	85.79

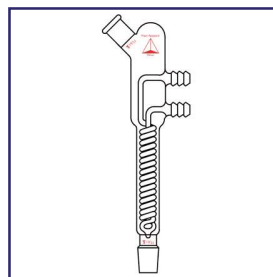




PG-9116
MICRO, REFLUX,
COIL TYPE

Condenser, reflux, coil type, top outer joint, bottom inner joint. Coil on inside of jacket forms a drip tip at the bottom. Overall length is 200mm.

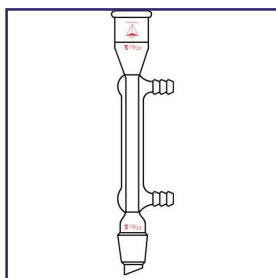
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	163.71
19/22	-02	167.27



PG-9118
MICRO, REFLUX,
COIL TYPE

Condenser, reflux, coil type, top outer joint, bottom inner joint. Coil on inside of jacket forms a drip tip at the bottom. Overall length is 200mm. Top joint is at an angle.

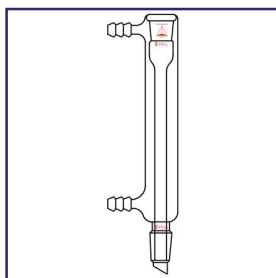
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	168.79
19/22	-02	194.36



PG-9120
MICRO, WEST

Condenser, West, top outer joint, bottom inner joint with drip tip. Both joints are the same size. Overall length of jacket is 110mm.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	85.67
19/22	-02	88.59

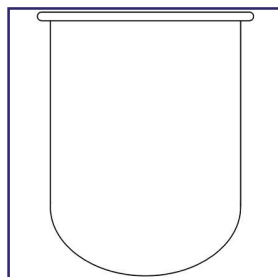


PG-9122
MICRO, WEST, JACK-
ETED

Condenser, West, jacketed. Water cooled outer top joint, bottom inner joint with drip tip. Both joints are the same size.

<u>Joint</u>	<u>Jacket Length</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	103.20
14/20	200	-02	108.94
19/22	110	-03	106.23
19/22	200	-04	112.04

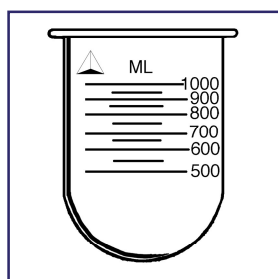




**PRG-1096
VESSEL**

Vessels are hand-blown into full radius bottoms for best mixing conditions in determining dissolution characteristics of media. Exceeds USP Standards. Compatible with all major manufacturers.

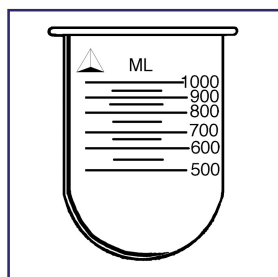
<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Clear Vessels</u>		<u>Amber Vessels</u>	
			<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
500	108	100	-01	101.69	-11	149.35
1000	108	168	-02	108.04	-12	155.70
2000	108	290	-03	141.40	-13	174.77



**PRG-1097
VESSEL, GRADU-
ATED**

Vessels have full radius bottoms for peak mixing characteristics. Exceeds US Standards. Graduation markings. Compatible with all major manufacturers.

<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Clear Vessels</u>	
			<u>CODE</u>	<u>Price</u>
1000	108	168	-01	119.16

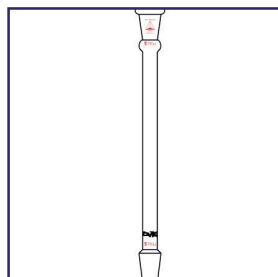


**PRG-1098
VESSEL, BATHLESS**

Bathless vessels with the tightest of tolerances to fit the snug outer heating jacket of the bathless system. Exceeds USP Standards.

<u>Capacity ml</u>	<u>O.D. mm</u>	<u>Height mm</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
1000	107.75	168	Clear (graduated)	-01	155.70
1000	107.25	168	Amber (not graduated)	-02	195.43

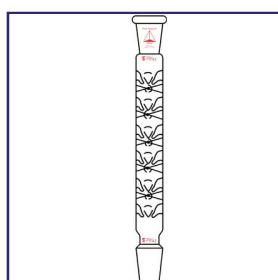




PRG-2000
COLUMN, HEMPLE

Column length is measured from the top of the indents to the bottom of the outer joint. Indents are to support most forms of packing materials. Both top outer and lower inner joints are the same size.

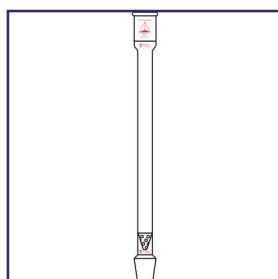
Length mm	12.5 mm		19 mm		25 mm	
	24/40 Joint	Price	24/40 Joint	Price	29/42 Joint	Price
300	-01	62.47	-02	68.05	-03	57.94
400	-04	70.48	-05	67.36	-06	72.96
500	-07	69.40	-08	74.90	-09	71.80
600	-10	77.38	-11	74.27	-12	79.83
900	-13	77.60	-14	83.16	-15	80.92



PRG-2005
COLUMN, VIGREUX

Indentations in column give improved vapor liquid contact. Effective lengths are measured top to bottom of indentations. Both top outer and lower inner joints are the same size.

Column Length mm	Overall Length mm	24/40 Joint		29/42 Joint	
		CODE	Price	CODE	Price
150	300	-01	70.04	-02	75.63
200	350	-03	74.27	-04	80.05
300	450	-05	97.17	-06	102.96
450	600	-07	134.06	-08	139.84
600	750	-09	160.06	-10	165.84

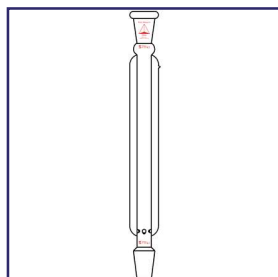


PRG-2010
COLUMN, HONEY-
COMB

Column has a honeycomb style basket in lower section to provide support for packing materials. Column length is measured from top of the basket to the bottom of the outer joint on top.

Length mm	12.5 mm		19 mm		25 mm		37 mm	
	24/40 Joint	Price	24/40 Joint	Price	29/42 Joint	Price	45/50 Joint	Price
300	-01	162.58	-02	183.84	-03	216.10	-04	243.52
400	-05	172.33	-06	193.11	-07	225.14	-08	254.78
500	-09	177.38	-10	198.19	-11	230.76	-12	265.03
600	-13	199.49	-14	203.16	-15	236.93	-16	271.63
900	-17	206.31	-18	218.90	-19	248.87	-20	275.79
1200	-21	208.21	-22	228.91	-23	263.56	-24	352.79
1800	-25	215.52	-26	234.74	-27	273.46	-28	391.45

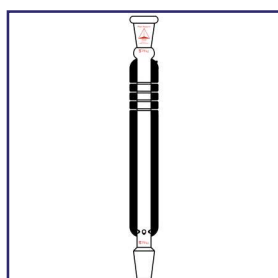




PRG-2020
COLUMN, HEMPLE,
VACUUM JACKETED

Columns have lower indentation for packing support. The vacuum jacket improves distillation performance.

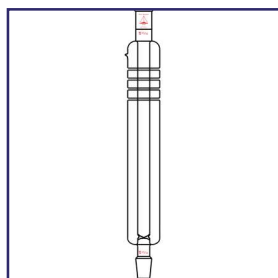
Length mm	12.5 mm		19 mm		25 mm	
	CODE	Price	CODE	Price	CODE	Price
300	-01	298.11	-02	305.01	-03	347.07
400	-04	336.20	-05	355.92	-06	374.25
500	-07	358.21	-08	379.97	-09	398.65
600	-10	378.57	-11	404.80	-12	429.74
900	-13	401.66	-14	486.92	-15	501.02



PRG-2025
COLUMN, HEMPLE,
VACUUM JACKETED,
SILVERED

Columns have indentations to support packing materials. Vacuum jacketed and silvered with two strip windows 180° apart. Both joints are the same size.

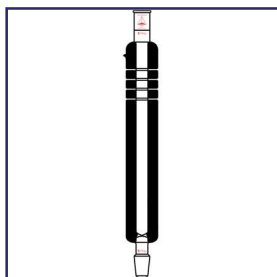
Length mm	12.5 mm		19 mm		25 mm	
	CODE	Price	CODE	Price	CODE	Price
300	-01	594.22	-02	630.50	-03	694.01
400	-04	671.33	-05	709.88	-06	748.44
500	-07	714.42	-08	759.78	-09	796.07
600	-10	756.38	-11	807.41	-12	881.12
900	-13	802.87	-14	972.97	-15	1,000.19



PRG-2030
COLUMN, VACUUM
JACKETED, EXPAN-
SION BELLOWS

Columns have support indentations for packing materials. Vacuum jacket has internal bellows to allow for thermal expansions and contractions. Both top outer and lower inner joints are the same size.

Length mm	25 mm		37 mm	
	CODE	Price	CODE	Price
300	-01	443.21	-02	576.67
400	-03	481.84	-04	615.26
600	-05	515.90	-06	649.40
900	-07	641.40	-08	774.86
1200	-09	782.85	-10	916.32

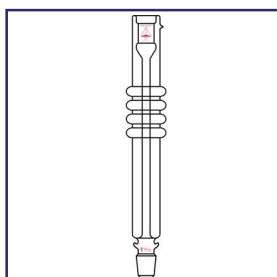


PRG-2035

**COLUMN, SILVERED,
VACUUM JACKETED,
EXPANSION BEL-
LOWS**

Column has support indentations for packing materials. Silvered and evacuated jacket has internal bellows to allow for thermal expansion and contractions. Both upper outer and lower inner joints are the same size. Call for pricing.

Length mm	25 mm		37 mm	
	CODE	Price	CODE	Price
300	-01	885.65	-02	1,152.14
400	-03	961.63	-04	1,229.26
600	-05	1,029.67	-06	1,297.30
900	-07	1,281.42	-08	1,545.64
1200	-09	1,564.92	-10	1,832.54

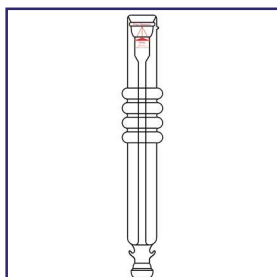


PRG-2040

**COLUMN, VACUUM
JACKETED, EXPAN-
SION BELLOWS**

Columns have support indentations for packing materials. Vacuum jacket has external bellows to allow for thermal expansions and contractions. Both top outer and lower inner joints are the same size.

Length mm	12.5 mm		25 mm		37 mm		50 mm	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
600	-01	480.34	-02	515.90	-03	649.40	-04	652.93
900	-05	515.90	-06	560.40	-07	703.18	-08	707.84
1200	-09	551.51	-10	604.90	-11	758.27	-12	761.89
1500	-13	596.01	-14	658.24	-15	811.66	-16	824.46
1800	-17	640.49	-18	712.10	-19	900.63	-20	913.45
2400	-21	693.87	-22	801.08	-23	998.54	-24	1,034.45



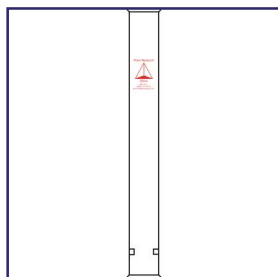
PRG-2045

**COLUMN, VACUUM
JACKETED, EXPAN-
SION BELLOWS**

Columns have support indentations for packing materials. Vacuum jacket has external bellows to allow for thermal expansions and contractions. Both top and bottom are the same size ball/socket joints.

Length mm	12.5 mm		25 mm		37 mm		37 mm	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
600	-01	485.66	-02	515.90	-03	649.44	-04	653.49
900	-05	521.27	-06	562.21	-07	704.19	-08	707.94
1200	-09	555.47	-10	605.44	-11	759.72	-12	764.26
1500	—	—	-13	658.24	-14	811.66	-15	824.19
1800	—	—	-16	712.11	-17	900.68	-18	914.14
2400	—	—	-19	801.17	-20	998.54	-21	1,034.45

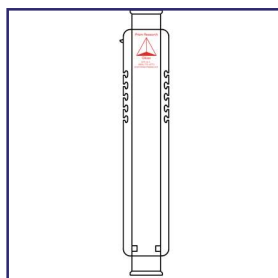



PRG-7310

**COLUMN, NON-JACK-
ETED WITH BEADED
PIPE CONNECTION
AND INTERNAL RING
FOR SUPPORT PLATE**

Columns have beaded pipe connection ends with an interior shelf 1.5" off the bottom to support a PRG-7314 perforated platform. Columns are listed as internal diameter (I.D.) x overall lengths (OVL). Other sizes and end connections are available upon request.

Column Length Inches	1.5"		2.0"		3.0"		4.0"		6.0"	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
12	-01	115.58	-11	159.51	-21	218.07	-31	354.77	-41	554.96
18	-02	136.72	-12	169.26	-22	226.21	-32	367.79	-42	581.00
24	-03	144.83	-13	177.39	-23	234.35	-33	395.47	-43	667.27
36	-04	154.61	-14	190.42	-24	253.87	-34	405.23	-44	860.91
48	-05	161.12	-15	203.44	-25	279.92	-35	416.62	-45	896.71
60	-06	167.63	-16	213.20	-26	315.72	-36	429.66	-46	1,074.10


PRG-7312

**COLUMN, VACUUM
JACKETED AND SIL-
VERED, BEADED PIPE
CONNECTION AND IN-
TERNAL RING FOR
SUPPORT PLATE**

Columns are vacuum jacketed with expansion bellow. Strip silvered for viewing. End connections are beaded pipe connections. Measured by internal diameter (I.D.) x overall length (OVL). Jacket length is approximately 3-4 inches shorter than overall length. Other sizes and connections are available upon request.

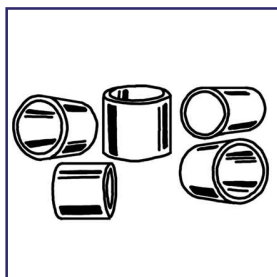
Column Length Inches	1.5"		2.0"		3.0"		4.0"		6.0"	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
12	-01	956.93	-11	1,111.52	-21	1,318.21	-31	1,845.49	---	---
18	-02	992.75	-12	1,142.44	-22	1,388.20	-32	1,943.15	-42	3,157.21
24	-03	1,023.65	-13	1,176.62	-23	1,541.16	-33	2,156.36	-43	3,922.11
36	-04	1,145.73	-14	1,314.96	-24	1,943.15	-34	2,719.43	-44	5,777.38
48	-05	1,337.73	-15	1,516.77	-25	2,050.56	-35	3,212.54	-45	6,851.49
60	-06	1,542.81	-16	1,954.54	-26	2,210.05	-36	4,052.31	-46	8,446.37


PRG-7314

SUPPORT PLATFORM

Perforated platforms are designed to work with columns PRG-7310 and PRG-7312. Offered in 25% glass filled Teflon or 316 stainless steel.

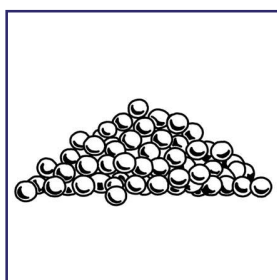
Column I.D.	Hole Size	Disc Thickness	Material	CODE	Price
1.5"	1/8"	1/4"	25% Glass Filled TFE	-01	187.16
2.0"	1/4"	1/4"	25% Glass Filled TFE	-02	200.16
3.0"	1/4"	3/8"	25% Glass Filled TFE	-03	240.85
4.0"	3/8"	1/2"	25% Glass Filled TFE	-04	307.59
6.0"	3/8"	3/4"	25% Glass Filled TFE	-05	470.33
1.5"	1/8"	1/8"	316 Stainless Steel	-11	159.51
2.0"	1/4"	1/8"	316 Stainless Steel	-12	209.94
3.0"	1/4"	1/4"	316 Stainless Steel	-13	289.69
4.0"	3/8"	1/4"	316 Stainless Steel	-14	318.97
6.0"	3/8"	1/4"	316 Stainless Steel	-15	398.73



PRG-7315
PACKING RINGS,
RASCHIG

Borosilicate rings sold in 1 pound packages. Measured: outside diameter (O.D.) x overall length (OVL) in millimeters

<u>O.D. x Length</u>	<u>Approx. pcs per lbs</u>	<u>Pieces per Cubic Foot</u>	<u>CODE</u>	<u>Price</u>
6 x 6	1900	114,000	-01	182.27
7 x 7	1480	63,500	-02	182.27
8 x 8	1070	39,000	-03	182.27
12 x 12	430	11,200	-04	182.27

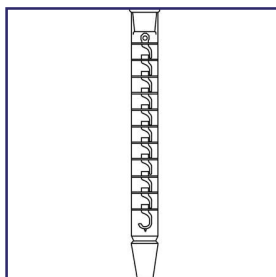


PRG-7316
PACKING BEADS

Solid borosilicate glass beads, sold in 1 pound packages.

<u>O.D. mm</u>	<u>Approx. Beads per lbs</u>	<u>CODE</u>	<u>Price</u>
3	11,000	-01	289.69
4	5,500	-02	278.31
5	2,500	-03	258.76
6	1,600	-04	214.81
7	TBD	-05	157.54



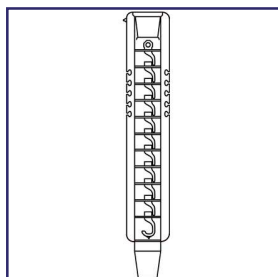


PRG-7318
COLUMN, OLDER-
SHAW, PERFORATED
PLATE, NON-JACK-
ETED

Columns are non-jacketed with uniform perforated plates. Offered with standard tapered joints. Columns are fabricated per order and can be customized to suit your applications.

Column I.D. mm	No. of Plates	Joint	CODE	Price
28	5	29/42	-01	667.27
28	10	29/42	-02	1,235.22
28	15	29/42	-03	1,969.19
28	20	29/42	-04	2,558.33
28	30	29/42	-05	3,402.96
40	5	45/50	-11	1,155.48
40	10	45/50	-12	2,205.17
40	15	45/50	-13	3,043.29
40	20	45/50	-14	4,036.02
40	30	45/50	-15	5,761.09
50	5	55/50	-21	1,357.27
50	10	55/50	-22	2,350.00
50	15	55/50	-23	3,435.50
50	20	55/50	-24	4,551.93
50	30	55/50	-25	6,602.49
75	5	71/60	-31	2,799.18
75	10	71/60	-32	5,451.90
75	15	71/60	-33	6,838.44
75	20	71/60	-34	8,530.98
100	5	103/60	-41	5,131.29
100	10	103/60	-42	8,098.08
100	15	103/60	-43	10,882.62
100	20	103/60	-44	13,117.08



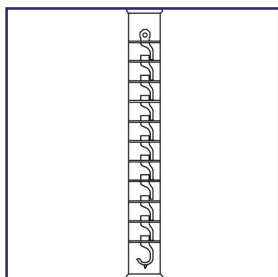


**PRG-7320
COLUMN, OLDER-
SHAW, VACUUM
JACKETED AND SIL-
VERED**

Vacuum jackets are strip silvered for side profile viewing. Uniform perforated plates allow even dispersment of distillate and condensate during operation. Connecting ends are standard tapered joints. Columns are fabricated per order and can be customized to suit your applications.

<u>Column I.D. mm</u>	<u>No. of Plates</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
28	5	29/42	-01	1,311.71
28	10	29/42	-02	2,091.24
28	15	29/42	-03	2,831.72
28	20	29/42	-04	3,415.98
28	30	29/42	-05	4,573.07
40	5	45/50	-11	1,928.51
40	10	45/50	-12	2,979.82
40	15	45/50	-13	3,824.47
40	20	45/50	-14	4,914.84
40	30	45/50	-15	5,513.72
50	5	55/50	-21	2,184.02
50	10	55/50	-22	3,775.63
50	15	55/50	-23	5,375.40
50	20	55/50	-24	6,851.49
50	30	55/50	-25	9,338.21
75	5	71/60	-31	3,472.93
75	10	71/60	-32	4,434.76
75	15	71/60	-33	7,925.58
75	20	71/60	-34	9,959.84
100	5	103/60	-41	5,713.91
100	10	103/60	-42	9,019.21
100	15	103/60	-43	12,116.21
100	20	103/60	-44	14,601.30

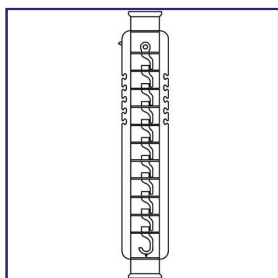




PRG-7322
COLUMN, OLDER-SHAW, PERFORATED PLATE, NON-JACKETED WITH BEADED PIPE CONNECTION

Columns are non-jacketed and have beaded pipe connections. Uniform perforated plates allow even dispersement of distillate and condensate during operation. Connecting ends are standard tapered joints. Columns are fabricated per order and can be customized to suit your applications. For pipe couplings see PRG-8022.

Column I.D. mm	No. of Plates	Pipe Fitting	CODE	Price
28	5	1.0"	-01	683.53
28	10	1.0"	-02	1,251.49
28	15	1.0"	-03	1,985.46
28	20	1.0"	-04	2,574.60
28	30	1.0"	-05	3,419.23
50	5	2.0"	-11	1,406.10
50	10	2.0"	-12	2,415.11
50	15	2.0"	-13	3,484.32
50	20	2.0"	-14	4,600.74
50	30	2.0"	-15	6,667.58
75	5	3.0"	-21	2,382.57
75	10	3.0"	-22	2,831.72
75	15	3.0"	-23	3,468.07
75	20	3.0"	-24	8,726.28
100	5	4.0"	-31	5,180.11
100	10	4.0"	-32	8,146.92
100	15	4.0"	-33	10,931.44
100	20	4.0"	-34	13,165.90

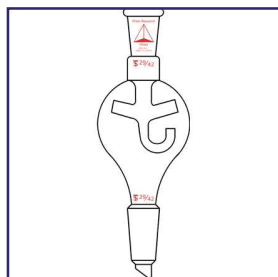


PRG-7324
COLUMN, OLDER-SHAW, VACUUM JACKETED AND SILVERED WITH BEADED PIPE CONNECTION

Vacuum jackets are strip silvered for side profile viewing. Uniform perforated plates allow even dispersement of distillate and condensate during operation. Columns are offered with beaded pipe connections. For pipe couplings see PRG-8022. Columns are fabricated per order and can be customized to suit your applications.

Column I.D. mm	No. of Plates	Pipe Fitting	CODE	Price
28	5	1.0"	-01	1,360.52
28	10	1.0"	-02	2,140.06
28	15	1.0"	-03	2,880.56
28	20	1.0"	-04	3,464.80
28	30	1.0"	-05	4,621.91
50	5	2.0"	-11	2,232.85
50	10	2.0"	-12	3,824.47
50	15	2.0"	-13	5,425.85
50	20	2.0"	-14	6,900.30
50	30	2.0"	-15	9,387.01
75	5	3.0"	-21	3,521.76
75	10	3.0"	-22	4,483.55
75	15	3.0"	-23	7,974.39
75	20	3.0"	-24	10,008.70
100	5	4.0"	-31	5,713.91
100	10	4.0"	-32	9,084.30
100	15	4.0"	-33	12,181.31
100	20	4.0"	-34	14,641.99

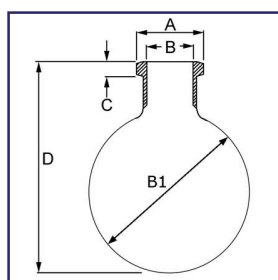




**PRG-2050
HEAD**

Baffles block carry over and allow vapors to move upward while condensate returns. Both joints are the same size.

Joint Size	CODE	Price
24/40	-01	136.74
29/42	-02	142.71



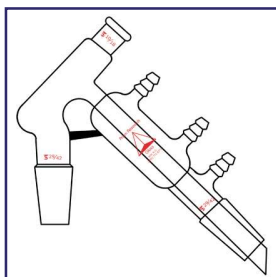
**PRG-2060
FLASK, EVAPORA-
TION, LARGE SCALE,
FLANGED**

Flasks to fit large scale rotary evaporators. Flasks have a heavy wall for vacuum applications and are balanced to prevent run-out during rotation. Available plain or plastic coated to prevent injury from broken glass while preventing spillage of hazardous materials.

Capacity L	Flange Size mm	Overall Height mm	CODE	Price
10	90	350	-01	348.26
10	100	335	-02	359.66
10	100	413	-03	359.66
10	110	410	-04	359.66
10	150	415	-05	501.26
10	210	375	-15	530.09
20	100	385	-06	572.86
20	100	435	-07	572.86
20	110	435	-08	572.86
20	150	440	-09	703.06
20	210	450	-19	725.36
50	150	570	-10	1,822.71
50	210	570	-20	1,921.90
100	150	760	-11	4,081.58
100	210	760	-21	4,156.90

To select the proper flask for your evaporator, determine the size flange required from the chart below. Match the overall height with the capacity required.

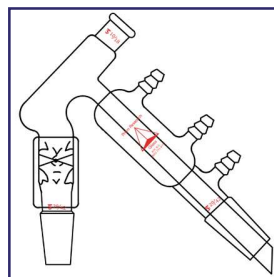
Flange Size	"A" Flange O.D.	"B" Flange I.D.	"C" Flange Thickness	Flask Size	B1
90 mm	90 mm	68 mm	18 mm	10	295 mm
100 mm	100 mm	72 mm	19 mm	20	350 mm
110 mm	110 mm	83 mm	23 mm	50	457 mm
150 mm	150 mm	119 mm	21 mm	100	610 mm
210 mm	210 mm	TBD	TBD		



PRG-2100
HEAD, SHORT PATH,
MACRO

The compact size of the head and 75mm condenser decrease the wetted surface area, allowing for improved separation. 10/18 joint provides for a 3" thermometer immersion.

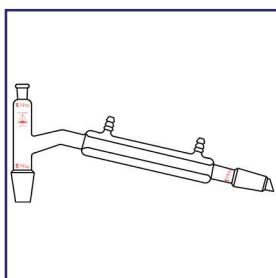
<u>Lower Joints</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	218.15
29/42	-02	224.34



PRG-2105
HEAD, SHORT PATH,
VACUUM JACKET

The head is vacuum jacketed, increasing flow and 75mm condenser decreases the wetted surface area, allowing for improved separation. 10/18 joint provides for a 3" thermometer immersion.

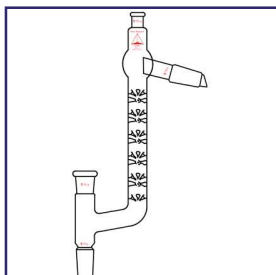
<u>Lower Joints</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	425.25
29/42	-02	432.05



PRG-2110
HEAD

Liebig condenser and a straight head are connected at a 75° angle. 10/30 top joint provides for a 3" thermometer immersion.

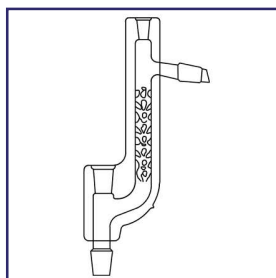
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	176.98
29/42	-02	182.74



PRG-2115
HEAD, VIGREUX

Indentations in the distillation head provide more efficient refluxing before condensing. 10/30 joint provides a 3" thermometer immersion.

<u>Column Height mm</u>	<u>Overall Height mm</u>	<u>24/40 Joint</u>		<u>29/42 Joint</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	435	-01	219.01	-04	224.55
250	485	-02	233.43	-05	235.68
300	535	-03	249.00	-06	254.58

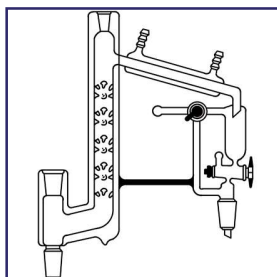


PRG-2120
HEAD, VIGREUX,
VACUUM JACKETED

Head path has indentations and vacuum jacket for better vapor flow. 10/30 joint provides a 3" thermometer immersion.

<u>Column Height mm</u>	<u>24/40 Joint</u>		<u>29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	471.86	-04	466.12
250	-02	506.02	-05	517.27
300	-03	557.34	-06	569.65

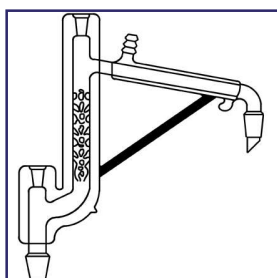




PRG-2125
HEAD

Jacketed fractionation apparatus used for distillation under vacuum. 10/30 top joint provides a 2" thermometer immersion. Glass or Teflon stopcocks are positioned so that the receiver flask may be removed without disturbing the distillation process.

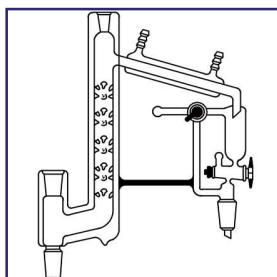
Joint Size	Glass Stopcock		Teflon Stopcock	
	CODE	Price	CODE	Price
24/40	-01	971.15	-02	994.52
29/42	-03	994.52	-04	994.52



PRG-2130
HEAD, VIGREUX,
VACUUM JACKETED

Jacketed fractionation apparatus used for distillation under vacuum. 10/30 top joint provides a 2" thermometer immersion. Glass or Teflon stopcocks are positioned so that the receiver flask may be removed without disturbing the distillation process.

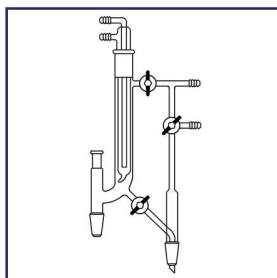
Joint Size	CODE	Price
24/40	-01	536.27
29/42	-02	551.27



PRG-2135
HEAD, SEPARABLE

Removable cold finger with drip tip can direct condensate flow with rotation. 4mm glass stopcocks allow removal of fluids without interruption of distillation process. 10/30 joint provides a 3" thermometer immersion.

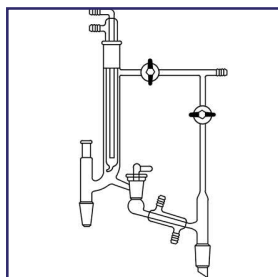
Lower Joint Size	Complete		Head Only	
	CODE	Price	CODE	Price
24/40	-01	689.22	-02	609.88
29/42	-03	689.22	-04	616.98



PRG-2140
HEAD, SEPARABLE,
TEFLON

Removable cold finger with drip tip can direct condensate flow with rotation. 4mm Teflon stopcocks allow removal of fluids without interruption of distillation process. 10/30 joint provides a 3" thermometer immersion.

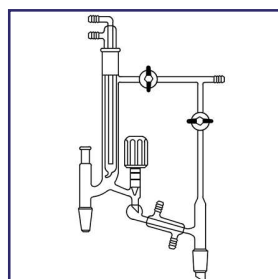
Lower Joint Size	Complete		Head Only	
	CODE	Price	CODE	Price
24/40	-01	689.22	-02	609.88
29/42	-03	689.22	-04	616.98



PRG-2145
HEAD, VARIABLE RE-
FLUX

Removable cold finger with drip tip can direct flow with rotation. The Newman type stopcock is for monitoring droplets. A small 3" condenser just below the stopcock prevents vapor back flow. 10/30 joints provide a 3" thermometer immersion.

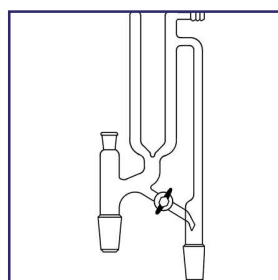
<u>Lower Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	798.08
29/42	-02	810.91



PRG-2150
HEAD, SEPARABLE,
TEFLON

Removable cold finger with drip tip can direct flow with rotation. The Newman style 0-4mm Teflon metering valve is for monitoring droplets. A small 3" condenser just below the stopcock prevents vapor back flow. 10/30 joints provide a 3" thermometer immersion.

<u>Lower Joint Size</u>	<u>Complete</u>		<u>Head Only</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	780.38	-02	700.27
29/42	-03	791.97	-04	711.90

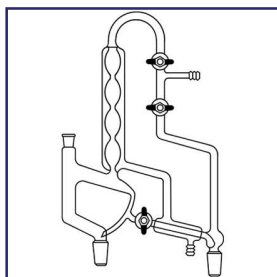


PRG-2155
HEAD, DEWAR TYPE

Dewar style head charged with dry ice or liquid nitrogen will deliver a rapid return of condensed liquid. 4mm stopcock allows droplets to be metered. 10/30 joint provides a 3" thermometer immersion.

<u>Lower Joint Size</u>	<u>Glass Stopcocks</u>		<u>Teflon Stopcocks</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	449.14	-02	484.68
29/42	-03	458.03	-04	493.58

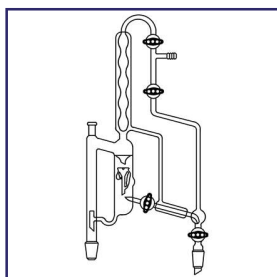




PRG-2160
HEAD, VARIABLE RE-
FLUX

Variable rate reflux head. Location of stopcocks allows receiver flask to be removed without disturbing the distillation process. Available with Glass or Teflon stopcocks.

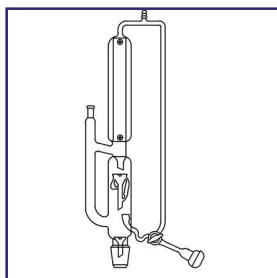
<u>Lower Joint Size</u>	Glass Stopcocks		Teflon Stopcocks	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	887.12	-02	933.80
29/42	-03	899.34	-04	945.57



PRG-2165
HEAD, VARIABLE RE-
FLUX

Head has "Swinging Bucket" that is magnetically controlled for precise collection rates. Stopcocks are positioned so receiver flasks can be removed without disturbing the distillation process. 10/30 joint provides a 3" thermometer immersion. See PRG-7360-02 for Electromagnet.

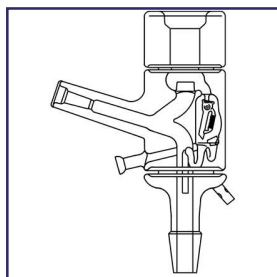
<u>Lower Joint Size</u>	Glass Stopcocks		Teflon Stopcocks	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	1,104.41	-02	1,113.57
29/42	-03	1,140.02	-04	1,148.91



PRG-2170
HEAD, VARIABLE RE-
FLUX

Head has "Swinging Bucket" that is magnetically controlled for precise collection rates. Stopcocks are positioned so receiver flasks can be removed without disturbing the distillation process. 10/30 joint provides a 3" thermometer immersion. See PRG-7360-02 for Electromagnet.

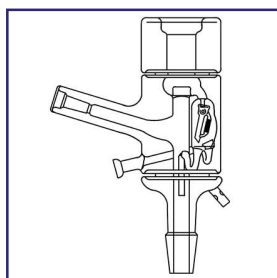
<u>Lower Joint Size</u>	Glass Stopcocks		Teflon Stopcocks	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	928.30	-02	945.33
29/42	-03	937.22	-04	954.20
45/50	-05	1,014.25	-06	1,032.51



Head returns condensate back to column except when magnetically controlled funnel delivers fluid to a receiver. Receiver joint is an 18/9 ball. Jacket has internal bellows for thermal changes. Silvered and evacuated jacket improves vapor flow.

<u>Top Joint Size</u>	<u>Bottom Joint Size</u>	<u>CODE</u>	<u>Price</u>
29/42	24/40	-01	CALL
29/42	29/42	-02	CALL
45/50	45/50	-03	2,869.59
55/50	55/50	-04	2,964.84

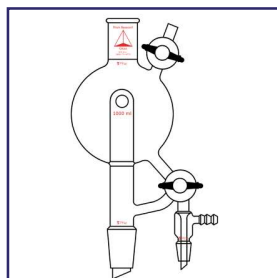
PRG-2175
HEAD, AUTOMATIC
LIQUID DIVIDING,
SHELL DESIGN, SIL-
VERED AND EVACU-
ATED



Head returns condensate back to column except when magnetically controlled funnel delivers fluid to a receiver. Receiver joint is an 18/9 ball. Jacket has internal bellows for thermal changes. Silvered and evacuated jacket improves vapor flow.

<u>Top Joint Size</u>	<u>Bottom Joint Size</u>	<u>CODE</u>	<u>Price</u>
29/42	24/40	-01	CALL
29/42	29/42	-02	CALL
45/50	45/50	-03	2,869.59
55/50	55/50	-04	2,964.84
71/60	71/60	-05	3,208.94

PRG-2180
HEAD, AUTOMATIC
LIQUID DIVIDING,
SHELL DESIGN, SIL-
VERED AND EVACU-
ATED

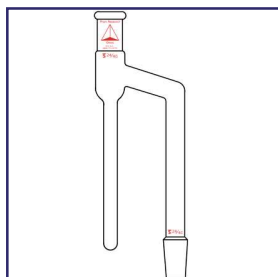


For maintaining oxygen free solvent. Top and bottom joints are 24/40, has a 14/20 discharge joint. Provided with Teflon stopcocks.

<u>Capacity ml</u>	<u>Flask ml</u>	<u>CODE</u>	<u>Price</u>
250	500	-01	404.77
500	1000	-02	419.58

PRG-2185
HEAD, SOLVENT
STILL

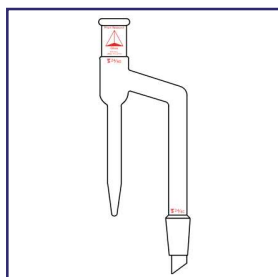




Used to determine moisture control. All 24/40 joints. ASTM standards.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>CODE</u>	<u>Price</u>
5	0.1	-01	109.84
10	0.1	-02	116.08

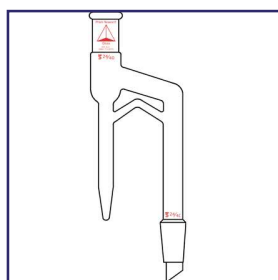
PRG-2250
DISTILLING / MOIS-
TURE TEST RE-
CEIVER,
BIDWELL-STERLING



Receiver is used to determine the moisture content of various materials. Conforms to ASTM Specifications D-95 and E-123. 24/40 tapered joints.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>CODE</u>	<u>Price</u>
10	0-2 in 0.1 2-10 in 0.2	-01	123.18
25	0-2 in 0.1 2-25 in 0.2	-02	128.74

PRG-2255
DISTILLING / MOIS-
TURE TEST RE-
CEIVER,
DEAN-STARK

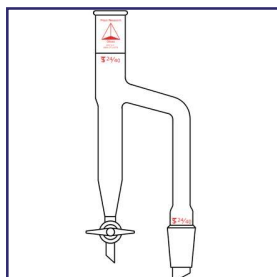


Receiver is used to determine the moisture content of various materials. Conforms to ASTM Specifications D-95 and E-123. Equipped with over flow arm and 24/40 tapered joints.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>CODE</u>	<u>Price</u>
10	0-2 in 0.1 2-10 in 0.2	-01	137.85
25	0-2 in 0.1 2-25 in 0.2	-02	144.52

PRG-2260
DISTILLING / MOIS-
TURE TEST RE-
CEIVER,
DEAN-STARK

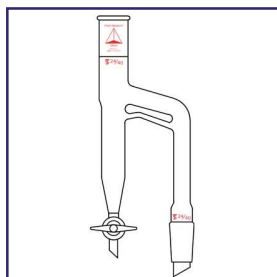




PRG-2265
**DISTILLATION RE-
CEIVER, MOISTURE**
TEST

Barrett type receiver for detection of moisture in petroleum or bituminous products, 2mm Teflon stopcock and 24/40 tapered joints.

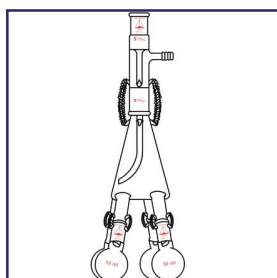
<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>CODE</u>	<u>Price</u>
10	0-10 in 0.1	-01	170.50
20	0-3 in 0.2	-02	179.89
	3-20 in 0.5		



PRG-2270
**DISTILLATION RE-
CEIVER, MOISTURE**
TEST

Barrett type receiver for detection of moisture in petroleum or bituminous products. With over flow arm, 2mm Teflon stopcock and 24/40 tapered joints.

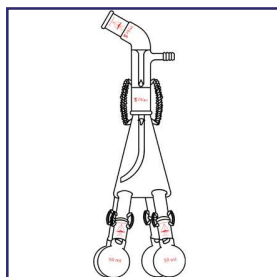
<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>CODE</u>	<u>Price</u>
10	0-10 in 0.1	-01	180.71
20	0-3 in 0.2	-02	193.22
	3-20 in 0.5		



PRG-2275
**DISTILLATION RE-
CEIVER, DISTRIBUTOR**

Vacuum adapter has extended drip tip angled for fluid delivery. Rotation of distribution adapter allows excess to the four 50 ml receivers. Springs are supplied.

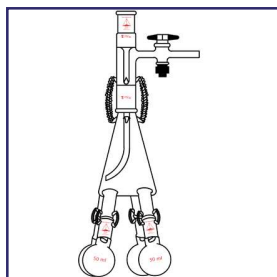
<u>Options</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	388.27
Distribution Adapter	-02	220.02
Vacuum Adapter	-03	65.43



PRG-2280
DISTILLATION RE-
CEIVER, DISTRIBUTOR,
105° BEND

Vacuum adapter has extended drip tip angled for fluid delivery. Rotation of distribution adapter allows excess to the four 50 ml receivers. The top outer joint is bent at 105°. Springs are supplied.

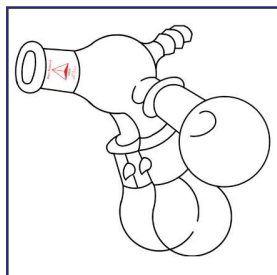
<u>Options</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	419.09
Distribution Adapter	-02	237.46
Vacuum Adapter	-03	70.69



PRG-2285
DISTILLATION RE-
CEIVER, DISTRIBUTOR,
VACUUM CONTROL

Vacuum adapter has extended drip tip angled for fluid delivery. Rotation of distribution adapter allows excess to the four 50 ml receivers. With a 2mm Teflon stopcock for vacuum control. Springs are supplied.

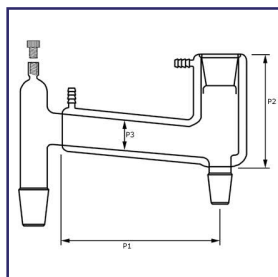
<u>Options</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	455.78
Distribution Adapter	-02	237.46
Vacuum Adapter	-03	107.40



PRG-2290
DISTILLATION RE-
CEIVER

Three 50ml receivers are spaced 45° apart. Distribution adapter has three extended drip tip joints.

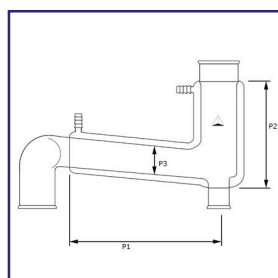
<u>Joint Sizes</u>	<u>Joint to Condenser</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	208.21
24/40	24/25	-02	361.07



**PRG-7326
HEAD**

Head offers maximum condensing power and zero distillate return. The three tapered joints are the same size. Jacket ports are offered with fixed glass barbs or detachable poly barbs. Both options fit s 1/2" I.D. hose. Thermometer port has a #7 thread for 6-7mm compression.

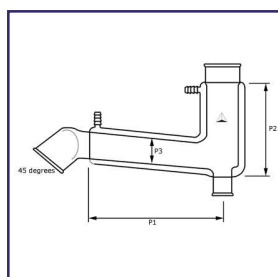
Joint Size	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
24/40	300	150	19	-01	664.00	-11	685.15
29/42	300	150	24	-02	696.53	-12	717.70
45/50	400	200	35	-03	774.65	-13	795.80



**PRG-7328
HEAD, PILOT PLANT**

Head offers maximum condensing power and zero distillate return. Offered with beaded pipe connections for greater durability and performance. The collection port (lower right) is a 1.0" pipe fitting for each model. Jacket ports are a fixed glass barb or a detachable poly barb with threaded bushing. Both options fit a 1/2" I.D. hose.

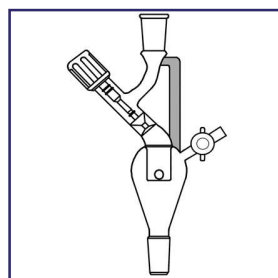
Beaded Pipe	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
1.0"	300	150	20	-01	686.76	-11	709.56
1.5"	300	150	35	-02	727.46	-12	747.00
2.0"	400	200	45	-03	797.45	-13	821.86
3.0"	400	200	65	-04	992.75	-14	1,022.02



**PRG-7330
HEAD, MODIFIED
PILOT PLANT**

Head offers maximum condensing power and zero distillate return. The inlet beaded pipe connection is at 45° to fit with lids PRG-7050 and PRG-7055 minimizing head space and additional sweep elbow adapters. The collection port (lower right) is s 1.0" pipe fitting for each model. Jacket ports are a fixed glass barb or a detachable poly barb with threaded bushing. Both options fit a 1/2" I.D. hose.

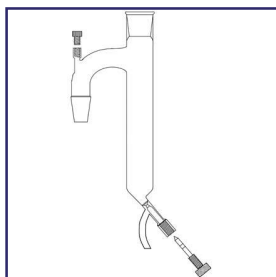
Beaded Pipe	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
1.0"	300	150	20	-01	686.76	-11	709.56
1.5"	300	150	35	-02	727.46	-12	747.00
2.0"	400	200	45	-03	797.45	-13	821.86
3.0"	400	200	65	-04	992.75	-14	1,022.02



**PRG-7332
ADAPTER, ISOLATION**

Adapter is used with distillation heads PRG-7326, PRG-7328 & PRG-7330. It is positioned between the discharge port and the collection vessel. Operator can isolate the collection vessel and break vacuum without interrupting the distillation process. A 1/2" support rod is installed for added durability.

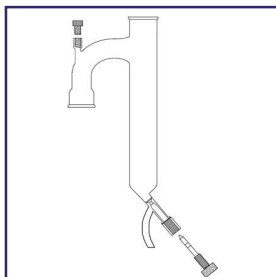
Top Connection	Lower Joint Size	Valve Size mm	CODE	Price
24/40	24/40	0-12	-01	318.79
29/42	29/42	0-12	-02	326.54
45/50	45/50	0-20	-03	520.11
1.0" b.p.	24/40	0-12	-11	330.11
1.0" b.p.	29/42	0-12	-12	339.05
1.0" b.p.	45/50	0-20	-13	529.07



Receivers are available with tapered joints or beaded pipe options. The lower drain valve has all Teflon exposed components. Calibrations are for reference only. The #7 thread accepts 6-7mm O.D. thermometers.

Tapered Joint Connection

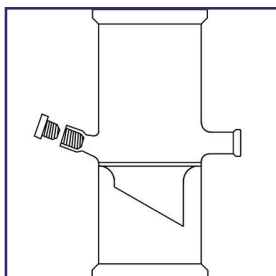
<u>Joint Size</u>	<u>Volume ml</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
24/40	250	0-6	-01	249.48
24/40	500	0-6	-02	265.63
29/42	250	0-6	-03	263.47
29/42	500	0-6	-04	274.97
45/50	500	0-12	-05	404.17
45/50	1000	0-12	-06	428.32



Beaded Pipe Connection

<u>Beaded Pipe</u>	<u>Volume ml</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	250	0-6	-11	257.08
1.0"	500	0-6	-12	273.27
1.5"	250	0-6	-13	297.91
1.5"	500	0-6	-14	309.99
2.0"	500	0-6	-15	369.59
2.0"	1000	0-12	-16	487.34
3.0"	1000	0-12	-17	670.51
3.0"	2000	0-12	-18	726.67

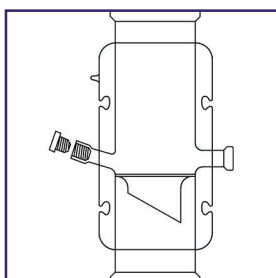
PRG-7334
RECEIVER, MOIS-
TURE TEST



Column is inserted between distillation columns to provide incremental or continuous center feed of materials. Beaded pipe fittings are offered as connecting ends. Other fittings are available upon request. The feed port is a 1.0" beaded pipe. #7 thread provides a 6-7mm compression fit.

<u>Beaded Pipe</u>	<u>Approx. Height mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	100	-01	611.90
1.5"	100	-02	624.95
2.0"	150	-03	637.97
3.0"	200	-04	685.15
4.0"	275	-05	760.01

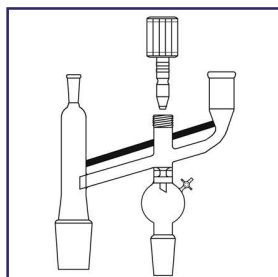
PRG-7340
FEED COLUMN IN-
SERT



Column is inserted between distillation columns to provide incremental or continuous center feed of materials. Beaded pipe fittings are offered as connecting ends. Other fittings are available upon request. The feed port is a 1.0" beaded pipe. #7 thread provides a 6-7mm compression fit. Column jacket is strip silvered with side viewing and evacuated.

<u>Beaded Pipe</u>	<u>Approx. Height mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	150	-01	1,082.23
1.5"	150	-02	1,135.95
2.0"	200	-03	1,240.10
3.0"	300	-04	1,451.67
4.0"	300	-05	1,521.64

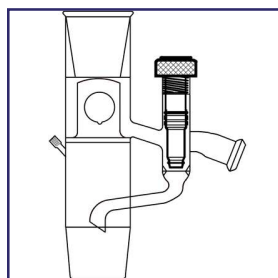
PRG-7342
FEED COLUMN IN-
SERT, VACUUM JACK-
ETED AND SILVERED



PRG-1091
REFLUX / DIVIDER
HEAD

Claixon style divider head has a manually controlled Teflon piston valve. Equipped with a 10/30 thermometer joint.

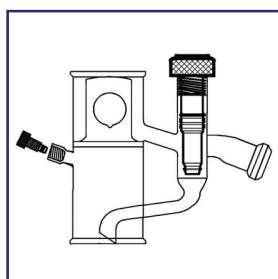
<u>\$ Joint Size</u>	<u>Valve Bore mm</u>	<u>CODE</u>	<u>Price</u>
24/40	0-12	-01	607.22
29/42	0-12	-02	637.04
45/50	0-20	-03	681.74



The head is positioned to allow the distillate to flow through the center chimney but the return condensate is diverted to the side valve. With the valve in an open position, condensate is re-fluxed back to the system. In a closed position, the condensate flows around the valve stem and out of the process. Offered with standard tapered joints or beaded pipe fittings. Other fittings are available upon request. #7 thread has a 6-7mm compression fit.

Tapered Joint Connection

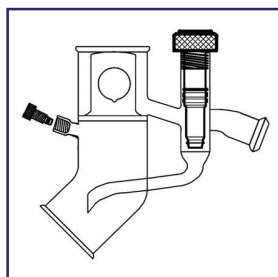
<u>\$ Joint Size</u>	<u>Valve ml</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
24/40	0-12	18/9 Ball	-01	424.75
29/42	0-12	18/9 Ball	-02	444.30
45/50	0-12	18/9 Ball	-03	567.95



Beaded Pipe Connection

<u>Beaded Pipe</u>	<u>Valve ml</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
1.0"	0-12	KF-15 Ball	-11	613.54
1.5"	0-12	KF-15 Ball	-12	628.19
2.0"	0-12	KF-15 Ball	-13	670.50
3.0"	0-20	KF-25 Ball	-14	917.88
4.0"	0-20	KF-25 Ball	-15	1,111.52

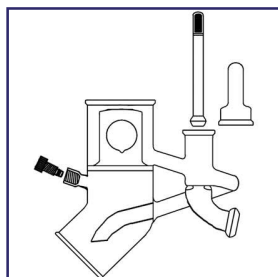
PRG-7348
REFLUX / DIVIDER
HEAD



PRG-7352
REFLUX / DIVIDER
HEAD, 45° ANGLE

Head is angled at 45° to fit directly onto the reactor lid without the use of a sweep elbow. Distillate flows through the center chimney but the return condensate is diverted to a valve. The valve in an open position allows the fluid to return back to the system. With the valve in a closed position, the fluid flows around the valve stem and exits the system. #7 thread has a 6-7mm compression fit.

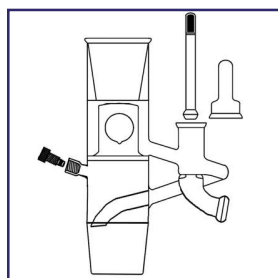
<u>Beaded Pipe</u>	<u>Valve Bore mm</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
1.0"	0-12	KF-15 Ball	-01	725.83
1.5"	0-12	KF-15 Ball	-02	751.88
2.0"	0-12	KF-15 Ball	-03	867.41
3.0"	0-20	KF-25 Ball	-04	961.81
4.0"	0-20	KF-25 Ball	-05	1,262.89



PRG-7358
REFLUX / DIVIDER
HEAD, AUTOMATIC

Distillation head uses a magnetic plunger valve and is activated with an electro-magnetic coil (solenoid) and reflux timer. With a reflux timer the plunger valve is activated automatically with consistent repeatability. The lower beaded pipe connection is angle at 45° to couple directly to PRG-7050 and PRG-7055 lids. This eliminates the need for a sweep elbow adapter coupling and reduces overall height. The #7 internal thread accepts a 6-7 mm diameter thermometer.

<u>Beaded Pipe</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
1.0"	KF-15 Ball	-01	CALL
1.5"	KF-15 Ball	-02	CALL
2.0"	KF-15 Ball	-03	CALL
3.0"	KF-25 Ball	-14	CALL
4.0"	KF-25 Ball	-15	CALL



PRG-7354
REFLUX / DIVIDER
HEAD

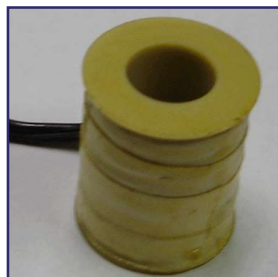
The distillation head uses a magnetic plunger valve and is activated by an electro-magnetic solenoid coil. With a reflux timer the plunger is activated automatically and with consistent repeatability. The apparatus is offered with standard tapered joints or beaded pipe connections. The #7 internal thread accepts a 6-7 mm diameter thermometer.

Tapered Joint Connection

<u>Joint Size</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
24/40	18/9 Ball	-01	CALL
29/42	18/9 Ball	-02	CALL
45/50	18/9 Ball	-03	CALL

Beaded Pipe Connection

<u>Beaded Pipe</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
1.0"	KF-15 Ball	-11	CALL
1.5"	KF-15 Ball	-12	CALL
2.0"	KF-15 Ball	-13	1,351.87
3.0"	KF-25 Ball	-14	1,642.49
4.0"	KF-25 Ball	-15	CALL



PRG-7360
ELECTRO-MAGNET
COIL

Coil has a .500" I.D. through hole and 115 volt. Used with PRG-7362 timer.

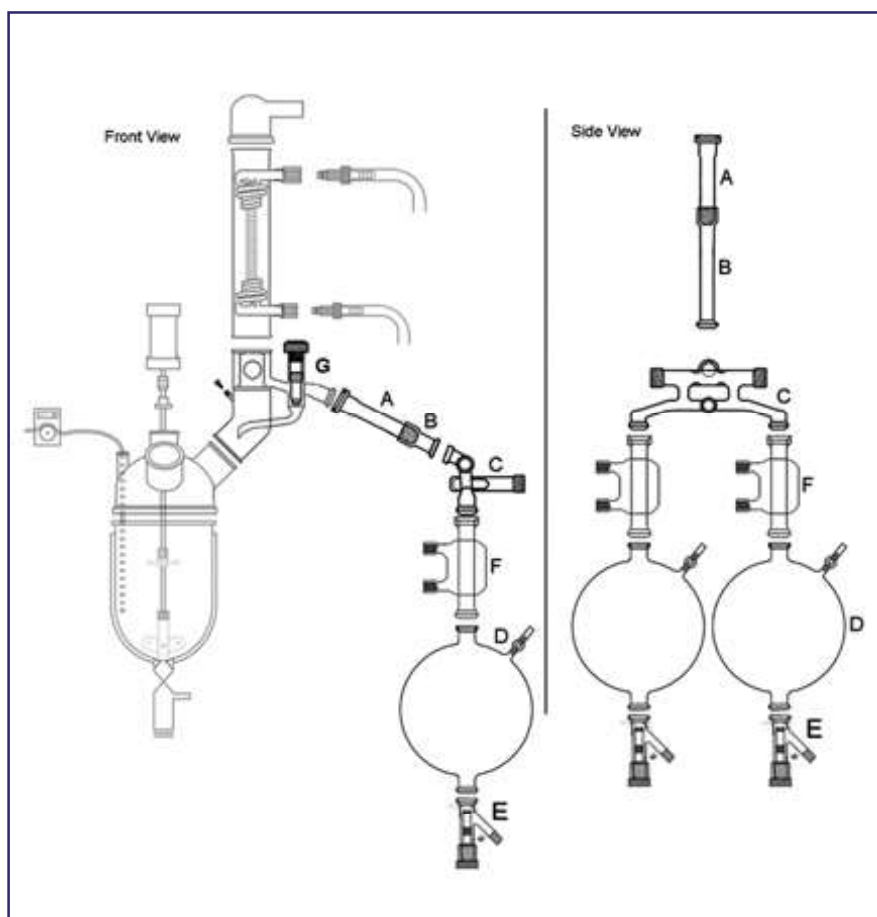
<u>CODE</u>	<u>Price</u>
-01	CALL
-02	222.55



This dual-function timer has two independent memories. Program one to control "On Time", the other to control "Off Time". Use one memory alone for a single cycle switching timer, or use both in tandem for a recycle intervalometer. Time settings entered in memory will remain until another time is substituted. Set time cycle or interval pattern to repeat automatically. LED display has a floating decimal point and two brightness settings. Accuracy is 0.015%. Timer can switch resistive loads up to 120W as well as most inductive loads. Maximum motor loads is 1/3hp. Parallel AC and logic-level outputs let you integrate the timer into your application System. Timer switches AC power through an output jack. The On/Off status of the output parallels that of the AC outlet.

PRG-7362
IMER, INTERVALOM-
ETER

<u>CODE</u>	<u>Price</u>
-01	824.40

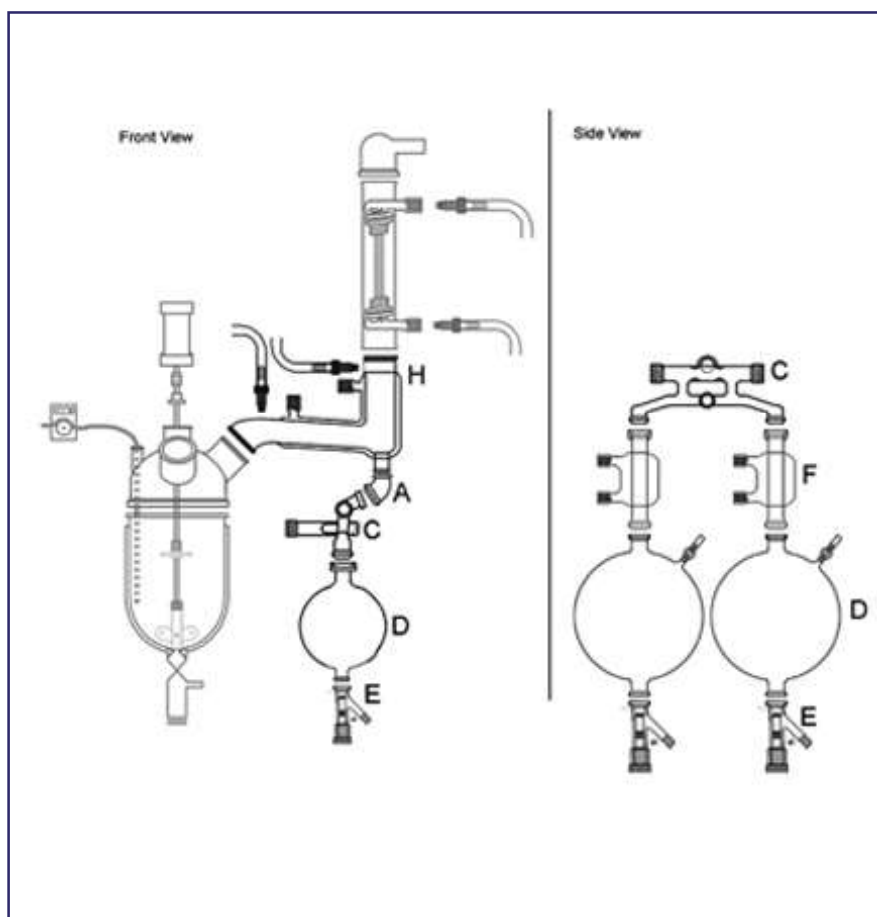


PRG-2438 DISTILLATION SYSTEM

Distillation / Reflux System easily mounts onto the PRG-7500 Reaction Platform Stand. The splitter head can isolate the condensate and divert it into dual reservoir flask or it can reflux it back to the reaction vessel.

Item	Part #	Description	Price	Complete Price
A	PRG-2438-11	Part "A" Socket to 1.0" O.D. Tube	219.08	CALL
B	PRG-2438-11	Part "B" KF-25 Ball to #25 Thread	219.08	
C	PRG-2438-13	Diverting Manifold 3-0-20 Valves	1,332.86	
D	PRG-2438-16	12 Liter Reservoir Flasks KF-25 Socket Top, 6mm TFE Vent KF-25 Ball Drain	507.76	
E	PRG-2438-16B	Drain Valve - KF-25 Socket 0-12 Valve GL Thread	192.03	
F	PRG-2438-14	Condenser, Liebig - 150mm OVL #15 Water Ports - KF-25 B/S	224.59	
	PRG-2438-18	KF-25 Couplings with TFE Seal Gasket	47.70	
	PRG-2438-25	Side Mount Support Structure (Not Shown)	1,982.13	
G	PRG-2438-10	Liquid Divider Head	812.24	
	PRG-366-11	0-12 TFE Valve Stems (Replacement)	54.50	
	PRG-366-13	0-20 TFE Valve Stems (Replacement)	230.37	
	PRG-310-13	6mm TFE Stopcock Plug	26.39	



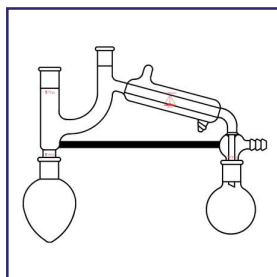


PRG-2440 DISTILLATION SYSTEM

Liquid Divider System easily mounts to the side of the PRG-7500 Reactor Support Platform. It has a zero return back to the reactor and collects the condensate in dual reservoirs. Each reservoir can be isolated and drain without interruption to the process.

Item	Part #	Description	Price	Complete Price
A	PRG-2440-21	1.0" Beaded Pipe to KF-Ball #25	104.02	CALL
B	PRG-2438-11	Part "B" KF-25 Ball to #25 Thread	219.08	
C	PRG-2438-13	Diverting Manifold 3-0-20 Valves	1,332.86	
D	PRG-2438-16	12 Liter Reservoir Flasks KF-25 Socket Top, 6mm TFE Vent KF-25 Ball Drain	507.76	
E	PRG-2438-16B	Drain Valve - KF-25 Socket 0-12 Valve GL Thread	192.03	
F	PRG-2438-14	Condenser, Liebig - 150mm OVL #15 Water Ports - KF-25 B/S	224.59	
	PRG-2438-18	KF-25 Couplings with TFE Seal Gasket	47.70	
	PRG-2438-25	Side Mount Support Structure (Not Shown)	1,982.13	
G	PRG-2438-10	Liquid Divider Head	812.24	
	PRG-366-11	0-12 TFE Valve Stems (Replacement)	54.50	
	PRG-366-13	0-20 TFE Valve Stems (Replacement)	230.37	
	PRG-310-13	6mm TFE Stopcock Plug	26.39	
H	PRG-7330-03	Distillation Head, 0-return	797.45	



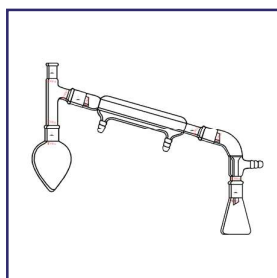


PG-9124
MICRO, DISTILLING
APPARATUS

Distilling apparatus, consists of a Claisen adapter and a condenser with vacuum take-off and drip tip sealed together as a single unit. All joints are the same size except a 10/18 thermometer joint located on the side arm of the adapter to accept 25mm immersion thermometer.

	14/20		19/22	
Description	CODE	Price	CODE	Price
Complete	-01	342.91	-11	334.25
Claisen Head Only	-02	379.90	-12	340.15

	CODE	Price
Distilling Flask, 50ml	PG-9210	26.33
Receiving Flask, 25ml	PG-9204	28.58

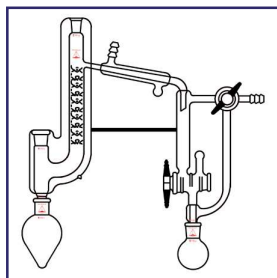


PG-9126
MICRO, DISTILLING
APPARATUS

Distilling apparatus, consists of a Claisen adapter and a condenser with vacuum take-off and drip tip sealed together as a single unit. All joints are the same size except a 10/18 thermometer joint located on the side arm of the adapter to accept 25mm immersion thermometer.

	14/20		19/22	
Description	CODE	Price	CODE	Price
Complete	-01	255.86	-11	266.13

	CODE	Price
Distilling Flask, 50ml	PG-9210	26.33
Distilling Adapter	PG-9024	28.58
Condenser	PG-9114	82.04
Vacuum Adapter	PG-9082	55.64
Erlenmeyer Flask, 25ml	PG-9232	25.33



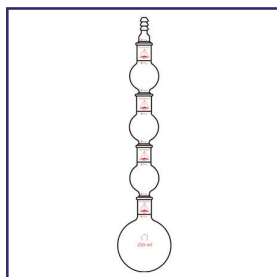
PG-9128
MICRO, DISTILLING
APPARATUS, VAC-
UUM, TEFLON STOP-
COCKS

The jacketed Vigreux head has an attached condenser with standard taper 10/18 outer thermometer joints at the top of both the main and column tubes for 25mm immersion thermometers. All other joints are the same size with two 2mm Teflon stopcocks for valve control.

	14/20		19/22	
Description	CODE	Price	CODE	Price
Complete	-01	871.68	-11	828.41
Distilling Head Only	-02	876.97	-12	832.68

	CODE	Price
50ml Pear Shaped Flask	PG-9210	26.33
25ml Round Bottom Receiving Flask	PG-9024	28.58

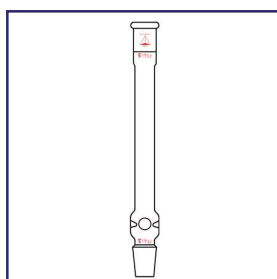




Distilling bulb, Kugelrohr, 14/20 standard taper outer and inner joints.

<u>Size ml</u>	<u>CODE</u>	<u>Price</u>
10	-01	42.78
25	-02	46.90
50	-03	48.41
100	-04	50.60

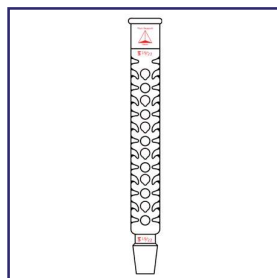
PG-9130
MICRO, BULB, KU-
GELROHR



Distilling column, plain, standard taper bottom inner joint and the same size top outer joint. Indentations above the lower joint are used to support packing materials.

<u>Joint</u>	<u>Length for Packing Material mm</u>	<u>CODE</u>	<u>Price</u>
14/20	130	-01	53.96
19/22	130	-02	55.20
14/20	250	-03	57.46
19/22	250	-04	56.74

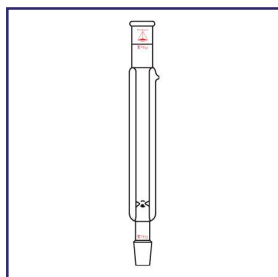
PG-9132
MICRO, COLUMN,
PLAIN



Distilling column, Vigreux, standard taper top outer joint, standard taper bottom inner joint. Both joints are the same size the indented portion makes up the column length.

<u>Joint</u>	<u>Column Length mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	72.97
19/22	100	-02	76.85
14/20	130	-03	73.92
19/22	130	-04	78.22
14/20	300	-05	98.34
19/22	300	-06	102.45

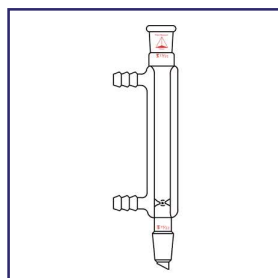
PG-9134
MICRO, COLUMN, VI-
GREUX



Distilling column, jacketed. Evacuated column has indents at the bottom for packing support.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	260.70
19/22	-02	263.36

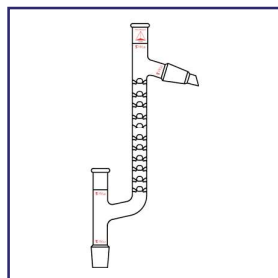
PG-9136
MICRO, COLUMN,
JACKETED



Distilling column, jacketed. Evacuated column has indents at the bottom for packing support. Water jacketed.

<u>Joint</u>	<u>Jacket Length mm</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	80.66
14/20	200	-02	90.17
19/22	110	-03	83.25
19/22	200	-04	92.76

PG-9138
MICRO, COLUMN,
JACKETED

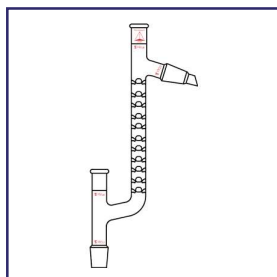


Distilling head, Claisen style head and long Vigreux column. Both top outer joints are 10/18 thermometer joints for 25mm immersion. Inner joints are the same size. Side port has drip tip.

<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	126.83
19/22	100	-02	149.06
14/20	200	-03	130.52
19/22	200	-04	153.00

PG-9140
MICRO, HEAD,
CLAISEN-VIGREUX

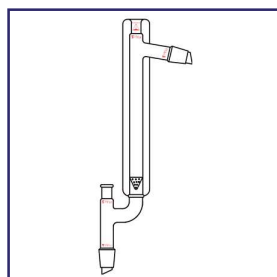




PG-9142
MICRO, HEAD,
CLAISEN-VIGREUX,
JACKETED

Distilling head, Claisen style head and long Vigreux column. Both top outer joints are 10/18 thermometer joints for 25mm immersion. Inner joints are the same size. Side port has drip tip. With an added evacuated jacket.

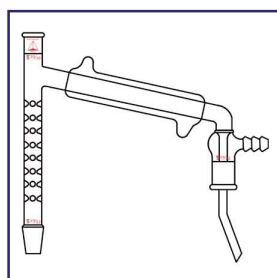
<u>Size Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	420.28
19/22	100	-02	426.19
14/20	200	-03	438.26
19/22	200	-04	441.88



PG-9144
MICRO, HEAD,
CLAISEN TYPE,
JACKETED

Distilling head, Claisen type, jacketed. Claisen style adapter with long distillation column with a honeycomb style support for packing. Both top outer joints are 10/18 thermometer joints for 25mm immersion. Inner joints are the same size.

<u>Size Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	150	-01	448.55
19/22	150	-02	452.35
14/20	300	-03	454.76
19/22	300	-04	459.12

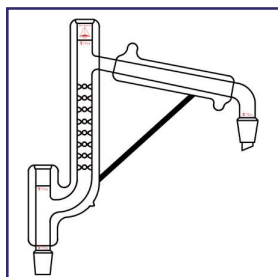


PG-9146
MICRO, HEAD, VI-
GREUX

Distilling head, Vigreux. Vigreux column has added West condenser at a 75° angle as a side arm with a vacuum port and extended drip tip. Top of column has a 10/18 outer joint for 25mm immersion thermometer. All other joints are the same size.

<u>Column Size Joint</u>	<u>Adapter Size Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	247.08
19/22	19/22	-02	CALL

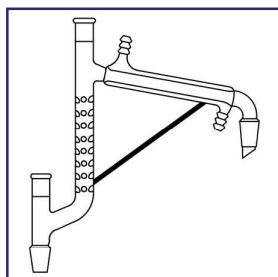




Claisen style head with long evacuated Vigreux column with a West condenser as a side arm. Tops of columns have 10/18 outer joints for 25mm immersion thermometer. Both lower joints are the same size.

<u>\$ Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	517.98
19/22	100	-02	521.84
14/20	200	-03	536.59
19/22	200	-04	540.08

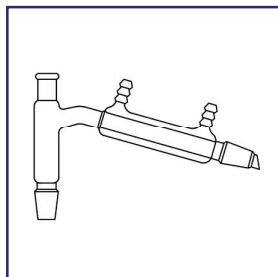
PG-9148
MICRO, HEAD,
CLAISEN-VIGREUX
WITH CONDENSER,
JACKETED



Claisen style distilling head with long Vigreux column with a West condenser as a side arm. Tops of columns have 10/18 outer joints for 25mm immersion thermometer. Both lower joints are the same size.

<u>\$ Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	199.45
19/22	100	-02	202.22
14/20	200	-03	224.04
19/22	200	-04	227.51

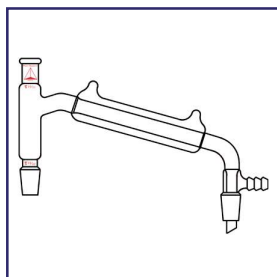
PG-9150
MICRO, HEAD,
CLAISEN-VIGREUX
WITH CONDENSER



Distilling head, uptake has a sealed-in Liebig condenser at a 75° Angle with an inner drip tip. All joints are the same size.

<u>\$ Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	127.00
19/22	100	-02	129.82
14/20	200	-03	133.67
19/22	200	-04	134.51

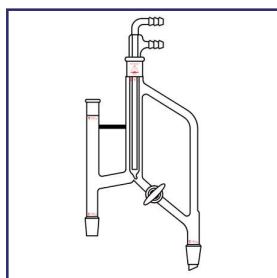
PG-9152
MICRO, DISTILLING
HEAD



PG-9154
MICRO, DISTILLING
HEAD

Distilling head. Uptake has a sealed-in Liebig condenser at a 75° angle with an inner drip tip angled downward and a vacuum port. All joints are the same size.

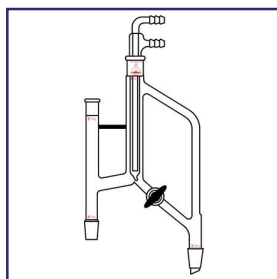
<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	136.66
19/22	100	-02	142.05



PG-9156
MICRO, HEAD, VARI-
ABLE REFLUX

Distillation head refluxes with the insertion of a cold finger. Condensate flow is controlled with the positioning of drip tip on bottom of cold finger. Uptake outer joint is a 10/18 for 75mm immersion. Valve is 2mm glass stopcock for flow control. All other joints are the same size. (Cold finger supplied with complete set)

<u>Description</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
Complete	14/20	-01	351.58
Distilling Head Only	14/20	-02	278.81
Complete	19/22	-03	354.09
Distilling Head Only	19/22	-04	281.71

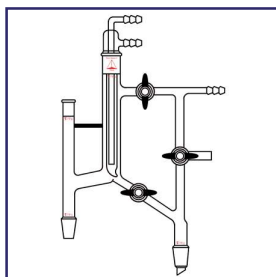


PG-9158
MICRO, HEAD, VARI-
ABLE REFLUX, TE-
FLON

Distillation head refluxes with the insertion of a cold finger. Condensate flow is controlled with the positioning of drip tip on bottom of cold finger. Uptake outer joint is a 10/18 for 75mm immersion. Valve is 2mm Teflon stopcock for flow control. All other joints are the same size. (Cold finger supplied with complete set)

<u>Description</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
Complete	14/20	-01	380.90
Distilling Head Only	14/20	-02	302.97
Condenser	14/20	PG-9106-01	69.35
Complete	19/22	-10	382.07
Distilling Head Only	19/22	-11	304.15
Condenser	19/22	PG-9106-02	70.73

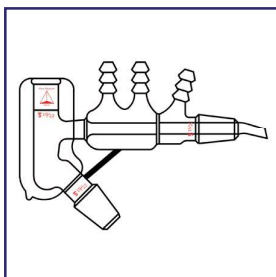




PG-9160
MICRO, HEAD, VARI-
ABLE REFLUX, TE-
FLON

Distillation head refluxes with the insertion of a cold finger. Condensate flow is controlled with the positioning of drip tip on bottom of cold finger. Uptake outer joint is a 10/18 for 75mm immersion. Valve is 2mm Teflon stopcock for flow control. All other joints are the same size. With two Teflon stopcocks in the pressure equalizing arm to allow removal of the receiver without interruption of the distilling process. (Cold finger supplied with complete set)

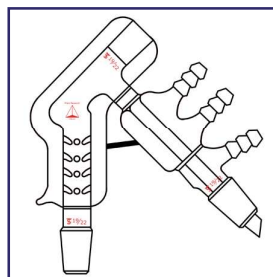
Description	Joint	CODE	Price
Complete	14/20	-01	470.02
Distilling Head Only	14/20	-02	401.12
Condenser	14/20	PG-9106-01	69.35
Complete	19/22	-10	471.24
Distilling Head Only	19/22	-11	402.28
Condenser	19/22	PG-9106-02	70.73



PG-9162
MICRO, HEAD, SHORT
PATH, VACUUM JACK-
ETED

Distilling head, short path, vacuum jacketed. 10/18 thermometer joint on top for 25mm immersion.

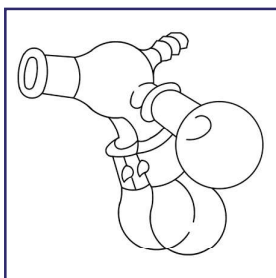
Joint	CODE	Price
14/20	-01	418.22
19/22	-02	424.13



PG-9164
MICRO, HEAD, VAC-
UUM JACKETED, VI-
GREUX

Distilling head, vacuum jacketed, Vigreux, 10/18 thermometer joint on top for 25mm immersion. The extended uptake tube contains a short Vigreux column.

Joint	CODE	Price
14/20	-01	529.52
19/22	-02	535.40

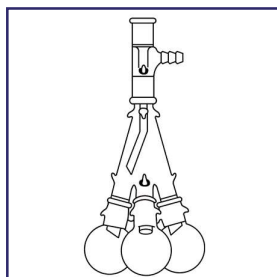


PG-9170
MICRO, RECEIVER

Distilling receiver. Vacuum adapter with three receivers 45° apart. All receiver joints are 14/20 with drip tips on inner member. (Supplied with springs)

Description	Joint	CODE	Price
Complete	14/20	-01	207.44
Vacuum Adapter Only	14/20	-02	121.40
Replacement Spring Only	14/20	PRG-1710	25.08
Receiving Flasks, 150 ml	14/20	PG-9202	CALL
Complete	19/22	-11	197.97
Vacuum Adapter Only	19/22	-12	118.86
Replacement Spring Only	19/22	PRG-1710	25.08
Receiving Flasks, 150 ml	19/22	PG-9202	CALL

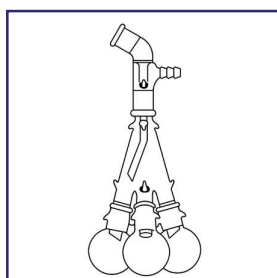




PG-9172
MICRO, RECEIVER
WITH ADAPTER

Distilling receiver consists of a vacuum adapter, distribution adapter and four 15ml receiver flasks. Adapter has extended drip tip angled for distillate delivery. All receivers have a 14/20 outer joints.

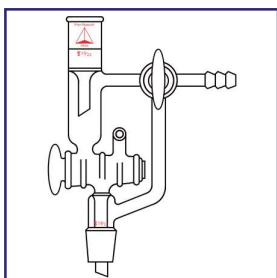
Description	Joint	CODE	Price
Complete	14/20	-01	317.64
Vacuum Adapter Only	14/20	-02	54.95
Distributing Adapter Only	14/20	-03	147.12
Receiving Flasks, 150 ml	14/20	PG-9202	CALL
Complete	19/22	-11	318.26
Vacuum Adapter Only	19/22	-12	51.75
Distributing Adapter Only	19/22	-13	165.89
Receiving Flasks, 150 ml	19/22	PG-9202	CALL



PG-9174
MICRO, RECEIVER
WITH ADAPTER, 105°

Distilling receiver consists of a vacuum adapter, distribution adapter and four 15ml receiver flasks. Adapter has extended drip tip angled at 105° for distillate delivery. All receivers have 14/20 outer joints.

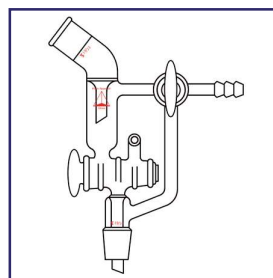
Description	Joint	CODE	Price
Complete	14/20	-01	323.67
Vacuum Adapter Only	14/20	-02	54.24
Distributing Adapter Only	14/20	-03	144.98
Receiving Flasks, 150 ml	14/20	PG-9202	CALL
Complete	19/22	-11	367.82
Vacuum Adapter Only	19/22	-12	55.33
Distributing Adapter Only	19/22	-13	163.48
Receiving Flasks, 150 ml	19/22	PG-9202	CALL



PG-9176
MICRO, RECEIVER

Distilling receiver has a by-pass between reservoir and delivery end, which has a sealed-in oblique stopcock. Receiver capacity is approximately 2.5ml. Both joints are the same size.

Joint	CODE	Price
14/20	-01	335.60
19/22	-02	365.99

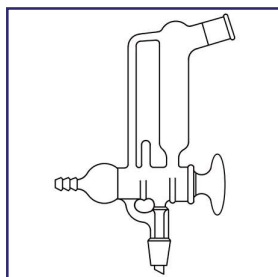


PG-9178
MICRO, RECEIVER

Distilling receiver has a by-pass between reservoir and delivery end, which has a sealed-in oblique stopcock. Receiver capacity is approximately 2.5 ml. Both joints are the same size. Top is at a 105° angle.

Joint	CODE	Price
14/20	-01	350.21
19/22	-02	379.10

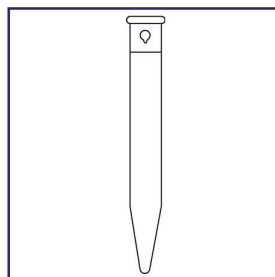




PG-9180
MICRO, RECEIVER

Distilling receiver has a bypass between reservoir and delivery end, which has a sealed-in oblique stopcock. Receiver capacity is approximately 2.5 ml. Both joints are the same size. Top is at a 105° angle. With an additional special stopcock for removal or replacement without interrupting distillation.

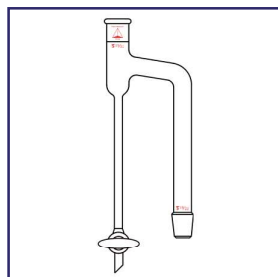
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	343.14
19/22	-02	348.57



PG-9182
MICRO, RECEIVER,
GRADUATED

Distilling receiver, graduated. A 12ml cylindrical tube with tapered bottom. Graduated to contain in 1/10ml subdivisions from the bottom to 2ml, and in 2/10ml from 2ml to 12ml. With standard taper outer joint and glass hooks.

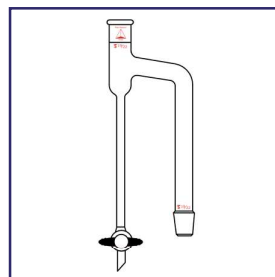
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	45.48
19/22	-02	45.83



PG-9184
MICRO, RECEIVER,
GRADUATED, GLASS
STOPCOCK

Distilling receiver, graduated. The tube is graduated from 0ml to 2 ml subdivisions with a 2mm glass stopcock near the bottom. Both joints the same size.

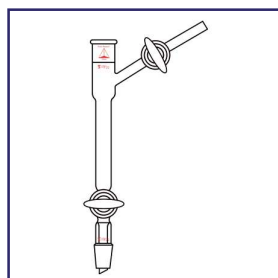
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	156.46
19/22	-02	160.98



PG-9186
MICRO, RECEIVER,
GRADUATED

Distilling receiver, graduated. The tube is graduated from 0ml to 2 ml subdivisions with a 2mm glass stopcock near the bottom. Both joints the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	169.95
19/22	-02	175.35

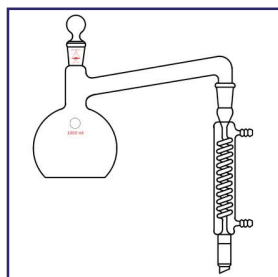


PG-9188
MICRO, RECEIVER,
GRADUATED

Distilling receiver, graduated. The tube is graduated from 0ml to 2ml subdivisions with a 2mm Teflon stopcock near the bottom. Both joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	236.70
19/22	-02	238.08

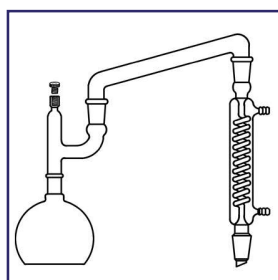




PRG-2500
AMMONIA DISTILLA-
TION UNIT

For recovery of ammonia nitrogen from water or soil. Clear Seal joints available upon request.

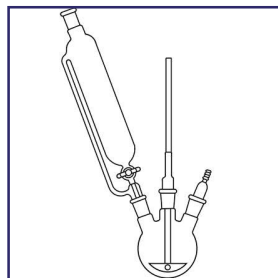
Description	CODE	Price
Complete	-01	295.52
Graham Condenser, 300 mm	PRG-1940-03	150.41
Flat Bottom Flask, 1000 ml	-03	133.25
Glass Stopper, 24/40	PRG-6100-05	28.41



PRG-2505
FLUORIDE DISTILLA-
TION UNIT

For isolating fluoride ions in water samples. Clear Seal joints available upon request.

Description	CODE	Price
Complete	-01	318.46
Claisen Adapter	PRG-1055-01	62.36
Connecting Adapter	PRG-1105-01	58.03
Flat Bottom Flask, 1000 ml	PRG-5015-07	61.03
Graham Condenser, 300 mm	PRG-1940-03	150.41

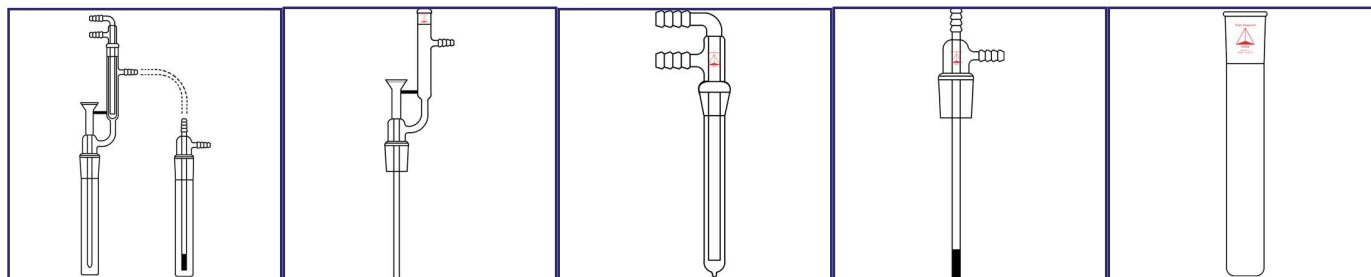


PRG-2510
HYDROGEN DISTIL-
LATION UNIT

For analysis of reactive wastes. Clear Seal joints available upon request.

Description	CODE	Price
Complete	-01	568.21
In/Out Adapter	PRG-1180-01	33.75
Flask, 3-Neck, 24/40	PRG-5085-07	130.29
Addition Funnel, 500 ml	PRG-5505-04	229.79
Stir Rod, 10 mm	PRG-6190-01	73.73
Stirrer Bearing	PRG-6155-02	90.56
Stir Blade, Teflon	PRG-6215-03	16.49

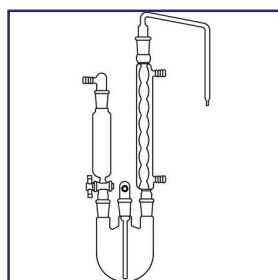




**PRG-2520
MIDI-VAP CYANIDE
DISTILLATION UNIT**

Reflux distillation for 50ml or less causes cyanide complexes to be released from hydrocyanic Acid and is captured in a scrubber containing a solution of sodium hydroxide. Clear Seal joints available upon request.

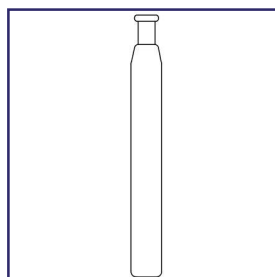
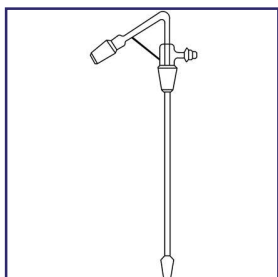
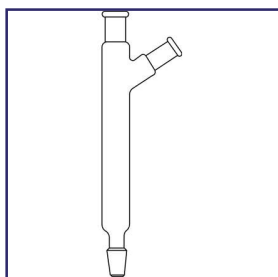
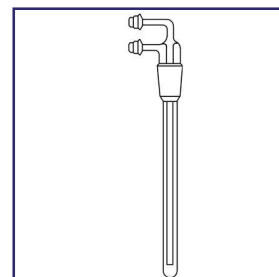
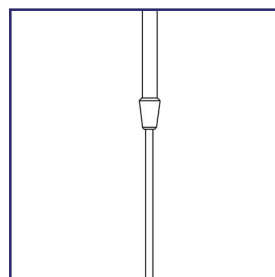
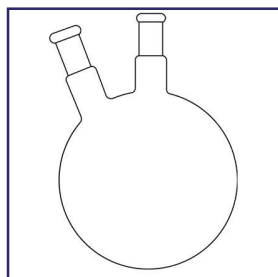
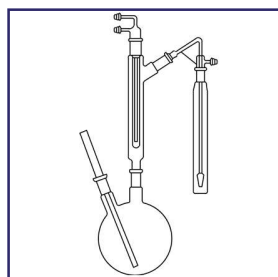
Description	CODE	Price
Complete	-01	333.34
Reaction Vessel, 50 ml	-02	127.80
Cold Finger, 24/40	-03	64.04
Dispersion Tube, 24/40	-04	92.78
Collection Vessel, 24/40	-05	55.50



**PRG-2575
SULFITE DETERMINA-
TION UNIT**

For sulfite determinations. Complete apparatus has standard taper 24/40 joints and is provided with Keck clamps. Graduated cylinder sold separately. Clear Seal joints available upon request.

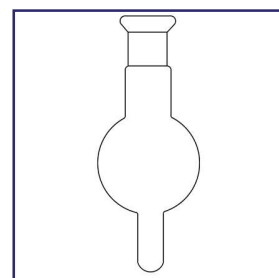
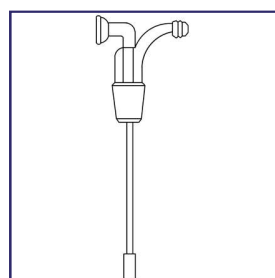
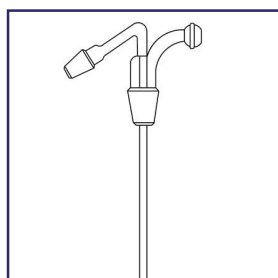
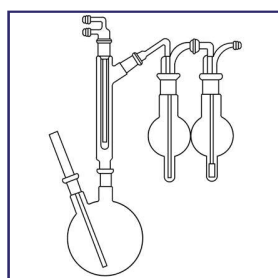
Description	CODE	Price
Complete	-01	585.00
In/Out Funnel Adapter	PRG-1181-01	33.75
Flask Inlet Adapter	-03	54.35
Bulb Condenser, 300 mm	PRG-1900-05	119.57
Bubbler Tube	-04	62.05
Flask, 3-Neck, 24/40, 1000 ml	PRG-5080-07	130.29
Addition Funnel, 250 ml	-05	154.01
Keck Clips (package of 10)	PRG-1700-05	39.69



**PRG-2525
CYANIDE DISTILLA-
TION UNIT**

Reflux distillation causes cyanide complexes to be released from hydrocyanic acid and is captured in a scrubber containing a solution of sodium hydroxide.

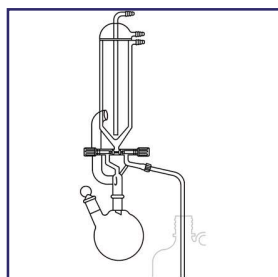
Description	Ground Joints		Clear-Seal Joints	
	CODE	Price	CODE	Price
Complete	-01	443.27	-11	393.38
Flask, 2-Neck, 19/38, 1000 ml	-03	84.23	-13	77.82
Inlet Tube, 19/38	-04	37.25	-14	30.53
Cold Finger, 29/42	-05	84.31	-15	68.54
Cold Finger Jacket	-06	98.88	-16	85.82
Bubbler, 19/38	-07	115.33	-17	93.86
Bubbler Jacket	-08	36.24	-18	26.96



**PRG-2530
CYANIDE SCRUBBER
APPARATUS**

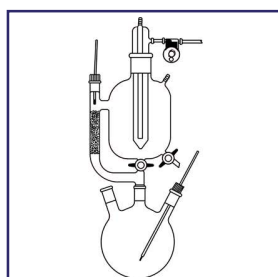
Reflux distillation causes cyanide complexes to be released from hydrocyanic acid and is captured in a scrubber containing a solution of sodium hydroxide. The first bubbler acts as a scrubber for cyanides and the second bubbler absorbs cyanide.

Description	Ground Joints		Clear-Seal Joints	
	CODE	Price	CODE	Price
Complete	-01	564.99	-11	1,226.43
Bubbler, Plain Tip	-02	112.79	-12	272.84
18/9 Socket Joint and 29/42 Bottom Joint				
Bubbler, with Medium Frit	-03	117.37	-13	288.00
18/9 Socket Joint and 29/42 Bottom Joint				
Bubbler Body, 29/42	-04	39.83	-14	93.71


PRG-2190
DISTILLATION APPARATUS, FREON RECOVERY/SOLVENT REPURIFICATION

Designed for distillation reflux recovery of solvents. Possible yields of one liter per hour. 0-8mm Teflon metering valves direct fluid flow direction. Take-off thread fits 1/4" O.D. tube. All 24/40 tapered joints.

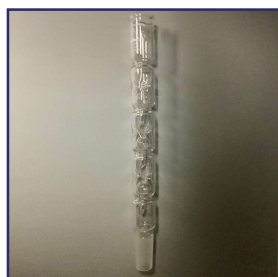
Description	CODE	Price
Complete, 2000 ml	-01	645.30
Complete, 5000 ml	-02	643.48
Distillation Head	-03	544.75
Flask, 2000 ml	PRG-5075-17	131.23
Flask, 5000 ml	PRG-5075-25	171.60
Stopper	PRG-6100-06	30.35


PRG-2195
DISTILLATION APPARATUS, SOLVENT REPURIFICATION

Head has vapor side arm that can handle packing materials like glass beads, charcoal, etc. Large capacity 45/50 cold finger provides condensing. Lower 6mm Teflon stopcocks control reflux or drainage of contents. All 24/40 tapered joints.

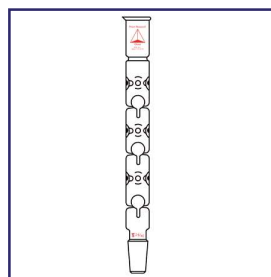
Note: Larger repurification systems available upon request.

Description	CODE	Price
Complete, 3000 ml	-01	1,114.62
Complete, 5000 ml	-02	1,164.90
Distillation Head, 3000 ml	-04	519.60
Distillation Head, 5000 ml	-05	561.50
Flask, 3000 ml	-06	183.21
Flask, 5000 ml	PRG-5085-14	208.62
Thermometer, -10 to 315° C	PRG-5085-19	231.81
Thermometer Adapter	PRG-6330-06	CALL
Flow Indicator	-07	25.64


PRG-3525
SNYDER COLUMN, WITH TOP 24/40 JOINT FOR SOLVENT RECOVERY

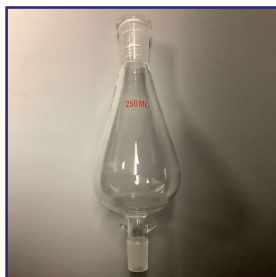
Column provided with a 24/40 top joint for a solvent recovery condenser. Additional float ball section may be requested. Both joints are standard taper 24/40. Float balls have indents to minimize vapor lock.

Number of Sections	CODE	Price
3	-01	92.17
2	-02	87.68


PRG-3530
SNYDER COLUMN, 24/40 LOWER JOINT WITH VENT TOP

3-Section column additional float ball section may be requested. Bottom joint is standard taper 24/40. Float balls have indents to minimize vapor lock.

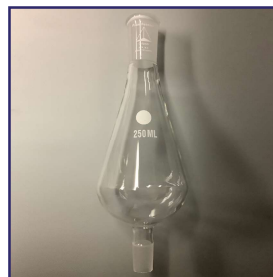
Number of Sections	CODE	Price
3	-01	83.69



PRG-3535
KUDERNA-DANISH
FLASK, WITH HOOKS,
24/40 TOP JOINT AND
19/22 LOWER JOINT

Hemispherical shaped flask bottom enhances the flow of heavier fractions to the concentrator tube during reflux. Top outer joint is a standard taper 24/40 and the bottom inner joint is a standard taper 19/22.

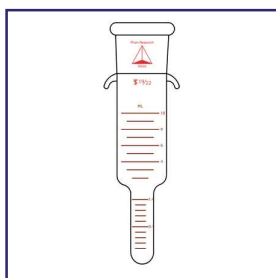
Capacity ml	CODE	Price
125	-01	74.98
250	-02	74.98
500	-03	74.98
1000	-04	78.43



PRG-3536
KUDERNA-DANISH
FLASK, WITHOUT
HOOKS, 24/40 TOP
JOINT AND 19/22
LOWER JOINT

Hemispherical shaped flask bottom enhances the flow of heavier fractions to the concentrator tube during reflux. Top outer joint is a standard taper 24/40 and the bottom inner joint is a standard taper 19/22.

Capacity ml	CODE	Price
125	-01	72.92
250	-02	72.92
500	-03	72.92
500 HW	-03HW	64.31
1000	-04	76.76



PRG-3540
CONCENTRATOR
TUBE, GRADUATED
WITH 1 ml RESER-
VOIR TIP, WITH
HOOKS, 19/22 OTER
JOINTS

Reservoir tip of 1ml with subdivisions of 0.1 ml. Outer joint is a standard taper 19/22, with hooks.

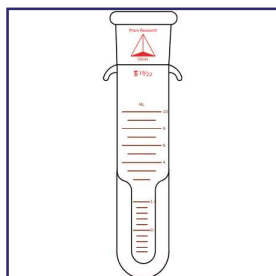
Capacity ml	CODE	Price
10	-01	45.26
25	-02	51.63



PRG-3541
CONCENTRATOR
TUBE, GRADUATED
WITH 1 ml RESER-
VOIR TIP, WITHOUT
HOOKS, 19/22 OTER
JOINTS

Reservoir tip of 1ml with subdivisions of 0.1 ml. Outer joint is a standard taper 19/22, without hooks.

Capacity ml	CODE	Price
10	-01	43.57
25	-02	53.14



PRG-3542
CONCENTRATOR
TUBE, THERMO-
JACKETED, WITH
HOOKS, 1 ml RESER-
VOIR TIP

Graduated concentrator tube has a vapor barrier protecting approximately 1-1/2ml of sample to slow the evaporation process. Reservoir tip of 1ml with subdivisions of 0.1 ml. Outer joint is a standard taper 19/22.

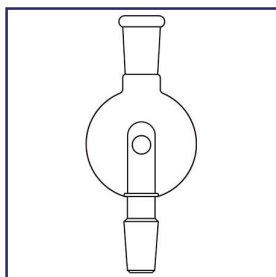
Capacity ml	CODE	Price
10	-01	56.14
25	-02	63.96



PRG-3543
CONCENTRATOR
TUBE, THERMO-
JACKETED, WITHOUT
HOOKS, 1 ml RESER-
VOIR TIP

Graduated concentrator tube has a vapor barrier protecting approximately 1-1/2ml of sample to slow the evaporation process. Reservoir tip of 1ml with subdivisions of 0.1 ml. Outer joint is a standard taper 19/22.

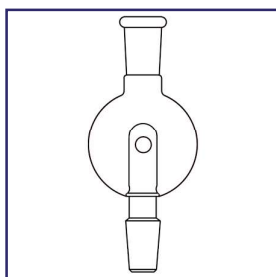
Capacity ml	CODE	Price
10	-01	53.63
25	-02	62.35



PRG-3545
ROTARY EVAPORA-
TOR TRAP

Used in applications where foaming may take place. To prevent foam from reaching the condenser. Top outer joint is a standard taper 24/40 to fit standard rotary equipment.

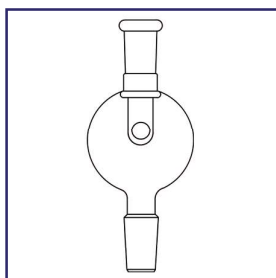
Capacity ml	14/20 Lower Joint		19/22 Lower Joint		24/40 Lower Joint	
	CODE	Price	CODE	Price	CODE	Price
100	-01	111.66	-02	111.66	-03	112.79
250	-04	112.79	-05	112.79	-06	115.07
500	-07	117.37	-08	117.37	-09	117.37
1000	—	—	—	—	-10	120.73



PRG-3550
ROTARY EVAPORA-
TOR TRAP, MODIFIED

Used in applications where foaming may take place. To prevent foam from reaching the condenser. Top outer joint is a standard taper 24/40 to fit standard rotary equipment. With drain holes at the bottom of the flask to return solvent.

Capacity ml	14/20 Lower Joint		19/22 Lower Joint		24/40 Lower Joint	
	CODE	Price	CODE	Price	CODE	Price
100	-01	117.37	-02	117.37	-03	119.48
250	-04	119.48	-05	119.48	-06	119.48
500	-07	119.48	-08	119.48	-09	124.15
1000	—	—	—	—	-10	127.30

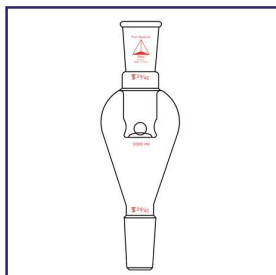


PRG-3555
ROTARY EVAPORA-
TOR TRAP, MODIFIED,
WITH DRAIN HOLES

Vapor tube is sealed in top portion of flask for excess foaming. Upper joint is a standard taper 24/40.

Capacity ml	14/20 Lower Joint		19/22 Lower Joint		24/40 Lower Joint	
	CODE	Price	CODE	Price	CODE	Price
100	-01	111.77	-02	111.77	-03	113.91
250	-04	113.91	-05	113.91	-06	116.02
500	-07	116.02	-08	116.02	-09	118.24
1000	—	—	—	—	-10	121.25





PRG-3557
ROTARY EVAPORA-
TOR TRAP, SELF
WASHING

This unique vapor tube allows gas to flow freely to condenser. Returning solvent exits side holes on vapor tube causing a washing effect on flask walls.

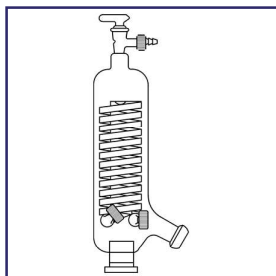
<u>Capacity ml</u>	<u>Lower Inner Joint</u>	<u>CODE</u>	<u>Price</u>
100	14/20	-01	119.55
250	14/20	-02	127.43
250	24/40	-03	137.69
500	24/40	-04	137.69
1000	24/40	-05	144.18



PRG-1145
ADAPTER, DISTIL-
LING TRAP

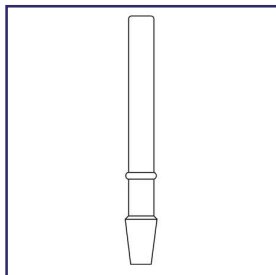
Both standard taper joints are same size.

<u>Joint</u>	<u>Bulb Capacity</u>	<u>CODE</u>	<u>Price</u>
24/40	125 ml	-01	69.24
29/42	125 ml	-02	72.08
24/40	250 ml	-03	75.38



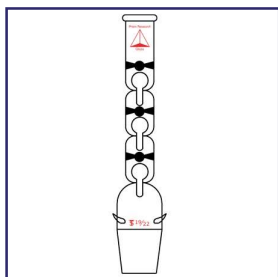
Double coiled condenser provides for efficient cooling of gases. Water inlet/outlets are a #14 GL thread with a plastic hose barb connection. Lower flange is made to a 50mm O.D. rotary shaft is equipped with a standard taper 24/40 inner joint and provides clamping with the use of a Keck clamp. Reservoir flask is available in a 500ml or 1000ml capacity with a 35/25 socket joint. Clamping is provided with a stainless steel pinch clamp.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Rotary Condenser	-01	765.11
Rotary Flow Shaft	-02	130.12
Reservoir Flask, 500 ml	PRG-5035-08	42.31
Reservoir Flask, 1000 ml	PRG-5035-10	43.11



PRG-3546
CONDENSER, RO-
TARY EVAPORATOR

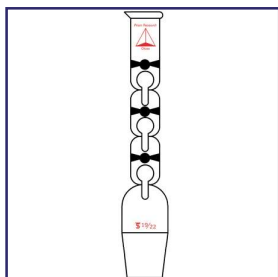




PRG-3500
EVAPORATIVE CON-
CENTRATOR, WITH
HOOKS

Used for smaller volume evaporative analysis with the use of a Kuderna-Danish flask. For improved analyte retention. Standard taper 19/22 joints. Supplied with springs.

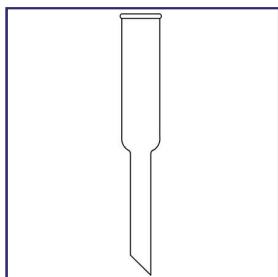
Number of Sections	Complete		Column Only	
	CODE	Price	CODE	Price
1	-01	121.53	-04	76.25
2	-02	124.86	-05	79.60
3	-03	128.21	-06	82.95



PRG-3505
EVAPORATIVE CON-
CENTRATOR, MICRO
SNYDER, WITHOUT
HOOKS

Used for smaller volume evaporative analysis with the use of a Kuderna-Danish flask. For improved analyte retention. Standard taper 19/22 joints. Supplied with polyacetal clamp.

Number of Sections	Complete		Column Only	
	CODE	Price	CODE	Price
1	-01	119.83	-04	74.59
2	-02	123.19	-05	77.95
3	-03	126.54	-06	81.31

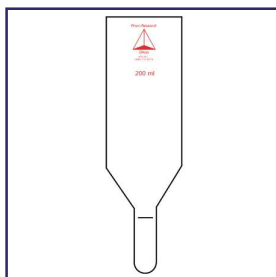


PRG-3560
EXTRACTION TUBE

Tube is 32mm O.D. x 125mm. Overall length is approximately 230mm. May also be used as a small funnel.

CODE	Price
-01	25.33





Nitrogen blow-down tube. Capacity is 200ml with a 1 ml or 0.5 ml calibrated tip.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
1.0	-01	56.14
0.5	-02	56.14

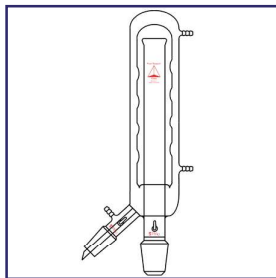
PRG-3645
EXTRACTION TUBE,
TURBO TUBE, MOD-
IFIED



Reflux condenser has lower tapered drip tip joint and tubulation chimney top. Ideal for use in reflux applications like soxhlets and continuous extractions.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
190	34/45	-01	111.11
260	45/50	-02	139.21
300	55/50	-03	160.28
350	71/60	-04	280.52
400	103/60	-05	544.00
500	145/60	-06	954.40

PRG-1910
CONDENSER, ALLIHN

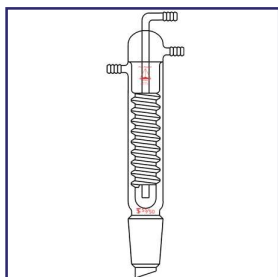


For efficient condensing of vapor. Condensate drains through the side tube inner joint into a suitable receiver. Vacuum connection provides for reduced pressure operation, if desired. Condenser is ideal for solvent recovery.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
190	24/40	-01	315.55
250	29/42	-02	329.57

PRG-1920
CONDENSER, CON-
CENTRATOR

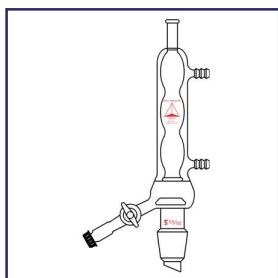




PRG-1935
CONDENSER, FRIE-
DRICHS

Spiral vapor path provides extended contact with cooling chamber. Lower taper drip joints, serrated barbs fit a 3/8" I.D. tube.

<u>Jacket Length mm</u>	<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
190	34/45	-01	176.04
190	45/50	-02	191.59
190	55/50	-03	204.01



PRG-1995
CONDENSER, SOL-
VENT RECOVERY

For solvent recovery after extractions are complete. Drain has a 2mm Teflon stopcock to GL-14 for a 1/4" O.D. hose compression fit.

<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	232.72
29/42	-02	235.89
45/50	-03	264.65
55/50	-04	272.08

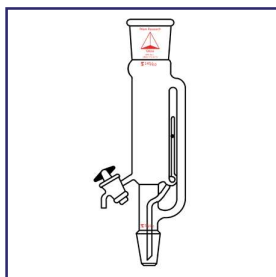


PRG-3565
EXTRACTOR, SOXH-
LET

For continuous extractions. For condensers see PRG-1910 thru PRG-1935. For flasks see PRG-5015 & PRG-5030.

<u>Body I.D. x Length mm</u>	<u>Top Joint</u>	<u>Bottom Joint</u>	<u>CODE</u>	<u>Price</u>
31 x 135	34/45	24/40	-01	152.95
41 x 157	45/50	24/40	-02	186.60
49 x 180	55/60	24/40	-03	210.47
70 x 240	71/60	29/42	-04	341.73
105 x 300	103/60	29/42	-05	631.00
143 x 405	145/60	50/50	-06	1,078.49





For continuous extractions. With a Teflon stopcock for sampling. For condensers see PRG-1910 thru PRG-1935. For flasks see PRG-5015 and PRG-5030.

<u>Body I.D. x Length mm</u>	<u>Top Joint</u>	<u>Bottom Joint</u>	<u>CODE</u>	<u>Price</u>
31 x 135	34/45	24/40	-01	231.08
41 x 157	45/50	24/40	-02	242.88
49 x 180	55/60	24/40	-03	279.80
70 x 240	71/60	29/42	-04	469.24
105 x 300	103/60	29/42	-05	687.17
143 x 405	145/60	50/50	-06	1,120.78

PRG-3570
EXTRACTOR, SOXH-
LET



Outer jacket provides heat exchange with a vapor envelope over inner extraction tube which has holes for rising vapor.

<u>Extractor I.D. x Height mm</u>	<u>Outer Joint</u>	<u>CODE</u>	<u>Price</u>
30 x 80	34/45	-01	183.88
40 x 90	45/50	-02	193.56
50 x 130	55/50	-03	238.95

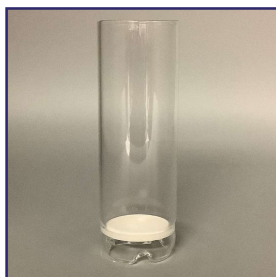
PRG-3575
EXTRACTOR, SOXH-
LET, JACKETED



This unique apparatus adds a Dean-Stark distillation with a soxhlet extraction process. The combination removes water and CDD/CDF from wet particulate samples without loss of anolyte or contamination of sample.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
45/50	-01	323.39
55/50	-02	333.49
71/60	-03	353.72

PRG-3580
EXTRACTION APPA-
RATUS,
SOXHLET/DEAN-
STARK MODIFIED



PRG-3585
EXTRACTION THIM-
BLE, GLASS

Extraction thimble with sintered glass frit. Used with PRG-3565 & PRG-3570 soxhlet extractors.

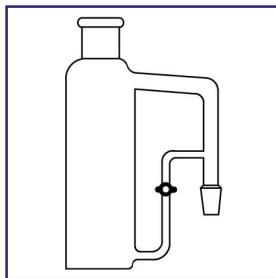
<u>Dimensions mm</u>	<u>Fine Porosity</u>		<u>Medium Porosity</u>		<u>Coarse Porosity</u>		<u>Extra Coarse Porosity</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10 x 35	—	—	—	—	-15	25.81	—	—
20 x 110	—	—	—	—	—	—	-50ml	51.05
25 x 85	-01	51.05	-02	51.05	-03	51.05	-04	51.05
35 x 90	-05	55.25	-06	55.25	-07	55.25	-08	55.25
45 x 130	-09	60.56	-10	60.56	-11	60.56	-12	60.56
45 x 160	—	—	—	—	-11T	60.56	-12T	60.56
50 x 130	—	—	—	—	—	—	-13	57.39
60 x 150	-21	89.16	-22	89.16	-23	89.16	-24	89.16
80 x 200	—	—	—	—	-14	263.13	—	—



PRG-3590
EXTRACTOR, LIQUID-
LIQUID, CONTINUOUS

For solvents heavier than water. Extractor capacity is for 1000ml samples. Joint on vapor arm is a standard taper 24/40 inner.

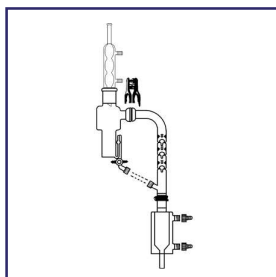
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
45/50	-01	260.12
55/50	-02	263.38



PRG-3595
EXTRACTOR, LIQUID-
LIQUID, TEFLON
STOPCOCK

For solvents heavier than water. Extractor capacity is for 1000ml samples. Joint on vapor arm is a standard taper 24/40 inner. With a 2mm Teflon stopcock on the overflow arm.

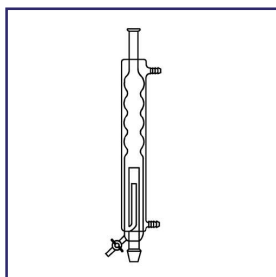
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
45/50	-01	300.12
55/50	-02	303.25



PRG-3573
EXTRACTOR, CON-
TINUOUS SOXHLET

Continuous process is created by a jacketed hot water concentrator vessel with a 1ml reservoir. Soxhlet body is designed for a 40mm or less thimble holder. However, alterations can be made to accommodate larger thimbles. 4mm Teflon stopcock (when turned off) will allow concentrator to boil down to 1ml of sample. Extractor body has a 45/50 outer joint and a 35/25 ball joint.

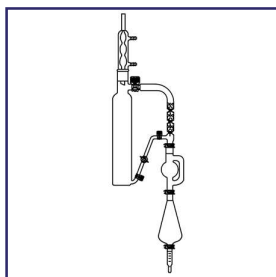
<u>Description</u>	<u>CODE</u>	<u>Price</u>	<u>Sold Separately</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	753.10	Extractor Body with O-Ring Ball Joint, 4 mm Valve	-03	215.38
Complete, with O-Ring	-02	760.65	Extractor Body, 4 mm Valve	-04	207.51
Ball Joint			Vapor Column	-05	149.77
			Jacketed Concentrator Tube, 100 ml	-06	233.67
			1/4" Teflon Tubing, 1 foot	-07	CALL
			#14 GL Hose Barb (2 required)	PRG-204.5-02	2.72
			#14 GL Threads (2 required)	PRG-203-01	2.68
			#14 GL Teflon Seal Rings	PRG-204-01	5.14
			#35 Pinch Clamp	PRG-1705-06	15.96
			Condenser	PRG-1910-02	139.21



PRG-3583
EXTRACTION APPA-
RATUS, PESTICIDE

For distillation and extraction of pesticides and industrial chemicals contained in water samples. The apparatus requires small amounts of solvent for the distillation process. Samples may be withdrawn through a Teflon stopcock without disrupting the process. Apparatus has a modified jacketed condenser to enhance the condensation process, often times eliminating the need for the cold finger. However, cold finger may be added to the process.

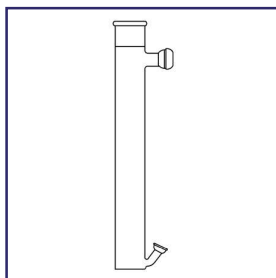
<u>Description</u>	<u>CODE</u>	<u>Price</u>	<u>Sold Separately</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	552.11	Extractor, 24/40 Joints	-02	485.08
			Erlenmeyer Flask, 1000 ml	PRG-5140-02	30.06
			Boiling Sticks (10 per pack)	-03	64.96
			Cold Finger	-04	63.71
			Adapter, Cold Finger with Vent	-05	65.22



PRG-3610
EXTRACTOR, CON-
TINUOUS, LIQUID/LIQ-
UID, HEAVIER THAN
WATER

Extraction apparatus set-ups for heavier than water solvents. Extended body provides longer solvent to sample interaction for increased efficiency. Sodium sulfate may be used in drying adapter with glass wool plug. Overflow arm has a 4mm Teflon stopcock to complete the continuous cycle if you opt for the 500ml extractor, it works on the same hydrolic principles as the 1000ml body, except with half the volume. Sodium sulfate is held in position with an extra coarse glass frit. Adapter also prevents bumping. Individual O-Ring apparatus available upon request.

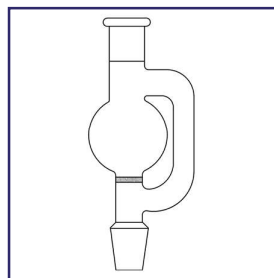
Description	CODE	Price	Sold Separately	CODE	Price
Complete	-01	871.57	Snyder Column, Sidearm	-02	149.77
Complete, with O-Ring	-20	879.96	Extraction Body, 45/50	-03	219.09
Ball Joint			Overflow Arm, 18/9	-04	133.70
			Drying Column	-05	90.50
			Condenser, 45/50	PRG-1910-02	139.21
			K-D Flask	PRG-3536-03	72.92
			Concentrator Tube	PRG-3541-02	53.14
			Stainless Pinch Clamp, #18 (2 required)	PRG-1705-04	11.22
			Pinch Clamp, #35	PRG-1705-06	15.96



PRG-3610-06
EXTRACTOR, CON-
TINUOUS, 500 ml
HEAVIER THAN
WATER

500 ml body works on the same hydrolic principles as the 1000 ml body, except with half the volume.

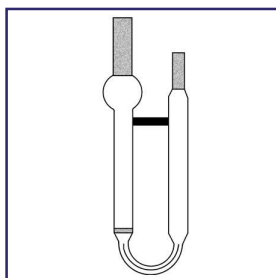
CODE	Price
-06	201.73



PRG-3610-07
DRYING ADAPTER,
FRITTED

Sodium sulfate is held in position with an extra-coarse glass frit. Adapter also prevents bumping.

CODE	Price
-07	146.48

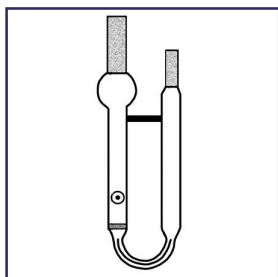


PRG-3630
SPARGE TUBE,
FRITTED

Comes standard with a medium porosity frit. Also available in coarse and extra coarse. Designed for use with water samples. Fittings available in 1/2" or 3/4" up-take precision O.D. ground tubing. 1/4" O.D. inlet tube.

Capacity ml	Fitting Type	CODE	Price
5	1/2"	-01	111.99
5	3/4"	-11	111.99
25	1/2"	-02	120.86
25	3/4"	-12	131.97

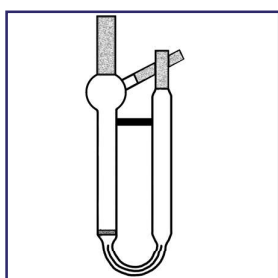




PRG-3631
**SPARGE TUBE, MOD-
IFIED, FRITTED**

Comes standard with a medium porosity frit. Also available in coarse and extra coarse. Designed for use with water samples. Fittings available in 1/2" or 3/4" up-take precision O.D. ground tubing. 1/4" O.D. inlet tube. Modified with a 1/4" O.D. sample port just above the frit.

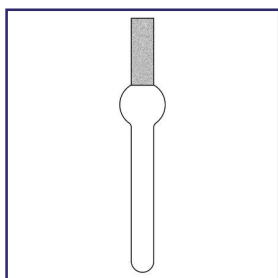
Capacity ml	Fitting Type	Left Hand		Right Hand	
		CODE	Price	CODE	Price
5	1/2" and 1/4"	-01	148.04	-06	148.04
5	3/4" and 1/4"	-11	148.04	-16	148.04
25	1/2" and 1/4"	-02	156.93	-07	156.93
25	3/4" and 1/4"	-12	156.93	-17	156.93



PRG-3632
**SPARGE TUBE, EPA
603, FRITTED**

Comes standard with a medium porosity frit. Also available in coarse and extra coarse. Designed for use with water samples. Available with 1/2" or 3/4" O.D ground uptake ports. 1/4" O.D. ground inlet. Modified with 1/4" port in top portion of bulb.

Capacity ml	Fitting Type	CODE	Price
5	1/2" and 1/4"	-01	148.04
5	3/4" and 1/4"	-11	148.04
25	1/2" and 1/4"	-02	156.93
25	3/4" and 1/4"	-12	156.93

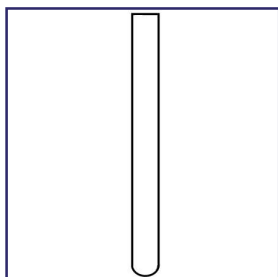


PRG-3633
SPARGER NEEDLE

Fittings available in 1/2" and 3/4" precision ground tubing.

Capacity ml	Fitting Type	CODE	Price
5	1/2"	-01	30.03
5	3/4"	-11	35.79
25	1/2"	-02	31.76
25	3/4"	-12	37.41

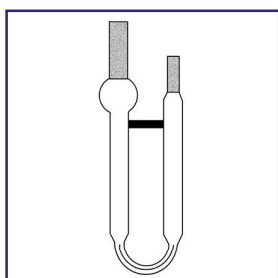




Test tube, sparge, 3/4" (19 mm), heavy wall tube. Sold in packs of 10.

<u>Length mm</u>	<u>CODE</u>	<u>Price</u>
130	-01	190.75
150	-02	195.43
200	-03	202.69

PRG-3634
SPARGE, TEST TUBE

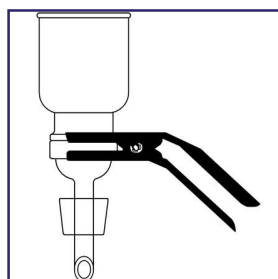


Designed for use with water samples. Fittings available in 1/2" or 3/4" O.D. up-take precision ground tubing. 1/4" O.D. inlet tube.

<u>Capacity ml</u>	<u>Fitting Type</u>	<u>CODE</u>	<u>Price</u>
5	1/2" and 1/4"	-01	102.59
5	3/4" and 1/4"	-11	102.59
25	1/2" and 1/4"	-02	111.99
25	3/4" and 1/4"	-12	111.99

PRG-3635
SPARGE TUBE, FRIT-LESS

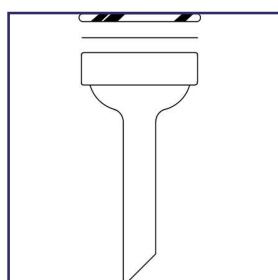




PRG-3700
MICRO-FILTRATION
APPARATUS, 47 mm

For general filtration and analysis of particulates or microbiological contaminants. Filtration apparatus holds 500 ml of sample. Filter support is a 47 mm sealed in coarse glass frit with 300 ml graduated funnel. A #8 silicone stopper for use with 1000 ml filter flask.

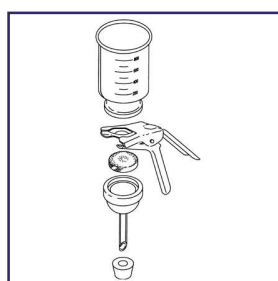
Description	CODE	Price
Complete Unit	-06	221.13
Fritted Glass	-01	19.28
Glass Funnel, 47 mm, 300 ml	-02	103.30
Fritted Glass Support Base, 47 mm	-03	107.73
Aluminum Clamp, 47 mm	-04	71.44
#8 Silicone Stopper, 9/16" (14.3 mm) Hole, For Use with Accessory	-05	22.68



PRG-3705
MICRO-FILTRATION
APPARATUS, 47 mm,
REMOVABLE

For general filtration and analysis of particulates or microbiological contaminants 47mm filtration base has a removable perforated disc. Discs are available in Teflon or sinter glass. Drip stem fits 9/16" hole in #8 stopper.

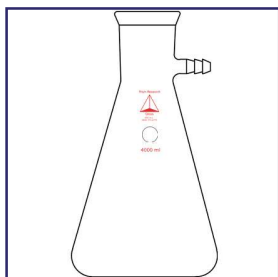
Description	CODE	Price
Support Base, 47 mm	-01	107.73
PTFE Frit, Removable, 47 mm	-02	87.92
Glass Frit, 47 mm	-03	19.28
Stainless Steel Frit	-04	152.60



PRG-3710
MICRO-FILTRATION
APPARATUS, 90 mm,
REMOVABLE

For larger volume samples or samples with heavy particulate concentrations. The 90 mm filter surface provides a more efficient filtration up to four times faster and has less chance of clogging than the 47 mm filters. The frits are removable and are available in glass or PTFE. Used for general filtration. The fritted glass support disc can be replaced if it becomes clogged or exchanged if sample to sample cross contamination is a concern. This unit is supplied with a coarse glass frit for filter support, glass support base, 1 liter graduated funnel, anodized aluminum clamp and a #8 stopper.

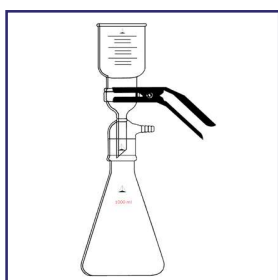
Description	CODE	Price
Glass Funnel, 90 mm, 1000 ml	-01	181.44
Fritted Glass Support Base, 90 mm	-02	300.51
Aluminum Clamp, 90 mm	-03	107.73
#8 Silicone Stopper, 9/16" (14.3 mm) Hole, for use with Accessory	-04	22.68
Coarse Glass Frit, 90 mm	-05	89.21
PTFE Frit, 90 mm	-06	133.68



PRG-5155
FLASK, HEAVY WALL

Serrated hose barb side port for vacuum connection.

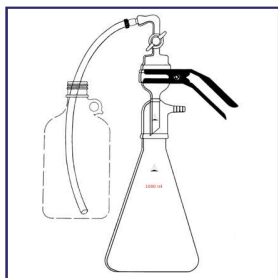
Capacity ml	Stopper Size	CODE	Price
250	#6	-01	18.43
500	#7	-02	25.29
1000	#8	-03	52.14
2000	#9	-04	100.11
4000	#12	-05	148.54



PRG-3720
MICRO-FILTRATION
APPARATUS, ALL
GLASS, 47 mm

Micro-filtration apparatus consists of a coarse glass frit sealed to a vacuum adapter with a standard taper 40/35 outer joint. Extended drip tip prevents liquid from entering vacuum line. Supplied complete with a 300 ml graduated funnel, 47 mm glass funnel, 1,000 ml filter flask, and an aluminum clamp.

Description	CODE	Price
Complete Unit	-08	466.18
Glass Funnel, 47 mm, 300 ml	-01	103.30
Glass Funnel, 47 mm, 1,000 ml	-02	147.42
Fritted Glass Support Base, 47 mm	-03	215.46
Flask, 1,000 ml	-04	147.42
Flask, 2,000 ml	-05	201.85
Flask, 3,000 ml	-06	260.82
Aluminum Clamp, 47 mm	-07	71.44
Flask Cap, 40/35 Outer Joint (Recommended)	-10	32.13

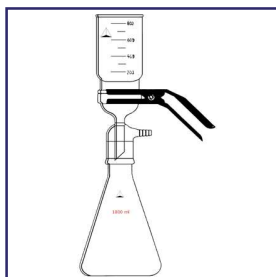


PRG-3725
MICRO-FILTRATION
ADAPTER, 47 mm,
SOLVENT PICKUP

Solvent pickup adapter eliminates the need to pour solvents through a funnel. Adapter allows solvent to be drawn through a 1/4" Teflon tube from reagent bottle to filter flask. Teflon tube connection is made with a PRG-201 thread cap, and Teflon sealing ring. A 4mm Teflon stop-cock, when closed, allows vacuum system to degas. Adapter supplied complete with Teflon tubing and sealing ring.

CODE	Price
-09	224.53

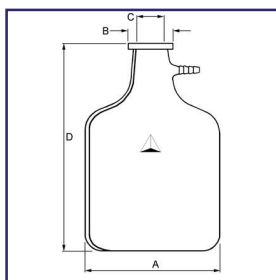




**PRG-3730
MICRO-FILTRATION
APPARATUS, 90 mm,
REMOVABLE**

For larger volume samples or samples with heavy particulate concentrations. The 90mm filter surface provides a more efficient filtration up to four times faster and has less chance of clogging than the 47mm filters. The frits are removable and are available in glass or PTFE. The addition of a standard taper 40/35 joint with a vacuum port. Used for general filtration. The fritted glass support disc can be replaced if it becomes clogged or exchanged if sample to sample cross contamination is a concern this unit is supplied with a coarse glass frit for filter support, glass support base, anodized aluminum clamp and a #8 stopper.

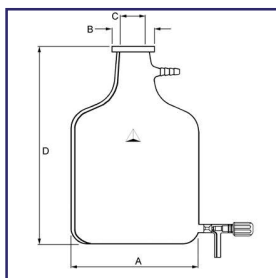
Description	CODE	Price
Glass Funnel, 90 mm, 1,000 ml	-01	181.44
Fritted Glass Support Base, 90 mm, 40/35	-02	430.92
Teflon Support Disc, 90 mm	-03	133.68
Coarse Glass Support Disc, 90 mm	-04	89.21
Flask, 1,000 ml	-05	147.42
Flask, 2,000 ml	-06	201.85
Flask, 3,000 ml	-07	260.82
Aluminum Clamp, 90 mm	-08	107.73
Flask Cap, 40/35 Outer Joint (Recommended)	-11	32.13



**PRG-1510
BOTTLE, CARBOY**

Large capacity bottles have a heavy duty tooled rim top and 1/2" o.d. serrated hose barb side port.

Capacity (Gal.)	Capacity (L)	A mm	B mm	C mm	D mm	CODE	Price
2.5	9.5	128	76	50	485	-01	241.51
3.5	13.3	233	76	50	436	-02	302.40
5.0	19	292	89	50	501	-03	412.49
12.0	45.6	408	91	76	585	-04	940.57

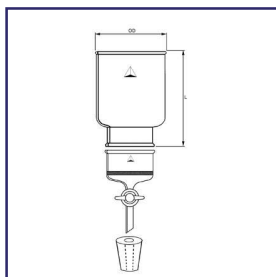


**PRG-1515
BOTTLE, CARBOY**

Large capacity bottles have a heavy duty tooled rim top and 1/2" o.d. serrated hose barb side port. Lower teflon valve makes drainage easy.

Capacity (Gal.)	Capacity (L)	A mm	B mm	C mm	D mm	Valve Size	CODE	Price
2.5	9.5	128	76	50	485	0-6	-01	401.24
3.5	13.3	233	76	50	436	0-6	-02	482.31
5.0	19	292	89	50	501	0-12	-03	649.99
12.0	45.6	408	91	76	585	0-12	-04	1,291.22





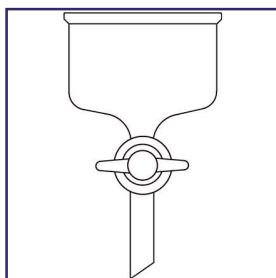
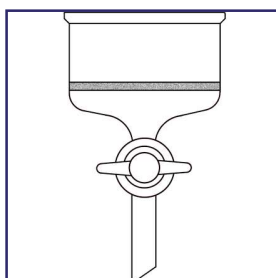
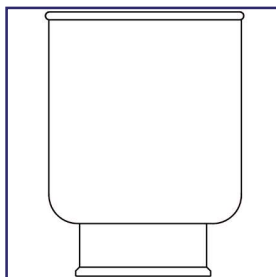
Filtration apparatus is used for large batch volumes. The lower base has a large bore 10mm Teflon stopcock and connects to the reservoir with a beaded pipe coupling. The base is offered with or without a sealed in fritted disc. An extra coarse frit comes standard with fritted bases. The beaded pipe connection and frit diameter are the same size. Medium and coarse porosity frits are available upon requests. Complete units consist of reservoir, fritted base, 10mm TFE plug, silicone pluro-stopper, and beaded pipe coupling. For collection bottles see PRG-1510 and PRG-1515.

Complete Unit

Capacity L	Beaded Pipe Fritted Base	OD mm	L1 mm	CODE	Price
12	3.0"	233	380	-01	984.58
19	3.0"	292	420	-02	1,204.29
19	6.0"	292	420	-03	1,902.44
36	3.0"	408	430	-04	1,658.35
36	6.0"	408	430	-06	2,341.87

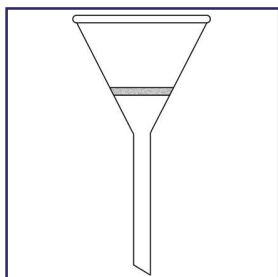
Individual Components

Description	Beaded Pipe Size	CODE	Price
12 Liter Reservoir	3.0"	-21	375.94
19 Liter Reservoir	3.0"	-22	595.63
19 Liter Reservoir	6.0"	-23	673.75
36 Liter Reservoir	3.0"	-24	1,049.70
36 Liter Reservoir	6.0"	-25	1,114.81
Fritted Base	3.0"	-31	322.24
Fritted Base	6.0"	-32	533.79
Non-Fritted Base	3.0"	-41	208.30
Non-Fritted Base	6.0"	-42	374.32
Beaded Pipe Coupling	3.0"	PRG-8022-06	285.05
Beaded Pipe Coupling	6.0"	PRG-8022-08	483.84



PRG-3735
PILOT PLANT, LARGE
VOLUME

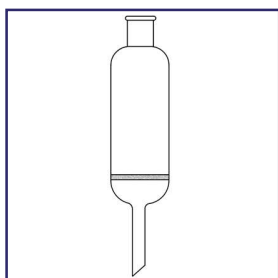




PRG-3750
FILTER FUNNEL,
HIRSCH

For precipitate that must be re-dissolved with reagent and not compatible with filter paper. Porosity of frit is medium.

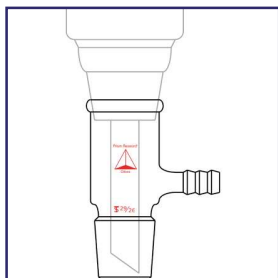
<u>Capacity ml</u>	<u>Approximate Diameter of Disc</u>	<u>Approximate Diameter of Funnel at Top</u>	<u>CODE</u>	<u>Price</u>
65	30 mm	75 mm	-01	60.71



PRG-3755
FILTER FUNNEL,
PRESSURE

Top joint is tooled for a #3 rubber stopper. Helpful when using volatile liquids. Do not exceed 15 psi.

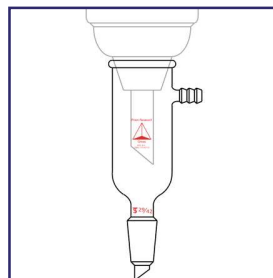
<u>Capacity ml</u>	<u>Approximate Diameter of Disc</u>	<u>Frit Porosity</u>	<u>CODE</u>	<u>Price</u>
50	30 mm	Extra Coarse	-01	90.01
50	30 mm	Coarse	-02	90.01
50	30 mm	Medium	-03	90.01
50	30 mm	Fine	-04	90.01
200	50 mm	Extra Coarse	-05	154.81
200	50 mm	Coarse	-06	154.81
200	50 mm	Medium	-07	154.81
200	50 mm	Fine	-08	154.81



PRG-1295
ADAPTER, VACUUM
FILTRATION, SMALL

#3 pluro stopper top, standard taper lower inner joint, 3/8" hose barb. Accepts 15 through 150ml buchner funnels.

<u>Lower Inner Joint</u>	<u>CODE</u>	<u>Price</u>
24/25	-01	56.29
29/26	-02	60.32

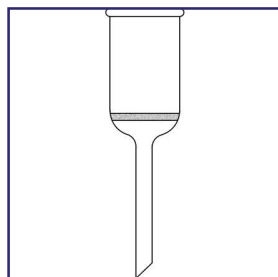


PRG-1297
ADAPTER, VACUUM
FILTRATION, LARGE

#6 stopper top, standard taper lower inner joint, 3/8" hose barb. Accepts a 250ml to 300ml buchner funnel. Top is tooled for a #5 or #6 pluro stopper.

<u>Lower Inner Joint</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	78.16
29/42	-02	82.22





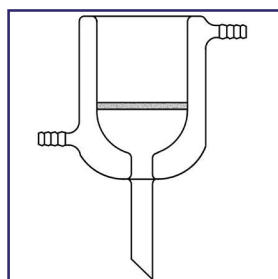
**PRG-3760
BUCHNER FUNNEL**

Funnel has sealed glass frit for filter paper support. Do not exceed 15 psi.

Porosity	Designation	Pore Size Microns	Principal Uses
Fine	F	4.0 - 5.5	Filtration and extraction
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Capacity	Porosity	Approx. Diam. of Disc	Stem O.D. x Length	Height Above Disc	CODE	Price
2 ml	XC	10 mm	6 x 30 mm	30 mm	-01	36.30
2 ml	C	10 mm	6 x 30 mm	30 mm	-02	36.30
2 ml	M	10 mm	6 x 30 mm	30 mm	-03	36.30
2 ml	F	10 mm	6 x 30 mm	30 mm	-41	36.30
15 ml	XC	20 mm	8 x 75 mm	45 mm	-04	41.08
15 ml	C	20 mm	8 x 75 mm	45 mm	-05	41.08
15 ml	M	20 mm	8 x 75 mm	45 mm	-06	41.08
15 ml	F	20 mm	6 x 75 mm	45 mm	-42	41.08
30 ml	XC	30 mm	8 x 75 mm	45 mm	-07	46.32
30 ml	C	30 mm	8 x 75 mm	45 mm	-08	46.32
30 ml	M	30 mm	8 x 75 mm	45 mm	-09	46.32
30 ml	F	30 mm	6 x 75 mm	45 mm	-43	46.32
60 ml	XC	40 mm	10 x 75 mm	50 mm	-10	51.17
60 ml	C	40 mm	10 x 75 mm	50 mm	-11	51.17
60 ml	M	40 mm	10 x 75 mm	50 mm	-12	51.17
60 ml	F	40 mm	10 x 75 mm	50 mm	-44	51.17
150 ml	XC	60 mm	16 x 75 mm	60 mm	-13	94.22
150 ml	C	60 mm	16 x 75 mm	60 mm	-14	94.22
150 ml	M	60 mm	16 x 75 mm	60 mm	-15	94.22
150 ml	F	60 mm	16 x 75 mm	60 mm	-45	94.22
350 ml	XC	80 mm	19 x 75 mm	75 mm	-16	121.55
350 ml	C	80 mm	19 x 75 mm	75 mm	-17	121.55
350 ml	M	80 mm	19 x 75 mm	75 mm	-18	121.55
350 ml	F	80 mm	19 x 75 mm	75 mm	-46	121.55
600 ml	XC	90 mm	19 x 100 mm	100 mm	-19	139.50
600 ml	C	90 mm	19 x 100 mm	100 mm	-20	139.50
600 ml	M	90 mm	19 x 100 mm	100 mm	-21	139.50
600 ml	F	90 mm	19 x 100 mm	100 mm	-47	139.50
1000 ml	XC	110 mm	19 x 100 mm	125 mm	-51	282.94
1000 ml	C	110 mm	19 x 100 mm	125 mm	-52	282.94
1000 ml	M	110 mm	19 x 100 mm	125 mm	-53	282.94
1000 ml	F	110 mm	19 x 100 mm	125 mm	-54	282.94
2000 ml	XC	125 mm	19 x 110 mm	145 mm	-22	325.54
2000 ml	C	125 mm	19 x 110 mm	145 mm	-23	325.54
2000 ml	M	125 mm	19 x 110 mm	145 mm	-24	325.54
2000 ml	F	125 mm	19 x 110 mm	145 mm	-48	325.54
3000 ml	XC	150 mm	25 x 110 mm	175 mm	-25	452.17
3000 ml	C	150 mm	25 x 110 mm	175 mm	-26	452.17
3000 ml	M	150 mm	25 x 110 mm	175 mm	-27	452.17
3000 ml	F	150 mm	25 x 110 mm	175 mm	-49	452.17
6000 ml	XC	150 mm	32 x 130 mm	250 mm	-61	960.10
6000 ml	C	150 mm	32 x 130 mm	250 mm	-62	960.10
6000 ml	M	150 mm	32 x 130 mm	250 mm	-63	960.10
6000 ml	F	150 mm	32 x 130 mm	250 mm	-64	960.10



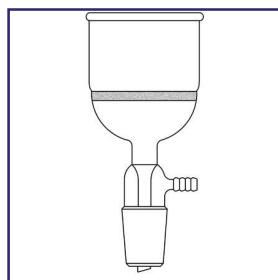


**PRG-3765
BUCHNER FUNNEL,
JACKETED**

Outer jacket allows liquids to circulate around inner funnel for heating or cooling applications. Custom sizes are available upon request.

Porosity	Designation	Pore Size Microns	Principal Uses
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Capacity	Porosity	Approx. Diam. of Disc	CODE	Price
30 ml	XC	30 mm	-01	258.43
30 ml	C	30 mm	-02	258.43
30 ml	M	30 mm	-03	258.43
60 ml	XC	40 mm	-04	288.61
60 ml	C	40 mm	-05	288.61
60 ml	M	40 mm	-06	288.61
150 ml	XC	60 mm	-07	302.29
150 ml	C	60 mm	-08	302.29
150 ml	M	60 mm	-09	302.29
600 ml	XC	90 mm	-10	381.58
600 ml	C	90 mm	-11	381.58
600 ml	M	90 mm	-12	381.58
2000 ml	XC	125 mm	-13	663.47
2000 ml	C	125 mm	-14	663.47
2000 ml	M	125 mm	-15	663.47

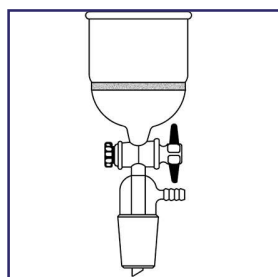


**PRG-3770
BUCHNER FUNNEL,
WITH VACUUM
ADAPTER**

Filter funnel has a sealed-in glass disc with a standard taper inner joint for apparatus connection. A 3/8" diameter vacuum port provides for increased efficiency.

Porosity	Designation	Pore Size Microns	Principal Uses
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Capacity	Porosity	Approx. Diam. of Disc	24/40		29/42	
			CODE	Price	CODE	Price
15 ml	XC	20 mm	-01	114.77	—	—
15 ml	C	20 mm	-02	114.77	—	—
15 ml	M	20 mm	-03	114.77	—	—
30 ml	XC	30 mm	-04	122.42	—	—
30 ml	C	30 mm	-05	122.42	—	—
30 ml	M	30 mm	-06	122.42	—	—
60 ml	XC	40 mm	-07	130.12	—	—
60 ml	C	40 mm	-08	130.12	—	—
60 ml	M	40 mm	-09	130.12	—	—
150 ml	XC	60 mm	-10	169.57	-13	174.09
150 ml	C	60 mm	-11	169.57	-14	174.09
150 ml	M	60 mm	-12	169.57	-15	174.09
350 ml	XC	80 mm	-16	202.79	-19	227.85
350 ml	C	80 mm	-17	202.79	-20	227.85
350 ml	M	80 mm	-18	202.79	-21	227.85
600 ml	XC	90 mm	-22	226.64	-25	230.53
600 ml	C	90 mm	-23	226.64	-26	230.53
600 ml	M	90 mm	-24	226.64	-27	230.53

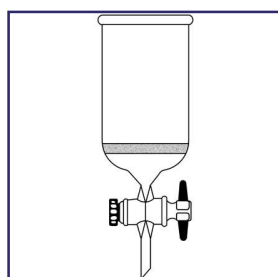


**PRG-3772
BUCHNER FUNNEL,
WITH VACUUM
ADAPTER CONTROL**

Filter funnel has a sealed-in glass disc with a standard taper inner joint for apparatus connection. A 3/8" diameter vacuum port provides for increased efficiency. With a Teflon stopcock.

<u>Porosity</u>	<u>Designation</u>	<u>Pore Size Microns</u>	<u>Principal Uses</u>
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

<u>Capacity</u>	<u>Porosity</u>	<u>Approx. Diam. of Disc</u>	<u>Stopcock Size</u>	<u>24/40</u>		<u>29/42</u>	
				<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
15 ml	XC	20 mm	2 mm	-01	156.67	—	—
15 ml	C	20 mm	2 mm	-02	156.67	—	—
15 ml	M	20 mm	2 mm	-03	156.67	—	—
30 ml	XC	30 mm	2 mm	-04	164.31	—	—
30 ml	C	30 mm	2 mm	-05	164.31	—	—
30 ml	M	30 mm	2 mm	-06	164.31	—	—
60 ml	XC	40 mm	2 mm	-07	172.02	—	—
60 ml	C	40 mm	2 mm	-08	172.02	—	—
60 ml	M	40 mm	2 mm	-09	172.02	—	—
150 ml	XC	60 mm	4 mm	-10	217.34	-13	221.88
150 ml	C	60 mm	4 mm	-11	217.34	-14	221.88
150 ml	M	60 mm	4 mm	-12	217.34	-15	221.88
350 ml	XC	80 mm	6 mm	-16	261.47	-19	286.51
350 ml	C	80 mm	6 mm	-17	261.47	-20	286.51
350 ml	M	80 mm	6 mm	-18	261.47	-21	286.51
600 ml	XC	90 mm	6 mm	-22	285.48	-25	289.18
600 ml	C	90 mm	6 mm	-23	285.48	-26	289.18
600 ml	M	90 mm	6 mm	-24	285.48	-27	289.18

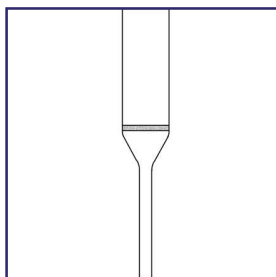


**PRG-3775
FILTERING FUNNEL,
CYLINDRICAL, TE-
FLON**

Filter funnel has a 2mm Teflon stopcock for flow control.

<u>Porosity</u>	<u>Designation</u>	<u>Pore Size Microns</u>	<u>Principal Uses</u>
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

<u>Capacity</u>	<u>Porosity</u>	<u>Approx. Diam. of Disc</u>	<u>CODE</u>	<u>Price</u>
125 ml	XC	40 mm	-01	149.09
125 ml	C	40 mm	-02	149.09
125 ml	M	40 mm	-03	149.09
250 ml	XC	65 mm	-04	185.18
250 ml	C	65 mm	-05	185.18
250 ml	M	65 mm	-06	185.18

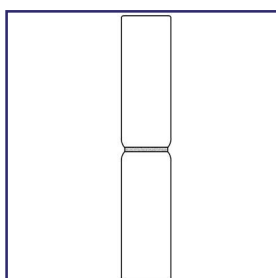


PRG-3780
FILTERING TUBE, AL-
LIHN

Filtration chamber is 30mm I.D. x 100mm in height. Overall height is 150mm.

Porosity	Designation	Pore Size Microns	Principal Uses
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Porosity	CODE	Price
XC	-01	44.82
C	-02	44.82
M	-03	44.82



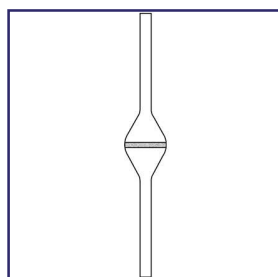
PRG-3785
FILTER TUBE,
STRAIGHT

Designed for sealing to other apparatus. Overall length is 200mm with frit sealed in the center.

Porosity	Designation	Pore Size Microns	Principal Uses
Fine	F	4.0 - 5.5	Filtration and extraction
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Approximate Diameter of Disc	Approximate OD of Tubing	Porosity	CODE	Price
10 mm	13 mm	XC	-01	35.82
10 mm	13 mm	C	-02	35.82
10 mm	13 mm	M	-03	35.82
10 mm	13 mm	F	-04	35.82
20 mm	25 mm	XC	-05	40.44
20 mm	25 mm	C	-06	40.44
20 mm	25 mm	M	-07	40.44
20 mm	25 mm	F	-08	40.44
30 mm	35 mm	XC	-09	44.96
30 mm	35 mm	C	-10	44.96
30 mm	35 mm	M	-11	44.96
30 mm	35 mm	F	-12	44.96
40 mm	45 mm	XC	-13	60.03
40 mm	45 mm	C	-14	60.03
40 mm	45 mm	M	-15	60.03
40 mm	45 mm	F	-16	60.03
50 mm	54 mm	XC	-17	86.99
50 mm	54 mm	C	-18	86.99
50 mm	54 mm	M	-19	86.99
50 mm	54 mm	F	-20	86.99
65 mm	70 mm	XC	-21	114.48
65 mm	70 mm	C	-22	114.48
65 mm	70 mm	M	-23	114.48
65 mm	70 mm	F	-24	114.48
90 mm	100 mm	XC	-25	141.31
90 mm	100 mm	C	-26	141.31
90 mm	100 mm	M	-27	141.31
90 mm	100 mm	F	-28	141.31





PRG-3790
FILTER TUBE, RE-
DUCE

The large filter surface and reduced tube ends add to the flow samples. Overall length is 200mm.

Porosity	Designation	Pore Size Microns	Principal Uses
Fine	F	4.0 - 5.5	Filtration and extraction
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Approximate Diameter of Disc	Approximate OD of Tubing	Porosity	CODE	Price
30 mm	8 mm	XC	-01	56.96
30 mm	8 mm	C	-02	56.96
30 mm	8 mm	M	-03	56.96
30 mm	8 mm	F	-04	56.96
40 mm	13 mm	XC	-05	76.34
40 mm	13 mm	C	-06	76.34
40 mm	13 mm	M	-07	76.34
40 mm	13 mm	F	-08	76.34
60 mm	15 mm	XC	-09	118.29
60 mm	15 mm	C	-10	118.29
60 mm	15 mm	M	-11	118.29
60 mm	15 mm	F	-12	118.29
90 mm	25 mm	XC	-13	166.02
90 mm	25 mm	C	-14	166.02
90 mm	25 mm	M	-15	166.02
90 mm	25 mm	F	-16	166.02



PRG-3791
FILTER PAPER DISCS,
260mm

Filter paper discs are sized to fit table top Buchner funnels. Filter paper discs are E-D 615 type for fast filtering. they have a rough crepe surface with a thickness of 0.0105mm, basic weight 20 lb. G/Sq meter, flow rate 235ml/min., retention of 25 microns. 100 discs per box. Used with Buchner Funnels, PRG-3793.

Funnel I.D. mm	CODE	Price
260	-01	82.30
457	-02	CALL
610	-03	CALL
914	-04	CALL



**PRG-3793
BUCHNER FUNNELS**

Buchner Funnels are economical, lightweight and durable. Easy to clean two-piece, polypropylene Buchner funnels with perforated HDPE filter plate. Lightweight, but not top-heavy. Steam autoclavable at 121°C (250°F). Per each.

<u>Funnel I.D. mm</u>	<u>Plate Type</u>	<u>Rim to Plate mm</u>	<u>CODE</u>	<u>Price</u>
260	Coarse Porosity Fixed	127	-01	CALL
260	Coarse Porosity Removable	127	-02	CALL
260	Medium Porosity Fixed	127	-03	CALL
260	Medium Porosity Removable	127	-04	CALL
260	Perforated Fixed	127	-05	CALL
260	Perforated Removable	127	-06	CALL
457	Coarse Porosity Fixed	203	-11	CALL
457	Coarse Porosity Removable	203	-12	774.98
457	Medium Porosity Fixed	203	-13	CALL
457	Medium Porosity Removable	203	-14	774.98
457	Perforated Fixed	203	-15	CALL
457	Perforated Removable	203	-16	CALL
610	Coarse Porosity Fixed	267	-21	CALL
610	Coarse Porosity Removable	267	-22	CALL
610	Medium Porosity Fixed	267	-23	CALL
610	Medium Porosity Removable	267	-24	CALL
610	Perforated Fixed	267	-25	CALL
610	Perforated Removable	267	-26	CALL
914	Coarse Porosity Fixed	305	-31	CALL
914	Coarse Porosity Removable	305	-32	CALL
914	Medium Porosity Fixed	305	-33	CALL
914	Medium Porosity Removable	305	-34	CALL
914	Perforated Fixed	305	-35	CALL
914	Perforated Removable	305	-36	CALL

<u>Replacement Discs</u>				
<u>Funnel I.D. mm</u>	<u>Plate Type</u>	<u>CODE</u>	<u>Price</u>	
260	Coarse Porosity	-41	CALL	
260	Medium Porosity	-42	CALL	
260	Perforated	-43	CALL	
457	Coarse Porosity	-51	CALL	
457	Medium Porosity	-52	CALL	
457	Perforated	-53	CALL	
610	Coarse Porosity	-61	CALL	
610	Medium Porosity	-62	CALL	
610	Perforated	-63	CALL	
914	Coarse Porosity	-71	CALL	
914	Medium Porosity	-72	CALL	
914	Perforated	-73	CALL	



Single piece Buchner Funnels are fast flowing with Fritware porous plates. One piece HDPE funnels with sealed in, polyethylene filter plate of coarse porosity (90-130 microns) offer good retention and fast flow under vacuum. Usable with or without filter paper. Use below 52° C (125° F)

<u>Funnel Capacity ml</u>	<u>Diam. of Plate mm</u>	<u>Rim to Plate mm</u>	<u>CODE</u>	<u>Price</u>
50	36	35	-01	CALL
150	70	51	-02	CALL
250	104	50	-03	CALL
1000	122	104	-04	CALL

PRG-3795
BUCHNER FUNNELS,
SINGLE PIECE



Drum and Carboy funnels provide optimum flow. Large funnels with handles are ideal for filling drums, barrels, tanks and carboys providing ample volume and fast flow. The two smaller sizes have a handle at the rim. Molded of natural polypropylene, funnels are autoclavable at 121°C

<u>Funnel Capacity L</u>	<u>Top of O.D. mm</u>	<u>Height mm</u>	<u>Bottom Stem ID</u>	<u>CODE</u>	<u>Price</u>
2.1	207	250	21	-01	CALL
4.3	260	309	23	-02	CALL
14.1	353	454	26	-03	CALL

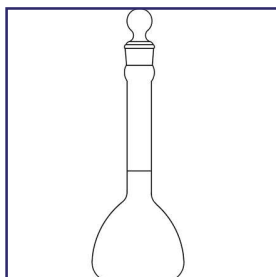
PRG-3797
DRUM AND CARBOY
FUNNELS



Heavy duty funnels are durable, versatile and available in assorted sizes. Sturdy, polypropylene funnels with ridges to prevent vapor lock. Highly recommended for continuous laboratory work. Steam autoclavable at 121°C

<u>Funnel Cap. ml</u>	<u>Stem ID</u>	<u>Stem OD</u>	<u>Stem Length</u>	<u>Total Length</u>	<u>Diameter</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
30	7.9	14.3	38.1	66.7	54	6	-01	CALL
90	6.4	11.1	69.9	127.0	76.2	6	-02	CALL
180	12.7	19.1	44.5	104.8	101.6	6	-03	CALL
480	11.1	19.1	79.7	177.8	152.4	3	-04	CALL
720	19.1	25.4	69.9	187.3	184.2	3	-05	CALL
3845	22.2	34.9	139.7	342.9	266.7	1	-06	CALL

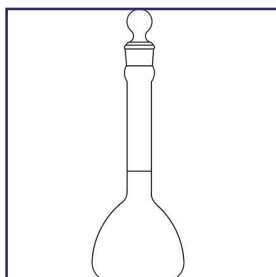
PRG-3799
HEAVY DUTY FUN-
NELS



PRG-5000
VOLUMETRIC, CLASS
"A", STANDARD
TAPER STOPPER

Volumetric flask, standard taper stopper top. Supplied with a stopper plug. Meets ASTM 288 Standards.

Capacity ml	Tolerance +ml	Stopper Size	Qty per Pack	Color	CODE	Price
1	—	9	24	Clear	-21C	312.47
2	—	9	24	Clear	-22C	312.47
5	—	9	6	Clear	-01	88.80
5	—	9	24	Clear	-01C	322.24
5	—	9	6	Amber	A-01	135.43
10	—	9	6	Clear	-02	88.80
10	—	9	24	Clear	-02C	331.99
10	—	9	6	Amber	A-02	112.56
20	—	9	1	Amber	A-20	19.18
25	0.03	9	6	Clear	-03	99.46
25	—	9	1	Amber	A-25	19.18
40	—	13	1	Clear	-40ml	57.54
50	0.05	9	4	Clear	-04	68.77
80	—	16	1	Clear	-80ml	97.20
100	0.08	13	4	Clear	-05	72.71
150	—	16	1	Clear	-150ml	97.20
200	0.10	13	4	Clear	-06	98.47
250	0.12	16	4	Clear	-07	110.02
500	0.20	19	2	Clear	-08	63.81
1000	0.30	22	2	Clear	-09	87.47
2000	0.50	27	2	Clear	-10	155.96

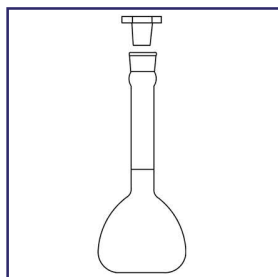


PRG-5001
VOLUMETRIC, CLASS
"A", AMBER, STAN-
DARD TAPER
STOPPER

Volumetric Flask, Amber Finish, Supplied with Standard Taper Glass Plug

Capacity ml	Stopper Size	Qty per Pack	CODE	Price
10	9	1	-01	86.94
25	9	1	-02	110.80
50	9	1	-03	80.45
100	13	1	-04	91.21
200	13	4	-05	191.18
250	13	4	-06	CALL
500	13	2	-07	CALL
1000	19	2	-08	CALL

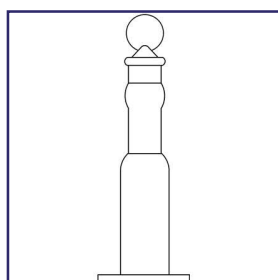




PRG-5005
VOLUMETRIC, TYPE
1, CLASS "A"

Volumetric flask, standard taper stopper top. Supplied with a closed bottom polyethylene stopper. Meets ASTM Standards.

<u>Capacity ml</u>	<u>Tolerance +ml</u>	<u>Stopper Size</u>	<u>Qty per Pack</u>	<u>CODE</u>	<u>Price</u>
10	—	9	1	-02	69.63
25	0.03	9	6	-03	74.20
50	0.05	9	4	-04	51.30
100	0.08	13	4	-05	66.61
200	0.10	13	4	-06	83.69
250	0.12	16	4	-07	96.04
500	0.20	19	2	-08	57.98
1000	0.30	22	1	-09	71.69
2000	—	27	2	-10	117.53



PRG-5010
VOLUMETRIC, MICRO

Volumetric flask, micro. Type 1, Class "A". Supplied complete with stopper. Meets ASTM E-237 Specifications.

<u>Capacity ml</u>	<u>Tolerance +ml</u>	<u>Stopper Size</u>	<u>Qty per Pack</u>	<u>CODE</u>	<u>Price</u>
1	—	8	—	-21	63.47
2	—	8	—	-22	73.23
5	—	9	—	A-22	33.54
5	0.03	8	10	-01	63.47
10	0.05	9	10	-02	78.10

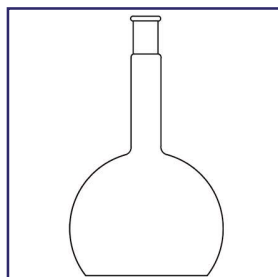


PRG-5015
FLAT BOTTOM, SIN-
GLE SHORT NECK,
STANDARD TAPER
JOINT

Standard taper outer joint, single short neck.

<u>Capacity ml</u>	<u>24/40 Joint</u>		<u>29/42 Joint</u>		<u>45/50 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
50	-01	31.65	—	—	—	—
125	-02	31.65	—	—	—	—
250	-03	32.76	-31	38.39	—	—
300	-27	34.39	-29	38.39	—	—
500	-04	39.72	-05	40.44	—	—
1000	-07	61.03	-08	62.77	-09	71.46
2000	-10	102.01	-11	99.92	-12	105.19
5000	-13	209.23	-14	211.83	-15	239.02
12,000	-21	373.34	-23	373.68	-25	377.69





Neck length 75mm between bottom of tapered joint and flask.

PRG-5020

FLAT BOTTOM, SINGLE LONG NECK, STANDARD TAPER JOINT

Capacity ml	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
50	-01	37.46	—	—	—	—
125	-02	37.46	—	—	—	—
250	-03	37.46	-04	40.00	—	—
500	-05	48.35	-06	52.65	—	—
1000	-07	63.41	-08	63.78	-09	79.46
2000	-10	86.00	-11	91.99	-12	117.01
5000	-13	220.12	-14	223.13	-15	250.39
12,000	-21	373.34	-23	378.54	-25	380.85



Flask, flat bottom, single short neck with spherical socket joint.

PRG-5025

FLAT BOTTOM, SINGLE LONG NECK, SOCKET JOINT

Capacity ml	28/15 Joint		35/25 Joint		50/30 Joint	
	CODE	Price	CODE	Price	CODE	Price
50	-01	36.84	-02	39.58	—	—
125	-03	36.84	-04	39.58	—	—
250	-05	36.84	-06	39.58	—	—
500	-07	39.58	-08	44.40	—	—
1000	-09	61.77	-10	64.49	-11	75.38
2000	—	—	-12	106.27	-13	109.99
5000	—	—	-14	179.27	-15	204.00
12,000	—	—	—	—	-21	372.60



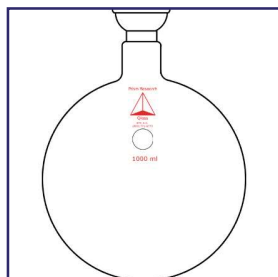
Single short neck, standard taper joint. For micro applications see PG-9202 and PG-9204 (with hooks).

PRG-5030

ROUND BOTTOM, SINGLE SHORT NECK, STANDARD TAPER JOINT

Capacity ml	19/38 Joint		24/40 Joint		29/42 Joint		45/50 Joint		55/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
50	-01	24.70	-02	24.70	-03	28.07	-31	59.08	—	—
100	-04	38.39	-05	24.07	-06	28.07	—	—	—	—
125	—	—	-08	27.82	-09	30.53	-33	63.39	-34	63.84
150	—	—	-11	32.24	-12	35.39	—	—	—	—
200	—	—	-14	26.60	-15	29.74	—	—	—	—
250	—	—	-17	28.79	-18	30.11	-35	134.89	-36	134.89
300	—	—	-69	32.77	-71	36.63	-37	153.54	-38	153.54
500	—	—	-20	36.11	-21	40.25	-39	286.34	-40	286.34
1000	—	—	-23	45.22	-24	52.45	-41	316.73	-42	343.60
2000	—	—	-25	125.87	-26	127.01	-43	446.83	-44	450.57
3000	—	—	-27	146.51	-28	148.72	—	—	—	—
5000	—	—	-29	173.33	-30	174.24	-61	1,174.46	-63	1,186.86
6000	—	—	—	—	-55	251.03	-58	259.29	—	—
12,000	—	—	—	—	-56	257.37	-65	1,718.41	-67	1,730.00
15,000	—	—	—	—	—	—	-53	452.79	—	—
16,000	—	—	—	—	—	—	-54	452.79	—	—

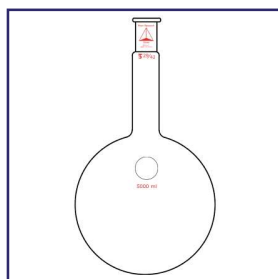




PRG-5035
ROUND BOTTOM,
SINGLE NECK,
SPHERICAL JOINT

Single spherical socket joint, short neck.

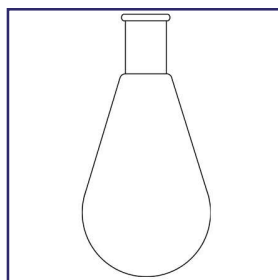
Capacity ml	J 28/15 Joint		J 35/25 Joint		J 50/30 Joint		J 65/40 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
50	-01	32.89	-02	33.88	—	—	—	—
100	-03	32.89	-04	33.88	—	—	—	—
250	-05	34.31	-06	35.09	—	—	—	—
500	-07	41.03	-08	42.31	—	—	—	—
1000	-09	50.26	-10	43.11	-31	49.22	—	—
2000	-11	102.92	-12	107.37	-13	113.37	—	—
3000	-14	115.82	-15	120.40	-16	123.74	—	—
5000	-17	121.79	-18	123.00	-19	131.37	-21	141.58
12,000	—	—	—	—	-23	240.54	-25	267.19
22,000	—	—	—	—	-27	415.10	-29	452.69



PRG-5040
ROUND BOTTOM,
SINGLE NECK, ME-
DIUM WALL

Long neck, 75mm between bottom of outer joint and the flask. For micro applications see PG-9206.

Capacity ml	J 24/40 Joint		J 29/42 Joint	
	CODE	Price	CODE	Price
50	-01	27.82	-02	28.51
100	-03	27.82	-04	30.37
125	-05	27.82	-06	31.19
150	-25	32.07	-27	35.52
200	-07	34.93	-08	35.52
250	-09	32.57	-10	36.00
300	-21	32.69	-23	35.95
500	-11	34.87	-12	38.51
1000	-13	41.66	-14	46.64
2000	-15	75.26	-16	77.88
3000	-17	110.79	-18	129.21
5000	-19	126.60	-20	129.73

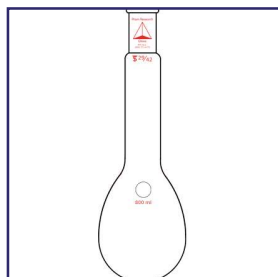


PRG-5045
RECOVERY, SINGLE
NECK, MEDIUM WALL

Standard taper outer joint. For micro applications see PG-9208.

Capacity ml	J 24/25 Joint		J 24/40 Joint		J 29/26 Joint		J 29/42 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
50	—	—	-01	33.14	—	—	-02	34.39
100	-21	76.59	-03	33.14	-27	32.69	-04	33.91
200	-23	39.00	-05	39.42	-29	40.21	-06	40.95
500	-25	57.79	-07	54.74	-31	59.19	-08	56.38
1000	—	—	-09	71.82	-33	76.59	-10	73.29
2000	—	—	-35	108.56	-37	109.39	-39	110.67

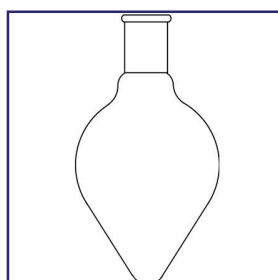




PRG-5050
KJELDAHL, SINGLE
NECK, MEDIUM WALL

Standard taper outer joint.

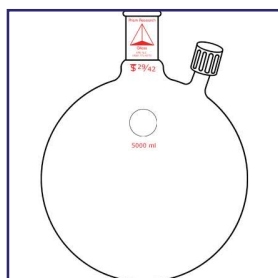
Capacity ml	§ 24/40 Joint		§ 29/42 Joint	
	CODE	Price	CODE	Price
100	-01	40.82	—	—
300	-02	44.93	—	—
500	-03	44.40	-04	47.72
800	-05	50.26	-06	53.81



PRG-5055
PEAR SHAPED, SIN-
GLE NECK, MEDIUM
WALL

Standard taper outer joint. For micro applications see PG-9210.

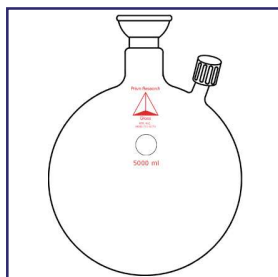
Capacity ml	§ 24/40 Joint		§ 29/42 Joint	
	CODE	Price	CODE	Price
50	-01	31.22	—	—
100	-02	33.94	-03	37.05
250	-04	38.53	-05	41.46
500	-06	46.71	-07	50.05



PRG-5060
ROUND BOTTOM,
SINGLE NECK, STAN-
DARD TAPER JOINT,
THREADED SIDE ARM

Standard taper outer joint and a side arm with #18 GL thread. Compression fitting and nut included. For 6-7 mm thermometer or bleed tube. (Replacement fittings see PRG-203 and PRG 204) For micro applications see PG-9212.

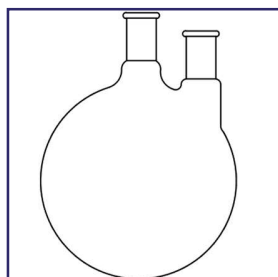
Capacity ml	§ 24/40 Joint		§ 29/42 Joint		§ 50/30 Joint	
	CODE	Price	CODE	Price	CODE	Price
100	-01	67.63	-02	70.98	—	—
250	-07	69.51	-08	72.68	—	—
500	-09	73.69	-10	77.08	—	—
1000	-11	79.57	-15	82.77	—	—
5000	-17	199.98	-18	203.10	-25	216.36



PRG-5065
ROUND BOTTOM,
SINGLE NECK,
SPHERICAL JOINT,
THREADED SIDE ARM

Side arm with #18 GL thread. Compression fitting and nut included. For 6-7mm thermometer or bleed tube. (Replacement fittings see PRG-203 and PRG-204) For micro applications see PG-9219.

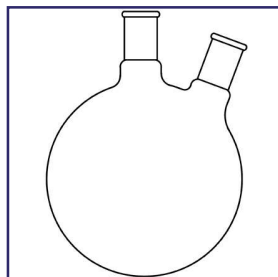
Capacity ml	28/15 Joint		35/25 Joint		50/30 Joint	
	CODE	Price	CODE	Price	CODE	Price
100	-01	66.60	-02	70.10	—	—
250	-07	76.84	-08	79.97	—	—
500	-09	79.35	-19	91.59	—	—
1000	-11	84.96	-12	86.90	—	—
5000	-21	202.27	-23	205.23	-25	232.84



PRG-5070
ROUND BOTTOM,
TWO NECK, STAND-
DARD TAPER JOINT

Necks are parallel and vertical, side neck has an outer joint.

Capacity ml	24/40 Joint		29/42 Joint		34/45 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
100	-01	78.56	—	—	—	—	—	—
250	-03	78.56	-21	80.16	—	—	—	—
500	-06	79.67	-07	80.87	-23	82.54	—	—
1000	-08	100.02	-09	100.26	-25	102.67	—	—
2000	-10	134.55	-11	135.97	-27	141.04	—	—
3000	-12	147.91	-13	150.45	-14	152.53	-15	155.70
5000	—	—	-39	273.06	—	—	-29	234.53

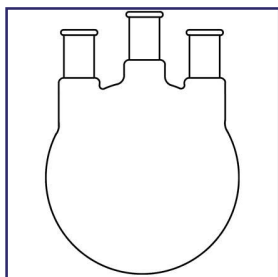


PRG-5075
ROUND BOTTOM,
TWO NECK, STAND-
DARD TAPER JOINT,
MEDIUM WALL

Vertical center neck, with side neck at 20° angle. For micro applications see PG-9218.

Capacity ml	Center Neck	10/30 Joint		24/40 Joint	
		CODE	Price	CODE	Price
100	24/40	-01	77.54	-02	78.73
250	24/40	-03	77.54	-04	78.73
250	29/42	-05	78.73	-06	79.91
500	24/40	-09	79.46	-10	80.87
500	29/42	-11	80.87	-12	80.87
1000	24/40	-13	97.88	-14	99.05
1000	29/42	-15	99.05	-16	97.88
2000	24/40	-17	131.23	-18	134.55
2000	29/42	-19	135.52	-20	136.83
3000	24/40	-21	148.35	-22	149.79
3000	29/42	-23	150.53	-24	150.53
5000	24/40	-25	171.60	-26	176.38
5000	29/42	-27	179.53	-28	187.46



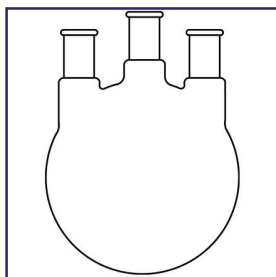


PRG-5080
ROUND BOTTOM,
THREE NECK, STAN-
DARD TAPER JOINT,
MEDIUM WALL

All joints are vertical and side necks are 180° apart.

Capacity ml	Center Neck	24/40 Joint		29/42 Joint		45/50 Joint		55/50 Joint	
		CODE	Price	CODE	Price	CODE	Price	CODE	Price
100	24/40	-01	109.32						
200	24/40	-02	109.32						
250	24/40	-03	109.32						
300	24/40	-38	109.32						
500	24/40	-05	111.69						
500	29/42	-40	114.85	-41	114.85				
500	34/45	-42	117.56	-43	118.36				
1000	24/40	-07	130.29						
1000	29/42	-08	137.74	-45	138.55				
1000	34/45	-46	140.43	-47	142.97				
1000	45/50	-48	142.36	-49	146.03				
2000	24/40	-50	154.59						
2000	29/42	-51	158.87	-52	163.02				
2000	34/45	-53	167.46	-54	169.24				
2000	45/50	-12	188.90	-13	191.93				
3000	24/40	-14	208.62						
3000	29/42	-15	210.35	-16	212.42				
3000	45/50	-17	219.88	-18	224.17				
5000	24/40	-19	231.81						
5000	29/42	-20	235.13	-57	235.13				
5000	34/45	-59	240.05	-58	243.39				
5000	45/50	-21	245.00	-22	248.31	-60	255.79		
5000	55/50	-23	256.91	-24	261.50	-61	263.72		
12,000	29/42	-62	363.83	-25	378.12				
12,000	34/45	-63	387.66	-64	389.26				
12,000	45/50	-26	390.82	-27	292.43	-65	395.61		
12,000	55/50	-28	397.21	-29	403.56	-66	409.88		
22,000	29/42			-30	711.77				
22,000	45/50	-31	718.12	-33	727.64	-67	754.68		
22,000	55/50	-34	757.85	-35	761.03	-68	781.68		
22,000	71/60					-69	975.49	-70	977.09
50,000	45/50			-71	1,783.69	-72	1,804.83		
50,000	55/50			-73	1,470.51	-74	1,846.13	-75	1,916.04
50,000	71/60					-76	1,952.59	-77	1,960.54
72,000	55/50			-82	1,788.60	-78	2,278.27	-79	2,283.06
72,000	71.60					-80	2,341.85	-81	2,376.78



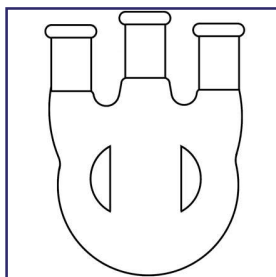


PRG-5085
ROUND BOTTOM,
THREE NECK, AN-
GLD STANDARD
TAPER JOINT,
MEDIUM WALL

Two side outer necks angled at 20° from center vertical neck, 180° apart. For micro applications see PG-9220.

Capacity ml	Center Neck	24/40 Joint CODE Price	29/42 Joint CODE Price	45/50 Joint CODE Price	55/50 Joint CODE Price
100	24/40	-01 109.32	— —	— —	— —
200	24/40	-02 109.32	— —	— —	— —
250	24/40	-03 109.32	— —	— —	— —
300	24/40	-38 106.13	— —	— —	— —
500	24/40	-05 111.69	— —	— —	— —
500	29/42	-40 114.85	-41 114.85	— —	— —
500	34/45	-42 117.56	-43 118.36	— —	— —
1000	24/40	-07 130.29	— —	— —	— —
1000	29/42	-08 136.96	-45 138.55	— —	— —
1000	34/45	-46 140.43	-47 142.97	— —	— —
1000	45/50	-48 142.36	-49 146.03	— —	— —
2000	24/40	-50 154.59	— —	— —	— —
2000	29/42	-51 158.87	-52 163.02	— —	— —
2000	34/45	-53 167.46	-54 169.24	— —	— —
2000	45/50	-12 188.90	-13 191.93	— —	— —
3000	24/40	-14 208.62	— —	— —	— —
3000	29/42	-15 210.35	-16 212.42	— —	— —
3000	45/50	-17 219.88	-18 224.17	— —	— —
5000	24/40	-19 231.81	— —	— —	— —
5000	29/42	-20 235.13	-57 235.13	— —	— —
5000	34/45	-59 240.05	-58 243.39	— —	— —
5000	45/50	-21 245.00	-22 248.31	-60 255.79	— —
5000	55/50	-23 256.91	-24 261.50	-61 263.72	— —
12,000	29/42	-62 363.83	-25 378.12	— —	— —
12,000	34/45	-63 387.66	-64 389.26	— —	— —
12,000	45/50	-26 390.82	-27 392.43	-65 395.61	— —
12,000	55/50	-28 397.21	-29 403.56	-66 409.88	— —
22,000	29/42	— —	-30 711.77	— —	— —
22,000	45/50	-31 718.12	-33 727.64	-67 754.68	— —
22,000	55/50	-34 757.85	-35 761.03	-68 781.68	-82 818.20
22,000	71/60	— —	— —	-69 975.49	-70 818.20
50,000	45/50	— —	-71 1,783.69	-72 1,804.83	— —
50,000	55/50	— —	-73 1,530.05	-74 1,846.13	-75 1,916.04
50,000	71/60	— —	— —	-76 1,952.59	-77 1,960.54
72,000	55/60	— —	— —	-78 2,278.27	-79 2,283.06
72,000	71/60	— —	— —	-80 2,341.85	-81 2,376.78

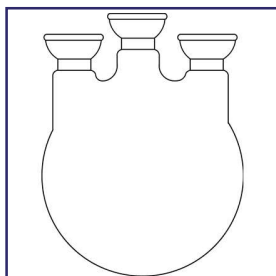




PRG-5090
ROUND BOTTOM,
MORTON TYPE,
THREE NECK, STAND-
ARD TAPER JOINT,
MEDIUM WALL

Flask has four baffles equally spaced around the body for greater agitation during stirring operations. All joints vertical. Side necks are 180° apart.

Capacity ml	Center Neck	24/40 Joint		29/42 Joint	
		CODE	Price	CODE	Price
500	24/40	-01	165.22	—	—
500	29/42	-02	167.14	-03	168.90
500	45/50	-04	172.69	-05	175.55
1000	24/40	-06	190.33	—	—
1000	29/42	-07	192.88	-08	194.46
1000	45/50	-09	198.61	-10	201.77
2000	24/40	-11	238.46	—	—
2000	29/42	-13	242.31	-14	245.94
2000	45/50	-15	249.46	-16	256.91
3000	24/40	-17	293.76	—	—
3000	29/42	-18	297.12	-20	297.88
5000	29/42	-21	330.31	-22	334.11
5000	45/50	-23	337.76	-24	345.24
12,000	45/50	-25	513.19	-26	516.34
12,000	55/50	-27	524.29	-28	527.47
22,000	45/50	-29	850.00	-30	854.75
22,000	55/50	-31	861.11	-32	865.87

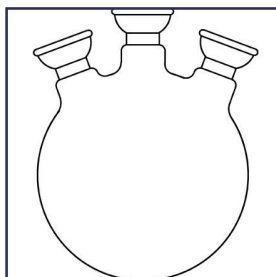


PRG-5095
ROUND BOTTOM,
THREE NECK,
SPHERICAL JOINT,
MEDIUM WALL

All socket joints are vertical and side necks are 180° apart.

Capacity ml	Center Neck	28/15 Joint		35/25 Joint	
		CODE	Price	CODE	Price
250	35/25	-05	109.14	-06	110.42
500	35/25	-09	111.69	-10	114.40
1000	35/25	-11	130.29	-12	135.04
2000	35/25	-13	158.87	-14	163.07
3000	35/25	—	—	-15	212.41
3000	50/30	—	—	-16	224.04
5000	35/25	—	—	-17	234.99
5000	65/40	—	—	-18	247.86
12,000	50/30	—	—	-19	389.26
12,000	65/40	—	—	-20	438.20
22,000	50/30	—	—	-31	727.64
22,000	65/40	—	—	-32	761.03

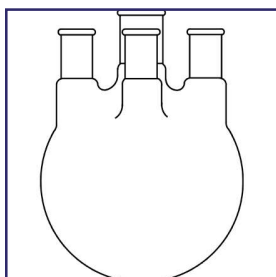




Two side necks angled at 20° from center neck, 180° apart.

PRG-5100
ROUND BOTTOM,
THREE NECK,
SPHERICAL JOINT,
MEDIUM WALL

Capacity ml	Center Neck	28/15 Joint		35/25 Joint	
		CODE	Price	CODE	Price
250	35/25	-05	109.14	-06	110.42
500	35/25	-09	111.69	-10	114.40
1000	35/25	-11	130.29	-12	135.04
2000	35/25	-13	158.87	-14	163.02
3000	35/25	-15	212.26	-16	222.42
3000	50/30	-17	234.99	-21	260.72
5000	65/40	—	—	-18	247.86
12,000	50/30	—	—	-19	389.26
12,000	65/40	—	—	-20	392.43
22,000	50/30	—	—	-31	802.01
22,000	65/40	—	—	-32	840.59

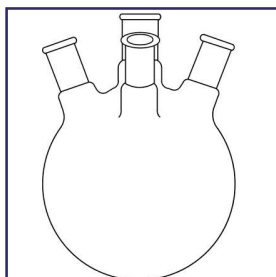


All vertical necks, the fourth neck is at a 90° from the three inline necks.

PRG-5105
ROUND BOTTOM,
FOUR NECK, ANGLED
STANDARD TAPER
JOINT,
MEDIUM WALL

Capacity ml	Center Neck	24/40 Joint		29/42 Joint		45/50 Joint		55/50 Joint	
		CODE	Price	CODE	Price	CODE	Price	CODE	Price
250	24/40	-01	152.36	—	—	—	—	—	—
500	24/40	-03	157.93	—	—	—	—	—	—
500	29/42	-04	158.87	-45	161.41	—	—	—	—
500	45/50	-32	172.21	—	—	—	—	—	—
1000	24/40	-05	194.46	—	—	—	—	—	—
1000	29/42	-06	196.51	—	—	—	—	—	—
1000	34/45	-33	201.77	-34	205.59	—	—	—	—
1000	45/50	-045	240.76	—	—	—	—	—	—
2000	24/40	-07	222.09	—	—	—	—	—	—
2000	29/42	-08	225.75	-35	227.67	—	—	—	—
2000	34/45	-36	229.41	-37	231.18	—	—	—	—
2000	45/50	-38	249.46	-39	257.03	—	—	—	—
3000	24/40	-09	274.86	—	—	—	—	—	—
3000	29/42	-10	278.82	-40	280.73	—	—	—	—
3000	34/45	-41	282.64	—	—	—	—	—	—
3000	45/50	-11	285.97	-12	293.60	—	—	—	—
5000	24/40	-13	302.82	—	—	—	—	—	—
5000	29/42	-14	304.72	-42	306.47	—	—	—	—
5000	34/45	-43	308.21	-44	312.03	—	—	—	—
5000	45/50	-15	323.00	-16	327.30	—	—	—	—
12,000	45/50	-17	476.62	-18	487.76	-51	486.17	—	—
12,000	55/50	-19	498.86	-20	513.19	-52	497.28	-53	511.57
22,000	45/50	-21	861.11	-22	872.24	-61	870.64	—	—
22,000	55/50	-23	880.17	-24	888.13	-63	884.95	—	—
50,000	45/50	—	—	—	—	-74	1,788.40	—	—

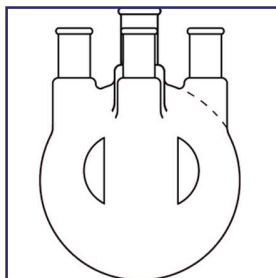




PRG-5110
ROUND BOTTOM,
FOUR NECK, ANGLED
STANDARD TAPER
JOINT,
MEDIUM WALL

Center neck is vertical, with three side necks at 20° angle. The fourth neck is at 90°. For micro applications see PG-9222.

Capacity ml	Center Neck	24/40 Joint		29/42 Joint	
		CODE	Price	CODE	Price
250	24/40	-01	152.36	—	—
500	24/40	-03	157.93	—	—
500	29/42	-04	158.87	-45	162.22
500	34/45	-31	164.76	—	—
1000	24/40	-05	194.46	—	—
1000	29/42	-06	196.51	-32	208.12
1000	34/45	-33	201.77	-34	203.09
2000	24/40	-07	222.09	—	—
2000	29/42	-08	225.75	-35	227.67
2000	34/45	-36	229.41	-37	231.18
2000	45/50	-38	249.46	-39	257.03
3000	24/40	-09	274.86	—	—
3000	29/42	-10	278.05	-40	280.73
3000	34/45	-41	282.64	—	—
3000	45/50	-11	285.97	-12	293.60
5000	24/40	-13	302.82	—	—
5000	29/42	-14	304.72	-42	306.47
5000	34/45	-43	308.21	-44	312.03
5000	45/50	-15	323.00	-16	327.30
12,000	45/50	-17	476.62	-18	487.76
12,000	55/50	-19	198.86	-20	513.19
22,000	45/50	-21	861.11	-22	872.24
22,000	55/50	-23	880.17	-24	888.13

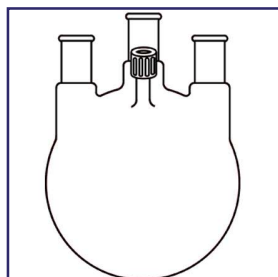


PRG-5115
ROUND BOTTOM,
MORTON TYPE, FOUR
NECK, STANDARD
TAPER JOINT,
MEDIUM WALL

Flask has four baffles, equally spaced around the body for greater agitation during stirring operations. All necks are vertical and 180° apart with one 90°.

Capacity ml	Center Neck	24/40 Joint		29/42 Joint	
		CODE	Price	CODE	Price
500	24/40	-01	204.97	—	—
500	29/42	-02	206.55	-03	209.71
500	45/50	-04	212.89	-05	219.25
1000	24/40	-06	252.63	—	—
1000	29/42	-07	255.47	-08	259.22
1000	45/50	-09	265.33	-10	271.70
2000	24/40	-11	285.97	—	—
2000	29/42	-13	292.33	-14	295.34
2000	45/50	-15	324.10	-16	333.63
3000	24/40	-17	355.88	—	—
3000	29/42	-18	360.65	-20	363.83
5000	29/32	-21	394.03	-22	397.21
5000	45/50	-23	417.87	-24	424.21
12,000	45/50	-25	619.64	-26	633.93
12,000	55/50	-27	648.22	-28	665.69
22,000	45/50	-29	1,118.50	-30	1,132.79
22,000	55/50	-31	1,143.92	-32	1,153.44



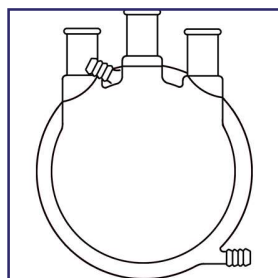


PRG-5120

**ROUND BOTTOM,
THREE NECK, STAND-
DARD TAPER JOINT,
THREADED SIDE
PORT**

Flask has a #18 GL threaded connector to accept thermometers or bleed tubes 6-7 mm O.D. All necks are vertical, 180° apart. Side necks have standard taper 24/40 joints on all sizes. (Replacement cap and sealing ring are PRG-203 and PRG-204)

Capacity ml	24/40 Joint		29/42 Joint		34/45 Joint		45/50 Joint		55/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
500	-01	157.93	-21	158.87	-22	164.76	—	—	—	—
1000	-02	194.46	-03	196.51	-23	201.77	-24	206.55	—	—
2000	-26	222.09	-27	225.61	-28	228.80	-29	249.46	-30	255.79
3000	-31	274.86	-32	278.82	-33	282.64	-34	285.97	-35	293.29
5000	-36	302.82	-37	304.72	-38	308.21	-39	322.52	-40	327.30

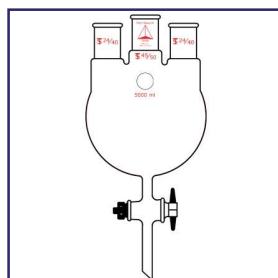


PRG-5125

**ROUND BOTTOM,
THREE NECK, STAND-
DARD TAPER JOINT,
JACKETED,
MEDIUM WALL**

Entire flask is jacketed and has 2 ports for circulation of steam or thermal fluid. All necks are vertical, 180° apart.

Capacity ml	Center Neck	24/40 Joint		29/42 Joint	
		CODE	Price	CODE	Price
500	24/40	-01	759.9	—	—
500	29/42	-02	766.82	-03	772.05
1000	24/40	-04	827.58	—	—
1000	29/42	-05	832.76	-06	837.98
2000	24/40	-07	1,098.23	—	—
2000	29/42	-08	1,103.40	-09	1,108.61
3000	29/42	-10	1,341.10	-11	1,349.78
3000	45/50	-12	1,358.44	-13	1,363.66
5000	29/42	-14	1,615.22	-15	1,620.41
5000	45/50	-16	1,627.36	-17	1,641.24



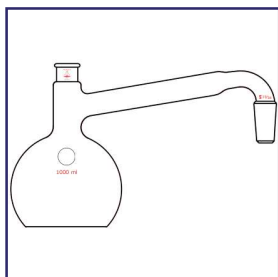
PRG-5130

**ROUND BOTTOM,
THREE NECK, STAND-
DARD TAPER JOINT,
BOTTOM OUTLET,
MEDIUM WALL**

Both side necks are standard taper 24/40 joints, 180° apart with Teflon stopcock for drain valve.

Capacity ml	Center Neck		Center Neck		Center Neck		Center Neck	
	24/40 Joint		29/42 Joint		34/45 Joint		45/50 Joint	
500	CODE	Price	CODE	Price	CODE	Price	CODE	Price
500	-01	295.52	-20	297.12	-21	303.44	—	—
1000	-02	327.30	-03	332.06	-22	336.81	—	—
2000	-04	368.60	-05	371.78	-23	376.54	-24	381.30
3000	-06	408.32	-07	411.49	-25	416.28	-26	421.04
5000	-08	441.69	-09	444.85	-27	452.79	-28	457.55
12,000	—	—	—	—	—	—	-29	691.74
22,000	—	—	—	—	—	—	-31	813.44

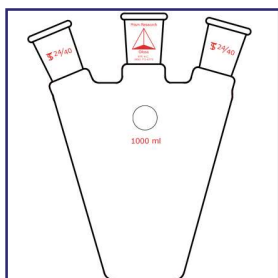




Flat bottom flask with a side arm. Standard taper 24/40 stopper joint on top. Side arm has a standard taper 19/38 joint. Inner stopper plug sold separately. (PRG-6100-05 Plug)

Capacity ml	Stopper Neck	CODE	Price
500	22	-01	129.07
1000	27	-02	162.93

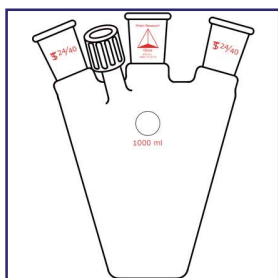
PRG-5135
DISTILLING, WITH
19/38 SIDE ARM



Conical bottom allows use down to greatly reduce volumes. The three necks have the same size standard taper outer joints.

Capacity ml	Joint Size	CODE	Price
500	14/20	-01	173.82
125	14/20	-02	124.83
250	24/40	-03	139.38
500	24/40	-04	176.82
1000	24/40	-05	187.08

PRG-5136
CONICAL BOTTOM,
EUROPEAN STYLE,
THREE NECK

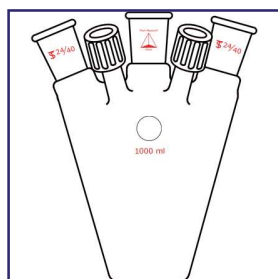


Conical bottom allows use down to greatly reduce volumes. The three necks have the same size standard taper outer joints. A fourth neck has a #18 GL threaded joint for 6-7mm compression fit. Nut and compression fitting included.

Capacity ml	Joint Size	CODE	Price
500	14/20	-01	188.28
125	14/20	-02	145.46
250	24/40	-03	160.47
500	24/40	-04	198.20
1000	24/40	-05	208.54

PRG-5137
CONICAL BOTTOM,
EUROPEAN STYLE,
FOUR NECK, ONE
JOINT THREADED

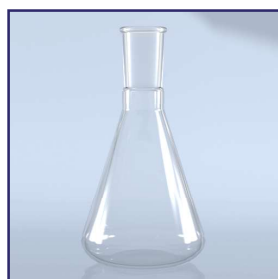




Conical bottom allows use down to greatly reduce volumes. The three necks have the same size standard taper outer joints. The fourth and fifth neck has a #18 GL threaded joint to accommodate thermometers, electrodes, adapters, etc.

Capacity ml	Joint Size	CODE	Price
500	14/20	-01	225.95
125	14/20	-02	174.57
250	24/40	-03	192.56
500	24/40	-04	237.85
1000	24/40	-05	250.23

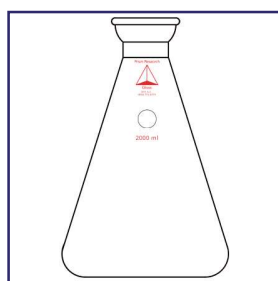
PRG-5138
CONICAL BOTTOM,
EUROPEAN STYLE,
FIVE NECK, TWO
JOINTS THREADED



Flask, Erlenmeyer, Standard Taper Outer Joint

Capacity ml	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
50	-01	28.37	-02	30.06	—	—
125	-03	30.58	-04	31.17	—	—
250	-05	27.62	-06	31.17	—	—
300	-07	27.62	-08	31.17	—	—
500	-09	30.29	-10	34.96	-20	39.92
1000	-12	35.09	-13	38.98	-14	70.65
2000	-15	47.23	-16	49.49	-17	71.53
4000	-21	126.44	-22	129.57	-18	132.01
6000	-23	162.91	-24	170.21	-19	181.73

PRG-5140
ERLENMEYER, STAND-
DARD TAPER JOINT

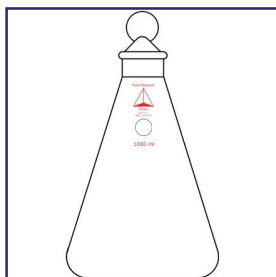


All sizes have a 35/25 socket joint.

Capacity ml	CODE	Price
250	-04	42.43
300	-06	42.65
500	-08	42.65
1000	-10	50.20
2000	-12	58.02

PRG-5145
ERLENMEYER, 35/25
SPHERICAL JOINT

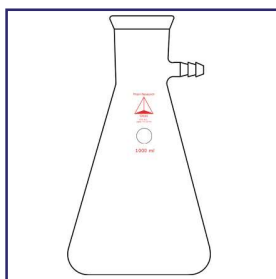




Supplied with a solid pennyhead stopper or flask only.

Capacity ml	Stopper	Complete		Flask Only	
		CODE	Price	CODE	Price
10	9	-01	24.55	-02	18.35
25	16	-03	25.22	-04	19.49
50	19	-05	25.95	-06	20.17
125	22	-07	31.20	-08	22.67
250	27	-09	37.84	-10	22.87
500	32	-11	43.11	-12	26.39
1000	32	-13	52.54	-14	36.58

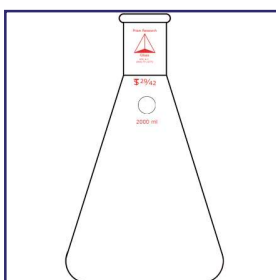
PRG-5150
ERLENMEYER, STANDARD TAPER STOPPER



Serrated hose barb side port for vacuum connection.

Capacity ml	Stopper Size	CODE	Price
250	#6	-01	18.43
500	#7	-02	25.29
1000	#8	-03	52.14
2000	#9	-04	100.11
4000	#12	-05	148.54

PRG-5155
FILTERING, HEAVY WALL

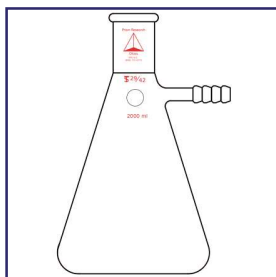


Heavy wall flask with standard taper outer joint.

Capacity ml	24/40 Joint		29/42 Joint	
	CODE	Price	CODE	Price
250	-01	57.83	-02	59.49
500	-03	62.29	-04	64.09
1000	-05	75.20	-06	79.31
2000	-07	105.76	-08	109.05

PRG-5160
FILTER, STANDARD TAPER JOINT, HEAVY WALL

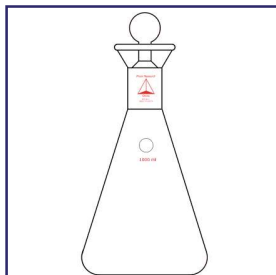




PRG-5162
FILTER, STANDARD
TAPER JOINT, HEAVY
WALL

Serrated hose barb side connection with standard taper outer joint.

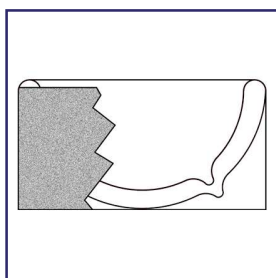
Capacity ml	24/40 Joint		29/42 Joint	
	CODE	Price	CODE	Price
250	-01	88.89	-02	92.15
500	-03	100.73	-04	104.54
1000	-05	131.69	-06	135.52
2000	-07	172.22	-08	175.23



PRG-5165
IODINE, STANDARD
TAPER STOPPER

Fluted funnel top with hollow pennyhead stopper.

Capacity ml	Complete		Flask Only		Stopper Only	
	CODE	Price	CODE	Price	CODE	Price
125	-01	78.50	-02	47.49	-03	30.63
250	-04	79.12	-05	48.61		
500	-06	89.45	-07	58.63		
1000	-08	97.56	-09	67.01		

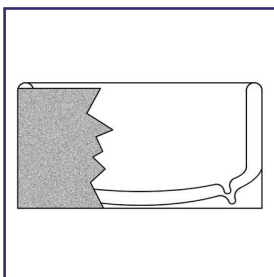


PRG-5185
DEWAR, LOW FORM,
HEMISPHERICAL

Low form style Dewar allows for magnetic stirring. Protective aluminum base extends up to the top rim for added protection. Flask size shown is the maximum size of round bottom flask that the Dewar will accommodate.

Capacity ml	Inside Depth mm	Inside Diameter mm	Flank Size ml	CODE	Price
150	40	80	100	-01	229.46
275	55	100	250	-02	292.95
600	65	140	500	-03	325.48

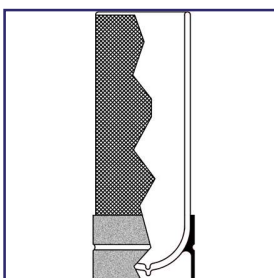




Aluminum base and sides are for added protection. The semi-flat bottom broadens the coolant capacity.

Capacity ml	Inside Depth mm	Inside Diameter mm	Flank Size ml	CODE	Price
150	35	80	100	-01	258.76
350	75	80	100	-02	263.63
850	75	130	500	-03	346.64
2500	135	170	1000	-04	621.67

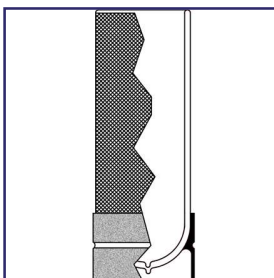
PRG-5190
DEWAR, LOW FORM,
HEMISPHERICAL



A weighted metal base is used for balance, and mesh cover is used for a solid grip and cushion against breakage. Evaporation is reduced with a vented polyethylene stopper.

Capacity ml	Inside Depth mm	Inside Diameter mm	Overall Height mm	CODE	Price
350	125	70	157	-01	138.34
665	195	70	240	-02	136.72
1000	302	70	337	-03	144.83
1900	190	120	252	-04	335.27
4300	305	143	365	-05	442.66

PRG-5195
DEWAR, CYLINDRI-
CAL, WIDE MOUTH

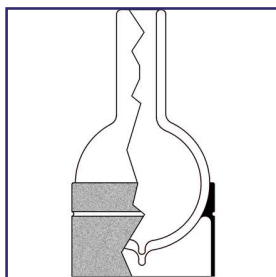


A weighted metal base is used for balance, and mesh cover is used for a solid grip and cushion against breakage. Evaporation is reduced with a vented polyethylene stopper. With an aluminum housing to increase safety during testing.

Capacity ml	Inside Depth mm	Inside Diameter mm	Flank Size ml	CODE	Price
350	125	70	157	-01	143.21
665	195	70	240	-02	141.60
1000	302	70	337	-03	149.74
1900	190	120	252	-04	356.40
4300	305	143	365	-05	462.20

PRG-5200
DEWAR, CYLINDRI-
CAL, WIDE MOUTH,
FULL HOUSING

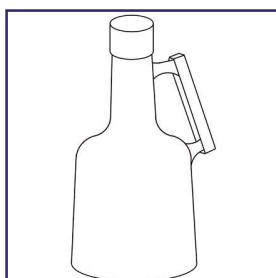




PRG-5205
DEWAR, SPHERICAL,
NARROW NECK

For temporary storage and transfer. The 5000ml size is available with a polyethylene stopper to minimize evaporation.

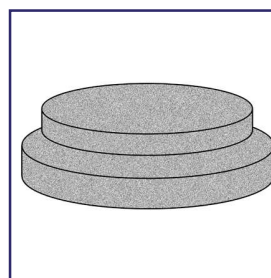
<u>Capacity ml</u>	<u>Inside Depth mm</u>	<u>Inside Diameter mm</u>	<u>Flank Size ml</u>	<u>CODE</u>	<u>Price</u>
2000	184	32	386	-01	732.35
5000	255	53	456	-02	854.40



PRG-5210
FIBERGLASS
CADDIES FOR
SPHERICAL DEWAR
FLASKS

To be used for transportation, protection and dispensing.

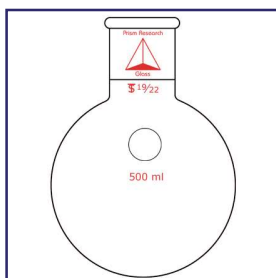
<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
2000	-01	341.79
5000	-02	444.14



PRG-5215
POLYETHYLENE
STOPPER FOR
DEWAR FLASKS

Minimizes evaporation.

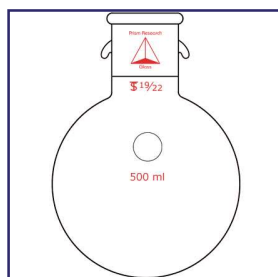
<u>I.D. or Neck</u> <u>Size mm</u>	<u>CODE</u>	<u>Price</u>
53	-02	12.17
70	-03	12.17
120	-04	12.17
143	-05	12.17



PG-9202
MICRO, ROUND BOT-
TOM, SINGLE SHORT
NECK, STANDARD
TAPER JOINT

Flask, round bottom, short neck, with standard taper outer joint. For larger sizes see PRG-5030.

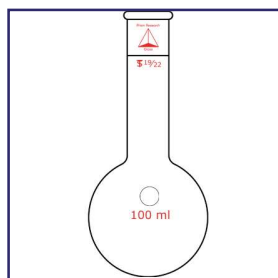
<u>Capacity ml</u>	<u>§ 14/20 Joint</u>		<u>§ 19/22 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	-01	22.71	-02	27.53
4	-03	22.71	-04	27.53
5	-05	24.83	-06	27.53
6	-07	24.83	-08	27.53
10	-09	24.83	-10	27.53
15	-11	24.83	-12	27.53
20	-13	24.70	-14	27.53
25	-15	24.70	-16	27.53
35	-17	24.70	-18	27.53
50	-19	24.70	-20	27.53
65	-21	24.70	-22	27.53
100	-23	24.70	-24	27.53
125	-25	24.70	-26	27.53
200	-27	24.70	-28	27.53
250	-29	27.40	-30	29.10
300	-31	29.10	-32	32.85
500	-33	29.10	-34	32.85



PG-9204
MICRO, ROUND BOT-
TOM, SINGLE SHORT
NECK, WITH HOOKS,
STANDARD TAPER
JOINT

Flask, round bottom, short neck, outer joint, with hooks. For larger sizes see PRG-5030.

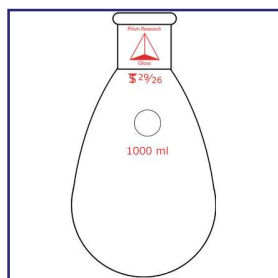
Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
2	-01	24.77	-02	26.77
4	-03	24.77	-04	24.77
5	-05	27.68	-06	28.58
6	-07	27.68	-08	28.58
10	-09	27.68	-10	27.74
15	-11	27.68	-12	28.58
20	-13	27.68	-14	28.58
25	-15	27.68	-16	28.58
35	-17	27.68	-18	28.58
50	-19	27.68	-20	28.58
65	-21	27.68	-22	28.58
100	-23	27.68	-24	28.58
125	-25	27.68	-26	28.58
200	-27	27.68	-28	28.58
250	-29	30.11	-30	33.10
300	-31	32.26	-32	36.19
500	-33	32.26	-34	36.19



PG-9206
MICRO, ROUND BOT-
TOM, LONG NECK,
STANDARD TAPER
JOINT

Flask, round bottom, long neck, with standard taper outer joint. For larger sizes see PRG-5040.

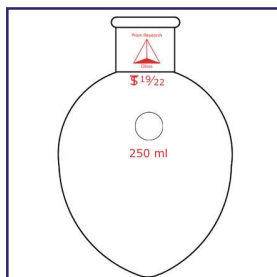
Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
10	-01	29.98	-02	31.48
25	-03	29.98	-04	31.48
50	-05	29.98	-06	31.48
100	-07	29.98	-08	31.48



PG-9208
MICRO, ROUND BOT-
TOM, IMPROVED,
SHORT NECK, STAN-
DARD TAPER JOINT

Flask, round bottom, improved, short neck, standard taper outer joint. Upper portion is tapered allowing for easier removal of solids and liquids. For larger sizes see PRG-5045.

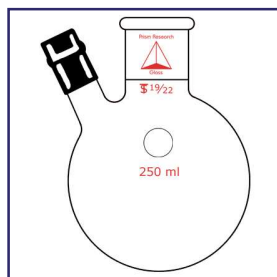
Capacity ml	§ 14/20 Joint		§ 19/22 Joint		§ 24/25 Joint		§ 29/26 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
10	-01	25.72	-02	26.72	—	—	—	—
25	-03	25.72	-04	27.68	—	—	—	—
50	-05	26.03	-06	27.77	-07	29.17	-08	30.79
100	-09	26.28	-10	28.54	-11	30.34	-12	30.92
200	-13	34.16	-14	34.97	-15	34.46	-16	34.82
500	-17	37.00	-18	38.89	-19	42.14	-20	40.51
1000	—	—	—	—	-21	43.57	-22	45.00



PG-9210
MICRO, PEAR
SHAPED, SHORT
NECK, STANDARD
TAPER JOINT

Flask, pear shaped, short neck, with standard taper outer joint. For larger sizes see PRG-5055.

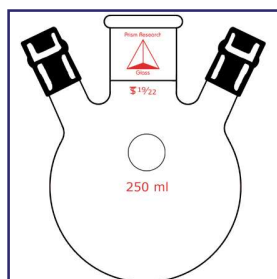
Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
2	-01	25.93	-02	26.33
4	-03	25.93	-04	26.33
5	-05	25.93	-06	26.33
6	-07	25.93	-08	26.33
10	-09	25.93	-10	26.33
15	-11	25.93	-12	26.33
20	-13	25.93	-14	26.33
25	-15	25.93	-16	26.33
35	-17	25.93	-18	26.33
50	-19	25.93	-20	26.33
65	-21	25.93	-22	26.33
75	-23	25.93	-24	26.33
100	-25	26.84	-26	27.33
250	-27	30.46	-28	31.59



PG-9212
MICRO, ROUND BOT-
TOM, SHORT NECK,
SIDE INLET TUBE,
STANDARD TAPER
JOINT

Flask, round bottom, short neck, side inlet tube, with standard taper outer joint. Furnished with a rubber filament for attachment to the side of a thermometer, gas inlet tube or bleed tube.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
5	-01	33.43	-02	33.95
10	-03	33.43	-04	33.95
25	-05	33.43	-06	33.95
50	-07	33.43	-08	33.95
100	-09	34.05	-10	34.91
250	-11	34.69	-12	36.14

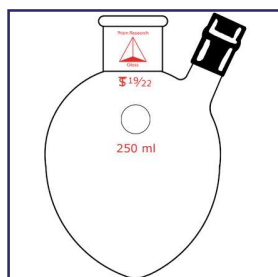


PG-9214
MICRO, ROUND BOT-
TOM, SHORT NECK,
TWO SIDE INLET
TUBES, STANDARD
TAPER JOINT

Flask, round bottom, short neck, two side inlet tubes, with standard taper outer joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
50	-01	41.94	-02	42.94
100	-03	44.15	-04	45.43
250	-05	48.58	-06	49.95

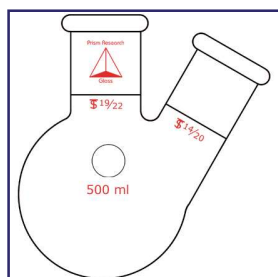




PG-9216
MICRO, PEAR
SHAPED, SHORT
NECK, SIDE INLET
TUBE, STANDARD
TAPER JOINT

Flask, pear-shaped, short neck, side inlet tube, with standard taper outer joint. Supplied with rubber filament.

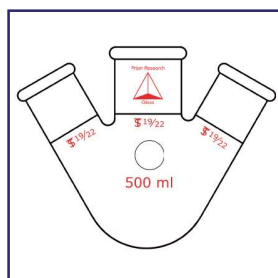
Capacity ml	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
5	-01	35.09	-02	35.48
6	-03	35.09	-04	35.48
10	-05	35.09	-06	35.48
15	-07	35.09	-08	35.48
20	-09	35.09	-10	35.48
25	-11	35.09	-12	35.48
50	-13	35.09	-14	35.48
100	-15	35.48	-16	37.16
250	-17	39.42	-18	41.94



PG-9218
MICRO, ROUND BOT-
TOM, TWO NECK,
STANDARD TAPER
JOINT

Flask, round bottom, two-neck, with standard taper outer joints. For larger sizes see PRG-5075.

Capacity ml	Center Neck 14/20 19/22	10/18 Joint		14/20 Joint		19/22 Joint		7/12 Joint	
		CODE	Price	CODE	Price	CODE	Price	CODE	Price
15	14/20	-01	51.01	-02	52.07	-03	53.16	-04	53.52
15	19/22	-05	52.86	-06	52.45	-07	54.50	-08	55.46
25	14/20	-09	51.01	-10	52.07	-11	53.52	-12	53.52
25	19/22	-13	52.86	-14	52.45	-15	54.50	-16	55.46
50	14/20	-17	52.07	-18	54.41	-19	54.41	-20	54.50
50	19/22	-21	53.94	-22	55.58	-23	57.52	-24	56.34
100	14/20	-25	52.07	-26	53.19	—	—	—	—
100	19/22	-27	53.94	-28	55.58	—	—	—	—
250	14/20	-29	52.07	-30	53.19	—	—	—	—
250	19/22	-31	53.94	-32	55.58	—	—	—	—
500	14/20	-33	52.07	-34	53.19	—	—	—	—
500	19/22	-35	53.94	-36	55.02	—	—	—	—

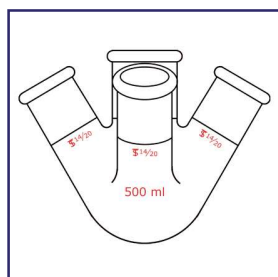


PG-9220
MICRO, ROUND BOT-
TOM, THREE NECK,
STANDARD TAPER
JOINT

Flask, round bottom, three-neck, with standard taper outer joints. For larger sizes see PRG-5085.

Capacity ml	Center Neck 14/20 19/22	14/20 Joint		19/22 Joint	
		CODE	Price	CODE	Price
25	14/20	-01	64.95	—	—
25	19/22	-02	66.69	-03	74.12
50	14/20	-04	67.32	—	—
50	19/22	-05	69.27	-06	69.64
100	14/20	-07	67.32	—	—
100	19/22	-08	69.27	-09	69.64
250	14/20	-10	68.14	—	—
250	19/22	-11	69.27	-12	69.64
500	14/20	-13	73.50	—	—
500	19/22	-14	74.67	-15	75.67

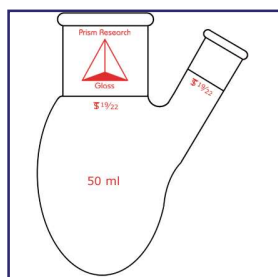




Flask, round bottom, four-neck, with a standard taper 19/22 center neck and three standard taper 14/20 side necks. For larger sizes see PRG-5110.

Capacity ml	CODE	Price
25	-01	92.52
50	-02	92.52
100	-03	92.52
250	-04	94.30
500	-05	100.40

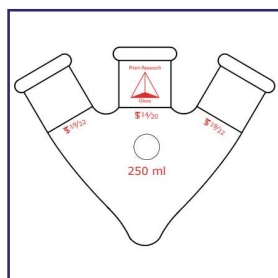
PG-9222
MICRO, ROUND BOT-
TOM, FOUR NECK,
STANDARD TAPER
JOINT



Flask, pear shaped, two-neck, with standard taper outer joints.

Capacity ml	Center Neck		7/12 Joint		10/18 Joint		14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
6	14/20	-01 49.39	-02 49.95	-03 51.75	—	—	—	—	—	—
6	19/22	-03 51.57	-04 51.75	—	—	—	—	—	—	—
10	14/20	-05 49.39	-06 49.95	-07 50.46	—	—	—	—	—	—
10	19/22	-08 51.57	-09 51.75	-10 52.86	—	—	—	—	—	—
15	14/20	-11 49.39	-12 49.95	-13 50.46	—	—	—	—	—	—
15	19/22	-14 51.57	-15 51.75	-16 52.86	-17 57.33	—	—	—	—	—
20	14/20	-18 49.39	-19 49.95	-20 50.46	—	—	—	—	—	—
20	19/22	-21 51.57	-22 51.74	-23 52.86	-24 57.33	—	—	—	—	—
25	14/20	-25 49.39	-26 49.95	-27 50.46	—	—	—	—	—	—
25	19/22	-28 51.57	-29 51.75	-30 52.86	-31 57.33	—	—	—	—	—
50	14/20	-32 49.39	-33 49.95	-34 50.46	—	—	—	—	—	—
50	19/22	-35 51.57	-36 51.75	-37 52.86	-38 57.33	—	—	—	—	—

PG-9224
MICRO, PEAR
SHAPED, TWO NECK,
STANDARD TAPER
JOINT

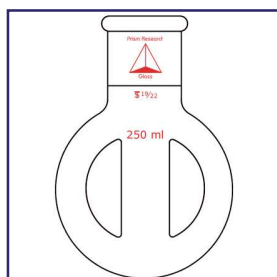


Flask, pear-shaped, three-neck, with standard taper outer joints.

Capacity ml	Center Neck		14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price	CODE	Price
15	14/20	-01 79.31	—	—	—	—
15	19/22	-02 79.74	-03 81.68	—	—	—
25	14/20	-04 79.31	—	—	—	—
25	19/22	-05 79.74	-06 81.68	—	—	—
50	14/20	-07 79.31	—	—	—	—
50	19/22	-08 79.74	-09 81.68	—	—	—
100	14/20	-10 79.31	—	—	—	—
100	19/22	-11 79.74	-12 81.68	—	—	—
250	14/20	-13 80.48	—	—	—	—
250	19/22	-14 81.04	-15 83.47	—	—	—

PG-9226
MICRO, PEAR
SHAPED, THREE
NECK, STANDARD
TAPER JOINT

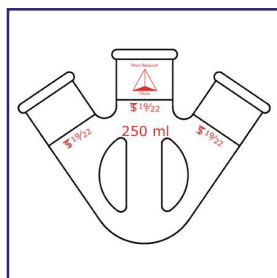




Flask has four equally spaced indentations on the body, allowing for better agitation which promotes mixing while being stirred.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
25	-01	62.17	-02	63.21
50	-03	62.17	-04	63.14
100	-05	62.17	-06	63.21
250	-07	64.01	-08	65.41

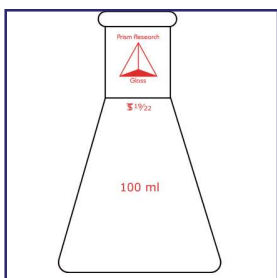
PG-9228
MICRO, ROUND
BODY, INDENTED,
MORTON STYLE,
STANDARD TAPER
JOINT



Flask has four equally spaced indentations on the body, allowing for better agitation which promotes mixing while being stirred. Center neck and two side necks are positioned 180 degrees apart.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
25	-01	106.19	-02	115.36
50	-03	107.75	-04	117.75
100	-05	113.33	-06	119.63
250	-07	122.46	-08	129.62

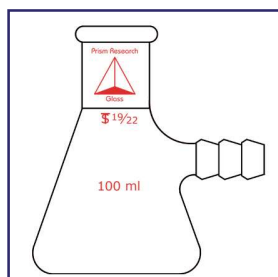
PG-9230
MICRO, ROUND
BODY, INDENTED,
MORTON STYLE,
THREE NECK, STAN-
DARD TAPER JOINT



Flask, Erlenmeyer, standard taper outer joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
5	-01	22.47	-02	23.50
10	-03	22.47	-04	23.50
15	-05	22.47	-06	23.50
25	-07	24.40	-08	25.33
50	-09	24.40	-10	25.33
100	-11	25.11	-12	27.76

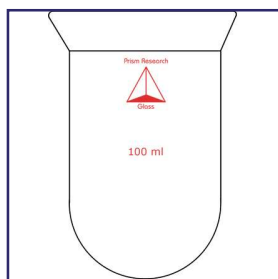
PG-9232
MICRO, ERLIN-
MEYER, STANDARD
TAPER JOINT



Flask, filter, heavy wall, standard taper outer joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
10	-01	35.80	-02	37.66
25	-03	35.80	-04	37.66
50	-05	36.47	-06	38.54
100	-07	48.56	-08	50.09

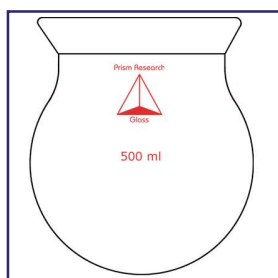
PG-9234
MICRO, FILTER,
HEAVY WALL, STAN-
DARD TAPER JOINT



Reaction vessel has a 60 mm I.D. Duran O-Ring flange. Leak-free seals can be obtained by use of an O-Ring or grease.

Capacity ml	Approximate Height mm	CODE	Price
50	65	-01	45.21
100	95	-02	48.16

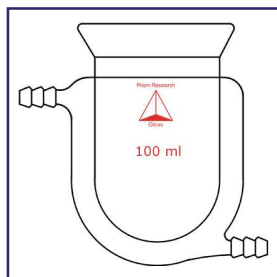
PG-9236
MICRO, REACTION
VESSEL, CYLINDRI-
CAL



Reaction vessel has a 60 mm I.D. Duran O-Ring flange and spherical body. Leak-free seal can be obtained by use of an O-Ring or grease.

Capacity ml	CODE	Price
200	-01	54.08
250	-02	54.08
300	-03	57.33
500	-04	60.96

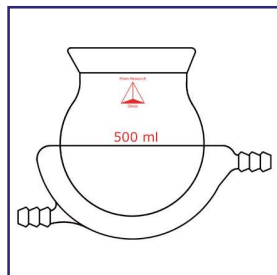
PG-9238
MICRO, REACTION
VESSEL, SPHERICAL



Reaction vessel has a 60mm I.D. Duran O-Ring flange and a jacket surrounding the body. Hose connections are positioned to optimize heating or cooling circulation. Jacket not included in height.

Capacity ml	Approximate Height mm	CODE	Price
100	110	-01	202.51

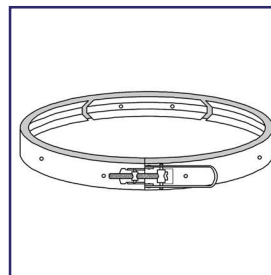
PG-9240
MICRO, REACTION
VESSEL, CYLINDRI-
CAL, JACKETED



Reaction vessel has a 60mm I.D. Duran O-Ring flange and spherical body. With a jacket surrounding it's lower half. Hose connections are positioned to optimize heating and cooling circulation.

Capacity ml	CODE	Price
200	-01	217.27
300	-02	233.64
500	-03	252.32

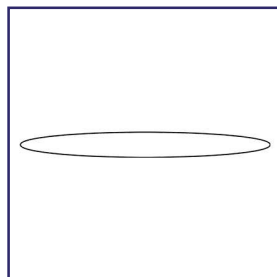
PG-9242
MICRO, REACTION
VESSEL, SPHERICAL,
JACKETED



Duron flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

Fits Flange I.D. mm	CODE	Price
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11

PRG-188
FLANGE, DURON

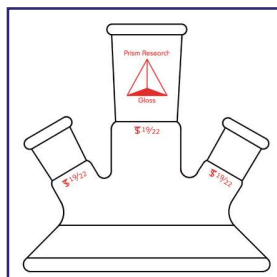


O-Rings are offered in Silicone or FEP Encapsulated Silicone and fit the PRG-184 flanges.

Fits Flange I.D. mm	Material	CODE	Price
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22

PRG-187
DURON O-RING

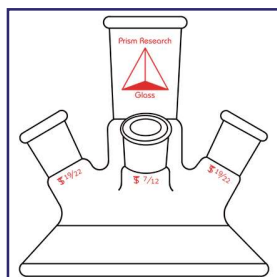




Three-neck cover with all joints 180° apart.

Center Neck $\text{\text{J}}$ Joints	Side Neck $\text{\text{J}}$ Joints	CODE	Price
14/20	14/20	-01	147.22
19/22	14/20	-02	150.74
19/22	19/22	-03	153.47

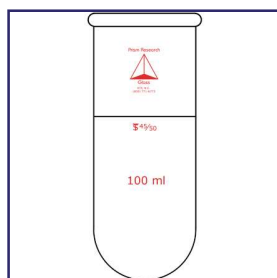
PG-9246
MICRO, REACTION
VESSEL COVER,
THREE NECK



Cover, reaction flask, four-neck with standard taper outer joints on three side necks and a center neck. Two side necks are 180° apart and the third is the same distance from the two. The bottom has a 60mm I.D. and is ground to prevent leakage.

Center Neck $\text{\text{J}}$ Joints	Side Neck $\text{\text{J}}$ Joints	Thermometer Neck $\text{\text{J}}$ Joints	CODE	Price
14/20	14/20	10/18	-01	161.47
19/22	14/20	10/18	-02	161.49
19/22	19/22	10/18	-03	166.72
14/20	14/20	7/12	-04	160.89
19/22	14/20	7/12	-05	163.32
19/22	19/22	7/12	-06	166.14

PG-9248
MICRO, REACTION
VESSEL COVER,
FOUR NECK

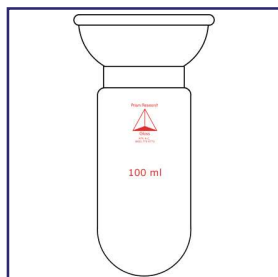


Flask, body reaction, cylindrical, round bottom with standard taper outer joint on top.

Capacity ml	$\text{\text{J}}$ Joints	CODE	Price
50	45/50	-01	47.35
100	45/50	-02	48.44

PG-9250
MICRO, BODY REAC-
TION, CYLINDRICAL

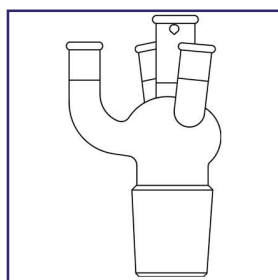




Flask, body reaction, cylindrical, round bottom with a socket joint on top.

Capacity ml	Joint	CODE	Price
50	65/40	-01	50.77
100	65/40	-02	52.53

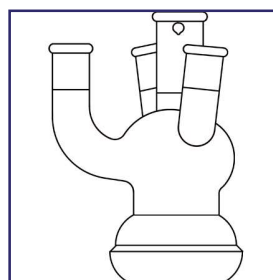
PG-9252
MICRO, BODY REAC-
TION, CYLINDRICAL



Flask head, reaction, four-neck. Side necks are 120° apart. Two are at a slant, one is straight. Bottom flask connection is a 45/50 inner joint.

Side Neck		
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	178.77
19/22	-02	179.03

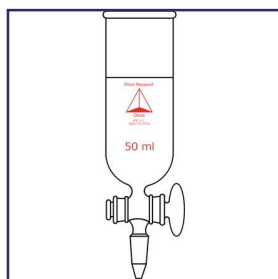
PG-9254
MICRO, REACTION
HEAD, FOUR NECK



Flask head, reaction, four-neck. Side necks are 120° apart. Two are at a slant, one is straight. Bottom flask connection is a 65/40 ball joint.

Side Neck		
<u>₹ Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	193.44
19/22	-02	195.97

PG-9256
MICRO, REACTION
HEAD, FOUR NECK

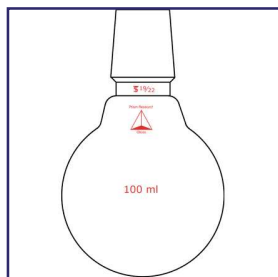


Flask body, reaction, cylindrical. Includes a 2mm stopcock outlet on the bottom above a standard taper 14/20 inner joint.

Capacity ml	Joint Sizes	CODE	Price
50	45/50	-01	170.20
50	65/40	-02	181.46
100	45/50	-03	173.14
100	65/40	-04	183.09

PG-9258
MICRO, REACTION
BODY, CYLINDRICAL,
WITH STOPCOCK

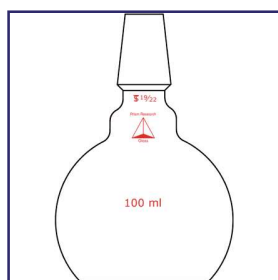




Flask, round bottom, short neck, with standard taper inner joint.

<u>Capacity ml</u>	<u>§ 14/20 Joint</u>		<u>§ 19/22 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
25	-01	26.97	-02	27.23
50	-03	26.97	-04	27.23
100	-05	26.97	-06	27.23

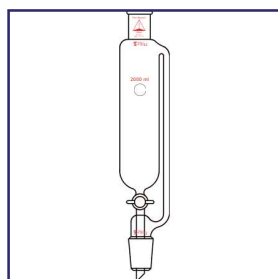
PG-9260
MICRO, ROUND BOT-
TOM, SHORT NECK,
WITH STANDARD
TAPER INNER JOINT



Flask, flat bottom, short neck, with standard taper inner joint.

<u>Capacity ml</u>	<u>§ 14/20 Joint</u>		<u>§ 19/22 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
25	-01	27.34	-02	27.61
50	-03	27.34	-04	27.61
100	-05	29.16	-06	29.40

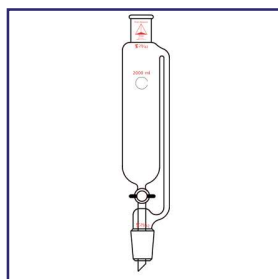
PG-9262
MICRO, FLAT BOT-
TOM, SHORT NECK,
WITH STANDARD
TAPER INNER JOINT



PRG-5500
ADDITION, STANDARD TAPER JOINTS,
GLASS STOPCOCK

Addition funnel with the same size standard taper joints at both ends. Glass stopcock and pressure equalizing side tube. Non calibrated.

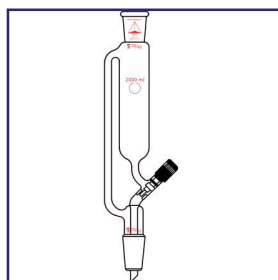
Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	158.40
125	2	24/40	-02	163.35
250	2	24/40	-03	176.36
500	4	24/40	-04	210.23
500	4	29/42	-05	215.44
1000	4	24/40	-06	233.37
1000	4	29/42	-07	240.54
2000	6	24/40	-08	357.48
2000	6	29/42	-09	363.83



PRG-5505
ADDITION, STANDARD TAPER JOINTS,
TEFLON STOPCOCK

Addition funnel with the same size standard taper joints at both ends. Teflon stopcock and pressure equalizing side tube. Non calibrated.

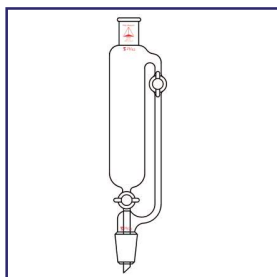
Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	183.31
125	2	24/40	-02	187.50
250	2	24/40	-03	201.24
500	4	24/40	-04	229.79
500	4	29/42	-05	240.54
1000	4	24/40	-06	260.30
1000	4	29/42	-07	265.51
2000	6	24/40	-08	379.73
2000	6	29/42	-09	387.66
3000	0-8mm	29/42	-17	257.37



PRG-5510
ADDITION, STANDARD TAPER JOINTS,
THREADED TEFLON VALVE

Cylindrical style addition funnel has standard tapered joints on top and bottom. Plunger style valve allows for better control of fluid release. Pressure equalizing side tube. Non calibrated.

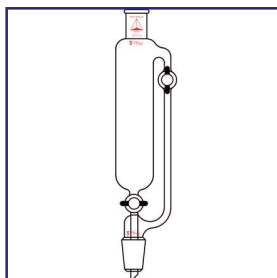
Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	190.70
125	2	24/40	-02	204.47
125	8	29/42	-09	482.97
250	2	24/40	-03	232.18
500	4	24/40	-04	244.15
500	4	29/42	-05	249.15
1000	4	24/40	-06	291.81
1000	4	29/42	-07	296.99
2000	8	24/40	-08	475.03



PRG-5515
ADDITION, STANDARD TAPER JOINTS,
GLASS STOPCOCKS

Same size standard taper joints at both ends and glass stopcocks. A 2mm glass stopcock is positioned on the arm allowing the funnel to fill without being exposed to the atmosphere. Non calibrated.

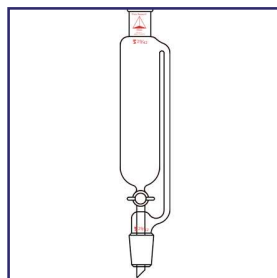
Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	203.10
125	2	24/40	-02	216.41
250	2	24/40	-03	231.79
500	4	24/40	-04	252.53
500	4	29/42	-05	257.89
1000	4	24/40	-06	277.86
1000	4	29/42	-07	283.05
2000	6	24/40	-08	465.53
2000	6	29/42	-09	471.86



PRG-5520
ADDITION, STANDARD TAPER JOINTS,
TEFLON STOPCOCKS

Same size standard taper joints at both ends and Teflon stopcocks. A 2mm Teflon stopcock is positioned on the arm allowing the funnel to fill without being exposed to the atmosphere. Non calibrated.

Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	239.35
125	2	24/40	-02	242.37
250	2	24/40	-03	259.31
500	4	24/40	-04	279.26
500	4	29/42	-05	284.27
1000	4	24/40	-06	304.18
1000	4	29/42	-07	309.59
2000	6	24/40	-08	505.22
2000	6	29/42	-09	511.57

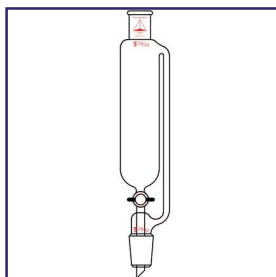


PRG-5525
ADDITION, GRADUATED, STANDARD
TAPER JOINTS,
GLASS STOPCOCK

Same size standard taper joints at both ends and glass stopcock. Calibrated in ascending and descending scales. Pressure equalizing side tube.

Capacity ml	Subdivision ml	Stopcock Size	Joint Size	CODE	Price
60	1.0	2	24/40	-01	215.24
125	1.0	2	24/40	-02	220.34
250	5.0	2	24/40	-03	233.64
500	5.0	4	24/40	-04	268.29
500	5.0	4	29/42	-05	273.82
1000	10.0	4	24/40	-06	294.00
1000	10.0	4	29/42	-07	299.32
2000	20.0	6	24/40	-08	510.01
2000	20.0	6	29/42	-09	516.34



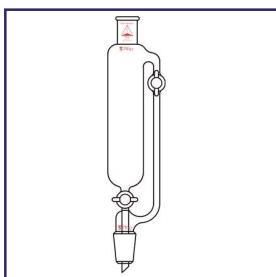


PRG-5530

ADDITION, GRADUATED, STANDARD TAPER JOINTS, TEFLON STOPCOCK

Same size standard taper joints at both ends and Teflon stopcock. Calibrated in ascending and descending scales. Pressure equalizing side tube.

Capacity ml	Subdivision ml	Stopcock Size	Joint Size	CODE	Price
60	1.0	2	24/40	-01	240.95
125	1.0	2	24/40	-02	245.24
250	5.0	2	24/40	-03	259.32
500	5.0	4	24/40	-04	288.25
500	5.0	4	29/42	-05	299.32
1000	10.0	4	24/40	-06	328.54
1000	10.0	4	29/42	-07	338.46
2000	20.0	6	24/40	-08	532.24
2000	20.0	6	29/42	-09	538.60

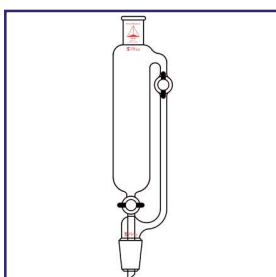


PRG-5535

ADDITION, GRADUATED, STANDARD TAPER JOINTS, GLASS STOPCOCKS

Same size standard taper joints at both ends and glass stopcocks. Calibrated in ascending and descending scales. With a 2mm glass stopcock positioned on the arm allowing the funnel to fill without being exposed to the atmosphere.

Capacity ml	Subdivision ml	Stopcock Size	Joint Size	CODE	Price
60	1.0	2	24/40	-01	276.76
125	1.0	2	24/40	-02	281.98
250	5.0	2	24/40	-03	298.16
500	5.0	4	24/40	-04	320.13
500	5.0	4	29/42	-05	325.55
1000	10.0	4	24/40	-06	351.95
1000	10.0	4	29/42	-07	360.23
2000	20.0	6	24/40	-08	525.88
2000	20.0	6	29/42	-09	525.88



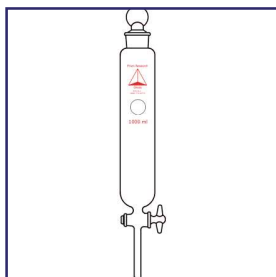
PRG-5540

ADDITION, GRADUATED, STANDARD TAPER JOINTS, TEFLON STOPCOCKS

Same size standard taper joints at both ends and Teflon stopcocks. Calibrated in ascending and descending scales. With a 2mm Teflon stopcock positioned on the arm allowing the funnel to fill without being exposed to the atmosphere.

Capacity ml	Subdivision ml	Stopcock Size	Joint Size	CODE	Price
60	1.0	2	24/40	-01	303.14
125	1.0	2	24/40	-02	308.15
250	5.0	2	24/40	-03	324.56
500	5.0	4	24/40	-04	351.73
500	5.0	4	29/42	-05	360.25
1000	10.0	4	24/40	-06	372.94
1000	10.0	4	29/42	-07	378.34
2000	20.0	6	24/40	-08	559.23
2000	20.0	6	29/42	-09	565.59

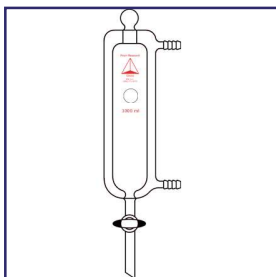




Cylindrical style funnel has a glass stopcock and stopper joint (plug supplied). Drip stem is 75mm long.

Capacity ml	Stopper Size	Stopcock Size	CODE	Price
60	16	2	-01	56.65
125	22	2	-02	68.45
250	22	2	-03	80.57
500	27	4	-04	111.95
1000	27	4	-05	167.38

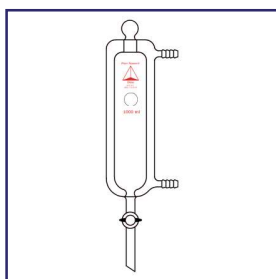
PRG-5545
SEPARATOR, CYLINDRICAL, GLASS STOPCOCK



The jacketed funnel comes equipped with a hollow penny stopper and a glass stopcock. The 3/8" hose connections allow the temperature to be regulated by circulating liquid through the jacket. Non calibrated.

Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	138.37
125	2	24/40	-02	142.68
250	2	24/40	-03	187.27
500	4	24/40	-04	232.70
500	4	29/42	-05	237.58
1000	4	24/40	-06	266.37
1000	4	29/42	-07	274.03

PRG-5555
SEPARATOR, CYLINDRICAL, JACKETED

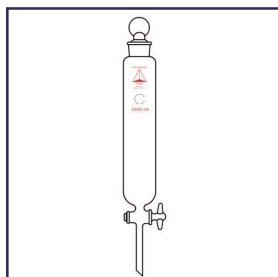


The jacketed funnel comes equipped with a hollow penny stopper and a Teflon stopcock. The 3/8" hose connections allow the temperature to be regulated by circulating liquid through the jacket. Non calibrated.

Capacity ml	Stopcock Size	Joint Size	CODE	Price
60	2	24/40	-01	161.44
125	2	24/40	-02	165.81
250	2	24/40	-03	210.45
500	4	24/40	-04	259.20
500	4	29/42	-05	263.13
1000	4	24/40	-06	294.09
1000	4	29/42	-07	300.15

PRG-5560
SEPARATOR, CYLINDRICAL, JACKETED

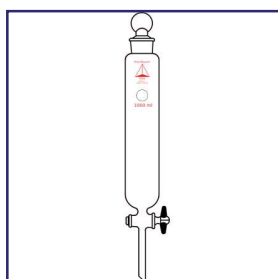




Cylindrical separatory funnel is fabricated with a standard taper stopper joint (plug supplied) and glass stopcock. Drip tip is 75mm below the stopcock. Calibrated on a double scale ascending and descending from the capacity line.

Capacity ml	Subdivision ml	Stopper Size	Stopcock Size	CODE	Price
60	1.0	16	2	-01	112.02
125	1.0	22	2	-02	123.21
250	5.0	22	2	-03	135.67
500	5.0	27	4	-04	167.73
1000	10.0	27	4	-05	229.37

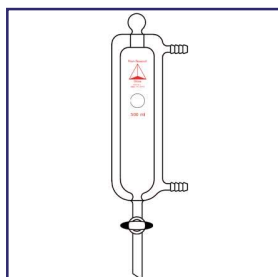
PRG-5565
SEPARATORY, CYLIN-
DRICAL, GRADU-
ATED, GLASS
STOPCOCK



Cylindrical separatory funnel is fabricated with a standard taper stopper joint (plug supplied) and Teflon stopcock. Drip tip is 75mm below the stopcock. Calibrated on a double scale ascending and descending from the capacity line.

Capacity ml	Subdivision ml	Stopper Size	Stopcock Size	CODE	Price
60	1.0	16	2	-01	132.84
125	1.0	22	2	-02	159.13
250	5.0	22	2	-03	180.57
500	5.0	27	4	-04	221.39
1000	10.0	27	4	-05	238.72

PRG-5570
SEPARATORY, CYLIN-
DRICAL, GRADU-
ATED, TEFLON
STOPCOCK

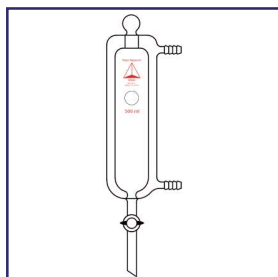


Cylindrical funnel is fabricated with a standard taper stopper joint (plug supplied) and glass stopcock. Thermal jacket has 3/8" hose barb for thermal fluid transfer. Calibrated in double scale ascending and descending formation.

Capacity ml	Subdivision ml	Stopper Size	Stopcock Size	CODE	Price
125	1.0	13	2	-01	185.35
250	5.0	16	2	-02	240.65
500	5.0	19	4	-03	299.06

PRG-5575
SEPARATORY, CYLIN-
DRICAL, JACKETED,
GRADUATED, TE-
FLON STOPCOCK

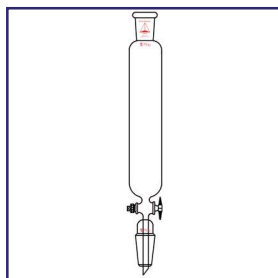




Cylindrical funnel is fabricated with a standard taper stopper joints (plugs supplied) and glass stopcock. Thermal jacket has 3/8" hose barb for thermal fluid transfer. Calibrated in double scale ascending and descending formation.

Capacity ml	Subdivision ml	Stopper Size	Stopcock Size	CODE	Price
125	1.0	13	2	-01	218.18
250	5.0	16	2	-02	273.24
500	5.0	19	4	-03	357.15

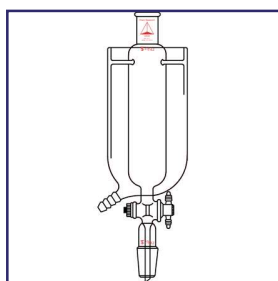
PRG-5580
SEPARATORY, CYLINDRICAL, JACKETED, GRADUATED, STANDARD TAPER STOPPER, TEFLON PLUG



Cylindrical separatory funnel with Teflon stopcock. Standard taper inner joint below and standard taper outer joint at the top. Calibrated on a double scale ascending and descending from the capacity line.

Capacity ml	Subdivision ml	Stopper Size	Stopcock Size	CODE	Price
60	1.0	2	24/40	-01	196.16
125	1.0	2	24/40	-02	198.28
250	1.0	2	24/40	-03	220.22
500	5.0	4	24/40	-04	260.87
500	5.0	4	29/42	-05	265.71
1000	10.0	4	24/40	-06	288.17
1000	10.0	4	29/42	-07	294.94

PRG-5585
SEPARATORY, CYLINDRICAL, JACKETED, GRADUATED, STANDARD TAPER JOINTS, TEFLON STOPCOCK

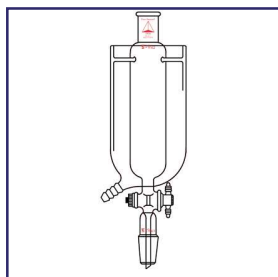


This separatory funnel is jacketed and uses dry ice as a means for cooling. Calibrated on a double scale ascending and descending. With Teflon stopcock.

Capacity ml	Joint	Stopper Size	Stopcock Size	CODE	Price
125	24/40	24/40	2	-01	381.58
250	24/40	24/40	2	-02	418.55
250	29/42	29/42	2	-03	420.41
500	24/40	24/40	4	-04	439.46
500	29/42	29/42	4	-05	462.54

PRG-5590
SEPARATORY, JACKETED

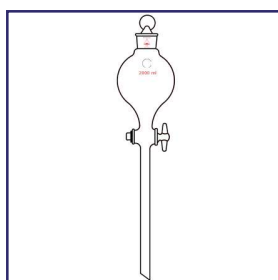




PRG-5592
SEPARATORY

This separatory funnel is jacketed and uses dry ice as a means for cooling. With Teflon stopcock. Non calibrated.

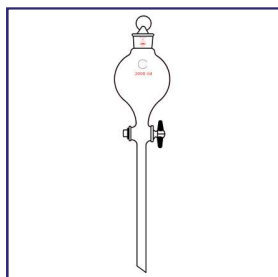
<u>Capacity ml</u>	<u>Joint</u>	<u>Stopper Size</u>	<u>Stopcock Size</u>	<u>CODE</u>	<u>Price</u>
125	24/40	24/40	2	-01	181.93
250	24/40	24/40	2	-02	188.04
250	29/42	29/42	2	-03	194.72
500	24/40	24/40	4	-04	299.57
500	29/42	29/42	4	-05	306.28



PRG-5595
SEPARATORY, GLOBE
SHAPE, LONG STEM,
STANDARD TAPER
STOPPER TOP,
GLASS STOPCOCK

Globe shaped funnels are fabricated with standard tapered stopper joint (plug supplied) and a glass stopcock. Drip stem is 175mm long.

<u>Capacity ml</u>	<u>Stopper Size</u>	<u>Stopcock Size</u>	<u>CODE</u>	<u>Price</u>
30	16	2	-01	64.62
60	16	2	-02	76.01
125	22	2	-03	78.19
250	22	2	-04	91.75
500	27	4	-05	109.50
1000	27	4	-06	161.56
2000	38	6	-07	222.98

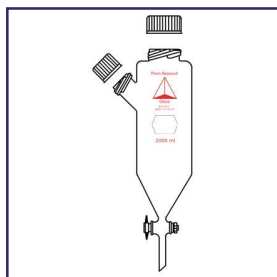


PRG-5600
SEPARATORY, GLOBE
SHAPE, LONG STEM,
STANDARD TAPER
STOPPER TOP, TE-
FLON STOPCOCK

Globe style funnels are fabricated with standard tapered stopper joint (plug supplied) and Teflon stopcock. Drip stem is 175mm long.

<u>Capacity ml</u>	<u>Stopper Size</u>	<u>Stopcock Size</u>	<u>CODE</u>	<u>Price</u>
30	16	2	-01	79.99
60	16	2	-02	267.30
125	22	2	-03	372.70
250	22	2	-04	111.70
500	27	4	-05	128.48
1000	27	4	-06	172.78
2000	38	6	-07	228.88

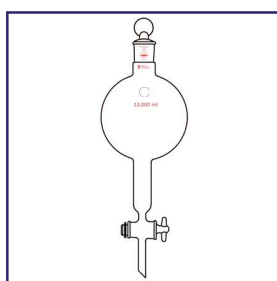




**PRG-5602
SHAKER**

Funnels are made of heavy wall tubing with two #45 GL threaded ports and caps. Caps have a Teflon liner. Lower portion is tapered down and has a 6mm Teflon stopcock.

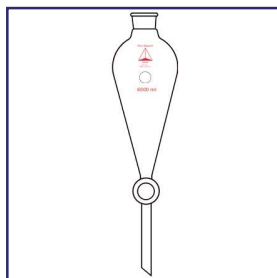
<u>Capacity ml</u>	<u>Stopcock Size</u>	<u>CODE</u>	<u>Price</u>
1000	6	-02	329.35
2000	6	-03	372.70



**PRG-5605
SEPARATORY, SURE-
GRIP**

Long neck and straight section provide ease while hand shaking and clamping. Available with glass or Teflon stopcock.

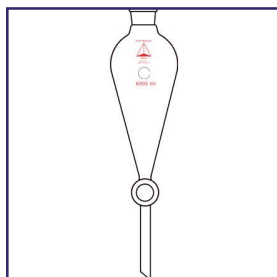
<u>Capacity ml</u>	<u>Stopper Size</u>	<u>Stopcock Size</u>	<u>Glass Stopcock CODE</u>	<u>Price</u>	<u>Teflon Stopcock CODE</u>	<u>Price</u>
3000	45/50	8	-01	437.85	-02	479.53
5000	45/50	8	-03	469.76	-04	511.84
12,000	55/50	10	-05	606.19	-06	658.23
22,000	45/50	8	—	—	-07	674.22



**PRG-5610
SEPARATORY,
SQUIBB, STANDARD
TAPER STOPPER
TOP, GLASS STOP-
COCK**

Squibb style funnels are fabricated with standard taper stopper joint (plug supplied) and glass stopcock. Drip tip length is approximately 60mm on all sizes.

<u>Capacity ml</u>	<u>Stopper Size</u>	<u>Stopcock Size</u>	<u>CODE</u>	<u>Price</u>
30	13	2	-01	64.62
60	16	2	-02	76.01
125	22	2	-03	80.20
250	22	4	-04	93.76
500	27	4	-05	112.48
1000	27	4	-06	161.56
2000	38	6	-07	233.37
3000	38	8	-08	275.27
4000	38	10	-09	332.70
6000	38	10	-10	400.17



PRG-5615
SEPARATORY,
SQUIBB, STANDARD
TAPER STOPPER
TOP, TEFLON STOP-
COCK

Squibb style funnels are fabricated with standard taper stopper joint (plug supplied) and Teflon stopcock. Drip tip length is approximately 60mm on all sizes.

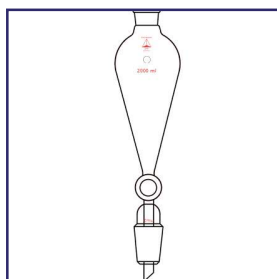
Capacity ml	Stopper Size	Stopcock Size	CODE	Price
30	13	2	-01	80.56
60	16	2	-02	84.22
125	22	2	-03	96.22
250	22	4	-04	113.25
500	27	4	-05	130.30
1000	27	4	-06	176.41
2000	38	6	-07	255.55
3000	38	8	-08	315.91
4000	38	10	-09	359.59
6000	38	10	-10	405.31



PRG-5620
SEPARATORY,
SQUIBB, FUNNEL
ONLY

Squibb style funnels are fabricated with standard taper stopper joint and Teflon stopcock. Drip tip length is approximately 60mm on all sizes. Funnel only – No stopper or TFE stopcock plug.

Capacity ml	Stopper Size	Stopcock Size	CODE	Price
30	13	2	-01	63.42
60	16	2	-02	67.01
125	22	2	-03	71.01
250	22	4	-04	95.73
500	27	4	-05	107.49
1000	27	4	-06	138.43
2000	38	6	-07	195.71

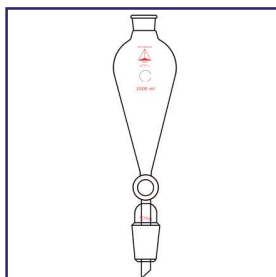


PRG-5625
SEPARATORY,
SQUIBB, STANDARD
TAPER JOINT, GLASS
STOPCOCK

Squibb type funnel with a standard taper stopper top and glass E61 stopcock. Drip stem has an inner standard tapered joint to connect with other apparatus. Complete with both stopper plugs.

Capacity ml	Joint Size	Stopper Size	Stopcock Size	CODE	Price
60	24/40	16	2	-01	114.50
125	24/40	22	2	-02	119.48
250	24/40	22	4	-03	141.04
500	24/40	27	4	-04	161.77
500	29/42	27	4	-05	166.38
1000	24/40	27	4	-06	197.88
1000	29/42	27	4	-07	222.41
2000	24/40	38	6	-08	296.39
2000	29/42	38	6	-09	321.53

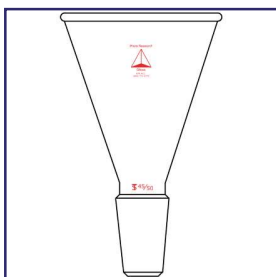




PRG-5630
SEPARATORY,
SQUIBB, STANDARD
TAPER JOINT, TE-
FLON STOPCOCK

Squibb type funnel with a standard taper stopper top and Teflon stopcock. Drip stem has an inner standard tapered joint to connect with other apparatus. Complete with both stopper plugs.

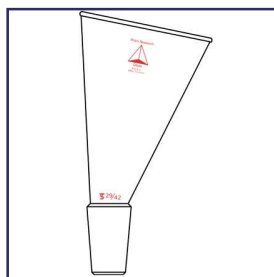
Capacity ml	Joint Size	Stopper Size	Stopcock Size	CODE	Price
60	24/40	16	2	-01	121.67
125	24/40	22	2	-02	125.27
250	24/40	22	4	-03	148.02
500	24/40	27	4	-04	168.52
500	29/42	27	4	-05	173.41
1000	24/40	27	4	-06	205.06
1000	29/42	27	4	-07	229.60
2000	24/40	38	6	-08	240.54
2000	29/42	38	6	-09	350.68



PRG-5650
POWDER, STANDARD
TAPER INNER JOINT

Powder funnel has a standard taper inner joint. Open top.

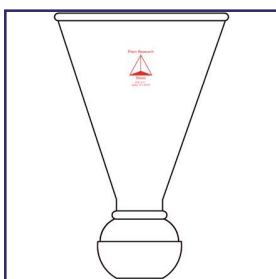
Approx. Diameter at Top mm	Joint Size	CODE	Price
75	24/40	-01	42.28
100	24/40	-02	42.28
100	29/42	-03	44.09
100	45/50	-04	48.90
125	24/40	-05	49.16
125	29/42	-06	52.81
150	45/50	-07	66.00



PRG-5655
POWDER, STANDARD
TAPER INNER JOINT

Powder funnel with inner standard taper joint. With a straight side for use with multi-neck flasks.

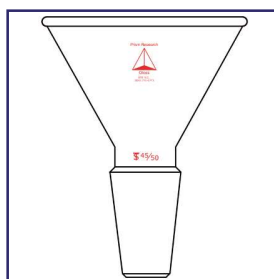
Approx. Diameter at Top mm	Joint Size	CODE	Price
75	24/40	-01	46.19
100	24/40	-02	55.78
100	29/42	-03	64.54



PRG-5660
POWDER, BALL
JOINT

Powder funnel with spherical ball joint.

Approx. Diameter at Top mm	Joint Size	CODE	Price
75	35/20	-01	45.42
100	35/25	-02	48.18

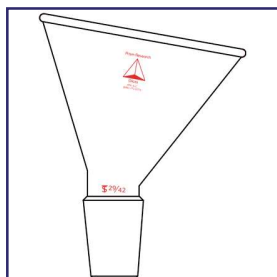


PRG-5665
POWDER, STANDARD
TAPER INNER JOINT

Powder funnel with inner standard tapered joint. 60° flute.

Approx. Diameter at Top mm	Joint Size	CODE	Price
75	24/40	-01	45.09
100	24/40	-02	31.22
100	29/42	-03	51.15
125	24/40	-04	52.89
125	29/42	-05	56.47
150	45/50	-06	73.40

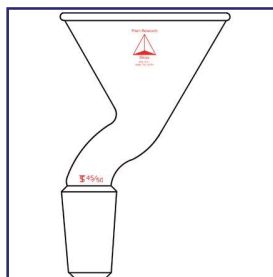




PRG-5670
POWDER, OFFSET

Powder funnel with inner standard tapered joint and straight side for use with multi-neck flasks. 60° flute.

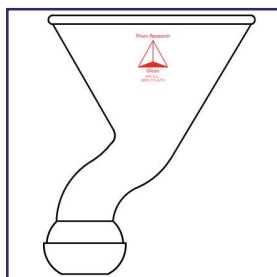
Approx. Diameter at Top mm	Joint Size	CODE	Price
75	24/40	-01	46.26
100	24/40	-02	55.92
100	29/42	-03	64.64



PRG-5675
**POWDER, ANGLED,
STANDARD TAPER
INNER JOINT**

For ease in adding powder or liquids into containers. With an angled stem. The angle provides ease of pouring powders or liquids into multi-neck flasks.

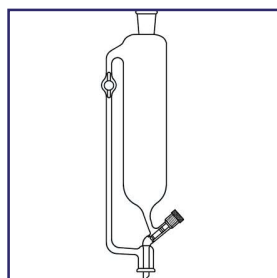
Approx. Diameter at Top mm	Joint Size	CODE	Price
75	24/40	-01	66.60
100	24/40	-02	69.85
100	29/42	-03	72.59
125	24/40	-04	74.33
125	29/42	-05	76.90
150	45/50	-06	95.18



PRG-5680
**POWDER, ANGLED,
BALL JOINT**

For ease in adding powder or liquids into containers. The stem is angled. The angle provides ease of pouring powders or liquids into multi-neck flasks.

Approx. Diameter at Top mm	Joint Size	CODE	Price
75	35/20	-01	75.06
100	35/25	-02	77.89
125	50/30	-03	93.25

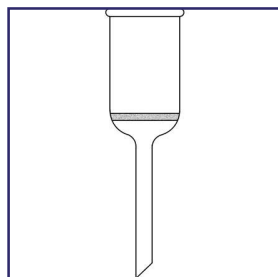


PRG-7140
**PILOT PLANT, AD-
DITION, LARGE CA-
PACITY**

Funnel has large 0-12 mm metering valve and 6 mm Teflon stopcock equalizing arm. Lower connection is 1.5" beaded pipe and 45/50 upper joint. Calibration marks are for reference only.

Capacity	CODE	Price
1 L	-01	345.02
2 L	-02	416.62
3 L	-03	501.26
5 L	-04	690.04





PRG-3760
BUCHNER FUNNEL

Funnel has sealed glass frit for filter paper support. Do not exceed 15 psi.

Porosity	Designation	Pore Size Microns	Principal Uses
Fine	F	4.0 - 5.5	Filtration and extraction
Medium	M	10 - 26	Filtration and extraction
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

Capacity	Porosity	Approx. Diam. of Disc	Stem O.D. x Length	Height Above Disc	CODE	Price
2 ml	XC	10 mm	6 x 30 mm	30 mm	-01	36.30
2 ml	C	10 mm	6 x 30 mm	30 mm	-02	36.30
2 ml	M	10 mm	6 x 30 mm	30 mm	-03	36.30
2 ml	F	10 mm	6 x 30 mm	30 mm	-41	36.30
15 ml	XC	20 mm	8 x 75 mm	45 mm	-04	41.08
15 ml	C	20 mm	8 x 75 mm	45 mm	-05	41.08
15 ml	M	20 mm	8 x 75 mm	45 mm	-06	41.08
15 ml	F	20 mm	6 x 75 mm	45 mm	-42	41.08
30 ml	XC	30 mm	8 x 75 mm	45 mm	-07	46.32
30 ml	C	30 mm	8 x 75 mm	45 mm	-08	46.32
30 ml	M	30 mm	8 x 75 mm	45 mm	-09	46.32
30 ml	F	30 mm	6 x 75 mm	45 mm	-43	46.32
60 ml	XC	40 mm	10 x 75 mm	50 mm	-10	51.17
60 ml	C	40 mm	10 x 75 mm	50 mm	-11	51.17
60 ml	M	40 mm	10 x 75 mm	50 mm	-12	51.17
60 ml	F	40 mm	10 x 75 mm	50 mm	-44	51.17
150 ml	XC	60 mm	16 x 75 mm	60 mm	-13	94.22
150 ml	C	60 mm	16 x 75 mm	60 mm	-14	94.22
150 ml	M	60 mm	16 x 75 mm	60 mm	-15	94.22
150 ml	F	60 mm	16 x 75 mm	60 mm	-45	94.22
350 ml	XC	80 mm	19 x 75 mm	75 mm	-16	121.55
350 ml	C	80 mm	19 x 75 mm	75 mm	-17	121.55
350 ml	M	80 mm	19 x 75 mm	75 mm	-18	121.55
350 ml	F	80 mm	19 x 75 mm	75 mm	-46	121.55
600 ml	XC	90 mm	19 x 100 mm	100 mm	-19	139.50
600 ml	C	90 mm	19 x 100 mm	100 mm	-20	139.50
600 ml	M	90 mm	19 x 100 mm	100 mm	-21	139.50
600 ml	F	90 mm	19 x 100 mm	100 mm	-47	139.50
1000 ml	XC	110 mm	19 x 100 mm	125 mm	-51	282.94
1000 ml	C	110 mm	19 x 100 mm	125 mm	-52	282.94
1000 ml	M	110 mm	19 x 100 mm	125 mm	-53	282.94
1000 ml	F	110 mm	19 x 100 mm	125 mm	-54	282.94
2000 ml	XC	125 mm	19 x 110 mm	145 mm	-22	325.54
2000 ml	C	125 mm	19 x 110 mm	145 mm	-23	325.54
2000 ml	M	125 mm	19 x 110 mm	145 mm	-24	325.54
2000 ml	F	125 mm	19 x 110 mm	145 mm	-48	325.54
3000 ml	XC	150 mm	25 x 110 mm	175 mm	-25	452.17
3000 ml	C	150 mm	25 x 110 mm	175 mm	-26	452.17
3000 ml	M	150 mm	25 x 110 mm	175 mm	-27	452.17
3000 ml	F	150 mm	25 x 110 mm	175 mm	-49	452.17
6000 ml	XC	150 mm	32 x 130 mm	250 mm	-61	960.10
6000 ml	C	150 mm	32 x 130 mm	250 mm	-62	960.10
6000 ml	M	150 mm	32 x 130 mm	250 mm	-63	960.10
6000 ml	F	150 mm	32 x 130 mm	250 mm	-64	960.10





Filter paper discs are sized to fit table top Buchner funnels. Filter paper discs are E-D 615 type for fast filtering. they have a rough crepe surface with a thickness of 0.0105mm, basic weight 20 lb. G/Sq meter, flow rate 235ml/min., retention of 25 microns. 100 discs per box. Used with Buchner Funnels, PRG-3793.

<u>Funnel I.D. mm</u>	<u>CODE</u>	<u>Price</u>
260	-01	82.30
457	-02	CALL
610	-03	CALL
914	-04	CALL

PRG-3791
FILTER PAPER DISCS,
260mm



Buchner Funnels are economical, lightweight and durable. Easy to clean two-piece, polypropylene Buchner funnels with perforated HDPE filter plate. Lightweight, but not top-heavy. Steam autoclavable at 121°C (250°F). Per each.

<u>Funnel I.D. mm</u>	<u>Plate Type</u>	<u>Rim to Plate mm</u>	<u>CODE</u>	<u>Price</u>
260	Coarse Porosity Fixed	127	-01	CALL
260	Coarse Porosity Removable	127	-02	CALL
260	Medium Porosity Fixed	127	-03	CALL
260	Medium Porosity Removable	127	-04	CALL
260	Perforated Fixed	127	-05	CALL
260	Perforated Removable	127	-06	CALL
457	Coarse Porosity Fixed	203	-11	CALL
457	Coarse Porosity Removable	203	-12	774.98
457	Medium Porosity Fixed	203	-13	CALL
457	Medium Porosity Removable	203	-14	774.98
457	Perforated Fixed	203	-15	CALL
457	Perforated Removable	203	-16	CALL
610	Coarse Porosity Fixed	267	-21	CALL
610	Coarse Porosity Removable	267	-22	CALL
610	Medium Porosity Fixed	267	-23	CALL
610	Medium Porosity Removable	267	-24	CALL
610	Perforated Fixed	267	-25	CALL
610	Perforated Removable	267	-26	CALL
914	Coarse Porosity Fixed	305	-31	CALL
914	Coarse Porosity Removable	305	-32	CALL
914	Medium Porosity Fixed	305	-33	CALL
914	Medium Porosity Removable	305	-34	CALL
914	Perforated Fixed	305	-35	CALL
914	Perforated Removable	305	-36	CALL

Replacement Discs

<u>Funnel I.D. mm</u>	<u>Plate Type</u>	<u>CODE</u>	<u>Price</u>
260	Coarse Porosity	-41	CALL
260	Medium Porosity	-42	CALL
260	Perforated	-43	CALL
457	Coarse Porosity	-51	CALL
457	Medium Porosity	-52	CALL
457	Perforated	-53	CALL
610	Coarse Porosity	-61	CALL
610	Medium Porosity	-62	CALL
610	Perforated	-63	CALL
914	Coarse Porosity	-71	CALL
914	Medium Porosity	-72	CALL
914	Perforated	-73	CALL





Single piece Buchner Funnels are fast flowing with Fritware porous plates. One piece HDPE funnels with sealed in, polyethylene filter plate of coarse porosity (90-130 microns) offer good retention and fast flow under vacuum. Usable with or without filter paper. Use below 52° C (125° F)

<u>Funnel Capacity ml</u>	<u>Diam. of Plate mm</u>	<u>Rim to Plate mm</u>	<u>CODE</u>	<u>Price</u>
50	36	35	-01	CALL
150	70	51	-02	CALL
250	104	50	-03	CALL
1000	122	104	-04	CALL

PRG-3795
BUCHNER FUNNELS,
SINGLE PIECE



Drum and Carboy funnels provide optimum flow. Large funnels with handles are ideal for filling drums, barrels, tanks and carboys providing ample volume and fast flow. The two smaller sizes have a handle at the rim. Molded of natural polypropylene, funnels are autoclavable at 121°C

<u>Funnel Capacity L</u>	<u>Top of O.D. mm</u>	<u>Height mm</u>	<u>Bottom Stem ID</u>	<u>CODE</u>	<u>Price</u>
2.1	207	250	21	-01	CALL
4.3	260	309	23	-02	CALL
14.1	353	454	26	-03	CALL

PRG-3797
DRUM AND CARBOY
FUNNELS

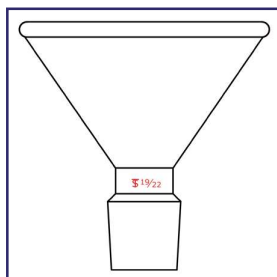


Heavy duty funnels are durable, versatile and available in assorted sizes. Sturdy, polypropylene funnels with ridges to prevent vapor lock. Highly recommended for continuous laboratory work. Steam autoclavable at 121°C

<u>Funnel Cap. ml</u>	<u>Stem ID</u>	<u>Stem OD</u>	<u>Stem Length</u>	<u>Total Length</u>	<u>Diameter</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
30	7.9	14.3	38.1	66.7	54	6	-01	CALL
90	6.4	11.1	69.9	127.0	76.2	6	-02	CALL
180	12.7	19.1	44.5	104.8	101.6	6	-03	CALL
480	11.1	19.1	79.7	177.8	152.4	3	-04	CALL
720	19.1	25.4	69.9	187.3	184.2	3	-05	CALL
3845	22.2	34.9	139.7	342.9	266.7	1	-06	CALL

PRG-3799
HEAVY DUTY FUN-
NELS

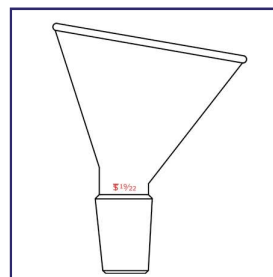




Powder funnel, 50mm diameter, with a standard taper inner joint on the bottom.

§ Joints	CODE	Price
14/20	-01	34.79
19/22	-02	39.77

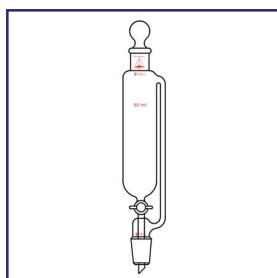
PG-9264
MICRO, POWDER



Powder funnel, offset, 50mm diameter, with a straight side to be used with multi-neck flasks. With a standard taper inner joint on the bottom.

§ Joints	CODE	Price
14/20	-01	35.60
19/22	-02	37.78

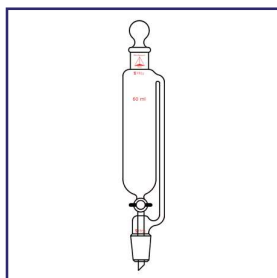
PG-9266
MICRO, POWDER, OFFSET



Funnel, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Both joints are the same size. 2mm glass stopcock supplied.

Capacity ml	§ 14/20 Joints		§ 19/22 Joints	
	CODE	Price	CODE	Price
10	-01	140.10	-02	143.36
25	-03	140.10	-04	143.36
60	-05	140.10	-06	143.36

PG-9270
MICRO, PRESSURE EQUALIZING

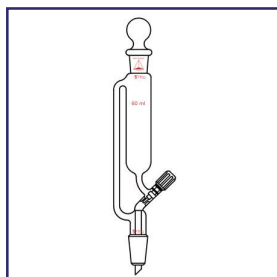


Funnel, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Both joints are the same size. 2mm Teflon stopcock supplied.

Capacity ml	§ 14/20 Joints		§ 19/22 Joints	
	CODE	Price	CODE	Price
10	-01	168.53	-02	171.71
25	-03	168.53	-04	171.71
60	-05	168.53	-06	171.71

PG-9272
MICRO, PRESSURE EQUALIZING, TEFLON

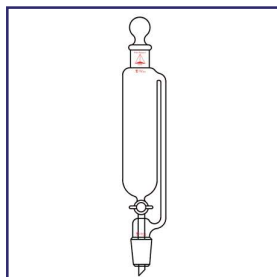




PG-9274
MICRO, PRESSURE
EQUALIZING, TEFLON
THREADED VALVE

Funnel, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Both joints are the same size. With a 0-4mm Teflon threaded valve.

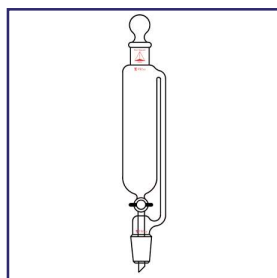
Capacity ml	§ 14/20 Joints		§ 19/22 Joints	
	CODE	Price	CODE	Price
10	-01	168.07	-02	169.19
25	-03	173.47	-04	174.57
60	-05	173.47	-06	174.57



PG-9276
MICRO, PRESSURE
EQUALIZING, GRADU-
ATED

Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm glass stopcock supplied.

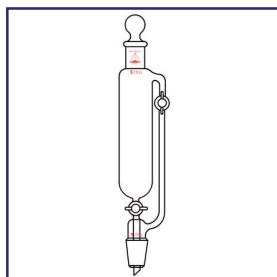
Capacity ml	Subdivisions ml	§ 14/20 Joints		§ 19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	182.26	-02	217.39
25	0.50	-03	203.56	-04	223.82
60	1.00	-05	244.84	-06	252.87



PG-9278
MICRO, PRESSURE
EQUALIZING, GRADU-
ATED, TEFLON

Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm Teflon stopcock supplied.

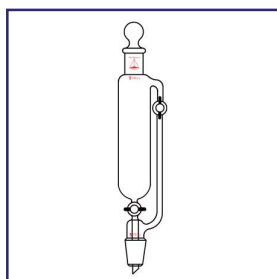
Capacity ml	Subdivisions ml	§ 14/20 Joints		§ 19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	209.36	-02	223.38
25	0.50	-03	240.44	-04	225.34
60	1.00	-05	269.47	-06	270.93



PG-9280
MICRO, PRESSURE
EQUALIZING, GRADU-
ATED

Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. An additional stopcock on the arm allows the funnel to fill without being exposed to the atmosphere, two 2mm glass stopcocks supplied.

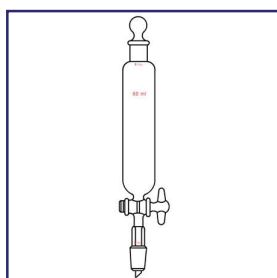
Capacity ml	Subdivisions ml	14/20 Joints		19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	241.63	-02	245.52
25	0.50	-03	275.86	-04	248.84
60	1.00	-05	253.07	-06	284.23



PG-9282
MICRO, PRESSURE
EQUALIZING, GRADU-
ATED, TEFLON

Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. An additional stopcock on the arm allows the funnel to fill without being exposed to the atmosphere. Two Teflon stopcocks supplied.

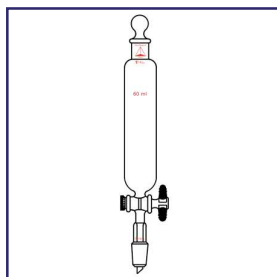
Capacity ml	Subdivisions ml	14/20 Joints		19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	285.64	-02	289.96
25	0.50	-03	294.95	-04	290.53
60	1.00	-05	325.74	-06	329.84



PG-9284
MICRO, SEPARATORY,
CYLINDRICAL

Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm glass stopcock.

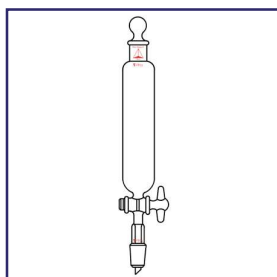
Capacity ml	14/20 Joints		19/22 Joints	
	CODE	Price	CODE	Price
10	-01	99.53	-02	100.97
25	-03	99.53	-04	100.97
60	-05	99.53	-06	100.97



PG-9286
MICRO, SEPARATORY,
CYLINDRICAL, TE-
FLON

Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm Teflon stopcock.

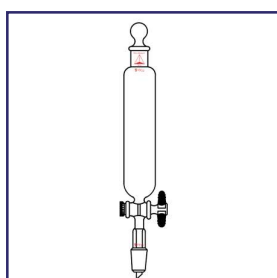
Capacity ml	§ 14/20 Joints		§ 19/22 Joints	
	CODE	Price	CODE	Price
10	-01	132.02	-02	133.04
25	-03	132.02	-04	133.04
60	-05	132.02	-06	133.04



PG-9288
MICRO, SEPARATORY,
CYLINDRICAL, GRAD-
UATED

Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm glass stopcock.

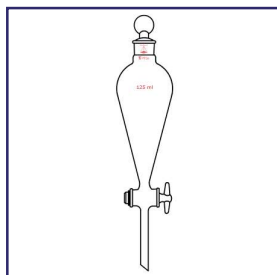
Capacity ml	Subdivisions ml	§ 14/20 Joints		§ 19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	152.10	-02	165.38
25	0.50	-03	166.77	-04	168.88
60	1.00	-05	170.76	-06	171.88



PG-9290
MICRO, SEPARATORY,
CYLINDRICAL, GRAD-
UATED, TEFLON

Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm Teflon stopcock.

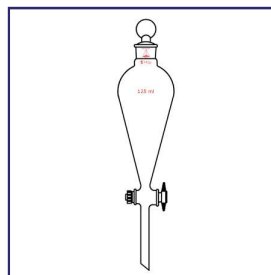
Capacity ml	Subdivisions ml	§ 14/20 Joints		§ 19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	167.67	-02	175.32
25	0.50	-03	169.37	-04	179.66
60	1.00	-05	172.21	-06	185.86



Funnel, separatory, squibb with a 2mm straight bore stopcock. Supplied with a standard taper 14/20 stopper.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
10	-01	69.01
25	-02	69.01
60	-03	69.01
125	-04	69.01

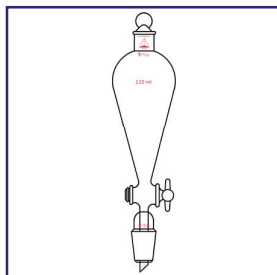
PG-9292
MICRO, SEPARATORY,
SQUIBB



Funnel, separatory, squibb with a 2mm Teflon stopcock. Supplied with a standard taper 14/20 stopper.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
10	-01	95.10
25	-02	95.10
60	-03	95.10
125	-04	95.10

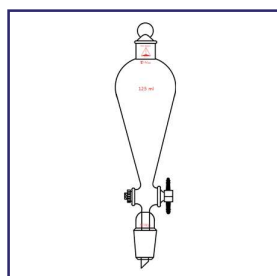
PG-9294
MICRO, SEPARATORY, SQUIBB, TE-
FLON PLUG



Funnel, separatory, squib, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm glass stopcock and 14/20 stopper included.

<u>Capacity ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	109.27	-02	110.51
25	-03	109.27	-04	110.51
60	-05	109.27	-06	110.51
125	-07	121.32	-08	127.56

PG-9296
MICRO, SEPARATORY,
SQUIBB

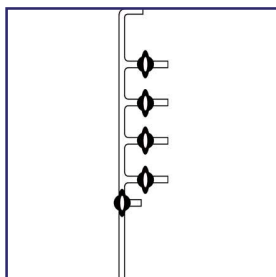


Funnel, separatory, squib, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm Teflon stopcock and 14/20 stopper included.

<u>Capacity ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	117.36	-02	118.26
25	-03	117.36	-04	118.26
60	-05	119.49	-06	150.74
125	-07	120.57	-08	150.74

PG-9298
MICRO, SEPARATORY,
SQUIBB, TEFLON
PLUG

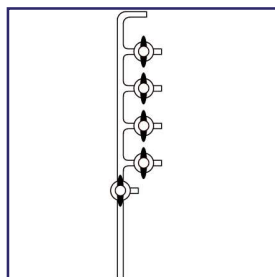




PRG-5700
MANIFOLD, GLASS

Four 2mm glass straight bore stopcocks are sealed 50mm apart from another. A T-Bore stopcock provides passage.

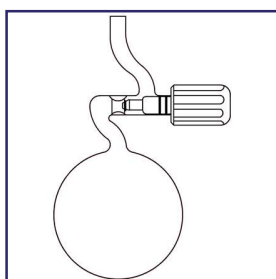
Number of Ports	CODE	Price
3	-02	252.21
4	-01	271.18



PRG-5705
MANIFOLD, TEFLON

Four 2mm Teflon straight bore stopcocks are sealed 50mm apart from another. A T-Bore stopcock provides passage.

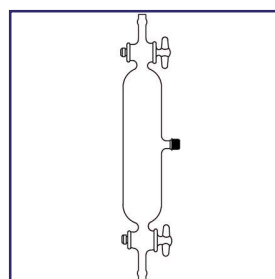
Number of Ports	CODE	Price
4	-01	296.80



PRG-5710
GAS BALLOON, 0-4
THREADED VALVE

Teflon valve has a 0-4mm bore.

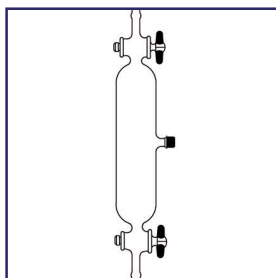
Capacity ml	CODE	Price
100	-01	186.70
250	-02	186.70
500	-03	190.05
1000	-04	194.23



PRG-5715
COLLECTION TUBE,
SAMPLING PORT

Collection tube has 4mm glass stopcocks and 3/8" hose connections. GL-14 sample port has self-sealing septa for a syringe. Sold complete with fittings and plugs.

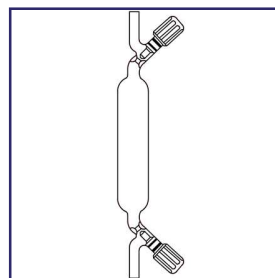
Capacity ml	Stopcock Size	CODE	Price
125	2	-01	179.53
250	4	-02	208.12
500	4	-03	246.26



PRG-5720
COLLECTION TUBE,
SAMPLING PORT, TE-
FLON STOPCOCKS

Collection tube has 4mm Teflon stopcocks and 3/8" hose connections. GL-14 sample port has self-sealing septa for a syringe. Sold complete with fittings and plugs.

Capacity ml	Stopcock Size	CODE	Price
125	2	-01	184.56
250	4	-02	215.36
500	4	-03	254.08



PRG-5725
COLLECTION TUBE,
THREADED VALVE

Collection tube has 0-4mm metering valves and 3/8" hose connections. GL-14 sample port has self-sealing septa for a syringe. Sold complete with fittings and plugs.

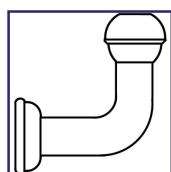
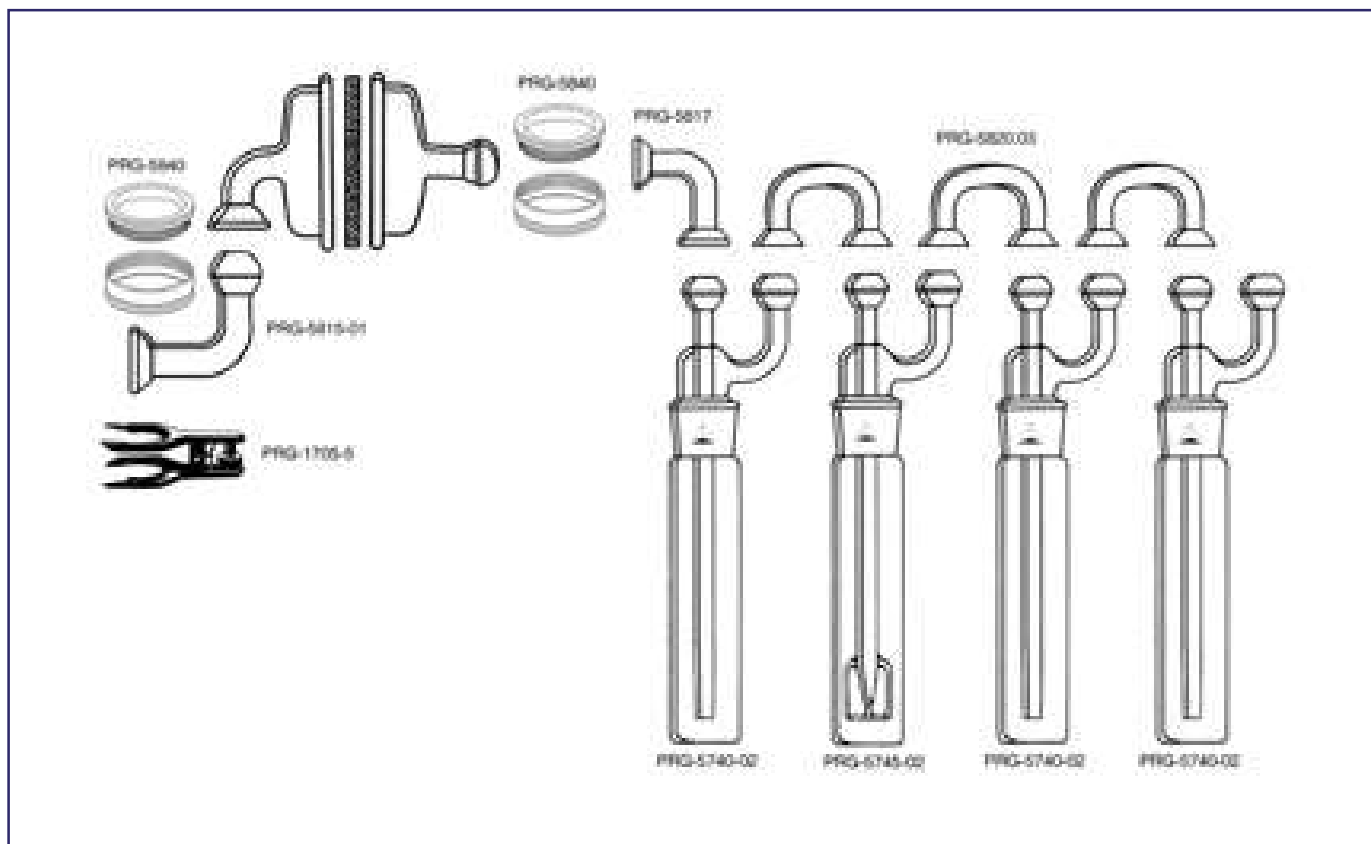
Capacity ml	Viton CODE	Viton Price	Teflon CODE	Teflon Price
125	-01	CALL	-11	195.43
250	-02	CALL	-12	225.61
500	-03	CALL	-13	257.37





PRG-5727

METHOD FIVE, HEAVY WALL, TRAIN, 28/12 BALL AND SOCKET JOINTS



PRG-5815



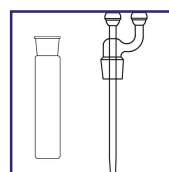
PRG-5817



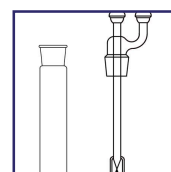
PRG-5820



PRG-5840



PRG-5740



PRG-5745



PRG-1705

EPA Method Five Air Sampling Train. Vacuum grease required for vacuum tight seal. Train consists of the following components (shown above). Please note 3" and 4" codes refer to the filter surface.

	3" Filter		4" Filter	
	CODE	Price	CODE	Price
<u>Complete Train</u>				
Without Frit	-01	CALL	-04	CALL
With Glass Frit	-02	CALL	-05	CALL
With Teflon Frit	-03	CALL	-06	CALL
<u>Filter Assembly Only</u>				
Without Frit	-11	CALL	-14	CALL
With Glass Frit	-12	CALL	-15	CALL
With Teflon Frit	-13	CALL	-16	CALL

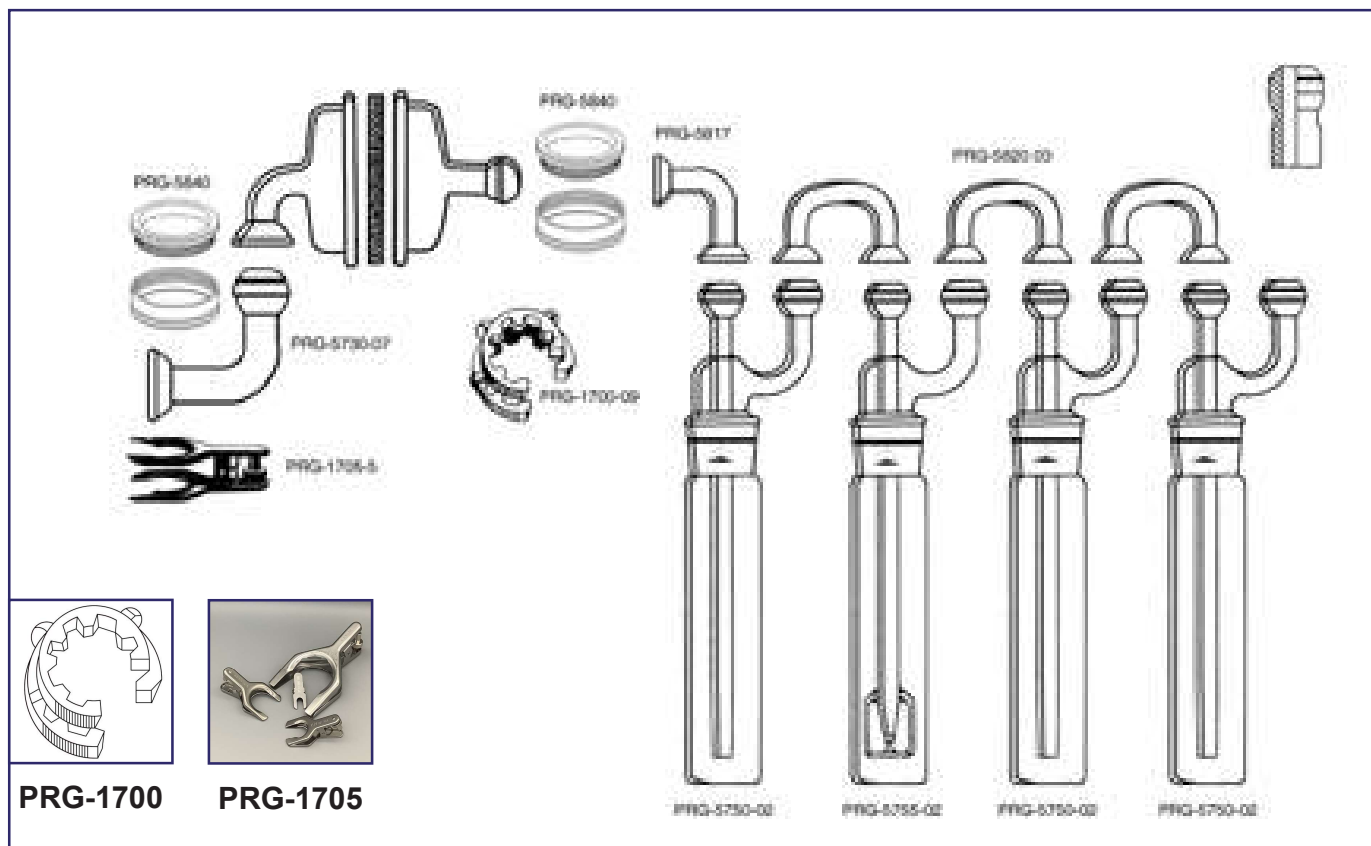
<u>Individual Components</u>	<u>CODE</u>	<u>Price</u>
Pinch Clamp	PRG-1705-05	12.02
Impinger, Modified	PRG-5740-02	229.00
Impinger, Greenburg-Smith	PRG-5745-02	243.88
Cyclone Bypass Adapter	PRG-5815-01	CALL
Double "L" Adapter	PRG-5817-01	81.77
Impinger Connector "U-Bend"	PRG-5820-03	57.26
Filter Clamp, 3"	PRG-5840-01	117.30
Filter Clamp, 4"	PRG-5840-02	135.32





PRG-5730

METHOD FIVE, HEAVY WALL, "PGS" TRAIN, GREASE FREE O-RING SEALS, 28/12 BALL AND SOCKET JOINTS



PRG-5817 PRG-5820 PRG-5825 PRG-5840 PRG-5750 PRG-5755 PRG-5730

EPA Method Five Sampling Train. #28 Ball O-Ring / Socket connection, NO vacuum grease needed. Available with a 3" or 4" filter frit. Frit materials options are either glass or Teflon. Ball O-Ring joints are supplied with both Silicone & Teflon coated Viton O-Ring.

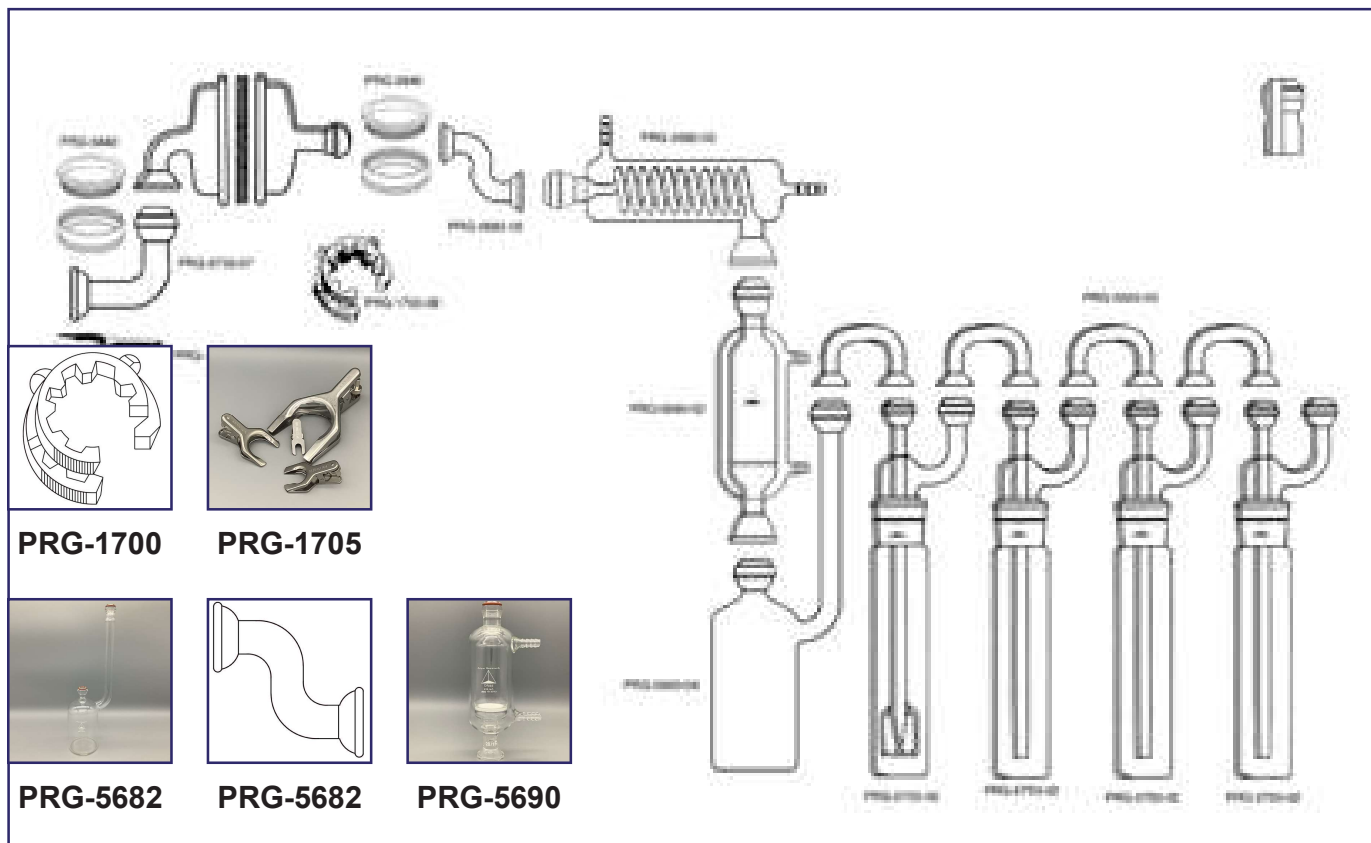
		3" Filter		4" Filter			
<u>Complete Train</u>		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>Individual Components</u>	<u>CODE</u> <u>Price</u>
Without Frit		-01	1,511.84	-04	1,606.55	Keck Clip	PRG-1700-09 82.78
With Glass Frit		-02	1,606.55	-05	1,751.91	Pinch Clamp	PRG-1705-05 12.02
With Teflon Frit		-03	1,606.55	-06	1,751.91	Impinger, Modified	PRG-5750-02 240.48
						Impinger, Greenburg-Smith	PRG-5755-02 256.07
<u>Filter Assembly Only</u>		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	Cyclone Bypass Adapter	PRG-5730-07 57.83
Without Frit		-11	290.41	-14	385.40	Filter Support, Outlet	PRG-5730-08 CALL
With Glass Frit		-12	396.21	-15	511.35	Double "L" Adapter	PRG-5817-01 81.77
With Teflon Frit		-13	395.07	-16	500.87	Impinger Connector "U-Bend"	PRG-5820-03 57.26
						Filter Support, Inlet	PRG-5825-01 123.92
						Filter Clamp, 3"	PRG-5840-01 117.30
						Filter Clamp, 4"	PRG-5840-02 135.32





PRG-5682

MODIFIED METHOD FIVE, HEAVY WALL, "PGS" RISER-LESS SYSTEM, GREASE FREE O-RING SEALS, 28/15 BALL AND SOCKET JOINTS



Modified Method Five "MM5" Train is used for semi-volatile air sampling without the use of a riser box. The "S" adapter, horizontal coil condenser, XAD trap and the "Pug" bottle assemble into a standard Method 5 Train. All #28 ball joints have the O-Ring groove and are supplied with a Silicone O-Ring and a Teflon coated Viton O-Ring – NO vacuum grease required.

Description	CODE	Price
Complete Unit 3" (Includes Teflon Frit)	-01	2,201.28
Complete Unit 4" (Includes Teflon Frit)	-11	2,315.19
MM5 Horizontal Condenser	-02	250.74
MM5 Hybrid Bottle	-04	253.78
"S" Adapter	-05	81.77

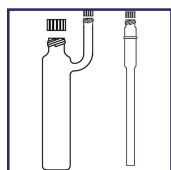
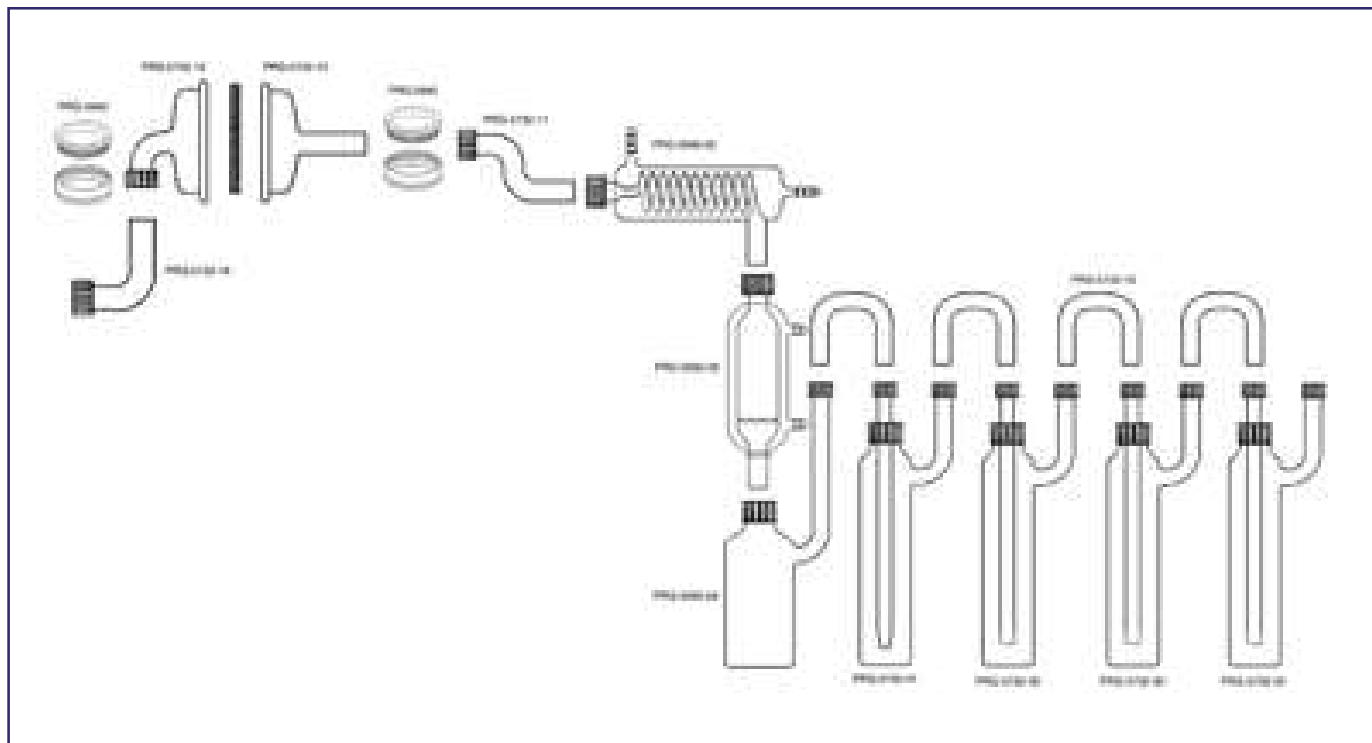
Individual Components	CODE	Price
Keck Clip	PRG-1700-09	82.78
Pinch Clamp	PRG-1705-05	12.02
Impinger, Modified	PRG-5750-02	240.48
Impinger, Greenburg-Smith	PRG-5755-02	256.07
Cyclone Bypass Adapter	PRG-5730-07	57.83
Filter Support, Outlet	PRG-5730-08	CALL
Impinger Connector "U-Bend"	PRG-5820-03	57.26
Filter Support, Inlet	PRG-5825-01	123.92
Filter Clamp, 3"	PRG-5840-01	117.30
Filter Clamp, 4"	PRG-5840-02	135.32



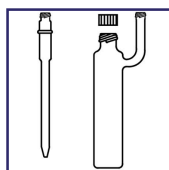


PRG-5686

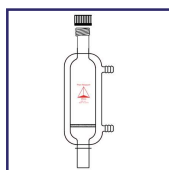
MODIFIED METHOD FIVE, SVL RISER-LESS SYSTEM, GREASE FREE, SVL SEALING RINGS



PRG-5732



PRG-5732



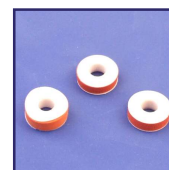
PRG-5692



PRG-5840



PRG-215



PRG-216

For semi-volatile organic sampling. Horizontal style. Requires no riser box with the sample case; the MM5 condenser is horizontal; XAD Trap is vertical; Impinger body is shorter and larger in diameter. Requires a special adapter for filter to condenser connection. SVL silicone sealing rings provide a grease-free seal. Teflon SVL Sealing rings may be purchased separately. Supplied with complete Method Five PRG-5732 without Double "L".

Description	CODE	Price
Complete Unit 3" (Includes Teflon Frit)	-01	2,092.99
Complete Unit 4" (Includes Teflon Frit)	-11	2,165.18
MM5 Horizontal Condenser	-02	236.61
MM5 SVL Bottle	-04	249.38
SVL Adapter	-05	46.26

Optional Components

Optional Components	CODE	Price
Teflon #22 Sealing Ring	PRG-216-03	14.32
Teflon #30 Sealing Ring	PRG-216-05	14.87

Individual Components

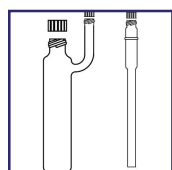
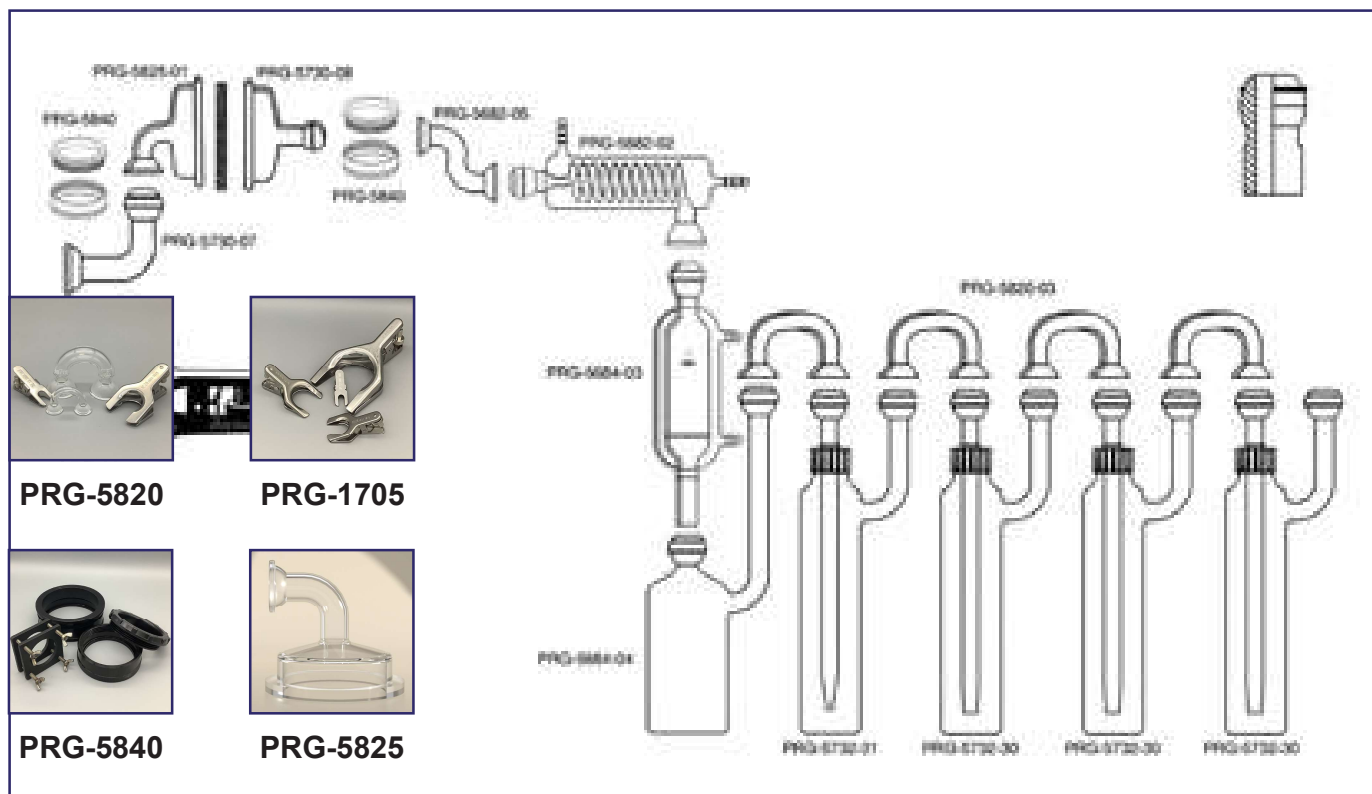
Individual Components	CODE	Price
SVL #22 Cap with Holes (4 required)	PRG-215-02	CALL
SVL #30 Cap with Holes	PRG-215-03	CALL
SVL #22 Silicone Sealing Ring (4 required)	PRG-216-04	4.56
SVL #30 Silicone Sealing Ring	PRG-216-06	4.96
MM5 XAD Trap, SVL	PRG-5692-02	CALL
SVL U-Tube	PRG-5732-10	CALL
Method Five, SVL Train	PRG-5732-11	CALL
Method Five, SVL Train	PRG-5732-12	CALL
Method Five, SVL Train	PRG-5732-13	CALL
Cyclone, Bypass Glass Only	PRG-5732-14	CALL
SVL Modified Impinger, Complete	PRG-5732-30	CALL
SVL Impinger, Small Orifice	PRG-5732-31	CALL
Filter Clamp, 3"	PRG-5840-01	117.30
Filter Clamp, 4"	PRG-5840-02	135.32



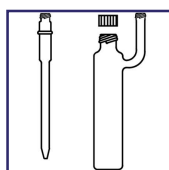


PRG-5684

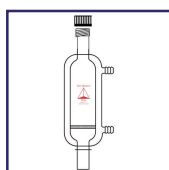
MODIFIED METHOD FIVE, HYBRID RISER-LESS SYSTEM, GREASE FREE O-RINGS, BALL AND SOCKET JOINTS WITH SVL SEALING RINGS



PRG-5732



PRG-5732



PRG-5692



PRG-5730



PRG-5682

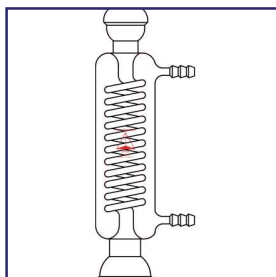


PRG-5682

Modified Method Five “MM5” Train is used for semi-volatile air sampling without the use of a riser box. The “S” adapter, horizontal coil condenser, XAD Trap and the “Pug” bottle assemble into a standard Method 5 Train. All #28 ball joints have the O-Ring groove and are supplied with a Silicone O-Ring and a Teflon coated Viton O-Ring – NO vacuum grease required.

Description	CODE	Price	Individual Components	CODE	Price
Complete Unit 3" (Includes Teflon Frit)	-01	2,219.31	Pinch Clamp	PRG-1705-05	12.02
Complete Unit 4" (Includes Teflon Frit)	-11	2,248.45	MM5 Horizontal Condenser	PRG-5682-02	250.74
			“S” Connector	PRG-5682-05	81.77
MM5 XAD Trap	-03	280.89	Cyclone Bypass, O-Ring	PRG-5730-07	57.83
MM5 Hybrid Bottle	-04	261.81	SVL Modified Impinger, Complete	PRG-5732-30	CALL
			SVL Impinger, Small Orifice	PRG-5732-31	CALL
			Impinger Connector	PRG-5820-03	57.26
			Filter Support, Inlet, 3"	PRG-5825-01	123.92
			Filter Clamp, 3"	PRG-5840-01	117.30
			Filter Clamp, 4"	PRG-5840-02	135.32



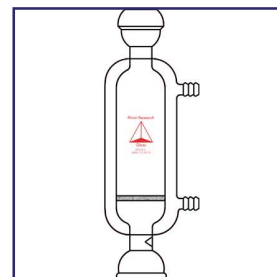


PRG-5688-01
**MM5 VERTICAL CON-
DENSER**

PRG-5688
**MM5 XAD TRAP AND VERTICAL COIL CONDENSER, 28/12
BALL AND SOCKET**

For semi-volatile organic sampling. Vertical style. For M5 Trains, see PRG-5727 through PRG-5737.

Description	CODE	Price
MM5 Vertical Condenser	-02	CALL
MM5 XAD Trap	-01	CALL



PRG-5688-02
MM5 XAD TRAP



PRG-5690-01
**MM5 VERTICAL CON-
DENSER**

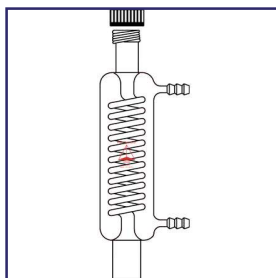
PRG-5690
**MM5 XAD TRAP AND VERTICAL COIL CONDENSER, 28/12 O-
RING BALL AND SOCKET**

For semi-volatile organic sampling. Vertical style. Vacuum grease optional. 28/12 ball joints have Teflon coated O-Rings. For M5 Trains, see PRG-5727 through PRG-5737.

Description	CODE	Price
MM5 Vertical Condenser	-02	293.25
MM5 XAD Trap	-01	216.30



PRG-5690-02
MM5 XAD TRAP

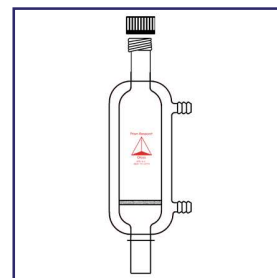


PRG-5692-01
**MM5 VERTICAL CON-
DENSER**

PRG-5692
**MM5 XAD TRAP AND VERTICAL COIL CONDENSER, SVL
THREADS**

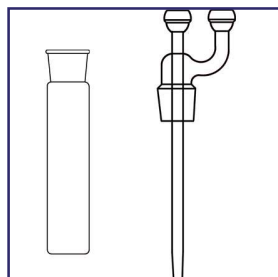
For semi-volatile organic sampling. Vertical style. No vacuum grease required. SVL caps and sealing rings must be purchased separately. See PRG-215 and PRG-216. For M5 Trains, see PRG-5727 through PRG-5737.

Description	CODE	Price
MM5 Vertical Condenser	-02	CALL
MM5 XAD Trap	-01	CALL



PRG-5692-02
MM5 XAD TRAP

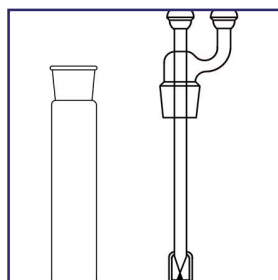




PRG-5740
IMPINGER, MODIFIED,
NON O-RING

For determination of dust concentration in air or other gases. 45/50 tapered joint connection between top and bottle. Standard bottle volume is 500ml. Other volume sizes are available – order separately from top. For O-Ring style see PRG-5750.

Description	Ø 18/9		Ø 28/12		Bottle Capacity ml		
	CODE	Price	CODE	Price		CODE	Price
Complete Impinger	-01	225.94	-02	229.00	500	-05	69.42
Stopper Only	-03	156.17	-04	159.58	1000	-06	CALL
					2000	-07	146.13
					3000	-08	164.70
					4000	-09	205.56
					4000 (Amber)	-11	236.73
					5000	-10	221.66



PRG-5745
IMPINGER, GREEN-
BERG-SMITH, NON O-
RING

For determination of dust concentration in air or other gases. Greenberg-Smith stems have an impactor plate and nozzle tip. 45/50 tapered joint connection between top and bottle. Standard bottle volume is 500ml. Other volume sizes are available – order separately from top. For O-Ring style see PRG-5755.

Description	Ø 18/9		Ø 28/12	
	CODE	Price	CODE	Price
Complete Impinger	-01	241.95	-02	243.88
Stopper Only	-03	172.50	-04	176.14
Bottle Only	-05	69.42		



PRG-5750
IMPINGER, MODIFIED,
"PGS" O-RING

For determination of dust concentration in air or other gases. "Grease Free Impinger" joints are centerless ground with an O-Ring groove. 45/50 tapered joint connection between top and bottle. Both ball and tapered joints are interchangeable with non O-Ring apparatus. Standard bottle volume is 500ml. Other volume sizes are available – order separately from top. Supplied with both a Silicone and a Teflon coated Viton O-Ring.

Description	Ø 18/9		Ø 28/12	
	CODE	Price	CODE	Price
Complete Impinger	-01	236.39	-02	240.48
Stopper Only	-03	167.79	-04	171.01
Bottle Only	-05	69.42		
Top Only - 2.0" Immersion Stem	-KO	171.01		

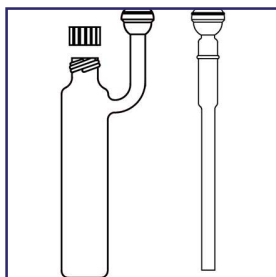




PRG-5755
IMPINGER, GREEN-
BERG-SMITH, "PGS"
O-RING

For determination of dust concentration in air or other gases. "Grease Free Impinger" joints have O-Ring groove and centerless ground. 45/50 tapered joint connection between top and bottle. Both ball and tapered joints are interchangeable with non O-Ring apparatus. Standard bottle volume is 500ml. Other volume sizes are available – order separately from top. Supplied with both a Silicone and a Teflon coated Viton O-Ring.

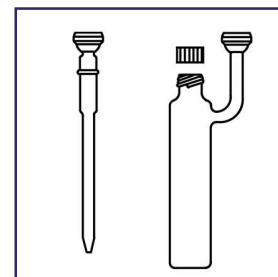
<u>Description</u>	<u>Ø 18/9</u>		<u>Ø 28/12</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
Complete Impinger	-01	254.06	-02	256.07
Stopper Only	-03	235.43	-04	186.67
Bottle Only	-05	69.42		



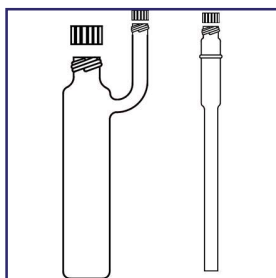
PRG-5737-30
HYBRID O-RING IM-
PINGER, MODIFIED

Grease-free impinger assembly is sold complete with bottle, plain tip stem, #30 cap and silicone sealing ring. Ball joints have both Silicone and Teflon coated O-Rings.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete	-30	CALL
Complete (Modified Tip)	-31	CALL
Hybrid Bottle	-07	CALL
Stem, Plain Tip	-08	CALL
Stem, Small Tip	-09	CALL
#30 Cap	PRG-215-03	CALL
#30 Sealing Ring	PRG-216-06	4.96
#30 Teflon O-Ring	PRG-216-05	14.87



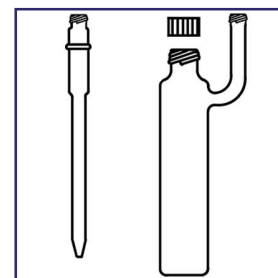
PRG-5737-31
HYBRID O-RING IM-
PINGER, MODIFIED



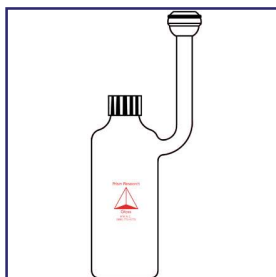
PRG-5732-30
SVL IMPINGER, MOD-
IFIED

SVL threaded grease-free impinger is sold complete with SVL impinger, SVL modified stem, two #22 and one #30 caps, and silicone rings. Teflon seal rings sold separately.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete	-30	CALL
Complete (Modified Tip)	-31	CALL
SVL Impinger	-07	CALL
Stem, Plain Tip	-08	CALL
Stem, Small Tip	-09	CALL
#22 Cap	PRG-215-02	CALL
#22 Sealing Ring	PRG-216-04	4.56
#22 Teflon O-Ring	PRG-216-03	14.32
#30 Cap	PRG-215-03	CALL
#30 Sealing Ring	PRG-216-06	4.96
#30 Teflon O-Ring	PRG-216-05	14.87



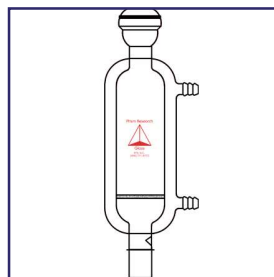
PRG-5732-31
SVL IMPINGER, MOD-
IFIED



PRG-5684-04
MM5 HYBRID BOTTLE

MM5 Hybrid bottle has a low profile to eliminate a riser box. SVL 30 center thread will accept the PRG-5684-03 XAD Trap. Side arm is a #28 Ball O-Ring. For additional caps see PRG-215-03 and seal ring PRG-216-06.

Description	CODE	Price
Complete	-04	261.81



PRG-5684-03
MM5 XAD TRAP

For semi-volatile organic sampling. #28 Ball O-Ring is on top inlet and 7/8" (22 mm) tubulation on the outlet.

CODE	Price
-03	280.89



PRG-1702
PINCH CLAMP, STAINLESS STEEL, FITS STANDARD TAPER JOINTS

Stainless steel clamps are spring loaded for a secure hold with tapered joints. Clamps are supplied with a lock screw. Sold individually.

Size	Fits Taper Joint Sizes	CODE	Price
14	14/20, 14/35	-03	54.05
19	19/22, 19/38	-04	60.85
24	24/25, 24/40	-05	66.52
29	29/26, 29/42	-06	72.58
45	45/50	-09	82.96

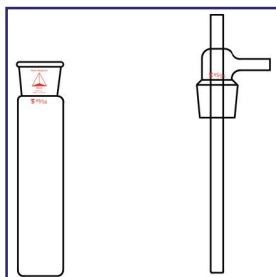


PRG-1705
PINCH CLAMP, STAINLESS STEEL, FITS BALL/SOCKET JOINTS

Stainless steel clamps are spring loaded for a secure hold with ball/socket joints. Please note - 01 and -03 do not have locking nuts. Sold individually.

Size	CODE	Price
12	-01	7.42
12-L	-02	10.77
18	-03	7.77
18-L	-04	11.22
28	-05	12.02
35	-06	15.96
40	-07	33.74
50	-08	36.22
65	-09	47.87
75	-10	61.84
102	-11	295.41

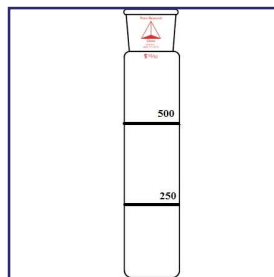




PRG-5760
IMPINGER, DUST

For determination of dust concentration in air or other gases. Without connecting joints.

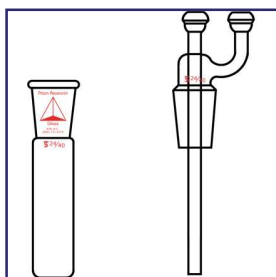
Description	CODE	Price
Complete	-01	CALL
Stopper Only	-02	CALL
Bottle Only	-03	CALL



PRG-5765
IMPINGER BOTTLE,
GRADUATED

Graduations at 250 and 500 ml.

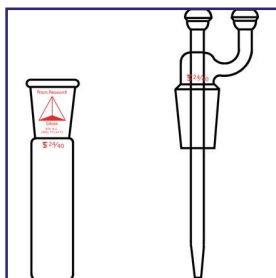
CODE	Price
-01	CALL



PRG-5770
MIDGET IMPINGER

For sampling low volumes and velocity of gases. Standard taper 24/40 joints on bottle and stopper. Ball joints are 12/5 or 18/9.

Description	ø 12/5		ø 18/9	
	CODE	Price	CODE	Price
Complete Impinger	-01	CALL	-02	CALL
Stopper Only	-03	CALL	-04	CALL
Bottle Only	-05	CALL		

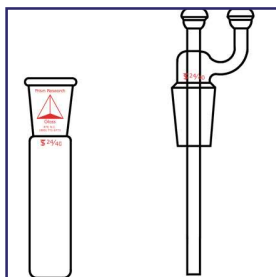


PRG-5775
MIDGET IMPINGER,
GRADUATED

For sampling low volumes and velocity of gases. Standard taper 24/40 joints on bottle and stopper. Ball joints are 12/5 or 18/9. Graduated with impinging tip.

Description	ø 12/5		ø 18/9	
	CODE	Price	CODE	Price
Complete Impinger	-01	CALL	-02	CALL
Stopper Only	-03	CALL	-04	CALL
Bottle Only	-05	CALL		





For sampling low volumes and velocity of gases. Standard taper 24/40 joints on bottle and stopper. Ball joints are 12/5 or 18/9. With Teflon coated O-Rings.

<u>Description</u>	<u>Ø 12/5</u>		<u>Ø 18/9</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
Complete Impinger	-01	86.18	-02	90.91
Stopper Only	-03	63.41	-04	70.27
Bottle Only	-05	23.59		

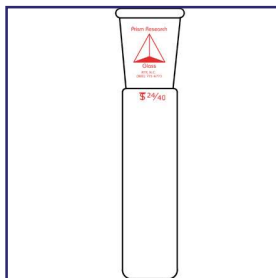
PRG-5780
**MIDGET IMPINGER, O-
RING**



For sampling low volumes and velocity of gases. Standard taper 24/40 joints on bottle and stopper. Ball joints are 12/5 or 18/9. Graduated with impinging tip. With Teflon coated O-Rings.

<u>Description</u>	<u>Ø 12/5</u>		<u>Ø 18/9</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
Complete Impinger	-01	93.18	-02	97.80
Stopper Only	-03	70.27	-04	77.16
Bottle Only	-05	23.59		

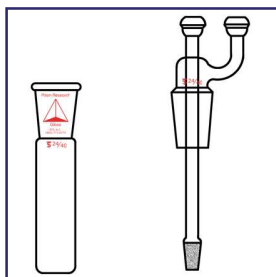
PRG-5785
**MIDGET IMPINGER,
GRADUATED, O-RING**



30 ml bottle, 24/40 joints.

<u>CODE</u>	<u>Price</u>
-01	23.59

PRG-5790
**MIDGET IMPINGER
BOTTLE**



PRG-5795
MIDGET BUBBLER,
MEDIUM FRITTED TIP

For sampling low volumes and velocity of gases. 24/40 joint connects top with bottle. Bottle volume is 30ml. Tops are offered with 12/5 or 18/9 ball joint size impinger stem has a medium porosity frit, 12mm o.d. x 25mm long. All joints have the O-Ring seal – grease free.

Description	12/5		18/9	
	CODE	Price	CODE	Price
Complete Impinger	-01	94.07	-02	96.21
Stopper Only	-03	71.60	-04	73.78
Bottle Only	-05	23.59		



PRG-5800
BUBBLER, SAMPLING
WITH FRITTED INLET
TIP

Designed for nitrogen sampling. Inlet and outlet joints are 18/9 ball and socket. 24/40 or 29/42 joint connects top with bottle. Bottle has 100mm long tube below the 125ml bulb. Coarse porosity frit is 12mm O.D. x 25mm long. All joints have the grease free O-Ring seals (except the 29/42 joint).

Joint Size	Complete		Flask Only		Bubbler Only	
	CODE	Price	CODE	Price	CODE	Price
24/40	-01	127.50	-02	34.63	-03	92.87
29/42	-04	131.00	-05	36.30	-06	94.70



PRG-5805
BUBBLER, SMOG
SAMPLING, WITH
CAPILLARY TIP

Inlet and outlet joints are 18/9 ball and socket. 24/40 or 29/42 joint connects top with bottle. Bottle has 100mm long tube below the 125ml bulb. Drawn tip has a 1mm orifice.

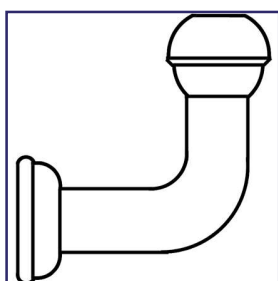
Joint Size	Complete		Flask Only		Bubbler Only	
	CODE	Price	CODE	Price	CODE	Price
24/40	-01	127.50	-02	34.63	-03	92.87
29/42	-04	127.75	-05	36.30	-06	94.61



PRG-5810
BUBBLER, SMOG
SAMPLING

Inlet and outlet joints are 18/9 O-Ring ball and socket joints. 24/40 or 29/42 joint connect top with bottle. Bottle has 100mm long tube below the 125ml bulb. Impinger stem is a straight tube, no hold up. All joints have the grease free O-Ring seal (except the 29/42 inner joint).

Joint Size	Complete		Flask Only		Bubbler Only	
	CODE	Price	CODE	Price	CODE	Price
24/40	-01	113.58	-02	34.63	-03	89.38
29/42	-04	127.50	-05	36.30	-06	91.20



PRG-5815
CYCLONE BY-PASS
ADAPTER, HEAVY
WALL

28/12 joints for connection of probe liner to filter assembly. For cyclone by-pass adapter with an O-Ring ball joint see PRG-5730-07.

CODE	Price
-01	CALL



PRG-5816
CYCLONE BY-PASS
ADAPTER, SVL/BALL
JOINT, HEAVY WALL

For 5/8" probe connection to cyclone by-pass using #22 SVL thread. Ball joint connects to filter assembly. Available in standard or O-Ring joints. Cap and sealing ring sold separately.

Description	CODE	Price
Standard Ball Joints	-01	CALL
O-Ring Ball Joints	-02	CALL



PRG-5817
DOUBLE "L"
ADAPTER, HEAVY
WALL

28/12 spherical joints for connection of filter assembly to first impinger.

Description	CODE	Price
Without GL-18 x 1/4" Compression Fit	-01	81.77
With GL-18 x 1/4" Compression Fit	-02	105.25





PRG-5818
FILTER BY-PASS
ADAPTER, HEAVY
WALL

Takes the place of the filter assembly. Connecting the cyclone or cyclone by-pass to the double "L" adapter. 28/12 ball is offered with or without an O-Ring seal joint.

Description	CODE	Price
Standard Ball Joints	-01	67.72
O-Ring Ball Joints	-02	72.69



PRG-5820
IMPINGER CONNEC-
TOR, HEAVY WALL

Or known as a "U-bend". U-shaped socket adapter connects one impinger top with the next. Mates with both O-Ring and non O-Ring ball joints.

Description	CODE	Price
12/5 Socket Joint	-01	41.73
18/9 Socket Joint	-02	45.90
28/12 Socket Joint	-03	57.26
28/12 Socket with GL-18 x 1/4" Compression Fitting	-03T	85.73



PRG-5825
FILTER SUPPORTS,
HEAVY WALL

Used to support filter disc in Method Five Application. 28/12 ball and socket joints. Offered with and without O-Ring ball joint seals. GL-18 x 1/4" thermocouple compression fittings are offered.

Description	2.0"		3.0"	
	CODE	Price	CODE	Price
Inlet (Socket Joint)	-11	95.31	-01	123.92
Inlet (Socket Joint and GL-18 x 1/4" Compression Fitting)	-11TC18	115.51	-01TC18	140.37
Outlet (Ball Joint)	-12	85.79	-02	115.51
Outlet (O-Ring Ball Joint)	-13	87.39	-03	118.36
Filter Clamp (Aluminum)	-14	111.71	—	—



PRG-5830
FILTER SUPPORTS,
4", HEAVY WALL

Used to support filter disc in Method Five Application. 28/12 ball and socket joints. Offered with and without O-Ring ball joint seals. .250" thermocoupling compression fittings are offered.

Description	CODE	Price
Inlet (Socket Joint)	-01	179.21
Inlet (Socket Joint and GL-18 x 1/4" Compression Fitting)	-11	206.23
Outlet (Ball Joint)	-02	168.66
Outlet (O-Ring Ball Joint)	-03	174.53





Sintered glass frit is bonded with a silicone rubber gasket. Used with PRG-5825 and PRG-5830 filter supports.

Description	CODE	Price
3" Disc	-01	105.77
4" Disc	-02	125.93

PRG-5835
FILTER DISC, GLASS
FRIT, COARSE PO-
ROSITY



Two piece clamp is used to secure PRG-5825 and PRG-5830 filter supports.

Size	Description	CODE	Price
2"	All Aluminum	-11	117.30
3"	Aluminum Female Portion, Phonolic Male Portion	-01	117.30
3"	Aluminum, Female Portion	-01F	68.33
3"	Phonolic, Male Portion	-01M	63.47
4"	All Aluminum	-02	135.32

PRG-5840
FILTER CLAMP



Perforated Teflon disc is used with PRG-5825 and PRG-5830 filter supports. Supplied with Teflon coated O-Rings.

Size	O-Ring	CODE	Price
2"	043	-22	87.33
3"	047	-01	104.67
4"	237	-02	115.49

PRG-5845
FRITTED DISC, TE-
FLOX

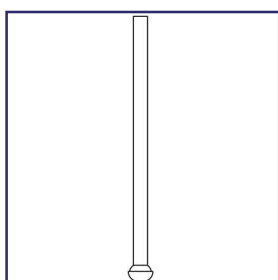




**PRG-5850
CYCLONE**

Positioned between the inlet probe and filter assembly to knock out heavy particulates. #28/2 ball joints are offered with and without O-Ring seals.

Description	CODE	Price
Body, 28/12 Ball and Socket Joint - Non O-Ring	-01	147.64
Flask, 125ml, 28/12 Socket Joint	-02	38.01
Body and Flask, 28/12 Ball and Socket - Non O-Ring	-03	185.65
Body, 28/12 O-Ring Ball and Socket	-04	150.95



**PRG-5855
PROBE LINER, 28/12
BALL JOINT**

Method Five 5/8" glass liners are listed as overall length. Effective lengths are one foot shorter. Pyrex is used for lower temperatures and Quartz is used for extreme temperatures.

Probe Length	Effective Length	Pyrex		Quartz	
		CODE	Price	CODE	Price
3'	2'	-01	CALL	-21	CALL
4'	3'	-02	CALL	-22	CALL
5'	4'	-03	CALL	-23	CALL
6'	5'	-04	CALL	-24	CALL
7'	6'	-05	CALL	-25	CALL
8'	7'	-06	CALL	-26	CALL
9'	8'	-07	CALL	-27	CALL
10'	9'	-08	CALL	-28	CALL
11'	10'	-09	CALL	-29	CALL
12'	11'	-10	CALL	-30	CALL
13'	12'	-11	CALL	—	—
14'	13'	-12	CALL	—	—



**PRG-5856
PROBE LINER, 28/12
BALL O-RING**

20' For Method Five Applications. 5/8" o.d. Liners Are Listed As Overall Lengths. Effective Lengths Are One Foot Shorter. Borosilicate "Pyrex" Is Functional To 480°C. Quartz Is Used In Hi-Temp Applications To 1215°C. Special Request Lengths Are Offered Upon Request.

Probe Length	Effective Length	Pyrex		Quartz	
		CODE	Price	CODE	Price
3'	2'	-01	79.60	-21	151.29
4'	3'	-02	91.68	-22	185.10
5'	4'	-03	114.02	-23	229.73
6'	5'	-04	126.24	-24	247.17
7'	6'	-05	140.00	-25	278.91
8'	7'	-06	150.60	-26	304.21
9'	8'	-07	193.17	-27	329.18
10'	9'	-08	205.33	-28	333.62
11'	10'	-09	217.56	-29	388.81
12'	11'	-10	229.75	-30	407.17
13'	12'	-11	244.35	-31	399.41
14'	13'	-12	276.90	-32	414.32
15'	14'	-15	317.54	-33	414.32
15.5'	14.5'	-13.5	320.73	—	—
16'	15'	—	—	-35	419.80
16.5'	15.5'	-14.5	290.75	—	—
17'	16'	-17	317.54	-36	428.46
18'	17'	-16	343.76	-37	445.80
19'	18'	-18	407.31	—	—
20'	19'	—	—	-39	482.95





PRG-5860
PROBE LINER,
STRAIGHT TUBE

For Method Five Applications. 5/8" o.d. glass liners are listed as overall lengths. Effective lengths are one foot shorter. Borosilicate "Pyrex" is functional to 480°C. Quartz is used in Hi-Temp applications to 1215°C. Ends are beveled and polished. Custom lengths are available upon request.

Probe liner available with nozzle as one unit. Often used when stack gases are too hot for stainless and Teflon unions. Please specify nozzle size.

Probe Length	Effective Length	Pyrex		Pyrex with Nozzle		Pyrex		Quartz with Nozzle	
		CODE	Price	CODE	Price	CODE	Price	CODE	Price
3'	2'	-01	50.24	-01N	113.03	-21	102.98	-21N	196.15
4'	3'	-02	56.99	-02N	119.78	-22	127.82	-22N	219.67
5'	4'	-03	87.10	-03N	149.88	-23	173.79	-23N	263.87
6'	5'	-04	108.91	-04N	171.70	-24	216.27	-24N	316.88
7'	6'	-05	120.95	-05N	183.73	-25	260.85	-25N	347.57
8'	7'	-06	133.17	-06N	213.97	-26	266.85	-26N	353.34
9'	8'	-07	144.62	-07N	226.49	-27	299.05	-27N	384.29
10'	9'	-08	157.47	-08N	240.56	-28	312.81	-28N	397.54
11'	10'	-09	163.41	-09N	247.01	-29	335.64	-29N	419.47
12'	11'	-10	165.22	-10N	244.09	-30	364.14	-30N	446.90
13'	12'	-11	CALL	-11N	263.93	-31	CALL	-31N	CALL



PRG-5875
METHOD FIVE NOZ-
ZLE, PYREX

Button hook style with 5/8" shank. Special request sizes are available upon request. Operational temperatures to 480°C.

(Inches)	(Decimal Equivalent)	(Actual)	CODE	Price
3/4	.750	.750	-01	59.81
5/8	.625	.622	-02	59.81
1/2	.500	.500	-03	59.81
7/16	.438	.433	-04	59.81
13/32	.406	.394	-05	59.81
3/8	.375	.378	-06	59.81
5/16	.313	.311	-07	59.81
9/32	.281	.276	-08	59.81
1/4	.250	.260	-09	59.81
7/32	.219	.220	-10	59.81
3/16	.188	.197	-11	59.81
5/32	.156	.157	-12	59.81
1/8	.125	.118	-13	59.81
11/32	?????	?????	-14	59.81
19/32	?????	?????	-15	59.81



PRG-5880
METHOD FIVE NOZ-
ZLE, QUARTZ

Button hook style with 5/8" shank. Special request sizes are available upon request. Operational temperatures to 1215°C.

(Inches)	(Decimal Equivalent)	(Actual)	CODE	Price
1 1/8	—	—	-01.12	CALL
3/4	.750	—	-01	106.64
5/8	.625	.630	-02	106.64
1/2	.500	.500	-03	106.64
7/16	.438	.433	-04	106.64
13/32	.406	.414	-05	106.64
3/8	.375	.393	-06	100.63
5/16	.313	.315	-07	100.63
9/32	.281	.276	-08	100.63
1/4	.250	.260	-09	100.63
3/16	.188	.197	-10	100.63
9/64	.141	.142	-11	100.63
1/8	—	—	-12	100.63

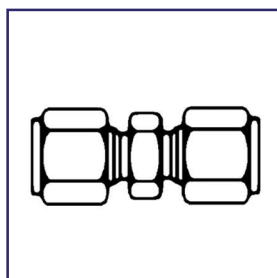




PRG-5885
METHOD FIVE NOZ-
ZLE, STAINLESS
STEEL

Button hook style with 5/8" shank. Special request sizes are available upon request. Operational temperatures to 480°C.

(Inches)	(Decimal Equivalent)	CODE	Price
4/32	.125	-01	86.60
5/32	.156	-21	86.60
6/32	.188	-02	86.60
7/32	.219	-22	86.60
8/32	.250	-03	86.60
9/32	.281	-23	86.60
10/32	.313	-04	86.60
11/32	.344	-24	86.60
12/32	.375	-05	86.60
13/32	.406	-25	86.60
14/32	.438	-06	86.60
15/32	.469	-26	86.60
16/32	.500	-07	104.67
18/32	.563	-08	115.49
20/32	.625	-09	162.39
22/32	.688	-10	162.39
24/32	.750	-11	162.39
32/32	1.000	-27	162.39



PRG-5870
UNIONS, STAINLESS
STEEL AND TEFLON

Connector for tubings. Supplied with nuts and ferrules.

Size	Teflon Union		Stainless Union		Teflon Ferrules		Stainless Ferrules	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1/4"	-01	66.58	-21	62.55	-05	7.39	-25	4.86
5/16"	-02	158.53	-22	69.53	-06	9.42	-26	5.93
3/8"	-03	76.34	-23	81.50	-07	9.85	-27	6.13
1/2"	-10	81.65						
5/8"	-04	160.91	-24	140.60	-08	14.11	-28	10.30
3/4"	-11	CALL						

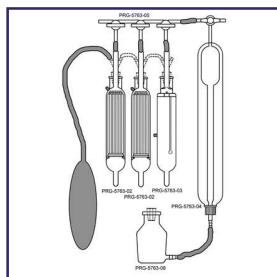


PRG-5873
PROBE LINER, COMBI-
NATION, QUARTZ

Probe liner has 28/12 ball O-Ring joint and 5/8" tubulation. 14/35 inner tapered joints on nozzle end which will slide through the steel sheath and mate with your nozzle of choice. Probe liners and nozzles are ordered separately. Nozzles have hooks (rabbit ears) to secure back to the sheath. PRG-1702-03 stainless steel joint clip can be used.

Probe Length	CODE	Price	Nozzle Size	CODE	Price
3'	-01	194.67	1 1/4"	-19	160.03
4'	-02	228.49	1"	-20	160.03
5'	-03	273.10	3/4"	-21	160.03
6'	-04	290.55	5/8"	-22	143.44
7'	-05	322.27	1/2"	-23	143.44
8'	-06	349.23	7/16"	-24	143.44
9'	-07	375.16	13/32"	-25	143.44
10'	-08	393.54	3/8"	-26	143.44
11'	-09	432.14	5/16"	-27	143.44
12'	-10	450.55	9/32"	-28	143.44
13'	-11	450.55	1/4"	-29	143.44
			3/16"	-30	143.44
			9/64"	-31	143.44
			1/8"	-32	131.36





PRG-5763 ORSAT GAS ANALYZER

Chamber Orsat Gas Analyzer. For determining carbon dioxide, oxygen, and carbon monoxide. Complete set consists of 100ml water jacketed buret, (2) contact bubblers, auto bubbler, 4-position non-flushing manifold, leveling bottle, expansion bag, supports, transfer tubes and carrying case.

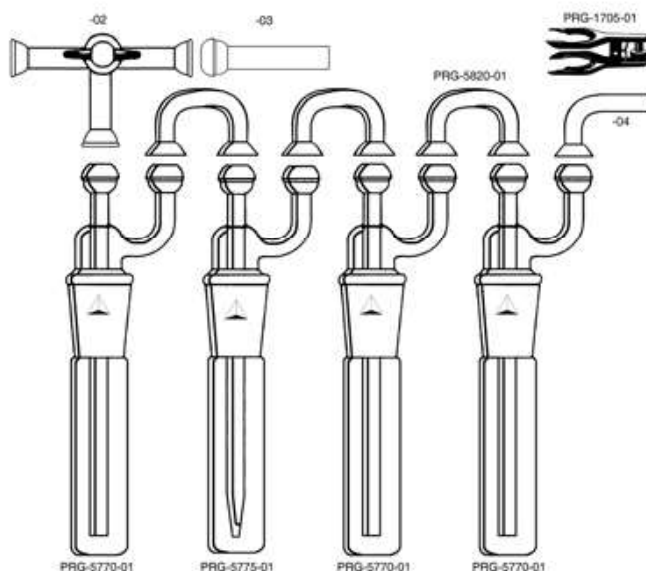
Description	CODE	Price
Complete	-01	1,872.88
Absorption Pipet, Contact	-02	185.65
Absorption Pipet, Auto Bubbler	-03	199.73
Buret, 100ml, 3-Way Valve (50ml Bulb, 50ml Calibrated in 1ml)	-04	429.59
Manifold, 3-Port, 3-Way Valve	-05	357.88
Buret Water Jacket	-06	CALL
Stoppers, for Water Jacket	-07	CALL
Reagent Bottle, 125ml	-08	42.53
Pipet Clamps	-09	CALL
Manifold Clamps	-10	CALL
Buret Clamp	-11	CALL
Expansion Bag	-12	70.76
Orsat Cabinet	-13	581.47
Manifold, 2-Port, 3-Way Valve (optional)	-14	CALL
Teflon Manifold, 3-Port (optional)	-15	CALL
Teflon Manifold, 2-Port (optional)	-16	CALL
Latex Tubing	-21	CALL
Poly Barb, Straight	-22	CALL
Poly Barb, "Y"	-23	CALL
Orsat Mounting Bracket	-31	CALL
Orsat Manifold Straps	-32	CALL





PRG-5889

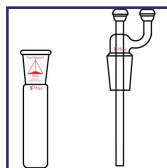
METHOD SIX, MIDGET IMPINGER TRAIN, 12/5 BALL AND SOCKET JOINTS



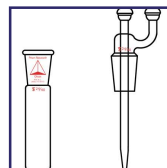
PRG-1705



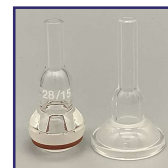
PRG-5820



PRG-5770



PRG-5775



PRG-1176

Description	CODE	Price
Complete Unit	-01	CALL

Individual Components	CODE	Price
Midget Impinger (3 required)	PRG-5770-01	CALL
Midget Impinger with Small Orifice	PRG-5775-01	CALL
"U" Tube Connector (3 required)	PRG-5820-01	41.73
3-Way Valve, Glass	PRG-5889-02	CALL
Pinch Clamp #12 (10 required)	PRG-1705-02	10.77
Ball 12/5 to 5/16" Adapter	PRG-1176-12	34.60
5/16" Socket Elbow, Adapter 12/5	PRG-5889-04	CALL
Midget Impinger, Top Only	PRG-5770-03	CALL
Midget Impinger, Top Only	PRG-5775-03	CALL

PRG-5890

METHOD TWENTY-SIX, MIDGET IMPINGER TRAIN

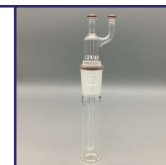
Same as PRG-5889, with an additional two impingers (PRG-5770-01).

Description	CODE	Price
Complete Unit	-01	CALL



PRG-5891
METHOD SIX, "PGS" MIDGET IMPINGER TRAIN, GREASE FREE, 12/5 O-RING BALL AND SOCKET JOINTS

PRG-1705

PRG-5820

PRG-5780

PRG-5785

Train incorporates O-Ring seals in the 12/5 ball and the 24/40 tapered joints. Rated for vacuum use without the need for grease. Silicone O-Rings are supplied. Teflon O-Rings may be purchased separately.

Description	CODE	Price
Complete Unit	-01	667.01

Individual Components	CODE	Price
Midget Impinger (3 required)	PRG-5780-01	86.18
Midget Impinger with Small Orifice	PRG-5785-01	93.18
"U" Tube Connector (3 required)	PRG-5820-01	41.73
3-Way Valve, Teflon	PRG-5894-07	32.80
Pinch Clamp #12 (10 required)	PRG-1705-02	10.77
Ball 12/5 to 5/16" Adapter	PRG-5891-02	176.07
5/16" Socket Elbow, Adapter 12/5	PRG-5890-04	CALL
Bottle Only	PRG-5770-05	CALL

PRG-5892
METHOD TWENTY-SIX, "PRG" MIDGET IMPINGER TRAIN, GREASE FREE

Same as PRG-5891, with an additional two impingers (PRG-5780-01).

Description	CODE	Price
Complete Unit	-01	784.88

PRG-5894
METHOD SIX, MIDGET IMPINGER TRAIN, GREASE FREE, SVL THREAD #15



1/4" compression fittings using a GL-18 thread and Teflon faced silicone seals and 12/5 ball joints have O-Ring for grease free vacuum use.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete Unit	-01	627.91
<u>Individual Components</u>		
Midget Impinger (4 required)	PRG-5894-02	87.58
Stem and Connector (2 required)	PRG-5894-03	24.39
Stem and Connector, Small Orifice	PRG-5894-04	29.33
Stem with 12/5 Ball Joint	PRG-5894-05	30.57
Teflon, 3-Way Valve, 4mm	PRG-5894-06	176.08
12/5 Ball Adapter	PRG-5894-07	32.80
Cap with Hole #15 (8 required)	PRG-215-01	CALL
Clamp #12 (3 required)	PRG-1705-02	10.77
Silicone Sealing Ring #15 (8 required)	PRG-216-02	3.91
Teflon Sealing Ring (optional)	PRG-216-01	13.90

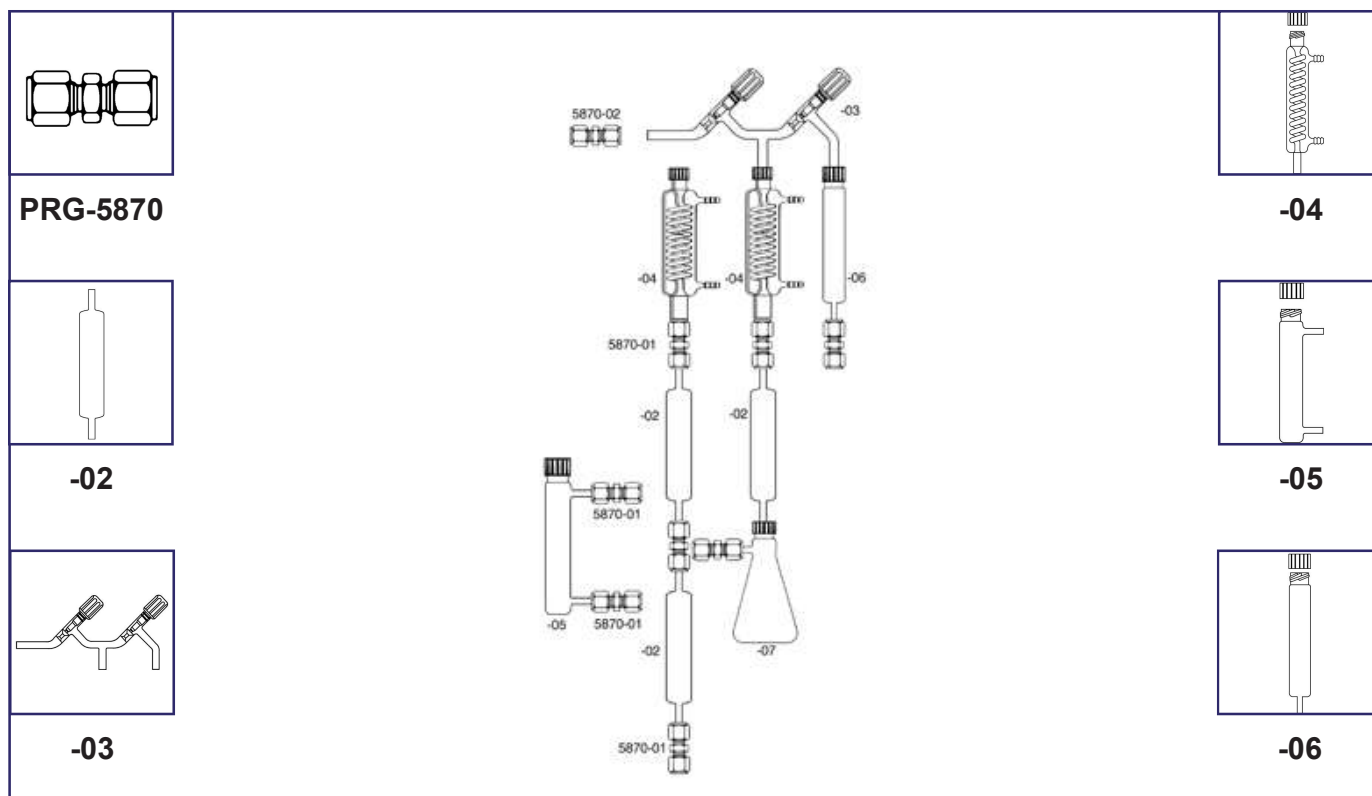
PRG-5895
METHOD TWENTY-SIX, "PRG" MIDGET IMPINGER TRAIN, GREASE FREE, SVL THREAD #15

Same as PRG-5894, with an additional two impingers (PRG-5780-01).

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete Unit	-01	748.80



PRG-5900 VOST APPARATUS



Vost Apparatus

Individual Components	CODE	Price
Complete (without connectors)	PRG-5900-01	863.79
Vost Cartridge (3 required)	PRG-5900-02	11.57
Twin Valve	PRG-5900-03	234.64
Coil Condenser, #15	PRG-5900-04	161.92
Drying Tube, #22 SVL	PRG-5900-05	42.00
Charcoal Trap	PRG-5900-06	42.00
Straight Condenser	PRG-5900-08	138.79
125ml Filter Flask	PRG-5900-07	62.65
250ml Filter Flask	PRG-5900-12	71.14
Cap with Hole, #15 (4 required)	PRG-215-01	CALL
Cap, #22 Teflon Lined	PRG-210-02	CALL
Teflon Sealing Ring, #8 (2 required)	PRG-216-07	13.90
Teflon Sealing Ring, #6 (2 required)	PRG-216-01	13.90





PRG-5905
PROBE LINER, 12/5
BALL JOINT, MIDGET
IMPINGER

Liners for the Method 6 and 26 Sampling Trains. 12/5 ball has option of O-Ring or non O-Ring seals. Available materials are "Pyrex" Or hi-temperature "Quartz". 5/16" o.d. tube with 5/8" o.d. glass wool cup.

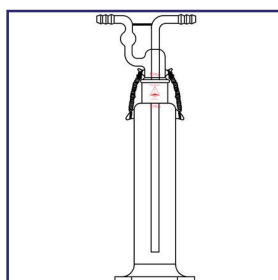
Length	Pyrex		Quartz		Pyrex (O-Ring Joint)		Quartz (O-Ring Joint)	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
2'	-01	65.45	-21	92.68	-31	65.45	-41	96.57
3'	-02	72.00	-22	101.96	-32	74.82	-42	105.84
4'	-03	84.53	-23	107.36	-33	87.35	-43	111.21
5'	-04	111.53	-24	133.32	-34	114.32	-44	137.21
6'	-05	120.19	-25	143.46	-35	122.97	-45	147.33
7'	-06	128.92	-26	155.63	-36	131.74	-46	159.52
8'	-07	137.67	-27	167.74	-37	140.41	-47	171.62



PRG-5910
VOST PROBE LINER,
8mm O.D.

8mm o.d. (5/16") liner with 5/8" o.d. glass wool cup. Available in "Pyrex" or hi-temperature "Quartz". Other lengths and diameters are offered upon request.

Length	Pyrex		Quartz	
	CODE	Price	CODE	Price
2'	-01	61.59	-21	73.09
3'	-02	72.00	-22	81.83
4'	-03	81.77	-23	95.91
5'	-04	104.67	-24	114.62
6'	-05	115.03	-25	126.01
7'	-06	125.43	-26	137.33
8'	-07	146.72	-27	160.56

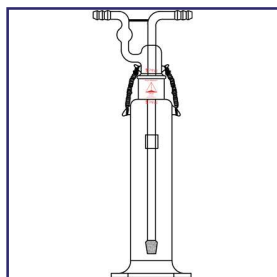


PRG-5960
GAS WASHING BOT-
TLE, DRESCHER,
TALL FORM

Used for gas dispersion. Straight bubbler stem, no hold up. 3/8" hose barb inlet and outlet. 24/40 tapered joint connection. Supplied with PRG-1710 extension springs.

Capacity ml	Complete		Stopper Only		Bottle Only	
	CODE	Price	CODE	Price	CODE	Price
125	-01	97.41	-02	52.58	-03	49.29
350	-04	112.02	-05	55.83	-06	57.46
500	-07	124.84	-08	57.54	-09	CALL

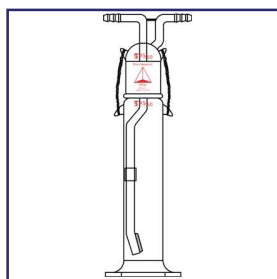




Used for gas dispersion. Stem has a 12mm o.d. x 25mm long frit. Porosity options are listed. 3/8" hose barb inlet and outlet. 24/40 tapered joint connection. Supplied with PRG-1710 extension springs. Stopper Only option is not supplied with frit.

Capacity ml	Medium		Coarse		Extra Coarse		Stopper Only		Bottle Only	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
125	-01	155.98	-02	156.08	-03	156.08	-04	78.21	-05	49.29
250	-06	164.75	-07	164.75	-08	164.75	-09	78.21	-10	57.46
500	-11	179.94	-12	179.94	-13	179.94	-14	78.21	-15	72.39
Frit Only	-16	CALL	-17	CALL	-18	CALL	—	—	—	—
Teflon Sleeve	-19	CALL	—	—	—	—	—	—	—	—

PRG-5965
GAS WASHING BOT-
TLE, FRITTED CYLIN-
DER



Used for gas dispersion. Connection joint is a 45/50 taper to accommodate the 25mm diameter fritted disc. Frit porosities options are listed. Insert has the outer tapered joint and the bottle has the mating inner joint. Stopper Only option is not supplied with frit.

Capacity ml	Medium		Coarse		Extra Coarse		Stopper Only		Bottle Only	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
125	-01	164.75	-02	164.75	-03	164.75	-04	84.14	-05	59.68
250	-06	194.95	-07	194.95	-08	194.95	-09	84.14	-10	69.76
500	-11	208.38	-12	208.38	-13	208.38	-14	84.14	-15	79.55
Frit Only	-16	CALL	-17	CALL	-18	CALL	—	—	—	—
Teflon Sleeve	-19	CALL	—	—	—	—	—	—	—	—

PRG-5970
GAS WASHING BOT-
TLE, FRITTED DISC

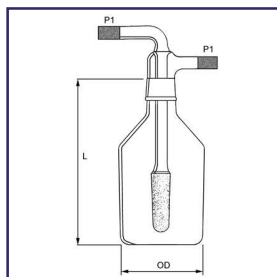


Bottle has a 60mm diameter sealed in frit. Frit porosity options are listed. Taper joint options are 24/40 or 29/42. 3/8" Inlet and outlet hose barbs. Approximate volume is 350ml. Other sizes are available upon request.

Joint Size	Medium		Coarse		Extra Coarse	
	CODE	Price	CODE	Price	CODE	Price
24/40	-01	222.42	-02	222.42	-03	222.42
29/42	-04	227.40	-05	227.40	-06	227.40
Adapter Only	-07	CALL	—	—	—	—

PRG-5975
GAS WASHING BOT-
TLE, FRITTED DISC





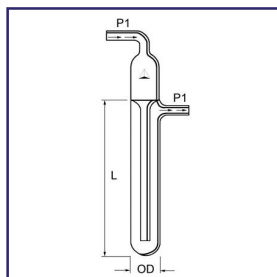
PRG-5980
GAS WASHING BOT-
TLE, LARGE VOLUME

Gas Scrubbing / Washing Bottles have large volumes for gas dispersion, from 1 liter to 45 liter. The cylindrical fit is 25mm o.d. x 75mm long, coarse porosity, 40/60 micron. Bottle is equipped with a 45/50 inner O-Ring joint and supplied with a Viton O-Ring (128 Size) the inlet / outlet arms are a heavy wall tubing with sandblasted ends for use with a compression fitting or tube slip fit. Medium (10/15 micron) and extra-coarse (170/200 micron) frits are available upon request. A "Set" is fritted insert and bottle sold together. Bottles and inserts are also offered individually.

<u>Description</u>	<u>P1 - 1/2"</u>		<u>P1 - 5/8"</u>		<u>P1 - 3/4"</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
1 Liter Complete	-51	265.29	-61	269.74	-41	275.72
Top Only, Fritted	-52	175.85	-62	180.32	-42	187.79
2 Liter Complete	-53	281.67	-63	281.67	-43	289.12
Top Only, Fritted	-54	175.85	-64	175.85	-44	183.30
4 Liter Complete	-01	536.13	-11	635.79	-21	767.51
Top Only, Fritted	-02	189.26	-12	191.66	-22	198.21
9 Liter Complete	-03	633.38	-13	634.88	-23	642.33
13 Liter Complete	-04	722.81	-14	760.07	-24	767.51
Top Only, Fritted	-05	189.26	-15	190.75	-25	198.21
19 Liter Complete	-06	847.99	-16	850.98	-26	856.93
Top Only, Fritted	-07	199.70	-17	202.69	-27	208.64
45 Liter Complete	-08	1,408.35	-18	1,414.30	-28	1,418.79
Top Only, Fritted	-09	232.48	-19	238.45	-29	242.91

<u>Description</u>	<u>O.D. mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
1 Liter Bottle	107	225	-75	89.43
2 Liter Bottle	133	270	-76	105.82
4 Liter Bottle	140	300	-70	346.87
9 Liter Bottle	203	440	-71	444.12
13 Liter Bottle	233	440	-72	569.30
19 Liter Bottle	292	500	-73	648.29
45 Liter Bottle	408	590	-74	1,175.86

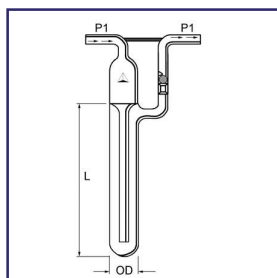




PRG-1365
BUBBLER, MINERAL
OIL

Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere.

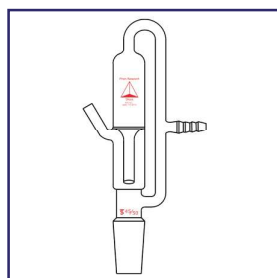
<u>Volume ml</u>	<u>P1 mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
30	8	100	28	-01	46.21
60	12.7	125	35	-02	64.08



PRG-1366
BUBBLER, MINERAL
OIL, WITH CHECK
VALVE

Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere. This bubbler has a ball check valve to prevent the possibility of back flow.

<u>Volume ml</u>	<u>P1 mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
30	8	100	28	-01	96.88
60	12.7	125	35	-02	116.26
150	12.7	150	40	-03	230.98
300	15.8	200	50	-04	281.67



PRG-1370
NITROGEN BUBBLER,
IMPROVED

Used to nitrogen purge the system. This bubbler is easily installed or removed from distillation apparatus.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	203.20
29/42	-02	199.70
45/50	-03	213.11





PRG-5400
HEMISPHERICAL, "O"
SERIES

The "O" Series hemispherical mantles cover and heat only the bottom half of flask. Supplied with a separable 4 foot 2-wire cord with locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Capacity	Wattage	CODE	Price
50 ml	60	-01	164.43
100 ml	80	-02	182.57
250 ml	180	-03	201.85
500 ml	270	-04	225.67
1,000 ml	380	-05	252.88
2,000 ml	500	-06	276.70
3,000 ml	500	-07	307.31
5,000 ml	600	-08	374.22
12,000 ml	2-650	-09	759.78



PRG-5401
HEATING / INSULAT-
ING TOPS

These tops either insulate or heat and are designed for use with Series M, TM, or STM mantles. They prevent vapor condensation in the upper half of a flask during distillation of high-boiling materials. All 115-volt tops are CSA certified. Electrical connection consists of separable 4 ft., 2-wire cord and locking connector. Accommodates up to a 3-neck flask.

Description	Flask Capacity	Flask Diameter	Heating Top Wattage	CODE	Price
Insulating	250 ml	83 mm	140	-01	197.32
Insulating	300 ml	86 mm	140	-02	197.32
Insulating	500 ml	101 mm	140	-03	213.19
Insulating	1,000 ml	137 mm	140	-04	238.14
Insulating	2,000 ml	170 mm	200	-05	254.02
Insulating	3,000 ml	183 mm	200	-06	228.78
Insulating	5,000 ml	220 mm	300	-07	349.27
Insulating	12,000 ml	293 mm	590	-08	535.25
Insulating	22,000 ml	347 mm	650	-09	607.82
Insulating	50,000 ml	456 mm	1,000	-10	983.18
Insulating	72,000 ml	522 mm	1,000	-11	1,149.88
Heating-115v	250 ml	83 mm	140	-21	224.53
Heating-115v	300 ml	86 mm	140	-22	263.09
Heating-115v	500 ml	101 mm	140	-23	277.83
Heating-115v	1,000 ml	137 mm	140	-24	309.58
Heating-115v	2,000 ml	170 mm	200	-25	320.92
Heating-115v	3,000 ml	183 mm	200	-26	353.81
Heating-115v	5,000 ml	220 mm	300	-27	447.93
Heating-115v	12,000 ml	293 mm	590	-28	747.31
Heating-115v	22,000 ml	347 mm	650	-29	806.27
Heating-115v	50,000 ml	456 mm	1,000	-30	1,251.94
Heating-230v	250 ml	83 mm	140	-40	277.83
Heating-230v	300 ml	86 mm	140	-41	277.83
Heating-230v	500 ml	101 mm	140	-42	285.77
Heating-230v	1,000 ml	137 mm	140	-43	342.47
Heating-230v	2,000 ml	170 mm	200	-44	343.60
Heating-230v	3,000 ml	183 mm	200	-45	369.68
Heating-230v	5,000 ml	220 mm	300	-46	460.40
Heating-230v	12,000 ml	293 mm	590	-47	763.18
Heating-230v	22,000 ml	347 mm	650	-48	823.28
Heating-230v	50,000 ml	456 mm	1,000	-49	1,270.08
Heating-230v	72,000 ml	522 mm	1,000	-50	1,443.58





PRG-5402
SPHERICAL, "O"
SERIES

The "O" Series mantles cover 1, 2, and 3-neck flasks completely with a 2 zone power supply to prevent heat loss. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Flask Capacity</u>	<u>Top Wattage</u>	<u>Bottom Wattage</u>	<u>CODE</u>	<u>Price</u>
50 ml	None	60	-01	344.74
100 ml	None	80	-02	348.14
250 ml	None	180	-03	358.34
500 ml	None	270	-04	410.51
1,000 ml	140	380	-05	687.20
2,000 ml	200	500	-06	718.96
3,000 ml	200	500	-07	755.24
5,000 ml	300	600	-08	896.99
12,000 ml	590	2-650	-09	1,620.49



PRG-5404
TRIPOD SUPPORT,
"O" SERIES

Floor model tripod support. For "O" Series heating mantle. Aluminum basket straps and mounting holes for leg support included.

<u>Flask Capacity</u>	<u>Height</u>	<u>CODE</u>	<u>Price</u>
5,000 ml	12"	-01	235.87
12,000 ml	14"	-02	242.68
22,000 ml	14"	-03	257.42



PRG-5406
EXTENSION SUP-
PORT, "O" SERIES

Support series for "O" Series mantle 50 ml - 500 ml. Attaches to lab rack or table top stands. Extension rod is 3/8".

<u>Flask Capacity</u>	<u>I.D.</u>	<u>CODE</u>	<u>Price</u>
50 ml	3 3/4"	-01	85.05
100-200 ml	4 7/8"	-02	87.32
250-300 ml	5 1/2"	-03	87.32
500 ml	5 7/8"	-04	89.59
1,000 ml	7 1/4"	-05	97.52
2,000 ml	8 3/4"	-06	103.19
3,000 ml	9 3/8"	-07	106.60
5,000 ml	11 7/8"	-08	111.13





PRG-5408
SPHERICAL, "TM"
SERIES

"TM" Series mantles with bottom half of flask providing heat source. Mantles are supplied with detachable 4 foot, 3-wire cord and locking connectorm except for 50 and 72 liter flask size, which have terminal boxes. All 115 volt items are CSA certified, except CODES 01-04. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Wattage	Voltage	CODE	Price
50 ml	60	115	-01	249.48
100 ml	80	115	-02	249.48
125 ml	80	115	-03	249.48
200 ml	100	115	-04	249.48
250 ml	180	115	-05	255.15
300 ml	180	115	-06	273.29
500 ml	270	115	-07	293.71
1,000 ml	380	115	-08	312.98
2,000 ml	500	115	-09	326.59
3,000 ml	500	115	-10	388.96
5,000 ml	600	115	-11	481.95
12,000 ml	2-650	115	-12	901.53
22,000 ml	2-770	115	-13	1,038.74
50,000 ml	3-1,000	115	-14	1,646.57
50,000 ml	3-1,000	230	-15	1,661.31
72,000 ml	2-2,000	230	-16	1,876.77



PRG-5410
STIR COMBO, WITH
CONTROLLER

Similar to heating mantle PRG-5408, with the addition of an electromagnetic stirring system capable of 50-750 RPM. Please note heating and stirring require separate controllers as a complete system. Complete set supplied with mantle, stir controller, connection wire and Teflon® stir bar. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Complete		Mantle Only	
	CODE	Price	CODE	Price
250 ml	-01	616.68	-11	CALL
500 ml	-02	635.04	-12	CALL
1,000 ml	-03	664.20	-13	CALL
2,000 ml	-04	1,397.52	-14	CALL
3,000 ml	-05	1,409.40	-15	CALL
5,000 ml	-06	1,508.76	-16	CALL
12,000 ml	-07	1,671.84	—	—
22,000 ml	-08	1,800.36	—	—



PRG-5412
SPHERICAL, "M"
SERIES

"M" Series mantles are similar to the "TM" Series except the outer aluminum housing is spherical, making it more compact. See PRG-5414 and PRG-5416 for mantle supports. Supplied with 4 foot, 3-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Wattage	Voltage	CODE	Price
50 ml	60	115	-01	284.63
100 ml	80	115	-02	284.63
125 ml	80	115	-03	284.63
250 ml	180	115	-04	268.65
500 ml	270	115	-05	296.70
1,000 ml	380	115	-06	321.79
2,000 ml	500	115	-07	343.95
3,000 ml	500	115	-08	416.27
5,000 ml	600	115	-09	501.89
12,000 ml	2-650	115	-10	922.59
22,000 ml	2-770	115	-11	1,048.05
50,000 ml	3-1,000	115	-12	1,653.26
72,000 ml	2-2,000	230	-13	1,845.16



PRG-5414
SERIES "M" TRIPOD
SUPPORT

Tripod supports for "M" Series mantles. Available in both bench or floor models.

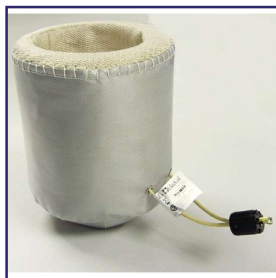
<u>Flask Size</u>	<u>Bench Height</u>	<u>CODE</u>	<u>Price</u>	<u>Floor Height</u>	<u>CODE</u>	<u>Price</u>
3,000 ml	14"	-01	110.71	—	—	—
5,000 ml	14"	-02	115.15	—	—	—
12,000 ml	14"	-03	146.13	24-36"	-13	410.37
22,000 ml	14"	-04	191.91	24-36"	-14	432.49
50,000 ml	16"	-05	191.91	24-36"	-15	516.65
72,000 ml	18"	-06	243.56	24-36"	-16	531.40



PRG-5416
SERIES "M" EXTEN-
SION SUPPORT

Support for "M" Series mantles 50-5,000 ml. Attaches to lab racks or table top stands.

<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
50-200 ml	-01	78.23
250-500 ml	-02	84.15
1,000 ml	-03	87.10
2,000-3,000 ml	-04	92.99
5,000 ml	-05	95.95



PRG-5418
BEAKER, GRIFFIN,
"O" SERIES

The flexible "O" Series mantle for Griffin beakers will heat even small volumes of liquid because heat is evenly concentrated at the bottom of the mantle. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Beaker Capacity</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
50 ml	40	-01	221.42
100 ml	100	-02	236.18
150 ml	100	-03	240.60
250 ml	140	-04	245.04
400 ml	240	-05	255.38
600 ml	325	-06	289.32
800 ml	350	-07	296.70
1,000 ml	430	-08	333.61
2,000 ml	550	-09	352.79
3,000 ml	630	-10	364.60
4,000 ml	710	-11	392.66





PRG-5420
BEAKER, GRIFFIN,
"TM" SERIES

"TM" Series mantles are similar to PRG-5418, except with an aluminum housing. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Beaker Capacity</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
600 ml	325	-01	274.56
800 ml	350	-02	278.99
1,000 ml	430	-03	289.32
2,000 ml	550	-04	326.22
3,000 ml	630	-05	349.85
4,000 ml	710	-06	367.56



PRG-5422
REACTION KETTLE,
"O" SERIES

The "O" Series mantle for resin reaction flasks. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Kettle Capacity</u>	<u>I.D.</u>	<u>Depth</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
500 ml	3 3/4"	4 1/2"	270	-01	354.27
1,000 ml	4 1/4"	5 1/4"	335	-02	367.56
2,000 ml	5 1/2"	6"	470	-03	382.32
3,000 ml	5 1/2"	9"	550	-04	407.41
4,000 ml	5 1/2"	11"	750	-05	417.73



PRG-5424
REACTION KETTLE,
"TM" SERIES

The "TM" Series mantle is similar to PRG-5422 "O" Series, except "TM" has an aluminum housing and 4 foot, 3-wire cord for a ground. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Kettle Capacity</u>	<u>I.D.</u>	<u>Depth</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
500 ml	3 3/4"	4 1/2"	270	-01	330.66
1,000 ml	4 1/4"	5 1/4"	335	-02	345.40
2,000 ml	5 1/2"	6"	470	-03	354.27
3,000 ml	5 1/2"	9"	550	-04	398.56
4,000 ml	5 1/2"	11"	750	-05	433.98





**PRG-5449
THERMOCOUPLES
"J"**

Thermocouples "J" type for use with PRG-5430 digital thermometers. All supplied with plugs.

For Liquid Immersion

24 gauge iron-constantan, 1/8" O.D. 6" long stainless steel probe. 48" long fiberglass insulated duplex lead with stainless steel over-braid.

<u>Temperature Range</u>	<u>CODE</u>	<u>Price</u>
0-370° C	-01	95.95

24 gauge iron-constantan, 1/8" O.D. 6" Teflon® coated stainless steel probe. 48" long Teflon® insulated duplex lead.

0-260° C	-02	154.99
----------	-----	--------

Not For Liquid Immersion

20 gauge iron-constantan, 72" long, fiberglass-insulated duplex lead wire with welded tip.

<u>Temperature Range</u>	<u>CODE</u>	<u>Price</u>
0-480° C	-03	51.66

24 gauge iron-constantan, 36" long, fiberglass-insulated duplex lead wire with welded tip.

0-480° C	-04	39.85
----------	-----	-------



**PRG-5430
DIGITAL THERMO-
METER**

Handheld microprocessor thermometer is battery operated with a 4-digit, 1/2" LCD display. Reads temperature in Celsius with display changes to Fahrenheit. Range is -190 to 1000° C (-310 to 1832° F). Power source is a 9 volt battery (included) with a life of 200 hours. "J" thermocouple is PRG-5449.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
PR-1000	-01	376.40



**PRG-5432
TEMPERATURE CON-
TROL, POWRTROL**

Solid state Powrtrol provides precision manual control of heating tapes and mantles. Output range is adjustable from 0-100% of rated voltage with controller linear from 2-100%. ON/OFF switch is lighted and is supplied with 10 amp circuit breaker and 3-wire cord.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>Case Dimensions</u>	<u>CODE</u>	<u>Price</u>
PL-120	120	10	4 x 4 x 3 3/8" H	-01	206.66
PL-124	240	10	4 x 4 x 3 3/8" H	-02	324.75





PRG-5434
TEMPERATURE CON-
TROLLER,
POWRTWIN

Similar to PRG-5432, except handles two separate circuits at one time. Often convenient for 2 circuit heating mantles. Not available with 240 volt.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>Case Dimensions</u>	<u>CODE</u>	<u>Price</u>
PL-1202	120	7	8 x 6 x 3 3/8" H	-01	324.75



PRG-5436
TEMPERATURE CON-
TROL,
MINITROL

Controller is manually adjusted for heating operation. Minitrol has only a percentage timer design without a sensing element. Operating voltage load is from 5.5%-100%. For use with heating mantles and tapes. Electrical 3-wire cord supplied.

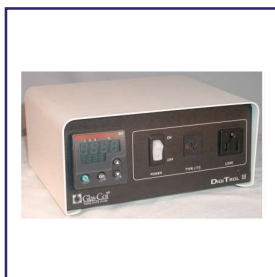
<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>CODE</u>	<u>Price</u>
PL-312	120	12	-01	215.46
PL-324	240	10	-02	243.56



PRG-5438
TEMPERATURE CON-
TROL,
MINITWIN

Similar to PRG-5436, except with a separate dual control. Convenient for mantles with two circuits. Not available in 240 volt. Electrical 3-wire cord supplied.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>CODE</u>	<u>Price</u>
PL-312	120	12	-01	309.99



PRG-5440
TEMPERATURE CON-
TROL, AUTOMATIC,
DIGITROL II

Digitrol uses a 1/16 DIN microprocessor base control. May be used with mantles, heating tapes, small ovens and other load resistive elements. Digitrol accuracy is 0.1% with a range of 32-999° F (0-750° C). Control is furnished with an immersion iron - constantan J thermocouple and a lighted ON/OFF switch. Electrical 3-wire cord supplied.

Number	Volts	Amps	CODE	Price
PL-612	120	15	-01	937.33
PL-624	240	10	-02	1,070.20



PRG-5444
TEMPERATURE CON-
TROL, MANTLE
MINDER II

An automatic time positioning control for heating mantles, cords and tapes. Control dial calibrated in °F/°C. Furnished with a immersion-iron constant and thermocouple for accuracy of 1.5% of full scale. Range is 0-1000° F. Electrical 3-wire cord supplied.

Number	Volts	Amps	CODE	Price
PL-512	120	10	-01	627.35
PL-524	240	5	-02	686.39



PRG-5950
LOW PROFILE CON-
TROLS

The low profile temperature controls feature a format with 1, 2, or 3 load receptacles. Control uses one thermocouple to operate all load receptacles simultaneously. easy set-up and simple input commands make this control very "user friendly". These controls are single-loop, auto-tuning temperature controllers that automatically set PID control parameters for optimum system performance. For use with heating mantles, tapes, ovens, water baths or other processes requiring accurate control.

Electrical Rating	Number	Temperature Range	Load Receptacles	Thermocouple	CODE	Price
15@120V, 1800W	PLSM112	0-750° C	1	Type J	-01	CALL
15@120V, 1800W	PLSM112K	-200-1250° C	1	Type K	-02	CALL
15@120V, 1800W	PLSM112T	-200-350° C	1	Type T	-03	CALL
15@120V, 1800W	PLSM212	0-750° C	2	Type J	-04	CALL
15@120V, 1800W	PLSM212K	-200-1250° C	2	Type K	-05	CALL
15@120V, 1800W	PLSM212T	-200-750° C	2	Type T	-06	CALL
15@120V, 1800W	PLSM312	0-750° C	3	Type J	-07	CALL
15@120V, 1800W	PLSM312K	-200-1250° C	3	Type K	-08	CALL
15@120V, 1800W	PLSM312T	-200-350° C	3	Type T	-09	CALL
10@240V, 2400W	PLSM124	0-750° C	1	Type J	-10	CALL
10@240V, 2400W	PLSM124K	-200-1250° C	1	Type K	-11	CALL
10@240V, 2400W	PLSM124T	-200-350° C	1	Type T	-12	CALL
10@240V, 2400W	PLSM224	0-750° C	2	Type J	-13	CALL
10@240V, 2400W	PLSM224K	-200-1250° C	2	Type K	-14	CALL
10@240V, 2400W	PLSM224T	-200-750° C	2	Type T	-15	CALL



JK-210

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE**

The Model 210 has 1200 Watts of power which is sufficient for heating mantles up to 5L in size along with most laboratory ovens and hot plates. Controller has the ability to display temperature without heating. The Model 210 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 5L.

Specifications

Dimensions 3.25" H x 5.25" W x 7.25" D
Power 10 Amps @ 120VAC, 1200 Watts

<u>Description</u>	<u>Controller Type</u>	<u>CODE</u>	<u>Price</u>
Controller Only	Type J	JK-210-J	860.00
Complete	Type J	JK-210-J-S	955.00
Controller Only	Type K	JK-210-K	860.00
Complete	Type K	JK-210-K-S	955.00
Controller Only	Type RTD	JK-210-PT	870.00
Complete	Type RTD	JK-210-PT-S	1,025.00
Controller Only	Type T	JK-210-T	860.00
Complete	Type T	JK-210-T-S	955.00



JK-210-TIMER

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE,
WITH 100 HOUR DIGI-
TAL TIMER**

The Model 210 has 1200 Watts of power which is sufficient for heating mantles up to 5L in size along with most laboratory ovens and hot plates. Controller has the ability to display temperature without heating. The Model 210 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 5L. With the addition of a 100 hour digital timer to turn heating ON or OFF when time has expired.

Specifications

Dimensions 3.4" H x 6.75" W x 6" D
Power 10 Amps @ 120VAC, 840 Watts

<u>Description</u>	<u>Controller Type</u>	<u>CODE</u>	<u>Price</u>
Controller Only	Type J	JK-210-TIMER-J	955.00
Complete	Type J	JK-210-TIMER-J-S	1,050.00
Controller Only	Type K	JK-210-TIMER-K	955.00
Complete	Type K	JK-210-TIMER-K-S	1,050.00
Controller Only	Type RTD	JK-210-TIMER-PT	965.00
Complete	Type RTD	JK-210-TIMER-PT-S	1,120.00
Controller Only	Type T	JK-210-TIMER-T	955.00
Complete	Type T	JK-210-TIMER-T-S	1,050.00



JK-250

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, WITH
BOTH HEATING AND
COOLING OUTLETS**

The Model 250 has 3 power outlets for maximum versatility in research. Two of the outlets are used for heating up to 1800 watts (mantles up to 22L).

The third outlet (360 watts), used normally for cooling, is programmable to provide power below, above, or at the entered temperature. This third outlet can also be used to turn on an alarm for an over or under temperature condition. Controller has the ability to display temperature without heating. The Model 250 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 22L. Available with a choice of Type "T", "J" or "K" thermocouple.

Specifications

Dimensions 3.25" H x 7.5" W x 9" D
Power Heating Outlets #1 & #2: 15
Amps @ 120VAC, 1800 Watts
Cooling/Alarm Outlet #3: 3 Amps
@ 12VAC, 360 Watts

<u>Description</u>	<u>Controller Type</u>	<u>CODE</u>	<u>Price</u>
Controller Only	Type J	JK-250-J	985.00
Complete	Type J	JK-250-J-S	1,080.00
Controller Only	Type K	JK-250-K	985.00
Complete	Type K	JK-250-S	1,080.00
Controller Only	Type RTD	JK-250-PT	985.00
Complete	Type RTD	JK-250-S	1,140.00
Controller Only	Type T	JK-250-T	985.00
Complete	Type T	JK-250-T-S	1,080.00



JK-260-TIMER
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE,
WITH BOTH HEATING
AND COOLING OUT-
LETS, WITH 100
HOUR DIGITAL TIMER

The J-Kem® Scientific microprocessor based temperature controller is for use with pilot plant reactors. The Model 260 disconnects all output power if the process temperature exceeds the entered temperature by a user-specified amount, or following recovery from a power failure. The outputs remain disconnected until manually reset. Over temperature condition is signaled by an indicator lamp and audible alarm. Controller has two outlets on the front for connection to heaters. The Model 260 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquid.

Specifications

Dimensions 3.25" H x 7.5" W x 9" D
 Power 15 amps @ 120 VAC, 1800 Watts

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type RTD
 Type RTD
 Type T
 Type T

CODE

JK-260-TIMER-J
 JK-260-TIMER-J-S
 JK-260-TIMER-K
 JK-260-TIMER-K-S
 JK-260-TIMER-PT
 JK-260-TIMER-PT-S
 JK-260-TIMER-T
 JK-260-TIMER-T-S

Price

1,175.00
 1,270.00
 1,175.00
 1,270.00
 1,175.00
 1,330.00
 1,175.00
 1,270.00



JK-270
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, HIGH
SAFETY, BUILT IN
BACK UP CON-
TROLLER

J-Kem® Scientific microprocessor temperature controller. The only temperature controller available with a completely INDEPENDENT BACK UP controller to guard against accidents from equipment failure.

The desired temperature is entered into the digital display of the setpoint controller which regulates heating. A high temperature limit is then entered into the second digital back-up. If the reaction reaches the setpoint of the second controller, power is shut off from the output circuit until the unit is manually reset. Both controllers independently monitor the reaction temperature and in the event that one controller fails, the other takes over to prevent an accident. Available with a choice of Type "T", "J", or "K" thermocouple.

Specifications

Dimensions 3.25" H x 7.55" W x 9" D
 Power 15 amps @ 120 VAC, 1800 Watts

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type T
 Type T

CODE

JK-270-J
 JK-270-J-S
 JK-270-K
 JK-270-K-S
 JK-270-T
 JK-270-T-S

Price

1,570.00
 1,720.00
 1,570.00
 1,720.00
 1,570.00
 1,720.00



JK-APOLLO
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, MULTI
CHANNEL, DUAL
TIMER

Apollo controls TWO independent reactions.

Features two independent temperature controllers in a single cabinet to regulate two independent reactions at the same time. Each temperature controller channel has a high power outlet and a 100 hour digital timer to turn heating OFF (or ON) at a user entered time. Features include: over-temperature protection circuits, dual temperature displays, selectable operating modes, double fused, and 100% solid state design. Contains J-KEM's patented power control computer which provides 0.1o C regulation of anything.

Specifications

Dimensions 4" H x 8.2" W x 9" D
Power 15 Amps @ 120VAC, 1800
Watts, 1500 Watts per Channel

Description

Controller Only
Complete
Controller Only
Complete
Controller Only
Complete
Controller Only
Complete

Controller Type

Type J
Type J
Type K
Type K
Type RTD
Type RTD
Type T
Type T

CODE

JK-APOLLO-J
JK-APOLLO-J-S
JK-APOLLO-K
JK-APOLLO-K-S
JK-APOLLO-PT
JK-APOLLO-PT-S
JK-APOLLO-T
JK-APOLLO-T-S

Price

1,595.00
1,795.00
1,595.00
1,795.00
1,595.00
1,920.00
1,595.00
1,795.00



JK-GEMINI
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, MULTI
CHANNEL, DUAL
TIMER, WITH DIGITAL
TIMER ON ONE
CHANNEL

J-Kem® Scientific Gemini-2 dual temperature controller permits control of two independent reactions with digital displays for both channels. Each channel is 1200 Watts MAX (1800 Watts total), 15 Amps @ 120VAC, and features advanced microprocessor PID control algorithm. Channel one also has a 100 hour digital timer. Safety features include 100% solid state, double fused, audible error alarm, and over temperature circuitry that disconnects power if an over temperature condition occurs.

Specifications

Dimensions 3.5" H x 7.75" W x 8.75" D
Power 15 Amps @ 120VAC, 1200 Watts
MAX/Channel, 1800 Watts
(Total)

Description

Controller Only
Complete
Controller Only, CE Approved
Complete, CE Approved
Controller Only
Complete
Controller Only, CE Approved
Complete, CE Approved
Controller Only
Complete
Controller Only, CE Approved
Complete, CE Approved
Controller Only
Complete
Controller Only, CE Approved
Complete, CE Approved
Controller Only
Complete

Controller Type

Type J
Type J
Type J
Type J
Type K
Type K
Type K
Type K
Type K
Type K
Type T
Type T
Type T
Type T
Type T
Type T
Type RTD
Type RTD

CODE

JK-GEMINI-J
JK-GEMINI-J-S
JK-GEMINI-CE-J
JK-GEMINI-CE-J-S
JK-GEMINI-K
JK-GEMINI-K-S
JK-GEMINI-CE-K
JK-GEMINI-CE-K-S
JK-GEMINI-T
JK-GEMINI-T-S
JK-GEMINI-CE-T
JK-GEMINI-CE-T-S
JK-GEMINI-PT
JK-GEMINI-PT-S

Price

1,425.00
1,625.00
1,495.00
1,685.00
1,425.00
1,625.00
1,495.00
1,685.00
1,425.00
1,625.00
1,495.00
1,685.00
1,425.00
1,745.00



JK-HCC
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, HIGH CUR-
RRENT, CONTROLLER
ONLY

The J-KEM® Scientific HCC controller is designed to power large scale equipment such as 50L to 100L heating mantles. Designed with the same safety features as the Model 270, the HCC incorporates a 100 hour digital timer to turn heating on or off.

Specifications

Dimensions 5.5" H x 12" W x 12" D
 Power 120VAC, 3600 Watts, 30 Amps

Description	Controller Type	CODE	Price
VAC: 130, AMP: 30, WATTS: 3600	Type J	JK-HCC-130-J	1,915.00
VAC: 130, AMP: 30, WATTS: 3600	Type K	JK-HCC-130-K	1,915.00
VAC: 130, AMP: 30, WATTS: 3600	Type T	JK-HCC-130-T	1,915.00
VAC: 240, AMP: 15, WATTS: 3600	Type J	JK-HCC-130-J	1,940.00
VAC: 240, AMP: 15, WATTS: 3600	Type K	JK-HCC-130-K	1,940.00
VAC: 240, AMP: 15, WATTS: 3600	Type T	JK-HCC-130-T	1,940.00
VAC: 240, AMP: 15, WATTS: 7200	Type J	JK-HCC-130-J	2,045.00
VAC: 240, AMP: 15, WATTS: 7200	Type K	JK-HCC-130-K	2,045.00
VAC: 240, AMP: 15, WATTS: 7200	Type T	JK-HCC-130-T	2,045.00



JK-LS-120
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, LAB
SAFETY

Combines the features of J-KEM's temperature monitor with our Water Flow Monitor and adds a temperature limit controller creating a single versatile instrument. Plug any piece of equipment into the monitor and if the water flow rate falls below the user set level, or the reaction temperature goes above or below the set limits, outlet power is turned off until the controller is manually reset. Also disconnects power following recovery from a power failure. USB communications and free KEM-Net software provide GLP/GMP data and alarm logging.

Input type K: -50 to 1200° C

Requires selection of a flow sensor

Specifications

Dimensions 3.5" H x 5.25" W x 7.25" D
 Power 120VAC, 1800 Watts

Controller Type	CODE	Price
Type J	JK-LS-120-J	840.00
Type K	JK-LS-120-K	840.00
Type T	JK-LS-120-T	840.00



JK-WATER
FLOW
MONITOR
J-KEM® SCIENTIFIC,
WATER FLOW
MONITOR

Precisely monitors the flow rate of water through a condenser, water bath, or other piece of equipment. If the flow rate falls below the minimum rate set by the user (i.e. loss of pressure, broken hose), power is turned off to the monitor's output receptacle and any equipment plugged into it. Power remains off until being manually reset. Requires selection of a flow sensor. The optional water shut off valve stops water flow during an alarm condition preventing a flooded lab. Digital sensor measures actual coolant flow rate. Optional audible and digital alarms.

Description	CODE	Price
Water Shut Off Valve	JK-250WV	182.50
120V, 1800W	JK-WFM-120	385.00
230V, 2300W	JK-WFM-230	385.00
0.1 to 2.5 L/minute	JK-WFM-01	240.00
1 to 10 L/minute	JK-WFM-02	240.00
2 to 30 L/minute	JK-WFM-03	240.00
Audible Alarm	JK-WFM-AA	65.00
Digital Alarm Outlet	JK-WFM-OC	35.00



JK-THERMOCOUPLE-PROBES J-KEM® SCIENTIFIC, THERMOCOUPLE PROBES

All sensors are housed in 304 stainless steel sheaths.

Teflon overcoating is PFA coating over stainless steel probe.

Note: To read temperatures accurately, the type of the thermocouple must match the controller's type. On a new controller, the type is the letter immediately following the model number: 210-K-S.

Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Controller	Coated	Length	1/16"		1/8"		1/4"	
			CODE	Price	CODE	Price	CODE	Price
Type T	Teflon	2"	—	—	JK-T-1/8-T-2	64.00	—	—
Type T	Teflon	4"	—	—	JK-T-1/8-T-4	64.00	—	—
Type T	Teflon	6"	JK-T-1/16-T-6	69.97	JK-T-1/8-T-6	71.04	JK-T-1/4-T-6	75.35
Type T	Teflon	8"	JK-T-1/16-T-8	69.97	JK-T-1/8-T-8	71.04	JK-T-1/4-T-8	75.35
Type T	Teflon	10"	—	—	JK-T-1/8-T-10	71.04	JK-T-1/4-T-10	75.35
Type T	Teflon	12"	JK-T-1/16-T-12	69.97	JK-T-1/8-T-12	71.04	JK-T-1/4-T-12	75.35
Type T	Teflon	16"	—	—	JK-T-1/8-T-16	75.00	—	—
Type T	Teflon	18"	JK-T-1/16-T-18	83.96	JK-T-1/8-T-18	85.04	JK-T-1/4-T-18	93.65
Type T	Teflon	24"	JK-T-1/16-T-24	95.80	JK-T-1/8-T-24	96.08	JK-T-1/4-T-24	105.49
Type T	Teflon	26"	—	—	—	—	JK-T-1/4-T-26	96.00
Type T	Teflon	27"	—	—	—	—	JK-T-1/4-T-27	96.00
Type T	Teflon	31"	—	—	—	—	JK-T-1/4-T-31	96.00
Type T	Teflon	36"	JK-T-1/16-T-36	107.64	JK-T-1/8-T-36	108.72	JK-T-1/4-T-36	117.33
Type T	Teflon	45"	—	—	JK-T-1/8-T-45	104.00	JK-T-1/4-T-45	108.00
Type T	Teflon	48"	—	—	JK-T-1/8-T-48	104.00	JK-T-1/4-T-48	108.00
Type T	Uncoated	3"	—	—	JK-T-1/8-U-3	34.00	—	—
Type T	Uncoated	4"	—	—	JK-T-1/8-U-4	34.00	JK-T-1/4-U-4	38.00
Type T	Uncoated	6"	JK-T-1/16-U-6	37.67	JK-T-1/8-U-6	38.75	JK-T-1/4-U-6	43.06
Type T	Uncoated	8"	JK-T-1/16-U-8	37.67	JK-T-1/8-U-8	38.75	JK-T-1/4-U-8	43.06
Type T	Uncoated	10"	—	—	—	—	JK-T-1/4-U-10	43.06
Type T	Uncoated	12"	JK-T-1/16-U-12	37.67	JK-T-1/8-U-12	38.75	JK-T-1/4-U-12	43.06
Type T	Uncoated	18"	JK-T-1/16-U-18	51.67	JK-T-1/8-U-18	52.74	JK-T-1/4-U-18	61.35
Type T	Uncoated	20"	—	—	—	—	JK-T-1/4-U-20	49.00
Type T	Uncoated	24"	JK-T-1/16-U-24	63.51	JK-T-1/8-U-24	64.58	JK-T-1/4-U-24	73.20
Type T	Uncoated	36"	JK-T-1/16-U-36	77.64	JK-T-1/8-U-36	76.42	JK-T-1/4-U-36	85.04
Type K	Teflon	6"	JK-K-1/16-T-6	69.97	JK-K-1/8-T-6	71.04	JK-K-1/4-T-6	75.35
Type K	Teflon	8"	JK-K-1/16-T-8	69.97	JK-K-1/8-T-8	71.04	JK-K-1/4-T-8	75.35
Type K	Teflon	10"	JK-K-1/16-T-10	69.97	JK-K-1/8-T-10	71.04	JK-K-1/4-T-10	75.35
Type K	Teflon	12"	JK-K-1/16-T-12	69.97	JK-K-1/8-T-12	71.04	JK-K-1/4-T-12	75.35
Type K	Teflon	16"	—	—	JK-K-1/8-T-16	75.00	—	—
Type K	Teflon	18"	JK-K-1/16-T-18	83.96	JK-K-1/8-T-18	85.04	JK-K-1/4-T-18	93.65
Type K	Teflon	24"	JK-K-1/16-T-24	95.80	JK-K-1/8-T-24	96.88	JK-K-1/4-T-24	105.49
Type K	Teflon	36"	JK-K-1/16-T-36	107.64	JK-K-1/8-T-36	108.72	JK-K-1/4-T-36	117.33
Type K	Teflon	48"	—	—	JK-K-1/8-T-48	104.00	JK-K-1/4-T-48	108.00
Type K	Uncoated	3"	—	—	JK-K-1/8-U-3	34.00	—	—
Type K	Uncoated	6"	JK-K-1/16-U-6	37.67	JK-K-1/8-U-6	38.75	JK-K-1/4-U-6	43.06
Type K	Uncoated	8"	JK-K-1/16-U-8	37.67	JK-K-1/8-U-8	38.75	—	—
Type K	Uncoated	10"	JK-K-1/16-U-10	37.67	JK-K-1/8-U-10	38.75	—	—
Type K	Uncoated	12"	JK-K-1/16-U-12	37.67	JK-K-1/8-U-12	38.75	JK-K-1/4-U-12	43.06
Type K	Uncoated	18"	JK-K-1/16-U-18	51.67	JK-K-1/8-U-18	52.74	JK-K-1/4-U-18	61.35
Type K	Uncoated	24"	JK-K-1/16-U-24	63.51	JK-K-1/8-U-24	64.58	JK-K-1/4-U-24	73.20
Type K	Uncoated	32"	—	—	—	—	JK-K-1/4-U-32	66.00
Type K	Uncoated	36"	—	—	JK-K-1/8-U-36	76.42	JK-K-1/4-U-36	85.04
Type J	Teflon	6"	JK-J-1/16-T-6	69.97	JK-J-1/8-T-6	71.04	JK-J-1/4-T-6	75.35
Type J	Teflon	8"	JK-J-1/16-T-8	69.97	JK-J-1/8-T-8	71.04	JK-J-1/4-T-8	75.35
Type J	Teflon	10"	—	—	JK-J-1/8-T-10	71.04	JK-J-1/4-T-10	75.35
Type J	Teflon	12"	JK-J-1/16-T-12	69.97	JK-J-1/8-T-12	71.04	JK-J-1/4-T-12	75.35
Type J	Teflon	18"	JK-J-1/16-T-18	83.96	JK-J-1/8-T-18	85.04	JK-J-1/4-T-18	93.65
Type J	Teflon	24"	JK-J-1/16-T-24	95.80	JK-J-1/8-T-24	96.88	JK-J-1/4-T-24	105.49
Type J	Teflon	36"	JK-J-1/16-T-36	107.64	JK-J-1/8-T-36	108.72	JK-J-1/4-T-36	117.33
Type J	Teflon	42"	—	—	—	—	JK-J-1/4-T-42	111.95
Type J	Teflon	48"	—	—	—	—	JK-J-1/4-T-48	127.02
Type J	Teflon	72"	—	—	—	—	JK-J-1/4-T-72	132.00
Type J	Uncoated	6"	JK-J-1/16-U-6	37.67	JK-J-1/8-U-6	38.75	JK-J-1/4-U-6	43.06
Type J	Uncoated	8"	JK-J-1/16-U-8	37.67	JK-J-1/8-U-8	38.75	—	—
Type J	Uncoated	10"	JK-J-1/16-U-10	37.67	JK-J-1/8-U-10	38.75	JK-J-1/4-U-10	43.06
Type J	Uncoated	12"	JK-J-1/16-U-12	37.67	JK-J-1/8-U-12	38.75	JK-J-1/4-U-12	43.06
Type J	Uncoated	14"	—	—	JK-J-1/8-U-14	45.00	—	—
Type J	Uncoated	18"	JK-J-1/16-U-18	51.67	JK-J-1/8-U-18	52.74	JK-J-1/4-U-18	61.35
Type J	Uncoated	24"	JK-J-1/16-U-24	63.51	JK-J-1/8-U-24	64.58	JK-J-1/4-U-24	73.20
Type J	Uncoated	30"	—	—	—	—	JK-J-1/4-U-30	59.00
Type J	Uncoated	36"	—	—	JK-J-1/8-U-36	76.42	JK-J-1/4-U-36	85.04



JK-TC270
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES, DUAL ELE-
MENTS

Dual element thermocouples contain two independent thermocouples in a single probe. All sensors are housed in 304 stainless steel sheaths.

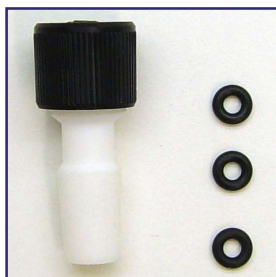
Teflon overcoating is PFA coating over stainless steel probe.

Note: To read temperatures accurately, the type of the thermocouple must match the controller's type. On a new controller, the type is the letter immediately following the model number: 210-K-S.

Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Controller	Coated	Length	1/8"		1/4"	
			CODE	Price	CODE	Price
Type T	Teflon	6"	—	—	JK-TC270-T14T6	115.00
Type T	Teflon	12"	JK-TC270-T18T12	113.02	JK-TC270-T14T12	125.94
Type T	Teflon	18"	JK-TC270-T18T18	124.86	JK-TC270-T14T18	137.78
Type T	Teflon	24"	JK-TC270-T18T24	136.70	JK-TC270-T14T24	149.62
Type T	Teflon	36"	—	—	JK-TC270-T14T36	164.69
Type T	Teflon	40"	—	—	JK-TC270-T14T40	170.00
Type T	Teflon	45"	—	—	JK-TC270-T14T45	170.00
Type T	Uncoated	6"	JK-TC270-T18U6	103.00	—	—
Type T	Uncoated	12"	JK-TC270-T18U12	104.41	JK-TC270-T14U12	117.33
Type T	Uncoated	18"	JK-TC270-T18U18	118.40	JK-TC270-T14U18	131.32
Type T	Uncoated	24"	JK-TC270-T18U24	134.55	JK-TC270-T14U24	1134.55
Type T	Glass	12"	—	—	JK-TC270-T14G12	160.38
Type T	Glass	18"	—	—	JK-TC270-T14G18	174.38
Type K	Teflon	6"	JK-TC270-K18T6	113.02	JK-TC270-K14T6	115.00
Type K	Teflon	8"	—	—	JK-TC270-K14T8	115.00
Type K	Teflon	12"	JK-TC270-K18T12	113.02	JK-TC270-K14T12	125.94
Type K	Teflon	18"	JK-TC270-K18T18	124.86	JK-TC270-K14T18	137.78
Type K	Teflon	24"	JK-TC270-K18T24	136.70	JK-TC270-K14T24	149.62
Type K	Teflon	30"	JK-TC270-K18T30	136.00	—	—
Type K	Teflon	36"	—	—	JK-TC270-K14T36	164.69
Type K	Teflon	45"	—	—	JK-TC270-K14T45	170.00
Type K	Teflon	48"	—	—	JK-TC270-K14T48	170.00
Type K	Uncoated	6"	JK-TC270-K18U6	104.41	—	—
Type K	Uncoated	12"	JK-TC270-K18U12	104.41	JK-TC270-K14U12	112.82
Type K	Uncoated	18"	JK-TC270-K18U18	118.40	JK-TC270-K14U18	131.32
Type K	Uncoated	24"	JK-TC270-K18U24	134.55	JK-TC270-K14U24	134.55
Type K	Glass	12"	—	—	JK-TC270-K14G12	160.38
Type K	Glass	18"	—	—	JK-TC270-K14G18	174.38
Type K	Glass	24"	—	—	JK-TC270-K14G24	179.76
Type J	Teflon	6"	JK-TC270-J18T6	103.00	—	—
Type J	Teflon	12"	JK-TC270-J18T12	113.02	JK-TC270-J14T12	125.94
Type J	Teflon	18"	JK-TC270-J18T18	124.86	JK-TC270-J14T18	137.78
Type J	Teflon	24"	JK-TC270-J18T24	136.70	JK-TC270-J14T24	149.62
Type J	Teflon	36"	—	—	JK-TC270-J14T36	164.69
Type J	Uncoated	12"	JK-TC270-J18U12	104.41	JK-TC270-J14U12	117.33
Type J	Uncoated	18"	JK-TC270-J18U18	118.40	JK-TC270-J14U18	131.32
Type J	Uncoated	24"	JK-TC270-J18U24	134.55	—	—
Type J	Glass	12"	—	—	JK-TC270-J14G12	160.38
Type J	Glass	18"	—	—	JK-TC270-J14G18	174.38
Type J	Glass	24"	—	—	JK-TC270-J14G24	179.76





JK-Thermocouple Probe Adapter
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES ADAPTER

Forms an air tight seal between temperature probes and standard taper joints. Not suitable for high vacuums. Includes replacement internal o-ring. Sold individually.

Probe Diameter	Standard Taper Joint	CODE	Price
1/16"	10/18	JK-1016	42.75
1/16"	14/20	JK-1416	49.20
1/16"	19/22	JK-1916	64.50
1/16"	24/40	JK-2416	58.70
1/16"	29/42	JK-2916	66.30
1/8"	10/18	JK-1018	38.75
1/8"	14/20	JK-1418	24.95
1/8"	19/22	JK-1918	68.80
1/8"	24/40	JK-2418	26.95
1/4"	14/20	JK-1414	24.45
1/4"	24/40	JK-2414	39.95
1/4"	29/42	JK-2914	52.85



JK-Thermocouple Adapter
J-KEM® SCIENTIFIC,
THERMOCOUPLE
ADAPTER

Adapts between large (OST) and small (SMP) thermocouple plugs. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Adapter Type	Controller Type	CODE	Price
SMP Male to OST Female	J	JK-ADA-J	12.95
SMP Male to OST Female	K	JK-ADA-K	12.95
SMP Male to OST Female	T	JK-ADA-T	12.95
OST Male to SMP Female	J	JK-ADA-J	12.95
OST Male to SMP Female	K	JK-ADA-K	12.95
OST Male to SMP Female	T	JK-ADA-T	12.95



JK-Thermocouple Probe Adapter O-rings
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES ADAPTER,
REPLACEMENT
O-RINGS

Package of 12.

Size	Material	Options	CODE	Price
1/16" Probe	Viton™	Internal	JK-161OR	12.00
1/8" Probe	Viton®	Internal	JK-181OR	12.00
1/8" Probe	Kalrez®	Internal	JK-181ORK	44.80
1/4" Probe	Viton™	Internal	JK-141OR	12.00
1/4" Probe	Kalrez®	Internal	JK-141ORK	80.00
1/4" Probe	Teflon®	Internal	JK-141ORT	27.00
14/20	Viton™	External	JK-1420E	9.00
14/20	Kalrez®	External	JK-1420EK	61.50
14/20	Teflon®	External	JK-1420ET	21.00
24/40	Viton™	External	JK-2440E	12.00
24/40	Kalrez®	External	JK-2440EK	66.90
24/40	Teflon®	External	JK-2440ET	13.15
29/42	Viton™	External	JK-2942E	12.00
29/42	Kalrez®	External	JK-2942EK	94.20
29/42	Teflon®	External	JK-2942ET	15.20





JK-StraightCord
J-KEM® SCIENTIFIC,
THERMOCOUPLE
CORD, STRAIGHT

Teflon insulated wire for superior chemical resistance. Made from 24 gauge single stranded wire. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Length	Style	Plug	Controller Type	Options	CODE	Price
10'	OST	Large	RTD	Straight	JK-EXT-10-Pt/100-OST	26.25
10'	OST	Large	J	Straight	JK-EXT-10-J-OST	26.25
10'	OST	Large	K	Straight	JK-EXT-10-K-OST	26.25
10'	OST	Large	T	Straight	JK-EXT-10-T-OST	26.25
10'	OST	Large	J	Straight, Dual	JK-EXT-270-J	59.50
10'	OST	Large	K	Straight, Dual	JK-EXT-270-K	59.50
10'	OST	Large	T	Straight, Dual	JK-EXT-270-T	59.50
10'	SMP	Mini	J	Straight	JK-EXT-10-J-SMP	26.25
10'	SMP	Mini	K	Straight	JK-EXT-10-K-SMP	26.25
10'	SMP	Mini	T	Straight	JK-EXT-10-T-SMP	26.25
10'	SMP	Mini	RTD	Straight, Two Wire	JK-EXT-10-Pt/100-2-SMP	26.25
20'	OST	Large	J	Straight	JK-EXT-20-J-OST	36.30
20'	OST	Large	K	Straight	JK-EXT-20-K-OST	36.30
20'	OST	Large	T	Straight	JK-EXT-20-T-OST	36.30
20'	SMP	Mini	J	Straight	JK-EXT-20-J-SMP	36.30
20'	SMP	Mini	K	Straight	JK-EXT-20-K-SMP	36.30
20'	SMP	Mini	T	Straight	JK-EXT-20-T-SMP	36.30
25'	OST	Large	J	Straight, Dual	JK-EXT-25-270-J	94.25
25'	OST	Large	K	Straight, Dual	JK-EXT-25-270-K	94.25
25'	OST	Large	T	Straight, Dual	JK-EXT-25-270-T	94.25



JK-CoiledCord
J-KEM® SCIENTIFIC,
THERMOCOUPLE
CORD, COILED

Retractable coiled cord saves space in crowded hoods. 26 gauge multi-strand wire with PVC insulation. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Length	Style	Plug	Controller Type	CODE	Price
10'	OST	Large	J	JK-CC-10-J-OST	39.80
10'	OST	Large	K	JK-CC-10-K-OST	39.80
10'	OST	Large	T	JK-CC-10-T-OST	39.80
10'	OST	Large	RTD	JK-CC-10-Pt/100-OST	56.20
10'	SMP	Mini	J	JK-CC-10-J-SMP	33.80
10'	SMP	Mini	K	JK-CC-10-K-SMP	33.80
10'	SMP	Mini	T	JK-CC-10-T-SMP	33.80
10'	SMP	Mini	RTD	JK-CC-10-Pt/100-SMP	60.00
20'	OST	Large	J	JK-CC-20-J-OST	67.00
20'	OST	Large	K	JK-CC-20-K-OST	67.00
20'	OST	Large	T	JK-CC-20-T-OST	67.00
20'	SMP	Mini	J	JK-CC-20-J-SMP	67.00
20'	SMP	Mini	K	JK-CC-20-K-SMP	67.00
20'	SMP	Mini	T	JK-CC-20-T-SMP	67.00





PRG-5952
"TM" SERIES HEAT
MANTLE, SPHERICAL,
BOTTOM HOLE

"TM" Series mantles are aluminum housed and equipped with a 3.0" center hole to accept a drain valve. The 115 volt mantles have a 4 foot long, 3-wire, twist-lock electrical cord (supplied) and the 230 volt are equipped with a terminal box.

<u>Flask Size in Liters</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
12	115	2@650	-01	1,342.64
12	230	2@650	-21	1,375.18
22	115	2@770	-02	1,533.02
22	230	2@770	-22	1,570.49
50	115	3@1000	-03	2,309.32
50	230	3@1000	-23	2,345.11
72	230	2@2000	-24	2,677.11
100	230	3@1800	-25	4,916.46
200	230	4@2000	-26	4,841.60

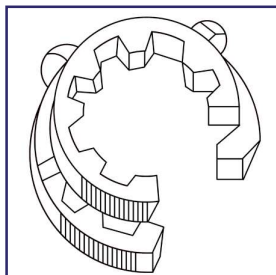
<u>Cylindrical Column O.D.</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
315 mm	115	2@650	-31	2,734.06
315 mm	230	2@650	-41	2,734.06
415 mm	115	2@770	-32	3,246.71
415 mm	230	2@770	-42	3,246.71
486 mm	230	2@2000	-43	5,565.81



PRG-5954
INSULATING/HEATING
JACKET

These columns are available for insulating or with heating capabilities. The heated units are designed to withstand an internal operating temperature of 450° C. These mantles wrap around the column and have a single lace up fastener which allows visibility into the vessel.

<u>Cylindrical Column O.D.</u>	<u>Length</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
315 mm	15"	—	Insulating	-01	1,490.73
315 mm	15"	115	2@900	-21	1,985.46
315 mm	30"	—	Insulating	-02	1,985.46
315 mm	30"	115	3@1200	-22	2,644.59
315 mm	40"	—	Insulating	-03	2,454.15
315 mm	40"	115	4@1200	-23	3,279.27
415/457 mm	30"	—	Insulating	-04	2,538.79
415/457 mm	30"	115	5@1050	-24	3,385.06
415/457 mm	40"	—	Insulating	-05	3,014.01
415/457 mm	40"	115	6@1150	-25	4,019.76



PRG-1700
JOINT CLIP, KECK

Made of Delrin Plastic. Non corrosive, Safe to 140°C. Sold in Packs of 10

Size	Fits Joint	CODE	Price
10	10/18, 10/30	-01	66.23
12	12/18, 12/30	-02	76.43
14	14/20, 14/35	-03	29.71
19	19/22, 19/38	-04	39.69
24	24/25, 24/40	-05	39.69
29	29/26, 29/42	-06	42.64
34	34/28, 34/45	-07	81.87
40	40/25, 40/50	-08	95.71
45	45/50	-09	82.78



PRG-1702
PINCH, STAINLESS STEEL

Stainless steel clamps are spring loaded for a secure hold with tapered joints. Clamps are supplied with a lock screw. Sold individually.

Size	Fits Joint	CODE	Price
14	14/20, 14/35	-03	54.05
19	19/22, 19/38	-04	60.85
24	24/25, 24/40	-05	66.52
29	29/26, 29/42	-06	72.58
45	45/50	-09	82.96

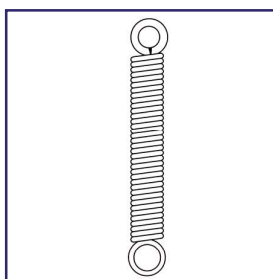


PRG-1705
PINCH, STAINLESS STEEL

Stainless steel clamps are spring loaded for a secure hold with ball/socket joints.

Please note -01 and -03 do not have locking nuts. Sold individually.

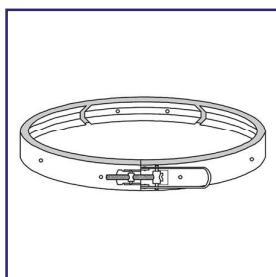
Size	CODE	Price
12	-01	7.42
12-L	-02	10.77
18	-03	7.77
18-L	-04	11.22
28	-05	12.02
35	-06	15.96
40	-07	33.74
50	-08	36.22
65	-09	47.87
75	-10	61.84
102	-11	295.41



PRG-1710
SPRINGS, STAINLESS STEEL

Springs are a 316 stainless steel and closed looped ends. Supplied in packages of 10.

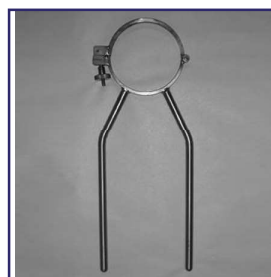
MM	IN	CODE	Price
12	1/2"	-01	25.08
19	3/4"	-02	25.08
25	1"	-03	25.08
32	1 1/2"	-04	25.08



PRG-188
FLANGE, DURON

Duron flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

Fits Flange		
I.D. MM	CODE	Price
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11

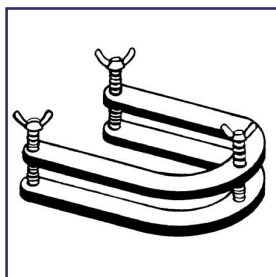


PRG-189
REACTION VESSEL SUPPORT

Constructed of a heavy gauge stainless steel. Fits most reaction vessels. The dual support rods ensure a rigid fit while in use. It also allows the reactor head to be removed without disturbing the vessel.

Fits Flange		
I.D. MM	CODE	Price
100	-01	278.81
150	-02	306.30
200	-03	372.58

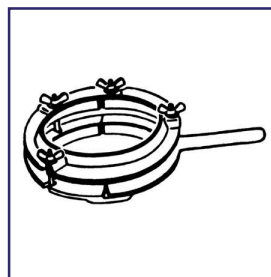




**PRG-190
McCARTER**

Clamp, McCarter

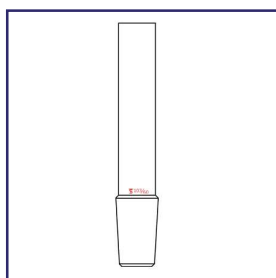
Flange Size	CODE	Price
4.5	-01	74.07
5.5	-02	82.71
32	-03	107.41
57	-04	179.89
80	-05	190.48



**PRG-197
REACTION FLASK**

Manufactured of aluminum, used to connect tops to flasks. The wing nuts are positioned to guarantee good compression.

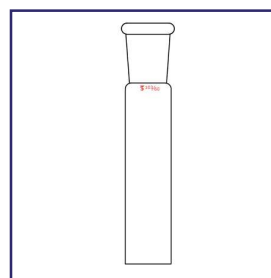
Fits Flange I.D.	CODE	Price
2"	-01	107.57
4"	-02	178.45



**PRG-100
INNER, FULL LENGTH**

Ground Joint, Full Length, Standard Taper Inner Joint

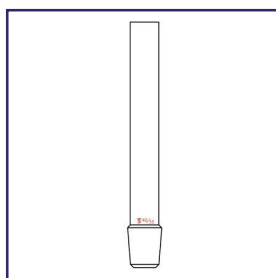
Joint Size	CODE	Price
7/25	-01	10.17
10/30	-02	8.72
12/30	-03	9.42
14/35	-04	10.75
19/38	-05	11.39
24/40	-06	11.73
29/42	-07	13.22
34/45	-08	17.35
40/50	-09	22.82
45/50	-10	27.25
50/50	-11	34.69
55/50	-12	39.72
60/50	-13	45.44
71/60	-14	55.65
103/60	-15	149.85



**PRG-105
OUTER, FULL LENGTH**

Ground Joint, Full Length, Standard Taper Outer Joint

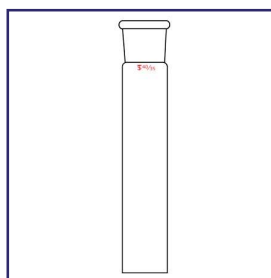
Joint Size	CODE	Price
7/25	-01	12.21
10/30	-02	11.73
12/30	-03	12.24
14/35	-04	12.72
19/38	-05	12.72
24/40	-06	13.03
29/42	-07	15.38
34/45	-08	20.66
40/50	-09	28.43
45/50	-10	31.05
50/50	-11	39.46
55/50	-12	43.78
60/50	-13	48.74
71/60	-14	65.28
103/60	-15	153.51



**PRG-110
INNER, MEDIUM LENGTH**

Ground Joint, Medium Length, Standard Taper Inner Joint

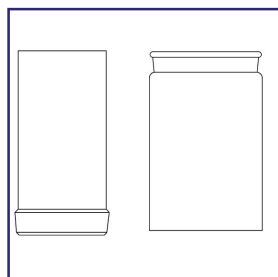
Joint Size	CODE	Price
5/12	-02	10.76
7/10	-03	11.24
7/15	-04	11.24
10/18	-05	8.73
12/18	-06	10.07
14/20	-08	10.56
19/22	-09	11.39
24/25	-10	12.87
29/26	-11	13.55
34/28	-12	18.34
40/35	-13	23.49



**PRG-115
OUTER, MEDIUM LENGTH**

Ground Joint, Medium Length, Standard Taper Outer Joint

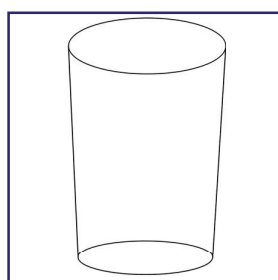
Joint Size	CODE	Price
5/12	-01	12.87
7/10	-02	12.87
7/15	-03	12.87
10/18	-04	12.58
12/18	-05	11.83
14/20	-06	12.21
19/22	-07	13.03
24/25	-08	14.70
29/26	-09	17.16
34/28	-10	20.82
40/35	-11	27.76



PRG-120
SHORT LENGTH

Ground Joint, Short Length, Standard Taper Joint Size

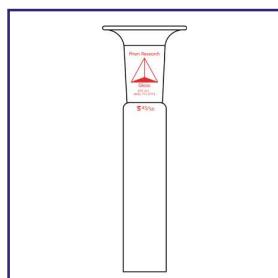
Inner			Outer		
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>	<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/12	-01	12.92	24/12	-11	14.36
29/12	-02	15.38	29/12	-12	16.50
34/15	-03	19.49	34/15	-13	22.09
40/12	-04	24.62	40/12	-14	29.38
45/12	-05	29.22	45/12	-15	32.57
55/15	-06	41.94	55/15	-16	45.09
60/15	-07	48.58	60/15	-17	49.57
71/15	-08	58.06	71/15	-18	66.40



PRG-125
TEFLON SLEEVE

Provides a grease-free connection between ground glass joints.
Sleeve has a .005 wall thickness.

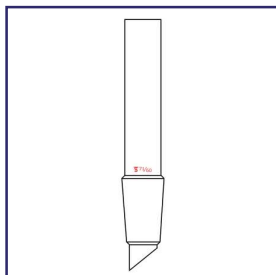
Medium Length			Full Length		
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>	<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
7/15	-01	12.32	7/25	-10	13.86
10/18	-02	13.37	10/18	-11	12.41
12/18	-03	13.37	12/30	-12	13.86
14/20	-04	18.75	14/35	-13	14.75
19/22	-05	24.65	19/38	-14	15.52
24/25	-06	26.24	24/40	-15	16.57
29/26	-07	32.51	29/42	-16	18.02
34/28	-08	18.02	34/45	-17	19.77
40/35	-09	19.91	40/50	-18	21.85
			45/50	-19	23.17
			50/50	-20	26.32
			55/50	-21	30.30



PRG-130
DEWAR SEAL, OUTER

Standard Taper Outer Joint With Dewar Seal

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/18	-01	23.26
10/30	-02	26.44
14/20	-03	24.78
19/22	-04	25.98
24/40	-05	27.15
29/42	-06	29.10
34/45	-07	CALL
45/50	-08	32.76



PRG-135
INNER, DRIP TIP

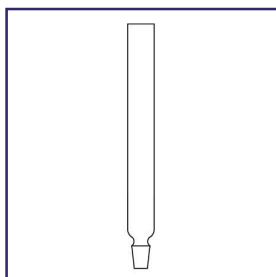
All joints available with the drip tip cut to an angle of 45° or uncut.

Full Length

Joint Size	Uncut		Cut	
	CODE	Price	CODE	Price
10/30	-05	12.58	-06	14.87
12/30	-07	13.22	-08	14.87
14/35	-09	13.71	-10	15.51
19/38	-11	14.87	-12	16.69
24/40	-13	15.09	-14	17.85
29/42	-15	17.35	-16	19.49
34/45	-17	22.15	-18	24.46
45/50	-19	36.00	-20	38.83
50/50	-21	42.13	-22	45.27
55/50	-23	48.07	-24	51.38
71/60	-25	66.24	-26	76.19

Medium Length

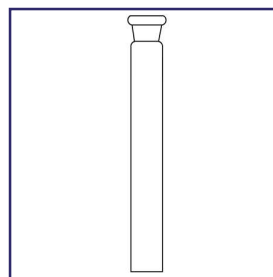
Joint Size	Uncut		Cut	
	CODE	Price	CODE	Price
14/20	-01	13.06	-02	14.37
19/22	-03	14.04	-04	15.55



PRG-150
INNER, LUER

Joints are manufactured to the lengths, diameters and tapers found on medical and research syringes, as per Federal Spec. No. CG-S-921b and USAST Standard Z70.1. 1mm ground tip on all joints.

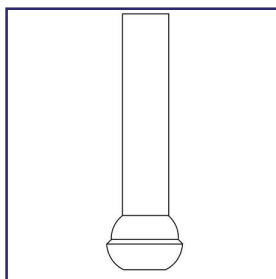
Tubing	CODE	Price
6.5 x 1.0	-01	13.52
7.5 x 2.0	-02	13.52
7.0 x 4.0	-03	13.52



PRG-155
OUTER, LUER

Joints are manufactured to the lengths, diameters and tapers found on medical and research syringes, as per Federal Spec. No. CG-S-921b and USAST Standard Z70.1. 1mm ground tip on all joints.

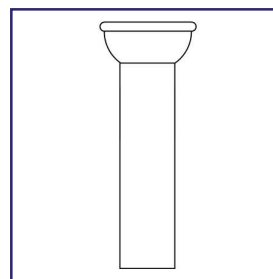
Tubing	CODE	Price
6.5 x 1.0	-01	16.37
7.5 x 2.0	-02	16.37
7.0 x 4.0	-03	16.37



PRG-160
SPHERICAL JOINT,
BALL MEMBER

Spherical ball joint connections offer flexibility and vacuum tight seals.

Joint Size	CODE	Price
12/1	-01	17.95
12/2	-02	17.95
18/7	-03	13.03
18/9	-04	13.03
28/12	-05	13.19
28/15	-06	13.19
35/20	-07	16.69
35/25	-08	16.69
40/25	-09	24.97
50/30	-10	33.68
65/40	-11	50.53
75/50	-12	74.82
102/75	-13	90.89

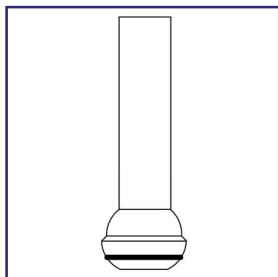


PRG-165
SPHERICAL JOINT,
SOCKET MEMBER

Spherical ball joint connections offer flexibility and vacuum tight seals.

Joint Size	CODE	Price
12/2	-01	14.30
12/5	-02	14.30
18/7	-03	14.79
18/9	-04	14.79
28/12	-05	17.16
28/15	-06	17.16
35/20	-07	20.66
35/25	-08	20.66
40/25	-09	33.19
50/30	-10	33.38
65/40	-11	49.25
75/50	-12	63.86
102/75	-13	81.77

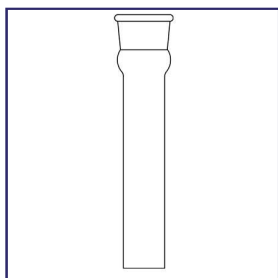




PRG-170
O-RING BALL
MEMBER

Spherical ball joint is tooled with an O-Ring groove. Supplied with a Viton O-Ring to create a grease-free high vacuum seal.

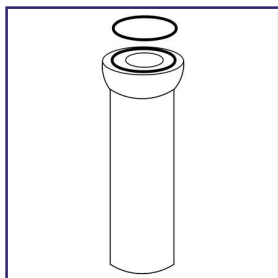
<u>Joint Size</u>	<u>O-Ring</u>	<u>CODE</u>	<u>Price</u>
12/5	011	-01	15.74
18/7	112	-02	16.99
18/9	112	-03	16.99
28/12	116	-04	18.51
28/15	116	-05	18.51
35/20	220	-06	22.87
35/25	220	-07	22.87
50/30	128	-08	41.78
65/40	137	-09	63.23
75/50	146	-10	162.06



PRG-175
GROUND STOPPER,
FLASK LENGTH

Inner and outer joints for standard taper length.

<u>Size</u>	<u>Outer Joint</u>		<u>Inner Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
9	-01	11.06	-02	11.90
13	-03	11.90	-04	12.58
16	-05	12.86	-06	13.19
19	-07	13.34	-08	13.81
22	-09	15.74	-10	14.79
27	-11	16.37	-12	18.44
32	-13	25.73	-14	18.44
38	-15	28.59	-16	26.84

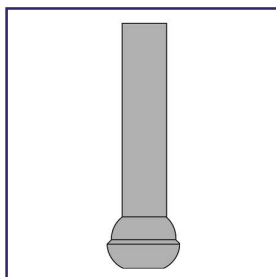


PRG-180
JOINT, O-RING SEAL

Tooled with an O-Ring groove to provide a grease-free high vacuum seal. Supplied with one Viton O-Ring. See PRG-1705 for clamps.

<u>I.D. Size</u>	<u>O-Ring Size</u>	<u>Clamp Size</u>	<u>CODE</u>	<u>Price</u>
5	110	12	-01	10.33
7	111	18	-02	10.65
9	112	18	-03	10.95
12	116	28	-04	11.39
15	116	28	-05	11.76
20	214	35	-06	14.14
25	217	35	-07	14.14
30	223	50	-08	24.62
40	226	65	-09	36.04
50	229	75	-10	33.07
75	341	102	-11	65.15

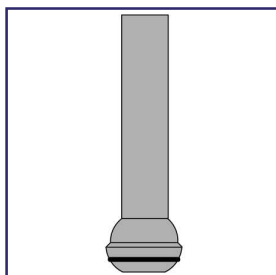




PRG-181
SPHERICAL, BALL
JOINT, STAINLESS
STEEL

Spherical ball joint connection offers flexibility and vacuum tight seals.

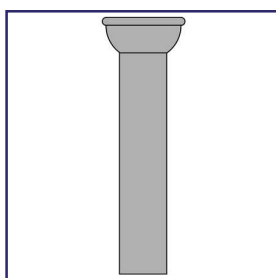
Joint Size	303 S.S.		316 S.S.	
	CODE	Price	CODE	Price
12/5	-01	CALL	-02	CALL
18/7	-03	CALL	-04	CALL
18/9	-05	CALL	-06	CALL
28/12	-07	CALL	-08	CALL
28/15	-09	CALL	-10	CALL
35/20	-11	CALL	-12	CALL
35/25	-13	CALL	-14	CALL
40/25	-15	CALL	-16	CALL
50/30	-17	CALL	-18	CALL
65/40	-19	CALL	-20	CALL
75/50	-21	CALL	-22	CALL
102/75	-23	CALL	-24	CALL



PRG-182
SPHERICAL, O-RING
BALL JOINT, STAIN-
LESS STEEL

Spherical ball joint connection offers flexibility and vacuum tight seals.

Joint Size	303 S.S.		316 S.S.	
	CODE	Price	CODE	Price
12/5	-01	CALL	-02	CALL
18/7	-03	CALL	-04	CALL
18/9	-05	CALL	-06	CALL
28/12	-07	CALL	-08	CALL
28/15	-09	CALL	-10	CALL
35/20	-11	CALL	-12	CALL
35/25	-13	CALL	-14	CALL
50/30	-15	CALL	-16	CALL
65/40	-17	CALL	-18	CALL
75/50	-19	CALL	-20	CALL



PRG-183
SPHERICAL, SOCKET
JOINT, STAINLESS
STEEL

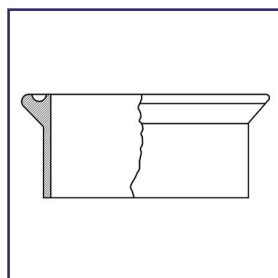
Spherical socket joint connection offers flexibility and vacuum tight seals.

Joint Size	303 S.S.		316 S.S.	
	CODE	Price	CODE	Price
12/5	-01	CALL	-02	CALL
18/7	-03	CALL	-04	CALL
18/9	-05	CALL	-06	CALL
28/12	-07	CALL	-08	CALL
28/15	-09	CALL	-10	CALL
35/20	-11	CALL	-12	CALL
35/25	-13	CALL	-14	CALL
40/25	-15	CALL	-16	CALL
50/30	-17	CALL	-18	CALL
65/40	-19	CALL	-20	CALL
75/50	-21	CALL	-22	CALL
102/75	-23	CALL	-24	CALL



Flange Dimensions

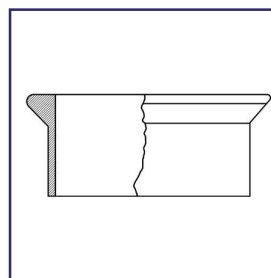
Flange I.D. mm	Tubing O.D mm	Overall Height mm
60	68	50
100	106	60
120	130	60
150	155	75
200	215	75



Duron flange are flat ground and have an O-Ring groove. For O-Rings see PRG-187 and clamps see PRG-188.

Flange I.D. mm	CODE	Price
60	-01	55.51
100	-02	95.43
120	-03	111.04
150	-04	163.09
200	-05	199.52

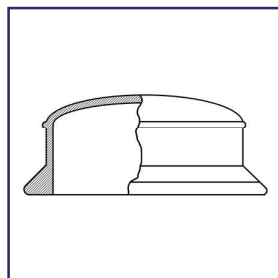
PRG-184
DURON REACTION
FLANGE WITH
O-RING GROOVE



Duron flange is flat ground, without an O-Ring groove. For clamps see PRG-188.

Flange I.D. mm	CODE	Price
60	-01	53.77
100	-02	79.79
120	-03	104.08
150	-04	159.61
200	-05	196.05

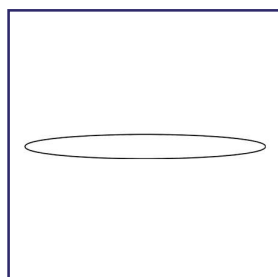
PRG-185
DURON FLANGE,
FLAT GROUND



Duron lids are ideal in fabricating a reaction vessel head. It has a flat ground surface to mate with both PRG-184 and PRG-185 flanges, for clamps see PRG-188.

Lid I.D. mm	Overall Height mm	CODE	Price
60	42	-01	38.17
100	65	-02	105.84
120	70	-03	123.16
150	70	-04	142.27
200	95	-05	194.32

PRG-186
DURON REACTION
KETTLE LID



Duron lids are ideal in fabricating a reaction vessel head. It has a flat ground surface to mate with both PRG-184 and PRG-185 flanges, for clamps see PRG-188.

Fits Flange I.D. mm	O-Ring Material	CODE	Price
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22
100	Silicone	-02	24.15
100	FEP-Silicone	-22	40.82
120	Silicone	-03	34.39
120	FEP-Silicone	-23	46.49
150	Silicone	-04	45.98
150	FEP-Silicone	-24	58.97
200	Silicone	-05	59.48
200	FEP-Silicone	-25	64.64

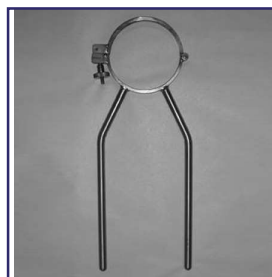
PRG-187
O-RING USED WITH
DURON FLANGES



**PRG-188
FLANGE CLAMP**

Duron flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

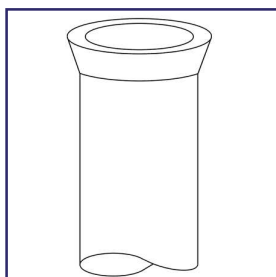
<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11



**PRG-189
REACTION VESSEL
SUPPORT**

Constructed of a heavy gauge stainless steel. Fits most reaction vessels. The dual support rods ensure a rigid fit while in use. It also allows the reactor head to be removed without disturbing the vessel.

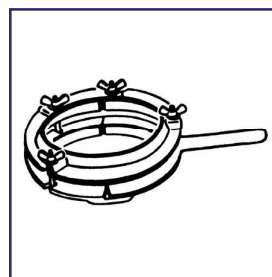
<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
100	-01	278.81
150	-02	306.30
200	-03	372.58



**PRG-190
REACTION KETTLE,
120MM (4") I.D.**

Flange is 102mm (4") I.D. with flat ground finish. Supplied with approximately 7" of glass below flange.

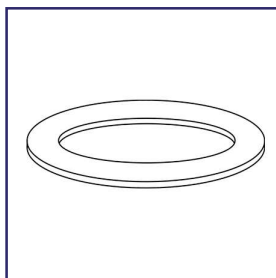
<u>CODE</u>	<u>Price</u>
-01	115.67



**PRG-197
FLASK CLAMP,
REACTION**

Manufactured of aluminum, used to connect tops to flasks. The wing nuts are positioned to guarantee good compression.

<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
2	-01	107.57
4	-02	178.45

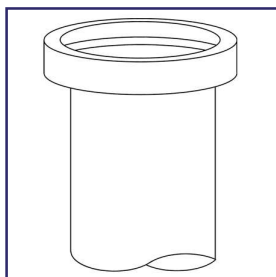


**PRG-198
GASKET,
REACTION
FLASK, TFE**

TFE gasket guarantees a leak-free seal with very little pressure from the clamps.

<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
50	-01	93.68
100	-02	133.93

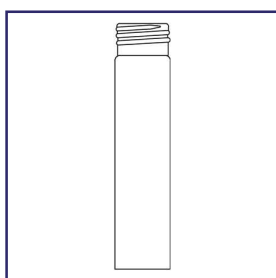




PRG-200
FLANGE, BUCHI

Flanges for Buchi condensers and rotary evaporator flasks.

<u>Fits Flange I.D. mm</u>	<u>Tubing</u>	<u>CODE</u>	<u>Price</u>
50	1 1/2 H.W.	-01	32.09
100	3 1/4 H.W.	-02	119.73



PRG-201
SCREW THREAD
TUBES, GL SIZES

Screw thread tubes for replacement of apparatus using the ISO threads.

<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	7.29
18	-02	8.21
25	-03	13.63
32	-04	33.87
45	-05	40.69



PRG-202
SOLID CAPS FOR GL
THREADS WITH PTFE
PROTECTED SEALS

Solid screw caps are made from red melamine and are autoclaveable to 180°C. With PTFE protected seals.

<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	3.50
18	-02	4.14
25	-03	4.81
32	-04	7.51
45	-05	11.24

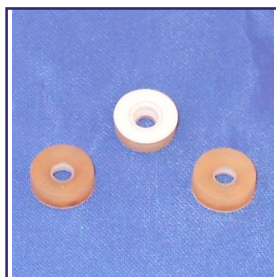


PRG-203
GL CAP WITH HOLE

Open top screw caps are made from red melamine and are autoclaveable to 180°C.

<u>GL Thread Size</u>	<u>CODE</u>	<u>Price</u>
14	-01	2.68
18	-02	3.52
25	-03	3.39
32	-04	4.00
45	-05	7.11

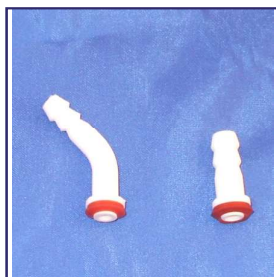




Silicone Sealing Ring

<u>GL Cap Size</u>	<u>Fits Tubing O.D.</u>	<u>CODE</u>	<u>Price</u>
14	55-6.5	-01	5.14
18	5.5-6.5	-02	7.89
18	9.0-11.0	-03	5.73
25	11.0-13.0	-04	9.20
25	7.5-9.0	-05	9.20
32	11.0-13.0	-06	14.31
32	14.0-15.0	-08	24.63
45	25.0-27.0	-09	7.37

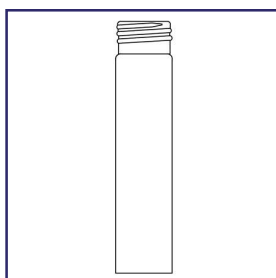
PRG-204
SILICONE/TEFLON
SEALING RINGS GL
SIZES



Hose connections are made of a durable polypropylene with a Silicone rubber seal. They fit the #14 GL and the #18 GL screw thread. The screw thread enables a sure fit with ease and convenience.

<u>Thread Size</u>	<u>Style</u>	<u>CODE</u>	<u>Price</u>
GL-14	Straight	-01	2.70
GL-14	Bent	-02	2.72
GL-18	Straight	-03	12.81
GL-18	Bent	-04	11.76

PRG-204.5
REMOVABLE HOSE
CONNECTON GL
SIZES



Screw threaded tubes for SVL series of threads. Can be used with PRG-210 solid caps with liner, PRG-215 open top caps, and with PRG-216 sealing rings.

<u>SVL Thread Size</u>	<u>CODE</u>	<u>Price</u>
15	-01	7.11
22	-02	12.17
30	-03	16.92

PRG-205
SCREW THREAD
TUBES, SVL





PRG-210
SOLID CAPS FOR SVL
THREADS WITH PTFE
PROTECTED SEALS

Screw threaded tubes for SVL series of threads. Can be used with PRG-210 solid caps with liner, PRG-215 open top caps, and with PRG-216 sealing rings.

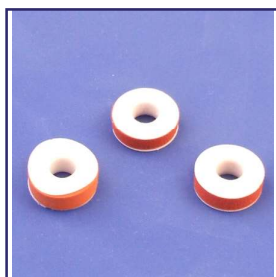
<u>SVL Thread Size</u>	<u>CODE</u>	<u>Price</u>
15	-01	CALL
22	-02	CALL
30	-03	CALL



PRG-215
SVL CAP WITH HOLE

Open top screw caps to be used with PRG-205 threads and PRG-216 sealing rings.

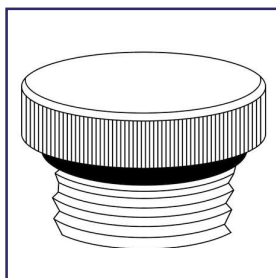
<u>SVL Thread Size</u>	<u>CODE</u>	<u>Price</u>
15	-01	CALL
22	-02	CALL
30	-03	CALL



PRG-216
SVL SEALING RINGS

SVL Sealing Ring - Offered in both Teflon and Silicone

<u>SVL Thread Size</u>	<u>Fits Tubing O.D. mm</u>	PTFE		Silicone	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
15	5.6 - 6.4	-01	13.90	-02	3.91
15	7.6 - 8.4	-07	13.90		
22	15.6-16.4	-03	14.32	-04	4.56
30	17.6-18.4	-05	14.87	-06	4.96

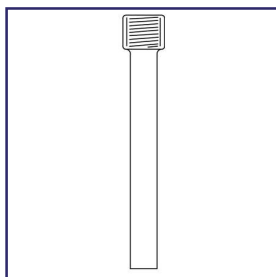


PRG-217
PLUG, SCREW
THREAD

Plug, Screw Thread

<u>Thread Size mm</u>	Nylon		Teflon	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
11	-01	17.21	-02	34.85
15	-03	20.98	-04	32.89
25	-05	28.81	-06	53.96
50	-07	82.62	-08	154.41

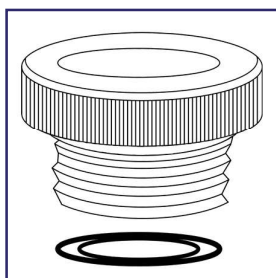




PRG-218
CONNECTOR,
THREADED, GLASS

For grease-free connections. Threads are inside tubing.

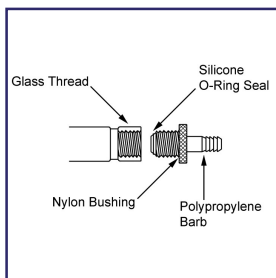
<u>Tubing I.D. mm</u>	<u>Tubing O.D. mm</u>	<u>Thread O.D. mm</u>	<u>CODE</u>	<u>Price</u>
7	12.5	18	-01	14.91
11	16	22	-02	18.92
15	23	26	-03	21.17
18	25	29	-04	25.33
25	32	41	-05	27.48
36	45	51	-06	56.55
50	57	71	-07	69.59



PRG-219
BUSHING, THREADED
CONNECTOR

For use with PRG-218, to join end to a reducing end tube. Nylon and Teflon available. One Viton O-ring is supplied.

<u>Connection Size mm</u>	<u>Tubing O.D. mm</u>	<u>Nylon</u>		<u>Teflon</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
7	7.5	-01	2.95	-02	14.11
11	10	-03	12.85	-04	42.94
15	14	-05	14.32	-06	44.25
18	17	-07	22.80	-08	53.77
25	26	-09	24.29	-10	60.61
36	36	-11	56.51	-12	117.11
50	49	-13	81.90	-14	139.86

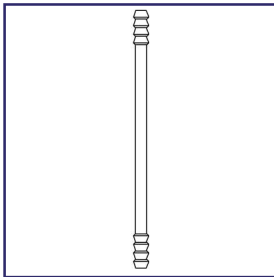


PRG-220
DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD

Flow rate @10lbs. H₂O

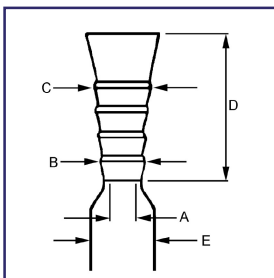
<u>Thread Size</u>	<u>Fits Tube I.D.</u>	<u>Barb I.D.</u>	<u>Nominal Flow Rate Gal./Min</u>	<u>CODE</u>	<u>Price</u>
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72




Reverse Seal Hose Connection

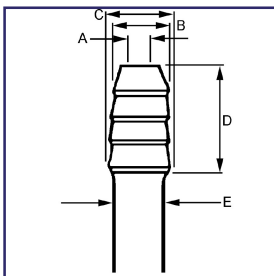
<u>Description</u>	<u>No. of Rings</u>	<u>CODE</u>	<u>Price</u>
10 mm Medium Wall	4	-01	7.31

PRG-222
REVERSE SEAL
HOSE CONNECTIONS


Direct seal hose connections, double ended. 8" overall length.

<u>Barb Size</u>	<u>No. of Rings</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>CODE</u>	<u>Price</u>
#1	3	3.2	8.0	10.2	17	8.0	-01	8.71
#2	4	3.4	8.2	10.0	23	8.0	-02	8.88
#3	4	3.4	9.6	10.9	21	10.0	-03	9.17
#4	3	4.6	10.0	12.0	18	10.0	-04	9.25
#5	5	5.5	13.0	15.4	31	12.0	-05	14.87
#6	7	10.2	19.0	26.0	45	19.0	-06	20.80

PRG-553
DIRECT SEAL HOSE
CONNECTIONS

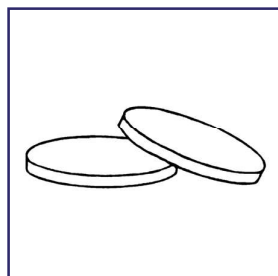

Reverse seal hose connections. Sold double ended.

<u>Barb Size</u>	<u>No. of Rings</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>CODE</u>	<u>Price</u>
#7	4	3.0	8.7	10.2	20	10	-01	8.22
#8	5	5.5	13.0	15.4	31	12	-02	15.25

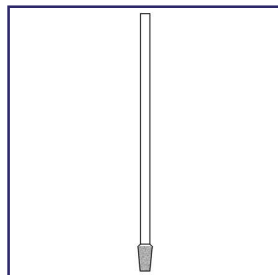
PRG-554
REVERSE SEAL
HOSE CONNECTIONS

BOROSILICATE FRITTED COMPONENTS POROSITIES

Porosity Grade	Designation	Pore Size Microns	Principal Uses
Fine	F	4.0 - 5.5	Filtration and Extraction
Medium	M	10 - 26	Filtration and Extraction
Coarse	C	40 - 60	Gas dispersion, washing absorption. Coarse filtration.
Extra Course	XC	170 - 220	Gas dispersion, washing absorption. Coarse filtration.

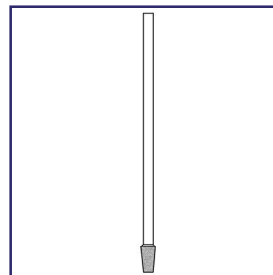

Fritted Disc, Borosilicate.
**PRG-225
FRITTED DISC,
BOROSILICATE**

Size mm	Fine		Medium		Coarse		Extra Coarse	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
10	-01	6.66	-02	6.66	-03	6.66	-04	6.66
12	-05	7.93	-06	7.93	-07	7.93	-08	7.93
15	-09	7.93	-10	7.93	-11	7.93	-12	7.93
20	-13	9.51	-14	9.51	-15	9.51	-16	9.51
25	-17	9.51	-18	9.51	-19	9.51	-20	9.51
30	-21	11.44	-22	11.44	-23	11.44	-24	11.44
35	-25	11.44	-26	11.44	-27	11.44	-28	11.44
40	-29	13.73	-30	13.73	-31	13.73	-32	13.73
50	-33	16.49	-34	16.49	-35	16.49	-36	16.49
60	-37	60.08	-38	23.75	-39	23.75	-40	23.75
70	-41	79.87	-42	35.63	-43	35.63	-44	35.63
75	-45	86.18	-46	44.20	-47	44.20	-48	44.20
80	-49	97.10	-50	55.65	-51	55.65	-52	55.65
90	-53	97.73	-54	69.56	-55	69.56	-56	69.56
100	—	—	-57	86.93	-58	86.93	-59	86.93
125	—	—	—	—	-60	135.88	-61	135.88
150	—	—	—	—	-62	169.90	-63	169.90



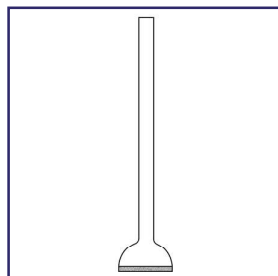
Stem is 10mm O.D., 250mm long. Frit is 12mm O.D., 20mm long.

Porosity	CODE	Price
Fine	-01	34.96
Medium	-02	34.96
Coarse	-03	34.96
Extra Coarse	-04	34.96

**PRG-235
GAS DISPERSION**


Stem is 6mm O.D., 100mm long. Frit is 7mm O.D., 12mm long.

Porosity	CODE	Price
Fine	-01	24.21
Medium	-02	24.21
Coarse	-03	24.21
Extra Coarse	-04	24.21

**PRG-240
MICRO GAS
DISPERSION TUBE**


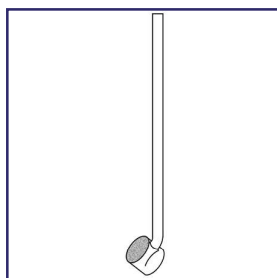
Gas dispersion tube has a variety of frit diameters and porosities. The stem is 10mm o.d. x 150mm total length.

Disc Diameter mm	Fine		Medium		Coarse		Extra Coarse	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
10	-01	37.01	-02	37.01	-03	37.01	-04	37.01
20	-05	41.30	-06	41.30	-07	41.30	-08	41.30
30	-09	44.49	-10	44.49	-11	44.49	-12	44.49
40	-13	65.77	-14	65.77	-15	65.77	-16	65.77

**PRG-245
GAS DISPERSION
TUBE**

BOROSILICATE FRITTED COMPONENTS POROSITIES

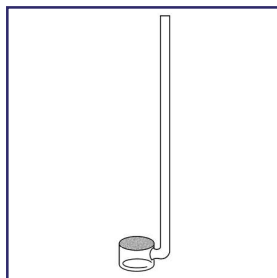
<u>Porosity Grade</u>	<u>Designation</u>	<u>Pore Size Microns</u>	<u>Principal Uses</u>
Fine	F	4.0 - 5.5	Filtration and Extraction
Medium	M	10 - 26	Filtration and Extraction
Coarse	C	40 - 60	Gas dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas dispersion, washing absorption. Coarse filtration.



Gas dispersion tube has a variety of frit diameters and porosities. Fritted disc is angled 15° from vertical position. The stem is 10mm o.d. x 150mm total length.

<u>Disc Diameter mm</u>	<u>Fine</u>		<u>Medium</u>		<u>Coarse</u>		<u>Extra Coarse</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	54.01	-02	54.01	-03	54.01	-04	54.01
20	-05	56.38	-06	56.38	-07	56.38	-08	56.38
30	-09	62.36	-10	62.36	-11	62.36	-12	62.36
40	-13	73.07	-14	73.07	-15	73.07	-16	73.07

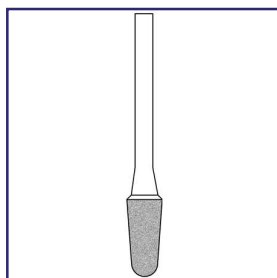
PRG-247
GAS DISPERSION
TUBE, 15° ANGLE



Gas dispersion tube has a variety of frit diameters and porosities. Frit is angled 90°. The stem is 10mm O.D. x 150mm total length.

<u>Disc Diameter mm</u>	<u>Fine</u>		<u>Medium</u>		<u>Coarse</u>		<u>Extra Coarse</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	54.01	-02	54.01	-03	54.01	-04	54.01
20	-05	56.38	-06	56.38	-07	56.38	-08	56.38
30	-09	62.36	-10	62.36	-11	62.36	-12	62.36
40	-13	73.07	-14	73.07	-15	73.07	-16	73.07

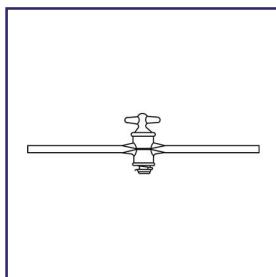
PRG-250
GAS DISPERSION
TUBE, 90° ANGLE



Gas dispersion tubes have large 25mm O.D. x 75mm long frit. The stem is 5/8" diameter x 200mm total length.

<u>Porosity</u>	<u>CODE</u>	<u>Price</u>
Coarse	-01	60.40
Extra Coarse	-02	60.40

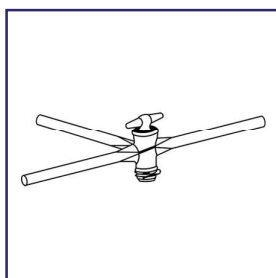
PRG-252
GAS DISPERSION
TUBE, LARGE CA-
PACITY



Stopcock has a solid glass plug with a straight through hole. Supplied with a retainer clip.

Bore mm	Plug Size	Complete		Plug Only	
		CODE	Price	CODE	Price
1	12/30	-01	43.68	-11	22.24
2	12/30	-02	40.52	-12	21.44
4	17/40	-03	51.17	-13	23.04
6	20/44	-04	59.19	-14	29.38
8	25/52	-05	94.12	-15	60.40
10	35/56	-06	123.92	-16	75.45

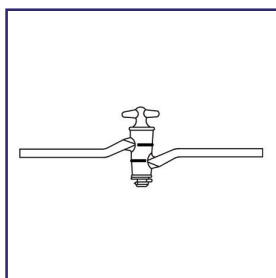
PRG-255
STOPCOCK,
STRAIGHT BORE -
GLASS



Solid glass plug allows 2 to 3 ports to interact. 90° angle. Supplied with retainer clip.

Bore mm	Plug Size	Complete		Plug Only	
		CODE	Price	CODE	Price
1	17/40	-01	59.10	-11	22.87
2	17/40	-02	59.10	-12	22.87
4	20/44	-03	70.06	-13	29.79
6	20/44	-04	98.19	-14	30.33

PRG-260
STOPCOCK, T-BORE -
GLASS

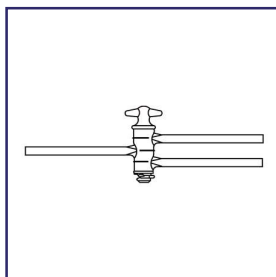


Solid glass has a single diagonal bore. Supplied with retainer clip.

Bore mm	Plug Size	Complete		Plug Only	
		CODE	Price	CODE	Price
2	12.6/40	-01	68.79	-11	37.75
4	17.35/5	-02	83.26	-12	37.75

PRG-265
STOPCOCK, SINGLE
OBLIQUE BORE

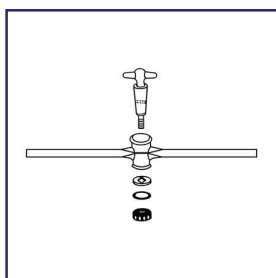




Solid glass plug has two parallel diagonal bores. Supplied with retainer clip.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	14.5/50	-01	92.15	-11	41.30
4	12.2/56	-02	106.46	-12	49.25

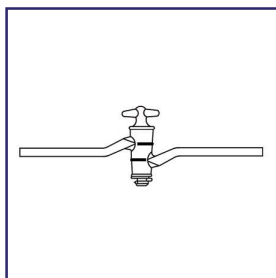
PRG-270
STOPCOCK, DOUBLE
OBLIQUE BORE



Solid glass plug with lower thread. Allows a Teflon washer, O-ring and retaining nut to be used for continuous tension.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12/30	-01	62.78
4	17/40	-02	81.98

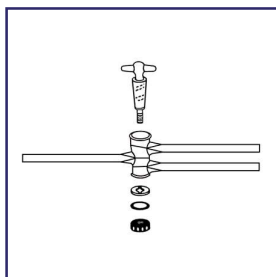
PRG-275
STOPCOCK,
STRAIGHT BORE,
PRESSURE



Solid glass plug with lower thread. Allows a Teflon washer, O-ring and retaining nut to be used for continuous tension. Solid glass plug has a T-shaped bore so that any two or all three ports can interact.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	17/40	-01	107.08

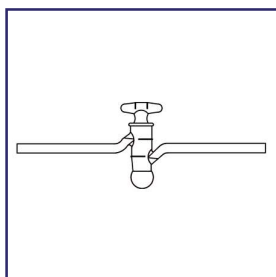
PRG-280
STOPCOCK,
T-BORE,
PRESSURE



Solid glass plug with lower thread. Allows a Teflon washer, O-ring and retaining nut to be used for continuous tension. Solid glass plug has a T-shaped bore so that any two or all three ports can interact. With two parallel oblique bores.

Bore mm	Plug Size	CODE	Price
2	14.5/50	-01	92.15
4	16.2/56	-02	106.46

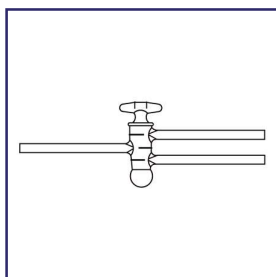
PRG-285
STOPCOCK,
DOUBLE OBLIQUE
BORE,
PRESSURE



Hollow plug with a single oblique bore. A single hole 90° from the lower stem is used to evacuate the lower chamber. Matching serial number provided on plug and barrel.

Bore mm	Plug Size	CODE	Price
2	12.6/40	-01	102.79
4	17.35/5	-02	125.99

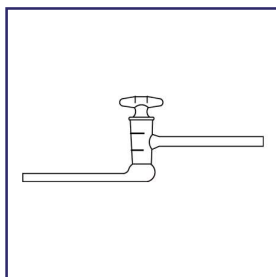
PRG-290
STOPCOCK,
HOLLOW PLUG,
OBLIQUE, HIGH VAC-
UUM



Hollow plug with a single oblique bore. A single hole 90° from the lower stem is used to evacuate the lower chamber. Matching serial number provided on plug and barrel. With two parallel oblique bores.

Bore mm	Plug Size	CODE	Price
2	14.5/50	-01	155.15
4	16.2/56	-02	190.67

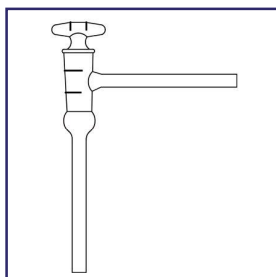
PRG-295
STOPCOCK,
HOLLOW PLUG, DOU-
BLE OBLIQUE, HIGH
VACUUM



PRG-300
STOPCOCK,
HOLLOW PLUG, OFF-
SET, HIGH VACUUM

With lower sidearm connected to a vacuum source. Pressure in the chamber will hold the plug in place. Matching serial number is provided on plug and barrel.

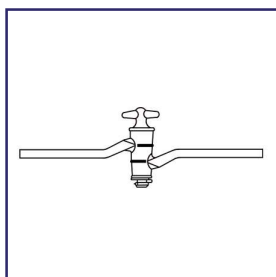
<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12.6/40	-01	89.12
4	17.35/50	-02	105.64
6	17.35/50	-03	135.52



PRG-305
STOPCOCK,
HOLLOW PLUG, 90°
ANGLE, HIGH VAC-
UUM

With lower sidearm connected to a vacuum source, pressure in the chamber will hold the plug in place. Plug and barrel are serialized.

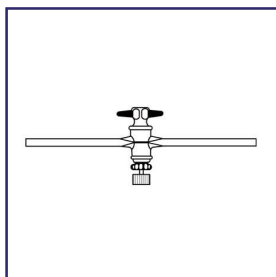
<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12.6/40	-01	89.12
4	17.35/50	-02	105.64
6	17.35/50	-03	135.52



PRG-310
STOPCOCK,
STRAIGHT BORE,
TEFLON

Solid Teflon plug with through hole and threaded retainer nut.

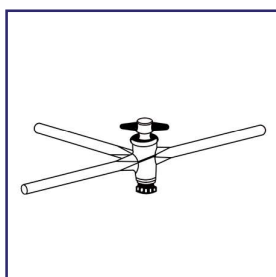
<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	11/25	-01	47.19	-11	15.74
4	15.2/30	-02	64.03	-12	17.95
6	16/35	-03	79.46	-13	26.39
8	24/40	-04	149.35	-14	95.31
10	24/40	-05	160.46	-15	96.91



Teflon plug with a threaded needle valve controls the rate of flow through the valve.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	11/25	-01	95.31	-11	63.97
4	15.2/30	-02	116.29	-12	66.72

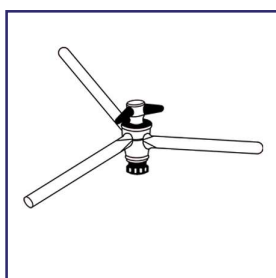
PRG-315
STOPCOCK,
STRAIGHT BORE,
METERING PLUG, TE-
FLON



Solid Teflon plug has a T-shaped bore so that any 2 or all 3 stems may be connected at one time.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	15.2/30	-01	93.26	-11	35.10
4	16/35	-02	112.33	-12	42.11
6	24/40	-03	157.93	-13	52.91

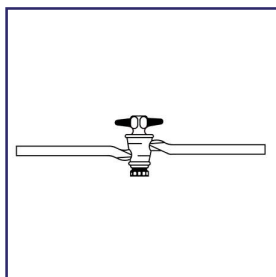
PRG-320
STOPCOCK
T-BORE, TEFLON



Solid Teflon plug has 120° "V" bore to enact two stems, isolating one stem.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	15.2/30	-01	95.17	-11	41.30
4	16/35	-02	106.77	-12	44.63

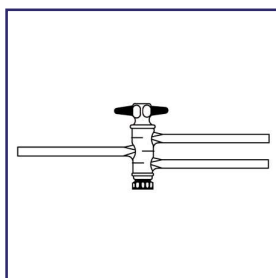
PRG-325
STOPCOCK, 120°
BORE, TEFLON



PRG-330
STOPCOCK,
SINGLE OBLIQUE
BORE, TEFLON

Teflon plug has a diagonal bore and threaded retainer nut.

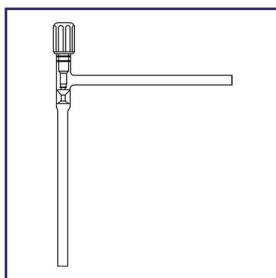
<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	15.2/30	-01	74.35	-11	32.57



PRG-335
STOPCOCK,
DOUBLE OBLIQUE
BORE, TEFLON

Teflon plug has dual diagonal bores and threaded retainer nut.

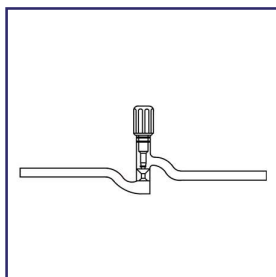
<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	12.9/44	-01	89.59	-11	33.68
4	14.4/44	-02	104.70	-12	40.02
6	20/65	-03	206.55	-13	116.47



PRG-340
VALVE, HIGH
VACUUM, RIGHT
ANGLE

For vacuum applications from 5×10^{-7} . The non rotating shaft has Teflon covered O-Ring. External precision glass threads provide a fine control.

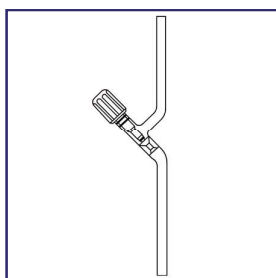
<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	007	010	-01	56.26	-10	69.45
4	010	110	-02	87.56	-11	91.37
12	110	112	-03	90.89	-12	105.82
20	208	210	-04	332.06	-13	354.30



PRG-345
VALVE, HIGH
VACUUM, "S" TYPE

Extension arms are 180° inline, non rotating shaft has Teflon covered O-Ring seals.

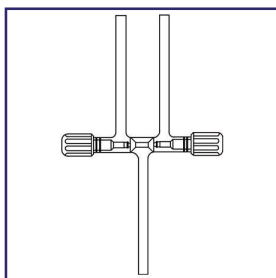
<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
4	007	010	-01	75.94	-10	82.62
8	010	110	-02	122.18	-11	125.68
12	110	112	-03	139.02	-12	140.60



PRG-350
VALVE, HIGH VAC-
UUM, LOW HOLD UP

Designed to minimize hold up of fluids. Non rotating shaft has Teflon covered O-Ring seal.

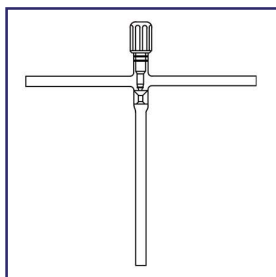
<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
4	007	010	-01	75.94	-10	82.62
8	010	110	-02	122.18	-11	125.68
12	110	112	-03	139.02	-12	140.60



PRG-355
VALVE, HIGH
VACUUM, THREE WAY

Twin valves are positioned to control flow through 3 stems. Non rotating shafts have Teflon covered O-Ring seals.

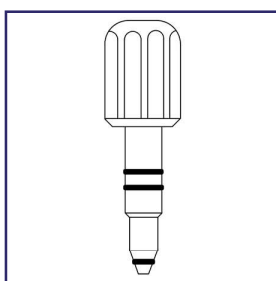
<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	007	010	-01	168.40	-10	228.80
4	010	110	-02	231.94	-11	297.12
12	110	112	-03	298.68	-12	317.75



PRG-360
VALVE, HIGH VAC-
UUM, "T" TYPE

Non rotating shaft has Teflon covered O-Ring seals. Continuous inline flow.

<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
4	007	010	-01	85.79	-10	102.31
8	010	110	-02	128.72	-11	138.21
12	110	112	-03	155.70	-12	170.00



PRG-366
REPLACEMENT
PLUG, TFE STEM

Complete with control knob and Teflon covered Viton O-Rings. Fits valves PRG-340 to 360.

Plugs Complete with Control Knob

<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
4	007	010	-01	35.42	-10	42.91
8	010	110	—	—	-11	54.50
12	110	112	—	—	-12	58.63
20	208	210	—	—	-13	230.37

Stem Only without Control Knob

<u>Bore mm</u>	<u>O-Ring Size</u>		<u>Viton</u>		<u>Teflon Coated</u>	
	<u>Tip</u>	<u>Shaft</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	007	010	—	—	-30	28.94
4	010	110	—	—	-31	42.91
12	110	112	—	—	-32	45.30
20	208	210	—	—	-33	CALL



**PRG-361
VITON**

Viton O-Rings offer a wide spectrum of chemical and temperature-range ability. To be used with petroleum products, diester lubricants, silicone fluids, solvents, and acids (excluding fuming nitric). Viton O-Rings have a good compression set and low gas permeability. Great for hard vacuum service. Temperature range is -30° to 400°F. Hardness is 70-80 Shore A durometer. They are brown in color.

<u>O-Ring Size</u>	<u>I.D. mm</u>	<u>Width mm</u>	<u>Quantity per Pack</u>	<u>CODE</u>	<u>Price</u>
006	2.90	1.78	10	-006	5.72
007	3.68	1.78	10	-007	5.89
008	4.47	1.78	10	-008	6.24
009	5.28	1.78	10	-009	6.78
010	6.07	1.78	10	-010	9.39
011	7.65	1.78	10	-011	9.39
012	9.25	1.78	10	-012	10.41
013	—	—	—	-013	10.07
015	14.00	1.78	10	-015	15.26
023	—	—	—	-023	11.58
043	88.62	1.78	10	-043	108.43
047	114.02	1.78	10	-047	164.83
110	—	—	—	-110	10.41
112	10.77	2.62	10	-112	21.70
113	13.94	2.62	10	-113	22.56
114	15.54	2.62	10	-114	23.86
115	17.12	2.62	10	-115	27.11
116	18.72	2.62	10	-116	27.76
118	21.89	2.62	10	-118	30.81
120	25.07	2.62	10	-120	34.71
128	37.77	2.62	10	-128	56.37
137	52.07	2.62	10	-137	86.76
146	66.34	2.62	10	-146	106.24
152	—	—	—	-152	19.28
204	9.12	3.53	5	-204	15.62
205	10.69	3.53	5	-205	16.05
207	13.87	3.53	5	-207	19.96
209	17.04	3.53	5	-209	21.70
210	—	—	—	-210	28.96
213	23.39	3.53	5	-213	31.22
216	28.17	3.53	5	-216	37.31
217	29.74	3.53	5	-217	37.98
224	44.04	3.53	5	-224	51.18
226	—	—	—	-226	41.61
228	56.74	3.53	5	-228	67.23
229	—	—	—	-229	20.81
325	37.47	5.33	5	-325	86.76
330	53.34	5.33	5	-330	110.61
338	78.74	5.33	5	-338	173.49
341	88.27	5.33	5	-341	63.56



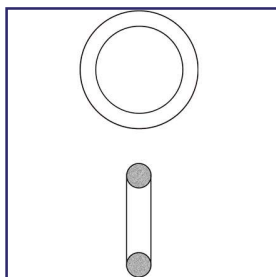


**PRG-362
SILICONE**

Superb high and low temperature capabilities enable silicone O-Ring to be used in long term exposure to dry heat. Due to poor abrasion resistance, Silicone O-Rings perform best in static sealing applications. Silicone resists brake fluids and high aniline point oil. Not recommended for ketones or most petroleum oils. Temperature range is -65°F to 450°F. Hardness is 65-75 Shore A durometer. Amber in color.

<u>O-Ring Size</u>	<u>I.D. mm</u>	<u>Width mm</u>	<u>Quantity per Pack</u>	<u>CODE</u>	<u>Price</u>
006	2.90	1.78	10	-006	3.18
007	3.68	1.78	10	-007	3.61
008	4.47	1.78	10	-008	4.24
009	5.28	1.78	10	-009	4.26
010	6.07	1.78	10	-010	4.64
011	7.65	1.78	10	-011	4.98
012	9.25	1.78	10	-012	5.22
013	—	—	—	-013	5.22
015	14.00	1.78	10	-015	5.62
043	88.62	1.78	10	-043	58.63
047	114.02	1.78	10	-047	76.69
112	10.77	2.62	10	-112	7.88
113	13.94	2.62	10	-113	8.56
114	15.54	2.62	10	-114	9.03
115	17.12	2.62	10	-115	9.45
116	18.72	2.62	10	-116	9.73
118	21.89	2.62	10	-118	11.49
120	25.07	2.62	10	-120	13.53
128	37.77	2.62	10	-128	22.97
137	52.07	2.62	10	-137	33.82
146	66.34	2.62	10	-146	49.62
204	9.12	3.53	5	-204	4.74
205	10.69	3.53	5	-205	5.09
207	13.87	3.53	5	-207	6.51
209	17.04	3.53	5	-209	7.54
213	23.39	3.53	5	-213	9.72
216	28.17	3.53	5	-216	11.75
217	29.74	3.53	5	-217	12.05
224	44.04	3.53	5	-224	18.62
228	56.74	3.53	5	-228	24.63
325	37.47	5.33	5	-325	32.16
330	53.34	5.33	5	-330	42.85
338	78.74	5.33	5	-338	67.67
341	88.27	5.33	5	-341	78.95



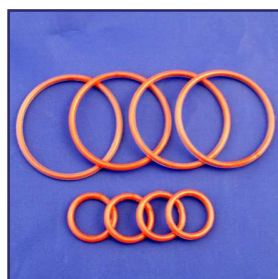


PRG-363
KALREZ®

Kalrez® O-Ring features outstanding chemical resistance to nearly all classes of chemicals except fluorinated solvents. It has the resilience and sealing force of an elastomer with the chemical inertness and thermal stability of Teflon. Temperature range is 0°F to 500°F continuous service, 600°F intermittent service. Hardness is 70-80 Shore A durometer. No color.

<u>O-Ring Size</u>	<u>I.D. mm</u>	<u>Width mm</u>	<u>Quantity per Pack</u>	<u>CODE</u>	<u>Price</u>
006	2.90	1.78	10	-006	38.28
007	3.68	1.78	10	-007	38.28
008	4.47	1.78	10	-008	40.40
009	5.28	1.78	10	-009	41.12
010	6.07	1.78	10	-010	42.06
011	7.65	1.78	10	-011	43.48
012	9.25	1.78	10	-012	45.13
015	14.00	1.78	10	-015	47.25
043	88.62	1.78	10	-043	230.39
047	114.02	1.78	10	-047	320.77
112	10.77	2.62	10	-112	61.92
113	13.94	2.62	10	-113	65.69
114	15.54	2.62	10	-114	67.11
115	17.12	2.62	10	-115	71.12
116	18.72	2.62	10	-116	75.85
118	21.89	2.62	10	-118	83.89
120	25.07	2.62	10	-120	90.50
128	37.77	2.62	10	-128	144.86
137	52.07	2.62	10	-137	165.29
146	66.34	2.62	10	-146	210.73
204	9.12	3.53	5	-204	76.35
205	10.69	3.53	5	-205	81.87
206				-206	CALL
207	13.87	3.53	5	-207	90.60
209	17.04	3.53	5	-209	98.47
213	23.39	3.53	5	-213	115.68
216	28.17	3.53	5	-216	128.23
217	29.74	3.53	5	-217	134.19
224	44.04	3.53	5	-224	204.80
228	56.74	3.53	5	-228	205.57
325	37.47	5.33	5	-325	256.98
330	53.34	5.33	5	-330	350.90
338	78.74	5.33	5	-338	492.67
341	88.27	5.33	5	-341	572.42

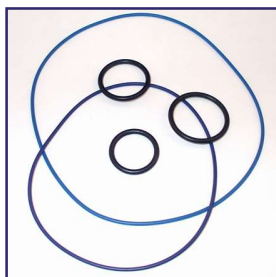




**PRG-364
TEFLON ENCAPSU-
LATED**

These O-Rings are made of FEP Teflon on the outside for chemical inertness and silicone on the inside for outstanding resilience. They withstand dry heat conditions as ordinary Silicone and are virtually impervious to most solvents and chemicals due to their Teflon cover. The resin in FEP Teflon meets or exceeds L-P389A and ASTM D2116 requirements and I.D. FDA approved. Temperature range is -75°F to 400°F. Hardness is 65-75 Shore A durometer. Clear in color with an amber center.

<u>O-Ring Size</u>	<u>I.D. mm</u>	<u>Width mm</u>	<u>Quantity per Pack</u>	<u>CODE</u>	<u>Price</u>
006	2.90	1.78	10	-006	CALL
007	3.68	1.78	10	-007	CALL
008	4.47	1.78	10	-008	CALL
009	5.28	1.78	10	-009	CALL
010	6.07	1.78	10	-010	29.94
011	7.65	1.78	10	-011	18.94
012	9.25	1.78	10	-012	18.94
014	—	—	—	-014	16.64
015	14.00	1.78	10	-015	CALL
043	88.62	1.78	10	-043	32.97
047	114.02	1.78	10	-047	44.31
110	—	—	—	-110	93.62
111	—	—	—	-111	CALL
112	10.77	2.62	10	-112	19.14
113	13.94	2.62	10	-113	19.14
114	15.54	2.62	10	-114	19.55
115	17.12	2.62	10	-115	19.55
116	18.72	2.62	10	-116	10.08
118	21.89	2.62	10	-118	19.55
120	25.07	2.62	10	-120	21.33
128	37.77	2.62	10	-128	10.95
137	52.07	2.62	10	-137	27.03
146	66.34	2.62	10	-146	32.91
156	—	—	—	-156	13.39
204	9.12	3.53	5	-204	33.41
205	10.69	3.53	5	-205	33.41
207	13.87	3.53	5	-207	33.41
209	17.04	3.53	5	-209	33.41
213	23.39	3.53	5	-213	27.03
214	—	—	—	-214	27.95
216	28.17	3.53	5	-216	27.93
217	29.74	3.53	5	-217	27.93
224	44.04	3.53	5	-224	29.60
228	56.74	3.53	5	-228	35.82
325	37.47	5.33	5	-325	51.01
330	53.34	5.33	5	-330	53.74
338	78.74	5.33	5	-338	59.35
341	88.27	5.33	5	-341	65.72



PRG-365
TEFLON COATED

The Teflon coated O-Ring offers great versatility when you need the vacuum sealing power of Viton and the protection of Teflon. The brown Viton O-Ring has an extremely low co-efficient of friction and an excellent compression set, making it ideal for static sealing applications. The Viton also has a good chemical resistance since the Teflon coating may become permeable over time.

Teflon coated O-Rings are mostly used for our Prism line of glassware for the EPA Methods of sampling and collection emissions gas. When the EPA regulations prohibits the use of vacuum grease the Viton O-Ring will make the difficult seals and the Teflon protection keeps the sampling procedure in compliance. Blue in color.

<u>O-Ring Size</u>	<u>I.D. mm</u>	<u>Width mm</u>	<u>Fits Joint</u>	<u>Quantity per Pack</u>	<u>CODE</u>	<u>Price</u>
011	7.6	1.78	12/2 12/5	10	-210	17.03
043	88.9	1.78	Frit 3"	2	-220	16.64
047	114.3	1.78	Frit 4"	2	-221	17.88
112	12.4	2.62	18/7 18/9	10	-230	CALL
115	17.1	2.62	24/40	10	-233	CALL
116	18.7	2.62	28/12 28/15	10	-234	23.08
120	26.6	2.62	35/20 35/25	10	-238	CALL
128	37.8	2.62	50/30 45/50	10	-246	35.88





**PRG-5460
MOHR**

Pipets are color coded and graduated to the base line above tip. calibrated "TD" to deliver. Meets ASTM E-1293, Style 1, Class "A" Specifications.

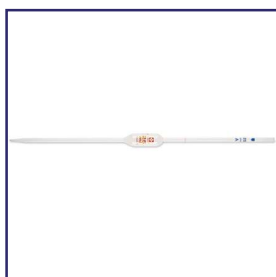
Capacity	Tolerance +/- ml	Quantity per Pack	Color	CODE	Price
1 ml	0.01	12	Yellow	-01	56.22
2 ml	0.01	12	Green	-02	56.22
5 ml	0.02	12	Blue	-03	63.91
10 ml	0.03	12	Orange	-04	67.67
25 ml	0.10	12	White	-05	176.76



**PRG-5465
SEROLOGICAL**

Pipets are color coded and graduated to tip. Calibrated "TD" to deliver when blown out. Meets ASTM E-1044, Style 1 Specifications.

Capacity	Tolerance +/- ml	Quantity per Pack	Color	CODE	Price
1 ml	0.01	12	Yellow	-01	56.22
2 ml	0.01	12	Green	-02	56.22
5 ml	0.02	12	Blue	-03	63.91
10 ml	0.03	12	Orange	-04	67.67
25 ml	0.10	12	White	-05	176.76

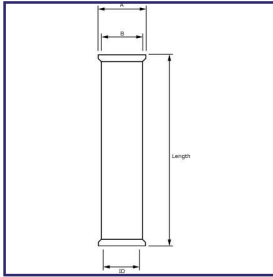


**PRG-5470
VOLUMETRIC**

Pipets are color coded with one permanent graduation. Calibrated "TD" to deliver and meets ASTM 969, Class "A" Specifications.

Capacity	Tolerance +/- ml	Quantity per Pack	Color	CODE	Price
0.5 ml	0.005	12	2-Black	-01	68.52
1 ml	0.007	12	Blue	-02	51.82
2 ml	0.01	12	Orange	-03	57.24
3 ml	0.01	12	N/C	-04	62.65
4 ml	0.01	12	N/C	-05	62.65
5 ml	0.015	12	White	-06	66.61
8 ml	—	—	—	-068	CALL
10 ml	0.02	12	Red	-07	75.38
15 ml	0.03	6	N/C	-08	52.13
20 ml	0.03	6	Yellow	-09	53.01
25 ml	0.03	6	Blue	-10	58.59
50 ml	0.05	6	Red	-11	89
100 ml	0.08	6	Yellow	-12	143.96





**PRG-8000
BEADED PIPE**

Custom lengths not shown can be made upon request. Call for a quote.

<u>1/2" I.D.</u>	<u>A=3/4"</u>	<u>B=57/64"</u>	<u>3/4" I.D.</u>	<u>A=1"</u>	<u>B=1 5/32"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
3"	-01	31.24	3"	-14	44.02
4"	-02	31.24	4"	-15	44.02
6"	-03	33.34	6"	-16	44.02
12"	-04	36.91	12"	-17	45.29
18"	-05	39.57	18"	-18	49.82
24"	-06	42.12	24"	-19	53.29
30"	-07	44.02	30"	-20	56.19
36"	-08	46.99	36"	-21	59.10
48"	-09	52.21	48"	-22	65.61
60"	-10	57.41	60"	-23	70.95
72"	-11	61.75	72"	-24	77.04
84"	-12	66.55	84"	-25	83.30
96"	-13	72.11	96"	-26	89.25

<u>1" I.D.</u>	<u>A=1 5/16"</u>	<u>B=1 17/32"</u>	<u>1 1/2" I.D.</u>	<u>A=1 27/32"</u>	<u>B=2 1/16"</u>	<u>2" I.D.</u>	<u>A=2 5/16"</u>	<u>B=2 9/16"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
3"	-27	58.45	4"	-43	80.05	4"	-57	105.18
4"	-28	58.45	6"	-44	80.05	6"	-58	105.18
6"	-29	58.45	12"	-45	85.38	12"	-59	114.86
12"	-30	61.86	18"	-46	90.99	18"	-60	123.93
18"	-31	66.33	24"	-47	97.10	24"	-61	132.68
24"	-32	72.11	30"	-48	108.67	30"	-62	142.14
30"	-33	77.66	36"	-49	109.29	36"	-63	145.98
36"	-34	83.16	48"	-50	115.14	48"	-64	159.93
48"	-35	92.39	60"	-51	123.41	60"	-65	167.36
60"	-36	104.11	72"	-52	148.35	72"	-66	202.11
72"	-37	115.27	84"	-53	171.94	84"	-67	235.94
84"	-39	126.12	96"	-54	196.45	96"	-68	270.57
96"	-40	134.65	108"	-55	222.16	108"	-69	302.98
108"	-41	143.00	120"	-56	246.43	120"	-70	166.41
120"	-42	158.82						

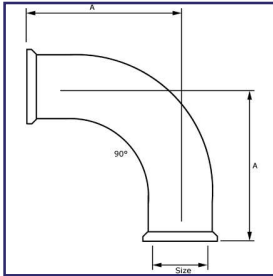
<u>3" I.D.</u>	<u>A=3 7/16"</u>	<u>B=3 11/16"</u>	<u>4" I.D.</u>	<u>A=4 9/16"</u>	<u>B=4 7/8"</u>	<u>6" I.D.</u>	<u>A=6 5/8"</u>	<u>B=7 1/8"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
4"	-71	166.41	6"	-85	301.75	6"	-98	492.52
6"	-72	174.99	12"	-86	313.97	12"	-99	519.71
12"	-73	182.98	18"	-87	327.34	18"	-100	546.74
18"	-74	182.98	24"	-88	341.33	24"	-101	634.60
24"	-75	190.66	30"	-89	353.38	30"	-102	664.95
30"	-76	199.02	36"	-90	366.40	36"	-103	833.50
36"	-77	206.89	48"	-91	378.54	48"	-104	869.51
48"	-78	210.52	60"	-92	390.45	60"	-105	1,011.57
60"	-79	224.57	72"	-93	468.97	72"	-106	1,163.12
72"	-80	269.40	84"	-94	546.89	84"	-107	1,267.32
84"	-81	314.72	96"	-95	625.04	96"	-108	1,452.97
96"	-82	358.76	108"	-96	703.22	108"	-109	1,636.72
108"	-83	402.92	120"	-97	755.53	120"	-110	1,740.93
120"	-84	448.46						



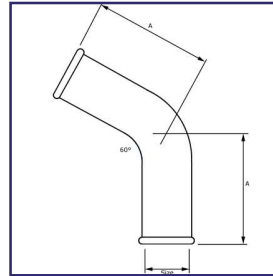


PRG-8002 SWEEP ELBOW

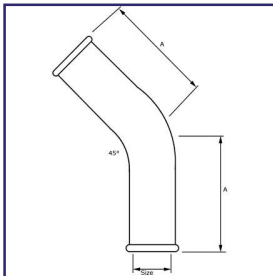
Beaded Pipe, Sweep Elbow



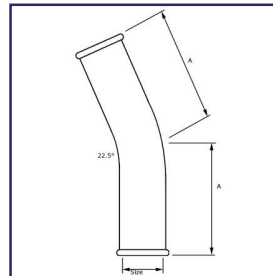
90°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-01	51.03
3/4"	2 1/2"	-02	60.12
1"	2 3/4"	-03	79.55
1 1/2"	5"	-04	83.78
2"	6"	-05	95.78
3"	7"	-06	177.26
4"	10"	-07	299.83
6"	12"	-08	780.16



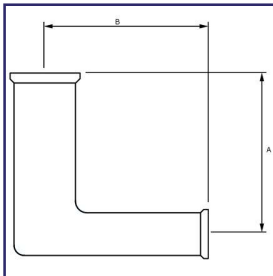
60°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-10	51.03
3/4"	2 1/2"	-11	60.12
1"	2 3/4"	-12	81.48
1 1/2"	5"	-13	83.78
2"	6"	-14	112.46
3"	7"	-15	177.26
4"	10"	-16	299.83
6"	12"	-17	780.16



45°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-20	51.03
3/4"	2 1/2"	-21	60.12
1"	2 3/4"	-22	79.55
1 1/2"	5"	-23	83.78
2"	6"	-24	112.46
3"	7"	-25	177.26
4"	10"	-26	299.83
6"	12"	-27	780.16



22.5°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-30	51.03
3/4"	2 1/2"	-31	60.12
1"	2 3/4"	-32	81.48
1 1/2"	5"	-33	83.78
2"	6"	-34	112.46
3"	7"	-35	177.26
4"	10"	-36	299.83
6"	12"	-37	780.16

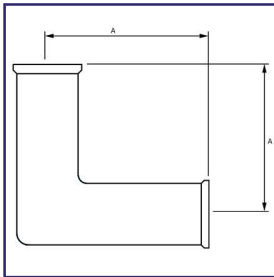


Beaded Pipe, Reducer Elbow

Dimensions	A=Length	B=Distance	CODE	Price
3/4" x 1/2"	2 1/2"	2 1/2"	-01	93.36
1" x 1/2"	2 3/4"	2 3/4"	-02	111.70
1" x 3/4"	2 3/4"	2 3/4"	-03	119.89
1 1/2" x 1/2"	3 1/2"	3"	-04	119.89
1 1/2" x 3/4"	3 1/2"	3"	-05	119.89
1 1/2" x 1"	3 1/2"	3"	-06	119.89
2" x 1/2"	4"	3"	-07	152.14
2" x 3/4"	4"	3"	-08	152.14
2" x 1"	4"	3"	-09	152.14
2" x 1 1/2"	4"	3 1/2"	-10	152.14
3" x 1"	4"	3 1/2"	-11	246.00
3" x 1 1/2"	5"	4"	-12	246.00
3" x 2"	5"	4 1/2"	-13	246.00
4" x 1"	7"	4"	-14	445.79
4" x 1 1/2"	7"	4 1/2"	-15	445.79
4" x 2"	7"	5"	-16	445.79
4" x 3"	7"	5 1/2"	-17	445.79
6" x 1 1/2"	9"	5 1/2"	-18	879.85
6" x 2"	9"	6"	-19	879.85
6" x 3"	9"	6 1/2"	-20	879.85
6" x 4"	9"	8"	-21	879.85

PRG-8004 REDUCER ELBOW

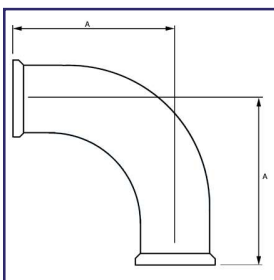




Beaded Pipe, 90° Mitered Elbow

<u>Dimensions</u>	<u>A=Length</u>	<u>CODE</u>	<u>Price</u>
1 1/2 = 90°	3 1/2"	-01	116.16
2 = 90°	4"	-02	141.26
3 = 90°	5"	-03	213.70
4 = 90°	7"	-04	407.22
6 = 90°	9"	-05	768.77

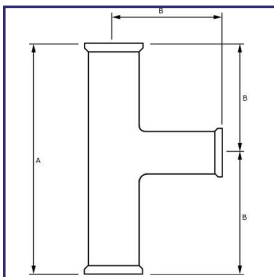
PRG-8006
90° MITERED ELBOW



Beaded Pipe, 90° Short Radius Elbow

<u>Dimensions</u>	<u>A=Length</u>	<u>CODE</u>	<u>Price</u>
1 1/2 = 90°	3 1/2"	-01	85.63
2 = 90°	4"	-02	110.66
3 = 90°	5"	-03	191.00
4 = 90°	7"	-04	341.33

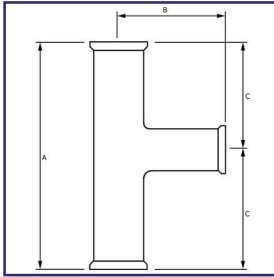
PRG-8008
90° SHORT RADIUS ELBOW



Beaded Pipe, Straight "T"

<u>Dimensions</u>	<u>A=Length</u>	<u>B=Distance</u>	<u>CODE</u>	<u>Price</u>
1/2"	4 1/2"	2 1/4"	-01	86.85
3/4"	5"	2 1/2"	-02	86.85
1"	5 1/2"	2 3/4"	-03	96.68
1 1/2"	7"	3 1/2"	-04	142.14
2"	8"	4"	-05	168.65
3"	10"	5"	-06	205.55
4"	14"	7"	-07	416.31
6"	18"	9"	-08	726.98

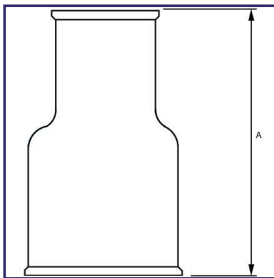
PRG-8010
STRAIGHT "T"



Beaded Pipe, Reducing "T" (Branch)

PRG-8012
REDUCING "T"
(BRANCH)

Run x Branch	A	B	C	CODE	Price
3/4 x 1/2	5"	2 1/2"	2 1/2"	-01	86.85
1 x 1/2	5 1/2"	2 3/4"	2 3/4"	-02	106.77
1 x 3/4	5 1/2"	2 3/4"	2 3/4"	-03	106.77
1 1/2 x 1/2	7"	3"	3 1/2"	-04	142.14
1 1/2 x 3/4	7"	3"	3 1/2"	-05	142.14
1 1/2 x 1	7"	3"	3 1/2"	-06	142.14
2 x 1/2	8"	3"	4"	-07	171.89
2 x 3/4	8"	3"	4"	-08	171.89
2 x 1	8"	3"	4"	-09	171.89
2 x 1 1/2	8"	3 1/2"	4"	-10	171.89
3 x 1	10"	3 1/2"	5"	-11	213.31
3 x 1 1/2	10"	4"	5"	-12	213.31
3 x 2	10"	4 1/2"	5"	-13	213.31
4 x 1	14"	4"	7"	-14	441.69
4 x 1 1/2	14"	4 1/2"	7"	-15	441.69
4 x 2	14"	5"	7"	-16	441.69
4 x 3	14"	5 1/2"	7"	-17	441.69
6 x 1 1/2	18"	5 1/2"	9"	-18	854.38
6 x 2	18"	6"	9"	-19	854.38
6 x 3	18"	6 1/2"	9"	-20	854.38
6 x 4	18"	8"	9"	-21	854.38

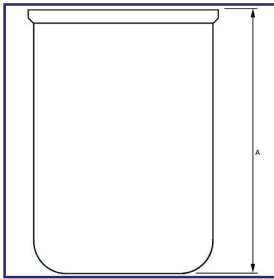


Beaded Pipe, Reducer, Straight

PRG-8014
REDUCER, STRAIGHT

Size	A	CODE	Price
3/4 x 1/2	4"	-01	51.12
1 x 1/2	4"	-02	53.54
1 x 3/4	4"	-03	53.54
1 1/2 x 1/2	4"	-04	64.50
1 1/2 x 3/4	4"	-05	64.50
1 1/2 x 1	4"	-06	64.50
2 x 1/2	4"	-07	79.79
2 x 3/4	4"	-08	79.79
2 x 1	4"	-09	79.79
2 x 1 1/2	4"	-10	79.79
3 x 1	5"	-11	115.12
3 x 1 1/2	5"	-12	115.12
3 x 2	5"	-13	115.12
4 x 1	7"	-14	165.47
4 x 1 1/2	7"	-15	176.08
4 x 2	7"	-16	208.23
4 x 3	7"	-17	250.68
6 x 1	9"	-18	457.84
6 x 1 1/2	9"	-19	486.44
6 x 2	9"	-20	457.84
6 x 3	9"	-21	520.10
6 x 4	9"	-22	536.10

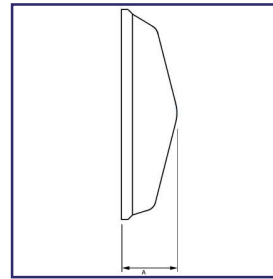




PRG-8016
END CAP

Beaded Pipe, End Cap

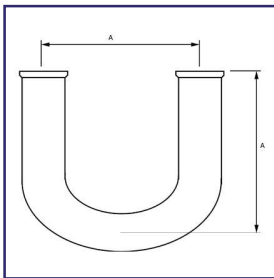
Size	A	CODE	Price
1/2"	2"	-01	28.29
3/4"	2"	-02	30.02
1"	2"	-03	50.28
1 1/2"	3"	-04	62.42
2"	4"	-05	73.93
3"	4 3/4"	-06	114.52
4"	6"	-07	212.89
6"	7"	-08	248.69



PRG-8018
END PLUG

Beaded Pipe, End Plug

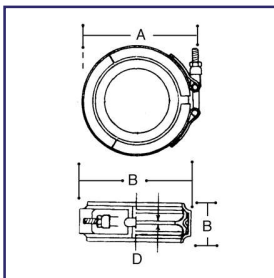
Size	A	CODE	Price
1 1/2"	7/8"	-01	30.53
2"	1"	-02	34.93
3"	1 1/8"	-03	46.86
4"	1 1/4"	-04	95.39
6"	1 1/2"	-05	130.75



PRG-8020
"U" BEND, AN-NEALED

Beaded Pipe, "U" Bend, Annealed

Size	A	CODE	Price
1/2"	2 1/4"	-01	76.64
3/4"	2 1/2"	-02	90.71
1"	5 1/2"	-03	140.72
1 1/2"	7"	-04	201.87
2"	7"	-05	270.40
3"	9"	-06	422.93
4"	12"	-07	785.01

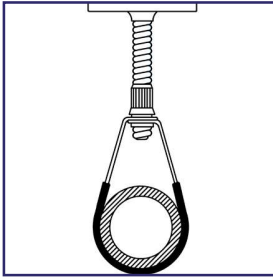


PRG-8022
COUPLINGS, BEAD TO BEAD

Coupling assemblies consist of a .300 series stainless steel outer band with T-Bolt and hex nut; Viton liner and TFE seal ring. Designed for temperature service up to 450°F.

Size	A	B	C	D	Max Torque	CODE	Price
1/2"	1 5/8"	1 3/8"	7/8"	3/16"	20	-01	CALL
3/4"	1 3/4"	1 1/2"	7/8"	3/16"	25	-02	92.99
1"	2 5/8"	1 7/8"	1"	3/16"	35	-03	97.52
1 1/2"	3"	2 5/8"	1 5/16"	3/16"	50	-04	125.65
2"	3 1/2"	3 1/8"	1 5/16"	3/16"	60	-05	150.03
3"	4 3/4"	4 1/4"	1 7/16"	3/16"	75	-06	285.05
4"	6"	5 1/2"	1 1/2"	3/16"	80	-07	330.06
6"	8 3/4"	8"	1 3/4"	1/4"	90	-08	483.84

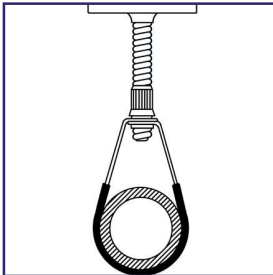




PRG-8024
PADDED PIPE
HANGER, WITH
MOUNTING FOOT

To prevent glass to metal contact, all hangers are zinc coated with a factory applied sleeve.
Use one hanger every 8 to 10 feet.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
1" (25 mm)	-01	17.61
2" (50 mm)	-02	19.22
3" (76 mm)	-03	38.64

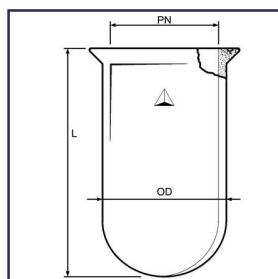


PRG-8026
PADDED PIPE
HANGER, WITHOUT
MOUNTING FOOT

To prevent glass to metal contact, all hangers are zinc coated with a factory applied sleeve.
Use one hanger every 8 to 10 feet.

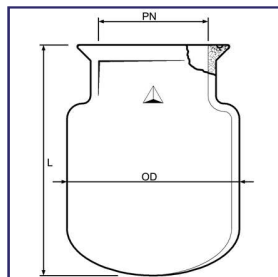
<u>Size</u>	<u>CODE</u>	<u>Price</u>
1/2"	-01	4.98
3/4"	-02	4.98
1"	-03	5.50
1 1/2"	-04	6.61
2"	-05	7.89
3"	-06	12.77
4"	-07	21.89
6"	-08	43.94





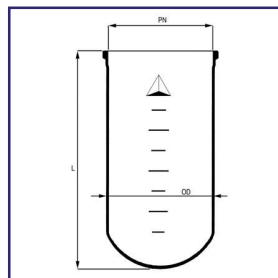
Cylindrical, reaction vessel has a flange tooled flat with an O-Ring groove and finely ground to prevent leaks. Flanges can either be sealed with an O-Ring or grease. For clamps see PRG-188, for O-Rings see PRG-187.

Volume ml	PN mm	OD mm	L mm	Style	CODE	Price
500	100	105	135	A	-01	214.88
1000	100	105	210	A	-02	229.00
2000	150	160	205	A	-03	267.75
3000	150	160	280	A	-04	315.29
4000	150	160	355	A	-05	387.53
10,000	200	215	440	A	-06	942.39



Volume L	PN mm	OD mm	L mm	Style	CODE	Price
15	200	260	375	B	-07	1,082.23
20	200	260	484	B	-08	1,173.37
30	200	315	735	B	-09	2,216.64
50	200	315	935	B	-10	2,801.30
75	200	457	775	B	-11	5,564.19
100	200	457	1035	B	-12	6,135.43
150	200	457	1335	B	-13	8,592.82
200	200	457	1560	B	-14	11,196.71

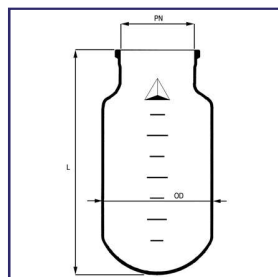
PRG-5220
CYLINDRICAL



Heavy duty vessels have a flat ground DN flange. Rated for full vacuum at nominal working pressures to 7 psi.

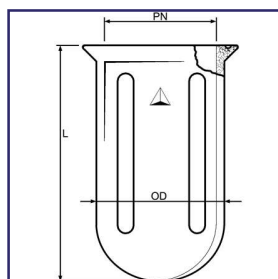
Volume L	PN mm	OD mm	L mm	Style	CODE	Price
10	200	215	490	A	-10	1,134.33
20	300	315	375	A	-01	1,596.51
30	300	315	520	A	-02	2,296.30
50	300	315	840	A	-03	2,906.60
75	300	315	1050	A	-11	3,215.80

Volume L	PN mm	OD mm	L mm	Style	CODE	Price
50	300	415	690	B	-13	5,045.02
75	300	415	800	B	-04	5,757.84
100	300	486	890	B	-14	9,408.16
150	300	486	1210	B	-15	10,724.77
200	300	486	1340	B	-16	14,850.31



PRG-7000
PILOT PLANT, CYLIN-
DRICAL

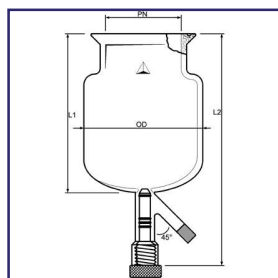
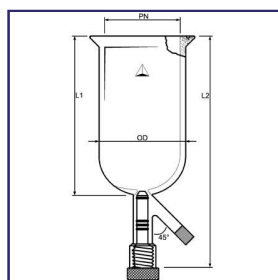




PRG-5225
CYLINDRICAL, IN-
DENTS

Cylindrical, reaction vessel has a flange tooled flat with an O-Ring groove and finely ground to prevent leaks. Flanges can either be sealed with an O-Ring or grease. Four Morton indents are added for improved mixing. For clamps see PRG-188, for O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
500	100	105	135	-01	245.01
1000	100	105	210	-02	265.50
2000	150	160	205	-03	301.26
3000	150	160	280	-04	369.33
4000	150	160	355	-05	433.99
10,000	200	215	440	-06	1,086.44



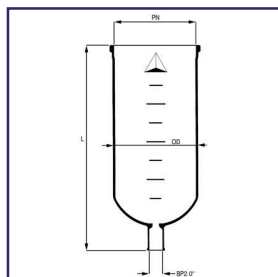
PRG-5227
CYLINDRICAL, DRAIN
VALVE

Cylindrical reaction vessel has a flange surface tooled flat with an O-Ring groove and finely ground. Leak free seals can be achieved either by use of an O-Ring or grease. When using a greased application under vacuum, the O-Ring groove acts as a barrier, not allowing grease into the chamber and causing contamination. The drain valve in a closed position seats flush to the inside radius of the vessel. This eliminates dead space and allows complete stirring of contents. The drain spout is a heavy wall tubulation with an etched tip to work with a compression fitting. For clamps see PRG-188, for O-Ring see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>Drain Valve Size</u>	<u>Style</u>	<u>CODE</u>	<u>Price</u>
500	100	105	135	270	0-12	A	-01	687.57
1000	100	105	210	345	0-12	A	-02	709.69
2000	150	160	205	400	0-12	A	-03	830.54
3000	150	160	280	475	0-12	A	-04	861.17
4000	150	160	355	550	0-12	A	-05	878.19
10,000	200	215	440	640	0-20	A	-06	1,492.37

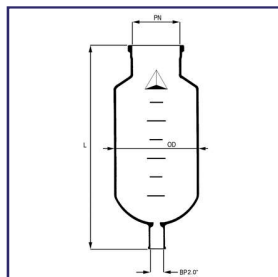
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>Drain Valve Size</u>	<u>Style</u>	<u>CODE</u>	<u>Price</u>
15	200	260	375	575	0-20	B	-07	1,837.68
20	200	260	485	685	0-20	B	-08	2,070.09
30	200	315	735	935	0-20	B	-09	2,514.78
50	200	315	935	1135	0-20	B	-10	3,208.64
75	200	457	775	975	0-20	B	-11	6,314.43
100	200	457	1035	1235	0-20	B	-12	6,822.18
150	200	457	1335	1535	0-20	B	-13	20,598.37
200	200	457	1560	1760	0-20	B	-14	24,232.41





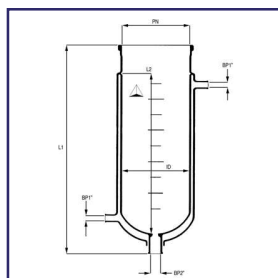
Heavy duty cylindrical vessels have a flat ground DN flange. Drain port connection is a 2.0" beaded pipe and has a 1.0" drain orifice. Drain valve PRG-7025 and PRG-7027 extended body are used with these vessels. Drain valve port will pass through a heat mantle with a bottom opening.

Volume L	PN mm	OD mm	L mm	Style	CODE	Price
10	200	215	550	A	-10	1,594.88
20	300	315	550	A	-01	2,022.90
30	300	315	670	A	-02	2,804.04
50	300	315	920	A	-03	3,474.56
75	300	315	1300	A	-14	4,092.97



Volume L	PN mm	OD mm	L1 mm	Style	CODE	Price
50	300	415	750	B	-13	5,549.54
75	300	415	1090	B	-04	6,319.31
100	300	486	950	B	-15	9,732.03
150	300	486	1275	B	-16	11,212.99
200	300	486	1400	B	-17	15,948.80

PRG-7005
PILOT PLANT, CYLIN-
DRICAL, DRAIN
VALVE

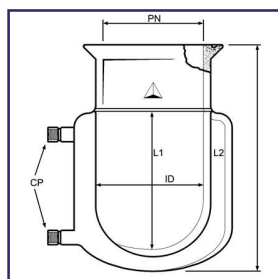


Vessel is jacketed for heating and cooling capacities. The vessel has a 200 or 300mm I.D. flat ground flange. The upper portion of the jacket is hard fused and the lower portion is sealed with an ultra durable Flouro-Silicone to allow for thermal transitions. The jacket ports are a 1.0" beaded pipe connection. The lower drain valve is attached by use of a 2.0" beaded pipe connection. The valve in a closed position seats flush to the interior bottom for zero dead space. Reactor is suited for full vacuum and normal working pressures to 7 psi. Temperature range - 60°C to 200°C with a maximum temperature deviation of 90°C.

Volume L	Jacket Volume L	PN mm	ID mm	L1 mm	L2 mm	CODE	Price
10	7	200	200	600	380	-11	5,377.03
20	6	300	300	560	310	-01	8,347.07
30	8	300	300	685	460	-02	8,832.05
50	13	300	300	940	710	-03	9,587.18
75	—	—	431	870	—	-04	12,000.66
100	—	—	431	1095	—	-05	14,080.54

PRG-7010
PILOT PLANT, JACK-
ETED, LOWER DRAIN
PORT



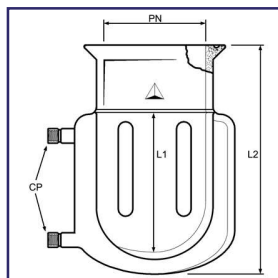


PRG-5230
CYLINDRICAL, JACK-
ETED

Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. The circulatory jacket is offered with detachable hose connections. Internal threaded ports are supplied with a Nylon bushing and Polypropylene barb. Teflon is available upon request. 1.0" beaded pipe ports are sold separately. See PRG-8022-03 for couplings and PRG-8030 for adapter selection.

<u>Volume ml</u>	<u>PN mm</u>	<u>ID mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>CP Size</u>	<u>CODE</u>	<u>Price</u>
250	60	60	75	145	#11	-00	489.67
500	100	100	130	210	#11	-01	621.22
1000	100	100	205	285	#11	-02	663.85
2000	150	150	200	295	#15	-03	747.14
3000	150	150	275	370	#15	-04	936.05
4000	150	150	350	445	#15	-05	1,118.15

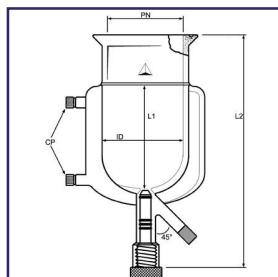
<u>Volume L</u>	<u>PN mm</u>	<u>ID mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>CP Size</u>	<u>CODE</u>	<u>Price</u>
10	200	200	436	540	#25	-06	2,944.85
15	200	200	500	605	#25	-07	4,249.72
20	200	200	610	725	#25	-08	5,354.26
30	200	300	645	750	BP 1"	-09	7,595.23
50	200	300	915	1020	BP 1"	-10	9,015.96



PRG-5233
CYLINDRICAL, JACK-
ETED, WITH MORTON
INDENTS

Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded joints are supplied with Nylon bushings and Polypropylene barbs. 1.0" beaded pipe connections are sold separately. See PRG-8022-03 for coupling and PRG-8030 for port selection. Four Morton indents are added for increased stirring performance.

<u>Volume ml</u>	<u>PN mm</u>	<u>ID mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>CP Size</u>	<u>CODE</u>	<u>Price</u>
250	60	60	75	145	#11	-00	593.29
500	100	97	130	210	#11	-01	729.08
1000	100	97	205	285	#11	-02	786.29
2000	150	143	200	295	#15	-03	886.70
3000	150	143	275	370	#15	-04	1,089.22
4000	150	143	350	445	#15	-05	1,300.24
10,000	200	200	695	540	#15	-06	3,252.29

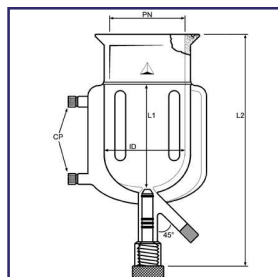


PRG-5235
CYLINDRICAL, JACK-
ETED, DRAIN VALVE

Vessels have a Duron style O-Ring flange. Flanges can be sealed either with an O-Ring or grease. Circulatory jacket is offered with removable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. 1.0" beaded pipe port connections are sold separately. See PRG-8022-03 for coupling and PRG-8030 for port selections. Drain valve stem seats flush to interior of bottom radius. Drain tube is nominal O.D. size and can be used with standard compression fittings.

Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
125							-125	941.05
250	60	60	245	320	#11	0-12	-00	593.29
500	100	100	130	335	#11	0-12	-01	729.08
1000	100	100	205	410	#11	0-12	-02	786.29
2000	150	150	200	600	#15	0-12	-03	886.7
3000	150	150	275	675	#15	0-12	-04	1,089.22
4000	150	150	350	750	#15	0-12	-05	1,300.24
5000							-05.5	1,778.01

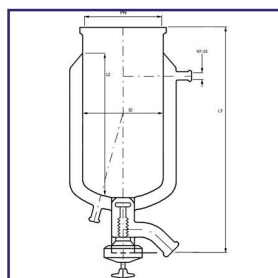
Volume L	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
10	200	200	435	635	#25	0-20	-06	3,950.41
15	200	200	550	795	#25	0-20	-07	6,379.52
20	200	200	660	860	#25	0-20	-08	CALL
30	200	300	590	790	BP 1"	0-20	-09	8,910.17
50	200	300	840	1040	BP 1"	0-20	-10	9,618.12



PRG-5240
CYLINDRICAL, JACK-
ETED, DRAIN VALVE,
WITH INDENTATIONS

Vessel has Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulator jacket has internal threads for detachable hose barbs. Supplied with Nylon bushings and Polypropylene barbs. Drain valve stem seats flush to inside radius of vessel bottom. Drain drip stem is a nominal O.D. for us with a standard compression fitting. Four equally spaced baffle indents improve stirring activity.

Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
250							-250	CALL
500	100	100	130	335	#11	0-12	-01	1,143.68
1000	100	100	205	410	#11	0-12	-02	1,162.42
2000	150	150	200	600	#15	0-12	-03	1,334.25
3000	150	150	275	675	#15	0-12	-04	1,429.60
4000	150	150	350	750	#15	0-12	-05	1,659.38
10,000	200	200	436	635	#15	0-20	-06	4,386.03

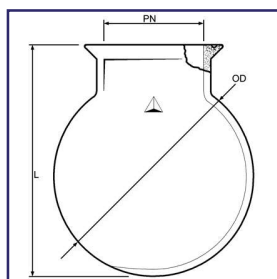


PRG-7012
PILOT PLANT, JACK-
ETED, DRAIN VALVE

Reaction vessels are jacketed for heating and cooling capabilities. The vessels have a 300mm I.D. flat ground flange and hard fused circulatory jacket – no Silicone seals. Jacket ports are a KF-25 ball connection. The drain valve seats flush to vessel interior and has a DN-50 ball discharge port. Temperature range is -40°C to 180°C with a maximum thermal change of 90°C. Maximum temperature for the 100 liter is 140°C. Rated for full vacuum and normal working pressures to 7 psi.

Volume L	Jacket Volume L	PN mm	L1 mm	L2 mm	CODE	Price
15	19	300	665	400	-01	4,819.50
30	25	300	875	560	-02	7,915.32
50	31	300	945	545	-03	9,525.60
100	38	300	1305	905	-04	14,061.60

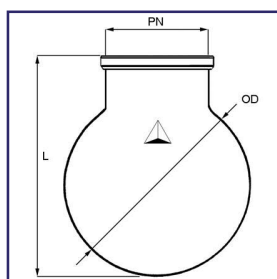




PRG-5245
SPHERICAL, ROUND
BOTTOM

Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. For clamps see PRG-188 and O-Rings see PRG-187.

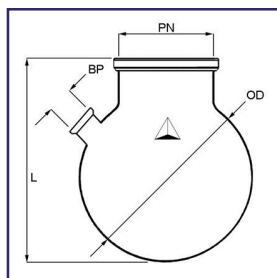
<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2000	100	161	200	-01	275.72
3000	100	185	225	-02	304.63
5000	150	221	270	-03	410.17
12,000	150	295	365	-04	549.73
22,000	150	350	420	-05	769.25
50,000	200	457	530	-06	2,163.26
72,000	200	520	590	-07	2,416.04
100,000	200	610	720	-08	6,080.66
200,000	200	750	890	-09	9,853.65



PRG-7014
PILOT PLANT, FLASK

Pilot plant reactor flask has a heavy duty flat ground flange. Spherical vessels have a 200mm or 300mm I.D. flat ground flange.

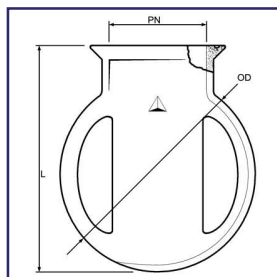
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
22	200	343	450	-11	781.17
50	200	457	580	-01	1,334.49
50	300	457	590	-02	1,822.71
72	200	520	670	-03	2,408.60
72	300	520	670	-04	2,896.81
100	300	610	735	-05	3,922.11
200	300	750	890	-06	8,918.31



PRG-7018
PILOT PLANT, FLASK,
SIDE PORT

Spherical vessels have a 200mm or 300mm I.D. flat ground flange. The charge port is a beaded pipe connection. Other connections are available upon request.

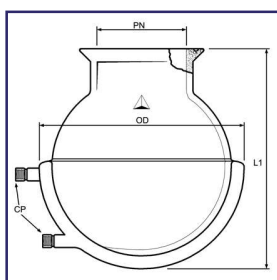
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
22	200	343	450	-11	989.47
50	200	457	580	-01	2,506.24
72	200	520	670	-02	3,075.83
100	300	610	760	-05	5,598.35
200	300	750	900	-06	11,571.01



Vessels have Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Four Morton baffle indents are evenly spaced around perimeter for improved stirring. For clamps see PRG-188 and O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2000	100	161	200	-01	326.75
3000	100	185	225	-02	362.51
5000	150	221	270	-03	488.45
12,000	150	295	365	-04	656.84
22,000	150	350	420	-05	925.85

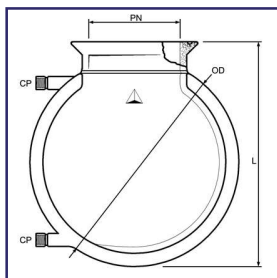
PRG-5250
SPHERICAL, MOTON
BAFFLE INDENTS



Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded joints are supplied with Nylon bushings and Polypropylene barbs. For clamps see PRG-188 and O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2000	100	221	240	-01	825.98
3000	100	221	255	-02	888.84
5000	150	295	370	-03	1,005.54
12,000	150	350	475	-04	2,873.01

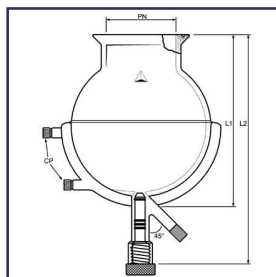
PRG-5255
SPHERICAL, HALF
JACKETED



Vessel have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. For clamps see PRG-188 and for O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2000	100	221	295	-01	846.26
3000	100	221	255	-02	968.31
5000	150	295	370	-03	1,513.53
12,000	150	350	460	-04	3,601.50

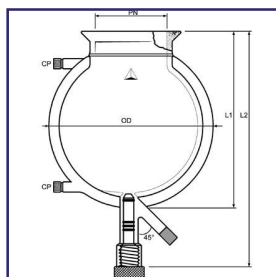
PRG-5257
SPHERICAL, FULL
JACKET



PRG-5260
SPHERICAL, HALF
JACKET, FLUSH
MOUNT DRAIN VALVE

Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. For clamps see PRG-188 and O-Rings see PRG-187. Drain valve 0-12mm seats flush to interior radius bottom.

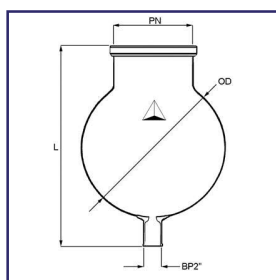
<u>Volume ml</u>	<u>PN mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>CP Size</u>	<u>Valve Bore</u>	<u>CODE</u>	<u>Price</u>
2000	100	295	410	#11	0-12	-01	1,140.24
3000	100	295	410	#11	0-12	-02	1,203.08
5000	150	370	505	#15	0-12	-03	1,319.79
12,000	150	460	595	#15	0-20	-04	3,187.29



PRG-5262
SPHERICAL, FULL
JACKET, FLUSH
MOUNT DRAIN VALVE

Vessel has a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. Drain valve seats flush to the interior radiused bottom. For clamps see PRG-188 and for O-Ring see PRG-187.

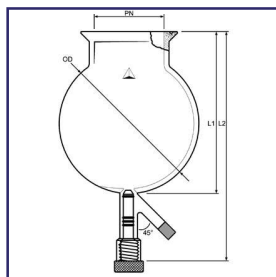
<u>Volume ml</u>	<u>PN mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>OD mm</u>	<u>CP Size</u>	<u>Valve Bore</u>	<u>CODE</u>	<u>Price</u>
2000	100	295	360	221	#11	0-12	-01	1,310.08
3000	100	295	360	221	#11	0-12	-02	1,428.90
5000	150	370	550	295	#15	0-12	-03	1,980.59
12,000	150	460	640	350	#15	0-20	-04	4,084.84



PRG-7016
PILOT PLANT, FLASK,
DRAIN PORT

Spherical vessels have a 200mm or 300mm I.D. flat ground flange. Drain valve attached by use of a 2.0" beaded pipe connection. Valve stem seats flush to interior of vessel and has a 1.0" drain opening.

<u>Volume L</u>	<u>PN mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
22	200	600	343	-11	927.63
50	200	730	457	-01	1,969.19
50	300	730	457	-02	2,522.53
72	200	820	520	-03	2,799.18
72	300	820	520	-04	3,222.32
100	300	910	610	-05	4,866.03
200	300	1050	750	-06	9,797.10



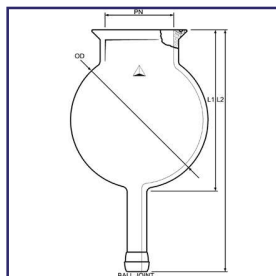
PRG-5265
SPHERICAL, DRAIN
PORT

Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Drain valve stem seats flush to the interior radius bottom. Valve drip stem is a nominal size to accommodate a standard size compression fitting. For clamps see PRG-188 and O-Ring see PRG-187.

Volume ml	PN mm	OD mm	L1 mm	L2 mm	Valve Bore	CODE	Price
2000	100	161	200	335	0-12	-01	662.68
3000	100	185	225	360	0-12	-02	735.04
5000	150	221	270	465	0-12	-03	994.67
12,000	150	295	365	560	0-20	-04	1,330.31
22,000	150	350	520	615	0-20	-05	1,858.13
50,000	200	457	530	725	0-20	-06	2,633.67
72,000	200	520	595	785	0-20	-07	2,926.14
100,000	200	610	720	870	0-20	-08	4,735.82
200,000	200	750	890	1040	0-20	-09	11,081.15

PRG-5266
SPHERICAL, OPEN
DRAIN PORT

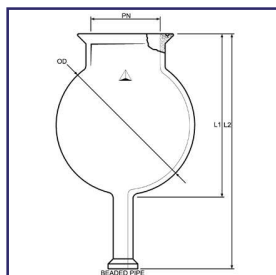
Vessels have a Duran style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. The open drain port is designed to fit through a heat mantle. Three options for outlet port, for drain valve options see PRG-5269 and PRG-5270. For couplings see PRG-1705, PRG-8022 & PRG-7070.



Ball Joint Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	150	295	365	480	28/15	-01	1,370.27
22	150	350	420	535	28/15	-02	1,946.39
50	200	457	530	655	35/25	-03	2,551.81
72	200	520	590	715	35/25	-04	2,844.73
100	200	610	720	685	50/30	-05	4,654.45
200	200	750	890	1015	50/30	-06	10,999.79

Ball joints with O-Ring grooves are available upon request.

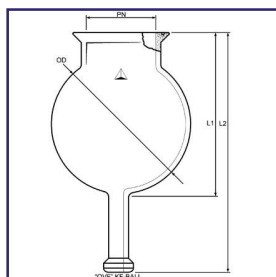


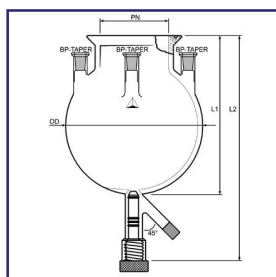
Beaded Pipe Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	150	295	365	480	1.0"	-11	1,370.27
22	150	350	420	535	1.0"	-12	1,946.39
50	200	457	530	655	1.5"	-13	2,551.81
72	200	520	590	715	1.5"	-14	2,844.73
100	200	610	720	685	2.0"	-15	4,654.45
200	200	750	890	1015	2.0"	-16	10,999.79

"QVF" KF Ball Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	150	295	365	480	KF-25	-21	1,402.85
22	150	350	420	535	KF-25	-22	1,978.95
50	200	457	530	655	KF-25	-23	2,584.36
72	200	520	590	715	KF-25	-24	2,877.30
100	200	610	720	685	KF-50	-25	4,686.99
200	200	750	890	1015	KF-50	-26	11,032.33





PRG-5267
FLANGED TOP,
THREE TAPERED
JOINT SIDE PORTS
AND DRAIN VALVE

Reaction flasks have a Duran style O-Ring flange and tapered joints side ports. Top rim of 45/50 joints is a tooled 2.0" beaded pipe connection. Drain valve seated flush to interior contour of flask. Valve stem has Teflon covered O-Ring seals.

Volume L	PN mm	OD mm	L1 mm	L2 mm	Valve Bore	CODE	Price
12	100	295	365	490	0-20	-01	1,165.23
22	100	350	420	545	0-20	-02	1,544.42
50	150	457	530	655	0-20	-03	2,709.67
72	200	520	590	715	0-20	-04	3,469.68
100	200	610	720	985	0-20	-05	6,153.32
200	200	750	890	1015	0-20	-06	13,540.21

Other "BP-Taper" connections available upon request are 1.0" bp x 24/40 outer and 1.5" bp x 29/42 outer.

PRG-5268
FLANGE TOP AND
SIDE PORTS, OPEN
DRAIN PORT

Flasks have a Duran O-Ring style flange top and 45/50 tapered side ports. Top rim of joints have a tooled beaded pipe connection, dual purpose joint. The drain port is extended to fit through a heat mantle. Three style connections are available to suit your needs.

Ball Joint Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	28/15	-01	969.94
22	100	350	420	545	28/15	-02	1,349.13
50	150	457	530	655	35/25	-03	2,595.74
72	200	520	590	715	35/25	-04	3,274.39
100	200	610	720	685	50/30	-05	5,958.02
200	200	750	890	1015	50/30	-06	13,344.92

Ball joints with O-Ring grooves are available upon request.

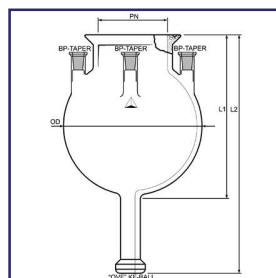
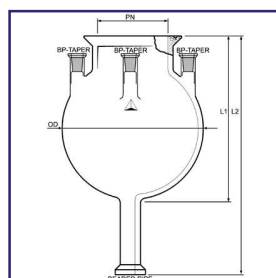
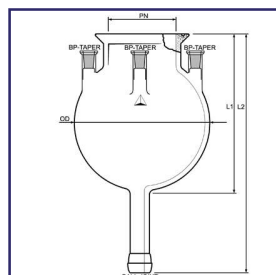
Beaded Pipe Connection

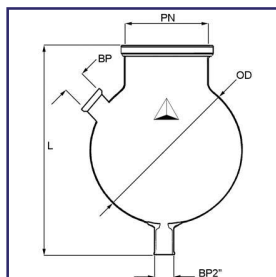
Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	1.0"	-11	969.94
22	100	350	420	545	1.0"	-12	1,349.13
50	150	457	530	655	1.5"	-13	2,595.74
72	200	520	590	715	1.5"	-14	3,274.39
100	200	610	720	685	2.0"	-15	5,958.02
200	200	750	890	1015	2.0"	-16	13,344.92

"QVF" KF Ball Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	KF-25	-21	1,018.77
22	100	350	420	545	KF-25	-22	1,397.96
50	150	457	530	655	KF-25	-23	2,595.74
72	200	520	590	715	KF-25	-24	3,323.20
100	200	610	720	685	KF-50	-25	6,006.84
200	200	750	890	1015	KF-50	-26	13,426.30

Other "BP-Taper" connections available upon request are 1.0" bp x 24/40 outer and 1.5" bp x 29/42 outer.





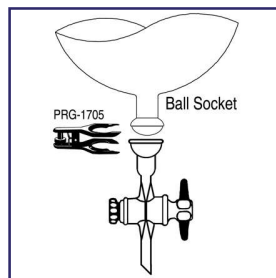
Spherical vessels have a 200mm or 300mm I.D. flat ground flange. The charge port is a beaded pipe connection. Drain valve attaches with the use of a 2.0" beaded pipe connection.

Volume L	PN mm	L mm	OD mm	CODE	Price
22	200	450	343	-11	1,318.21
50	200	730	457	-01	2,782.92
72	200	820	520	-03	3,433.90
100	300	910	610	-05	5,988.93
200	300	1050	750	-06	13,198.46

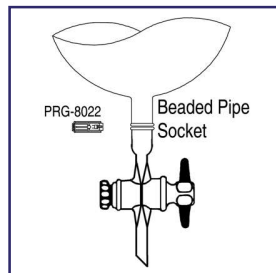
PRG-7020
PILOT PLANT, FLASK,
CHARGE PORT AND
DRAIN PORT

PRG-5269
DRAIN VALVE ADAPT-
ERS, TEFLON STOP-
COCKS

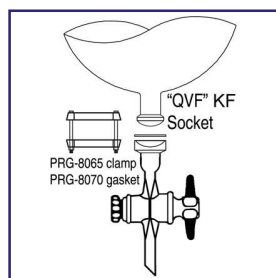
Stopcock adapter offer three connections, spherical ball joints, beaded pipe and "QVF" KF joints. Several options within each grouping for your selection to match mate with vessel connection. All style plugs have threaded nut retainer.



Socket Joint	Bore Size	Material	Plug Size	CODE	Price
28/15	6	Glass	20 x 44	-01	166.32
28/15	6	TFE	16 x 35	-02	166.32
28/15	10	Glass	35 x 56	-03	228.68
28/15	10	TFE	24 x 40	-04	228.68
35/25	6	Glass	20 x 44	-05	180.19
35/25	6	TFE	16 x 35	-06	180.19
35/25	10	Glass	35 x 56	-07	249.48
35/25	10	TFE	24 x 40	-08	249.48
50/30	10	Glass	35 x 56	-09	277.19
50/30	10	TFE	24 x 40	-10	277.19



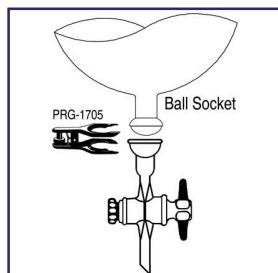
Beaded Pipe	Bore Size	Material	Plug Size	CODE	Price
1.0"	6	Glass	20 x 44	-21	166.32
1.0"	6	TFE	16 x 35	-22	166.32
1.0"	10	Glass	35 x 56	-23	228.68
1.0"	10	TFE	24 x 40	-24	228.68
1.5"	10	Glass	35 x 56	-25	236.96
1.5"	10	TFE	24 x 40	-26	266.77
2.0"	10	Glass	35 x 56	-27	279.28
2.0"	10	TFE	24 x 40	-28	279.28



"QVF" KF Socket	Bore Size	Material	Plug Size	CODE	Price
KF-25	6	Glass	20 x 44	-31	191.80
KF-25	6	TFE	16 x 35	-32	191.80
KF-25	10	Glass	35 x 56	-33	259.62
KF-25	10	TFE	24 x 40	-34	259.62
KF-50	10	Glass	35 x 56	-35	295.09
KF-50	10	TFE	24 x 40	-36	295.09

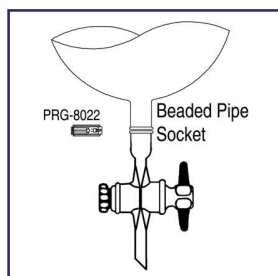
**PRG-5270
DRAIN VALVE ADAPT-
ERS, HIGH VOLUME,
TEFLON STOPCOCKS**

Valve have Teflon covered O-Ring seals. Adapter offer three connections: spherical ball joints, beaded pipe and "QVF" KF joints. Several options within each grouping for your selection to match mate with vessel connection drain spout is a nominal standard size for use with a compression fitting. All exposed parts are either Glass or Teflon.

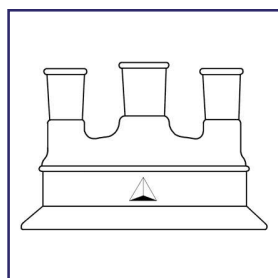
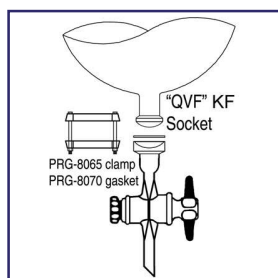


<u>Socket Joint</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
28/15	0-12	-02	213.11
35/25	0-12	-03	219.08
35/25	0-20	-04	365.13
50/30	0-12	-05	278.69
50/30	0-20	-06	412.82

<u>Beaded Pipe</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
1.0"	0-12	-12	213.11
1.5"	0-12	-13	219.08
1.5"	0-20	-14	365.13
2.0"	0-12	-15	278.69
2.0"	0-20	-16	412.82

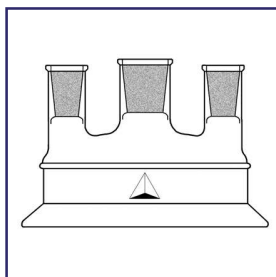


<u>"QVF" KF Socket</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
KF-25	0-12	-21	220.55
KF-50	0-20	-22	365.13
KF-50	0-20	-23	433.69


**PRG-5275
LID, THREE NECK**

Lids are a Duran style flange and can be mated to both O-Ring and non O-Ring flanges from the Duran family. Three top ports are standard taper joints. Other options are available upon request.

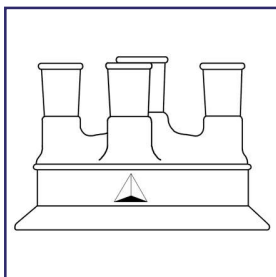
<u>Flange I.D. mm</u>	<u>Center Neck</u>	<u>Side Neck</u>	<u>CODE</u>	<u>Price</u>
100	24/40	24/40	-01	279.36
100	29/42	24/40	-02	285.93
150	24/40	24/40	-03	416.97
150	29/42	24/40	-04	422.48
150	29/42	29/42	-05	446.66
150	45/50	24/40	-06	442.49
200	45/50	24/40	-07	929.24
200	45/50	29/42	-08	934.36
200	45/50	45/50	-09	949.68



PRG-5277
LID, THREE NECK,
WITH "BP-TAPER"
CONNECTIONS

Lids are a Duran style flange and can be mated to both O-Ring and non O-Ring flanges from the Duran family. Three top ports are standard taper joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose joints. Other options are available upon request.

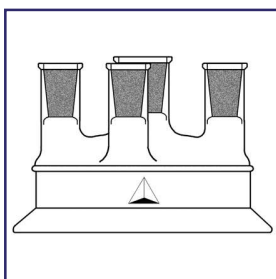
Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	329.56
100	29/42 x 1.5"	24/40 x 1.0"	-02	425.30
150	24/40 x 1.0"	24/40 x 1.0"	-03	462.49
150	29/42 x 1.5"	24/40 x 1.0"	-04	467.81
150	29/42 x 1.5"	29/42 x 1.5"	-05	476.77
150	45/50 x 2.0"	24/40 x 1.0"	-06	487.16
200	45/50 x 2.0"	24/40 x 1.0"	-07	957.45
200	45/50 x 2.0"	29/42 x 1.5"	-08	957.90
200	45/50 x 2.0"	45/50 x 2.0"	-09	992.08



PRG-5280
LID, FOUR NECK

Lids are a Duran style flange and can be mated to both O-Ring and non O-Ring flanges from the Duran family. Three top ports are standard taper joints. Other options are available upon request.

Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	302.94
100	29/42	24/40	-02	309.75
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	459.51
150	45/50	24/40	-06	464.55
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59

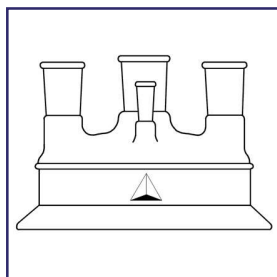


PRG-5282
LID, FOUR NECK,
WITH "BP-TAPER"
CONNECTIONS

Lids are a Duran style flange and can be mated to both O-Ring and non O-Ring flanges from the Duran family. Three top ports are standard taper joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose joints. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	359.75
100	29/42 x 1.5"	24/40 x 1.0"	-02	366.33
150	24/40 x 1.0"	24/40 x 1.0"	-03	494.58
150	29/42 x 1.5"	24/40 x 1.0"	-04	501.18
150	29/42 x 1.5"	29/42 x 1.5"	-05	511.04
150	45/50 x 2.0"	24/40 x 1.0"	-06	516.00
200	45/50 x 2.0"	24/40 x 1.0"	-07	994.50
200	45/50 x 2.0"	29/42 x 1.5"	-08	997.77
200	45/50 x 2.0"	45/50 x 2.0"	-09	1,034.91

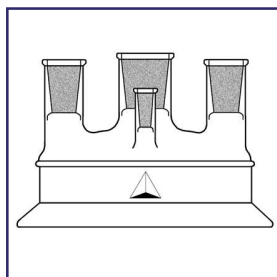




PRG-5285
LID, FOUR NECK, 90°
THERMOMETER
JOINT

Lids have a Duran style flanges that mates to O-Ring or non O-Ring flanges from the Duran family. Four top necks are tapered joints. The 4th neck to accommodate a thermometer. Other options are available upon request.

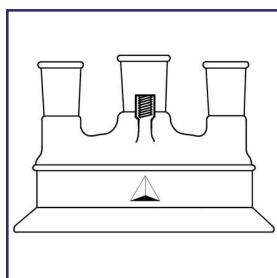
Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	306.32
100	29/42	24/40	-02	313.18
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	459.51
150	45/50	24/40	-06	464.63
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59



PRG-5287
LID, FOUR NECK, 90°
THERMOMETER
JOINT, WITH "BP-
TAPER" CONNEC-
TIONS

Lids have a Duran style flange that mates to O-Ring or non O-Ring flanges from the Duran family. Three top necks are "BP-Taper" joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose. The 4th joint is a 10/30 to accommodate a thermometer. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	355.59
100	29/42 x 1.5"	24/40 x 1.0"	-02	362.19
150	24/40 x 1.0"	24/40 x 1.0"	-03	487.16
150	29/42 x 1.5"	24/40 x 1.0"	-04	493.72
150	29/42 x 1.5"	29/42 x 1.5"	-05	506.56
150	45/50 x 2.0"	24/40 x 1.0"	-06	508.53
200	45/50 x 2.0"	24/40 x 1.0"	-07	964.68
200	45/50 x 2.0"	29/42 x 1.5"	-08	997.77
200	45/50 x 2.0"	45/50 x 2.0"	-09	1,005.12

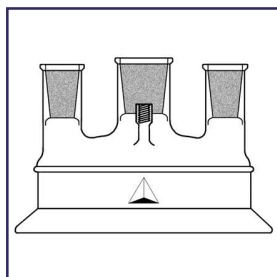


PRG-5290
LID, THREE NECK, 90°
THERMOMETER
PORT

Lids are Duran style flange that mates to O-Ring or non O-Ring flanges from the Duran family. Three 180° top neck are standard taper joints. A threaded 4th 90° port has 6-7mm O.D. compression fitting. Other options are available upon request.

Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	306.32
100	29/42	24/40	-02	313.18
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	464.63
150	45/50	24/40	-06	448.92
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59

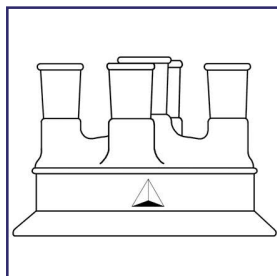




PRG-5292
LID, THREE NECK, 90°
THERMOMETER
JOINT WITH #7 INTER-
NAL THREAD, WITH
"BP-TAPER" CON-
NECTIONS

Lids have a Duran style flange that mates to O-Ring or non O-Ring flanges from the Duran family. Three top necks are "BP-Taper" joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose. The 4th joint is a 10/30 to accommodate a thermometer. Other options are available upon request.

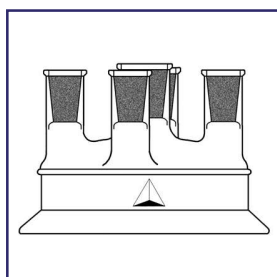
Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	338.66
100	29/42 x 1.5"	24/40 x 1.0"	-02	344.94
150	24/40 x 1.0"	24/40 x 1.0"	-03	463.96
150	29/42 x 1.5"	24/40 x 1.0"	-04	470.21
150	29/42 x 1.5"	29/42 x 1.5"	-05	479.61
150	45/50 x 2.0"	24/40 x 1.0"	-06	484.32
200	45/50 x 2.0"	24/40 x 1.0"	-07	940.04
200	45/50 x 2.0"	29/42 x 1.5"	-08	943.17
200	45/50 x 2.0"	45/50 x 2.0"	-09	957.26



PRG-5295
LID, FIVE NECK

Lids have a Duran style flange that mates to O-Ring or non O-Ring flanges of the same Duran family. Five top necks are standard taper joints. Other options are available upon request.

Flange I.D. mm	Center Neck	Side Neck	CODE	Price
150	24/40	24/40	-01	534.32
150	29/42	24/40	-02	541.19
150	29/42	29/42	-03	550.58
150	45/50	24/40	-04	555.28
150	45/50	(2) 29/42 (2) 24/40	-05	598.69
200	45/50	(2) 24/40 (2) 29/42	-06	937.23
200	45/50	(2) 45/50 (2) 29/42	-07	954.93
200	45/50	45/50	-08	992.06

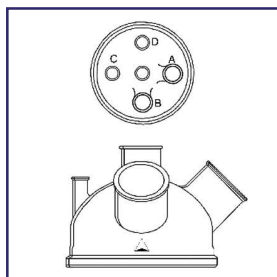


PRG-5297
LID, FIVE NECK, WITH
"BP-TAPER" CON-
NECTIONS

Lids have a Duran style flange that mates to a O-Ring or non O-Ring flange from the Duran family. Five top necks are a "BP-Tapered" joint. Top rim of joints are tooled to beaded pipe connection. Dual purpose connection. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
150	24/40 x 1.0"	24/40 x 1.0"	-01	591.09
150	29/42 x 1.5"	24/40 x 1.0"	-02	597.94
150	29/42 x 1.5"	29/42 x 1.5"	-03	608.76
150	45/50 x 2.0"	24/40 x 1.0"	-04	612.07
200	29/42 x 1.5"	29/42 x 1.5"	-05	994.23
200	45/50 x 2.0"	24/40 x 1.0"	-06	1,011.70
200	45/50 x 2.0"	29/42 x 1.5"	-07	1,037.84
200	45/50 x 2.0"	(2) 45/50 x 2.0" (2) 24/40 x 1.0"	-08	1,047.63

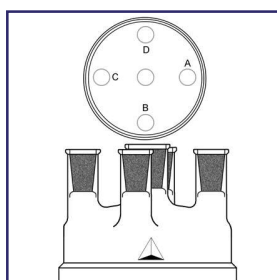




PRG-7050
PILOT PLANT, LID,
FIVE PORT

Heavy duty lids have a flat ground flange to mate with 200mm or 300mm flanged vessel. Connecting ports are a robust beaded pipe which has a misalignment factor of 3 degrees. Other configurations can be accommodated upon request. (Vertical ports – 90°)

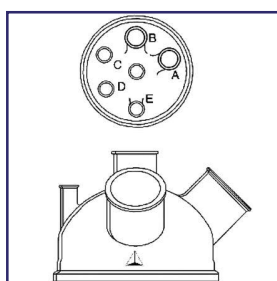
Flange I.D. mm	Center Neck	Side Necks				CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°		
200	1.5"	2.0"	2.0"	1.5"	1.5"	-01	1,964.30
300	2.0"	3.0"	2.0"	1.5"	1.5"	-02	2,245.84
300	2.0"	3.0"	3.0"	1.5"	1.5"	-03	2,294.68



PRG-7060
PILOT PLANT, LID,
BP-TAPER JOINTS,
FIVE PORT

Heavy duty lids have a flat ground flange to mate with 200mm or 300mm flanged vessels. Connecting ports are a "BP-Taper" joint. The upper rim of the joint is a beaded pipe while the interior has a ground tapered joint. For example: a 2.0" beaded pipe connection has an interior 45/50 outer tapered joint tooled into it. It has dual functions and are super robust. Other configurations are available upon request.

Flange I.D. mm	Center Neck	Side Necks				CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°		
200	2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	24/40 1.0"	-01	2,110.79
300	2.0"	45/50 2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	-02	2,286.55

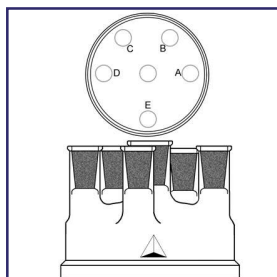


PRG-7055
PILOT PLANT, LID, SIX
PORT

Heavy duty lids have a flat ground flange to mate with 200mm or 300mm flanged vessels. Connecting ports are a robust beaded pipe which has a misalignment factor of 3 degrees. Other configurations are available upon request. (Vertical – 90°)

Flange I.D. mm	Center Neck	Side Necks					CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 45°		
200	1.5"	2.0"	2.0"	1.5"	1.5"	1.5"	-01	2,099.39
300	2.0"	3.0"	2.0"	1.5"	1.5"	1.5"	-02	2,359.76
300	2.0"	3.0"	3.0"	1.5"	1.5"	1.5"	-03	2,506.24

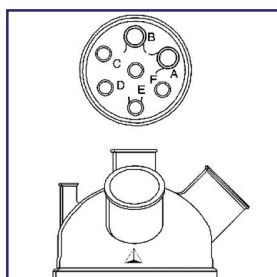




PRG-7065
PILOT PLANT, LID,
BP-TAPER JONTS,
SIX PORT

Heavy duty lids have a flat ground flange to mate with vessels with a 200mm or 300mm flange. Connecting port have a "BP-Taper" joint. The upper rim of the joint has a beaded pipe fitting while the interior has a ground tapered joint. For example: a 2.0" beaded pipe connection has a 45/50 outer joint tooled into it. It has dual function and is super robust. Other configurations are available upon request.

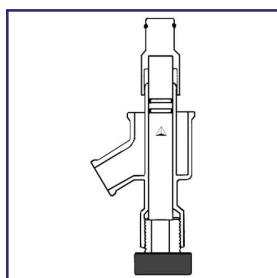
Flange I.D. mm	Center Neck	Side Necks						CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 90°			
200	2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	24/40 1.0"	24/40 1.0"	-01	2,197.03	
300	2.0"	45/50 2.0"	45/50 2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	-02	2,538.79	



PRG-7056
PILOT PLANT, LID,
SEVEN PORT

Heavy duty lids have a flat ground flange to mate with vessels with a 200mm or 300mm flange. Connecting ports are a robust beaded pipe which has a misalignment factor of 3 degrees. Other configurations are available upon request. (Vertical – 90°)

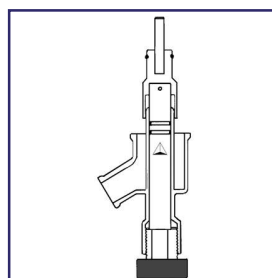
Flange I.D. mm	Center Neck	Side Necks						CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 45°	"E" 90°		
200	1.5"	2.0"	2.0"	1.0"	1.0"	1.0"	1.0"	-01	2,416.75
300	2.0"	3.0"	2.0"	1.5"	1.5"	1.5"	1.5"	-02	2,847.98
300	2.0"	3.0"	3.0"	1.5"	1.5"	1.5"	1.5"	-03	3,134.60



PRG-7025
PILOT PLANT, FLUSH
MOUNT DRAIN VALVE

Valve seats flush to the vessel interior. The Teflon plunger has an encapsulated O-Ring seat to ensure a leak free closure. Two Kalrez O-Rings create the seal further back on the valve shaft. In an open position, the discharge has a 25mm opening. Valve attaches to the vessel with a 2.0" beaded pipe. The discharge port is s 1.0" beaded pipe fitting.

Description	CODE	Price
Standard	-01	1,248.24
Extended	-02	1,284.03
Glass Portion Only	-10	558.20

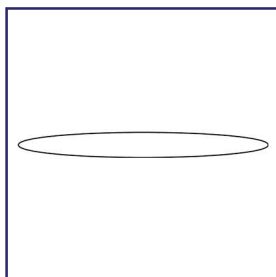


PRG-7027
PILOT PLANT, FLUSH
MOUNT DRAIN VALVE

Valve seats flush to vessel interior. A 1/2" stabilizer pin is installed to prevent shaft whip during stirring. An encapsulated O-Ring seats the valve plunger to the vessel bottom. Two Kalrez O-Rings are further back on the valve stem. Valve connects to the vessel by use of a 2.0" beaded pipe fitting. The discharge port is a 1.0" beaded pipe fitting.

Description	CODE	Price
Standard	-01	1,149.41
Extended	-02	1,298.69
Pin	-31	CALL
Flush Set	-32	CALL
Stem	-33	CALL
Contol Knob	-34	CALL
Glass Portion	-35	CALL

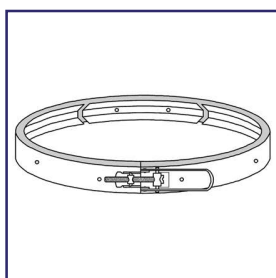




**PRG-187
DURON O-RING**

O-Rings are offered in Silicone or FEP Encapsulated Silicone and fit the PRG-184 flanges.

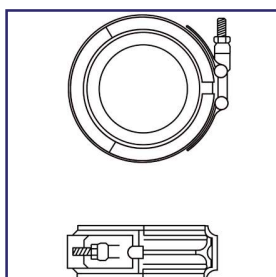
<u>Fits Flange I.D. mm</u>	<u>Material</u>	<u>CODE</u>	<u>Price</u>
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22
100	Silicone	-02	24.15
100	FEP-Silicone	-22	40.82
120	Silicone	-03	34.39
120	FEP-Silicone	-23	46.49
150	Silicone	-04	45.98
150	FEP-Silicone	-24	58.97
200	Silicone	-05	59.48
200	FEP-Silicone	-25	64.64



**PRG-188
FLANGE, DURON**

Duron flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11

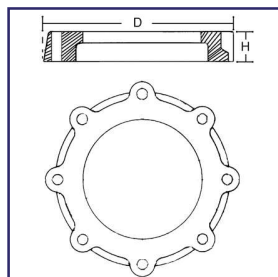


**PRG-8022
BEADED PIPE COU-
PLINGS**

Coupling assemblies consist of a .300 series stainless steel outer band with T-Bolt and hex nut; Viton liner and TFE seal ring. Designed for temperature service up to 450°F.

<u>Size</u>	<u>Max Torque</u>	<u>CODE</u>	<u>Price</u>
0.5"	—	-01	CALL
0.75"	—	-02	92.99
1.0"	35 lbs	-03	97.52
1.5"	50 lbs	-04	125.65
2.0"	60 lbs	-05	150.03
3.0"	75 lbs	-06	285.05
4.0"	80 lbs	-07	330.06
6.0"	90 lbs	-08	483.84



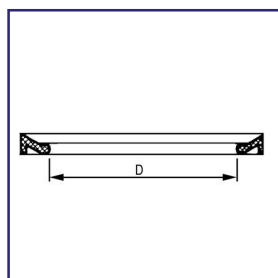


PRG-7070
PILOT PLANT COUPLING

Constructed from a heavy gauge aluminum and can be used to secure vessel to a fixed point. Packing material is a 70 durometer silicone. Comes complete with stainless steel bolts, washers and compression springs.

Flange Size	"D" mm	"H" mm	CODE	Price
200 mm	321	34	-01	455.69
300 mm	428	36	-02	797.45
400 mm	—	—	-03	1,401.22
600 mm	—	—	-04	1,379.43
KF-25	—	—	-25	50.46
KF-40	—	—	-40	69.04
KF-50	—	—	-50	94.38
KF-80	—	—	-80	137.94
KF-100	—	—	-100	215.44

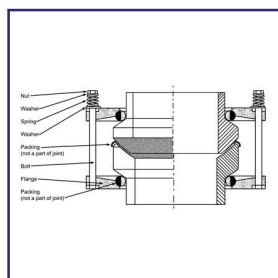
Description	CODE	Price
200 mm Clamp Insert	-10	CALL
300 mm Clamp Insert	-11	CALL
Stainless Steel Nut and Bolt	-12	CALL
Compression Springs	-13	CALL



PRG-7075
PILOT PLANT FLANGE GASKET

PTFE collar gasket is used in conjunction with the 200 and 300mm flat ground flange for pilot plant. Vessels have an operating temperature up to +200°C. The shape is suitable for high specific surface pressure, which is achieved with relatively low bolting loads.

Flange Size	"D" mm	CODE	Price
200 mm	220	-01	193.68
300 mm	321	-02	260.39
400 mm	—	-03	374.32
KF-15	—	-15	CALL
KF-25	—	-25	29.29
KF-40	—	-40	32.55
KF-50	—	-50	39.07
KF-80	—	-80	106.94
KF-100	—	-100	170.49
KF-150	—	-150	CALL

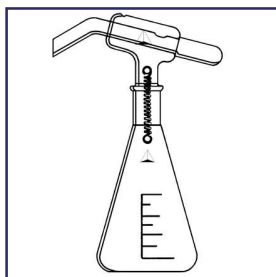


PRG-7072
KF COUPLING ASSEMBLY

Coupling is constructed from a heavy gauge aluminum and is epoxy coated. The packing material is a 70 durometer silicone cord. The 15 and 25 sizes are phonolic plastic. Coupling is used with the ball and socket and flat ground connections.

KF Joint Size	Packing	CODE	Price
15	Phonolic	-15	CALL
25	Phonolic	-25	CALL
40	—	-40	CALL
50	Silicone	-50	CALL
80	Silicone	-80	CALL
100	Silicone	-100	CALL
150	Silicone	-150	CALL

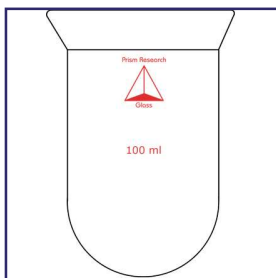




PRG-5385
**DISPENSING, TILT-
ING, PIPET TYPE**

Tilting the apparatus backward will flood the head. Once returned to upright position the excess fluids will return to the reservoir. Tilting forward will dispense the desire volume of fluid. Repeatedly and accurately. For replacement Erlenmeyer Flask, see PRG-5140 and PRG-5160.

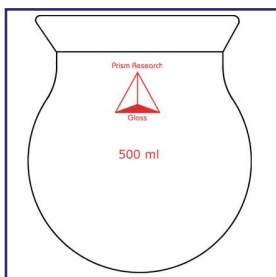
Capacity ml	Flask Capacity ml	Flask Only		Complete \$ 24/40		Complete \$ 29/42		Head Only	
		CODE	Price	CODE	Price	CODE	Price	CODE	Price
1	250	-01	CALL	-21	149.65	—	—	-101	121.38
2	250	-02	CALL	-22	149.65	—	—	-102	121.38
3	250	-03	CALL	-23	149.65	—	—	-103	121.38
4	250	-04	CALL	-24	149.65	—	—	-104	121.38
5	250	-05	CALL	-25	149.65	—	—	-105	121.38
10	500	-06	CALL	-26	154.12	-56	CALL	-106	132.64
15	500	-07	CALL	-27	156.66	-57	CALL	-107	132.64
20	500	-08	CALL	-28	160.46	-58	CALL	-108	132.64
25	1000	-09	CALL	-29	168.40	-59	CALL	-109	132.64
30	1000	-10	CALL	-30	171.60	-60	CALL	-110	148.54
40	1000	-11	CALL	-31	179.53	-61	CALL	-111	148.54
50	2000	-12	CALL	-32	182.70	-62	CALL	-112	177.95
100	2000	-13	CALL	-33	220.35	-63	CALL	-113	193.83



PG-9236
**MICRO, REACTION
VESSEL, CYLINDRI-
CAL**

Reaction vessel has a 60 mm I.D. Duran O-Ring flange. Leak-free seals can be obtained by use of an O-Ring or grease.

Capacity ml	Approximate Height mm	CODE	Price
50	65	-01	45.21
100	95	-02	48.16

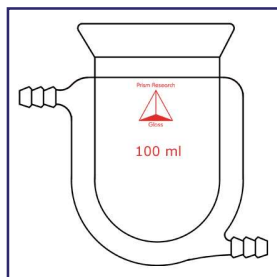


PG-9238
**MICRO, REACTION
VESSEL, SPHERICAL**

Reaction vessel has a 60 mm I.D. Duran O-Ring flange and spherical body. Leak-free seal can be obtained by use of an O-Ring or grease.

Capacity ml	CODE	Price
200	-01	54.08
250	-02	54.08
300	-03	57.33
500	-04	60.96

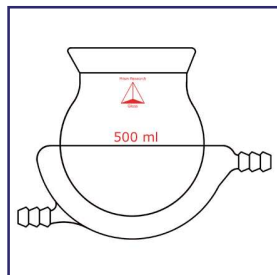




Reaction vessel has a 60mm I.D. Duran O-Ring flange and a jacket surrounding the body. Hose connections are positioned to optimize heating or cooling circulation. Jacket not included in height.

<u>Capacity ml</u>	<u>Approximate Height mm</u>	<u>CODE</u>	<u>Price</u>
100	110	-01	202.51

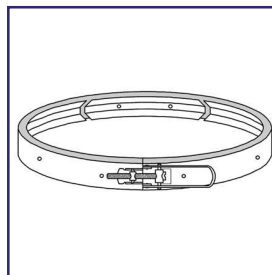
PG-9240
MICRO, REACTION
VESSEL, CYLINDRI-
CAL, JACKETED



Reaction vessel has a 60mm I.D. Duran O-Ring flange and spherical body. With a jacket surrounding it's lower half. Hose connections are positioned to optimize heating and cooling circulation.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
200	-01	217.27
300	-02	233.64
500	-03	252.32

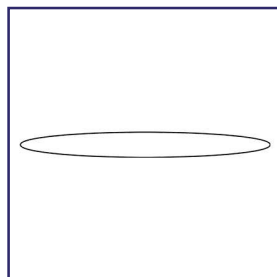
PG-9242
MICRO, REACTION
VESSEL, SPHERICAL,
JACKETED



Duron flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11

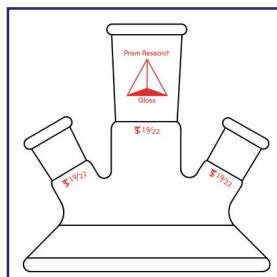
PRG-188
FLANGE, DURON



O-Rings are offered in Silicone or FEP Encapsulated Silicone and fit the PRG-184 flanges.

<u>Fits Flange I.D. mm</u>	<u>Material</u>	<u>CODE</u>	<u>Price</u>
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22

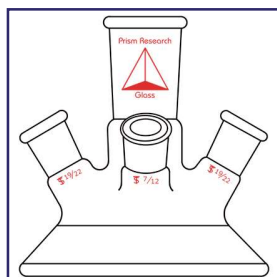
PRG-187
DURON O-RING



Three-neck cover with all joints 180° apart.

Center Neck $\text{\textcircled{S}}$ Joints	Side Neck $\text{\textcircled{S}}$ Joints	CODE	Price
14/20	14/20	-01	147.22
19/22	14/20	-02	150.74
19/22	19/22	-03	153.47

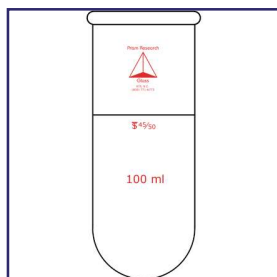
PG-9246
MICRO, REACTION
VESSEL COVER,
THREE NECK



Cover, reaction flask, four-neck with standard taper outer joints on three side necks and a center neck. Two side necks are 180° apart and the third is the same distance from the two. The bottom has a 60mm I.D. and is ground to prevent leakage.

Center Neck $\text{\textcircled{S}}$ Joints	Side Neck $\text{\textcircled{S}}$ Joints	Thermometer Neck $\text{\textcircled{S}}$ Joints	CODE	Price
14/20	14/20	10/18	-01	161.47
19/22	14/20	10/18	-02	161.49
19/22	19/22	10/18	-03	166.72
14/20	14/20	7/12	-04	160.89
19/22	14/20	7/12	-05	163.32
19/22	19/22	7/12	-06	166.14

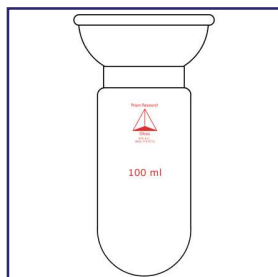
PG-9248
MICRO, REACTION
VESSEL COVER,
FOUR NECK



Flask, body reaction, cylindrical, round bottom with standard taper outer joint on top.

Capacity ml	$\text{\textcircled{S}}$ Joints	CODE	Price
50	45/50	-01	47.35
100	45/50	-02	48.44

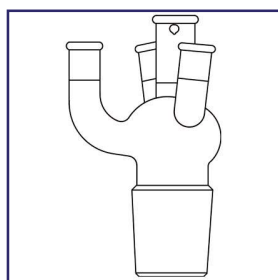
PG-9250
MICRO, BODY REAC-
TION, CYLINDRICAL



Flask, body reaction, cylindrical, round bottom with a socket joint on top.

<u>Capacity ml</u>	<u>d Joints</u>	<u>CODE</u>	<u>Price</u>
50	65/40	-01	50.77
100	65/40	-02	52.53

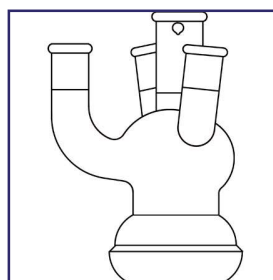
PG-9252
MICRO, BODY REAC-
TION, CYLINDRICAL



Flask head, reaction, four-neck. Side necks are 120° apart. Two are at a slant, one is straight. Bottom flask connection is a 45/50 inner joint.

<u>Side Neck</u>	<u>Joints</u>	<u>CODE</u>	<u>Price</u>
14/20		-01	178.77
19/22		-02	179.03

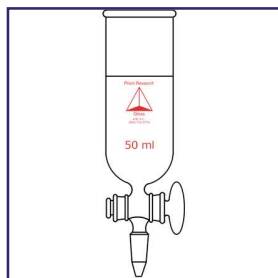
PG-9254
MICRO, REACTION
HEAD, FOUR NECK



Flask head, reaction, four-neck. Side necks are 120° apart. Two are at a slant, one is straight. Bottom flask connection is a 65/40 ball joint.

<u>Side Neck</u>	<u>Joints</u>	<u>CODE</u>	<u>Price</u>
14/20		-01	193.44
19/22		-02	195.97

PG-9256
MICRO, REACTION
HEAD, FOUR NECK

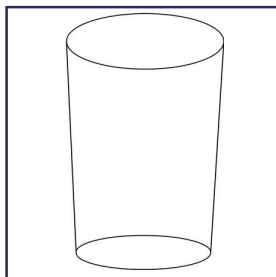


Flask body, reaction, cylindrical. Includes a 2mm stopcock outlet on the bottom above a standard taper 14/20 inner joint.

<u>Capacity ml</u>	<u>Joint Sizes</u>	<u>CODE</u>	<u>Price</u>
50	45/50	-01	170.20
50	65/40	-02	181.46
100	45/50	-03	173.14
100	65/40	-04	183.09

PG-9258
MICRO, REACTION
BODY, CYLINDRICAL,
WITH STOPCOCK





PRG-125
TEFLON SLEEVE

Provides a grease-free connection between ground glass joints.
Sleeve has a .005 wall thickness.

Medium Length

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
7/15	-01	12.32
10/18	-02	13.37
12/18	-03	13.37
14/20	-04	18.75
19/22	-05	24.65
24/25	-06	26.24
29/26	-07	32.51
34/28	-08	18.02
40/35	-09	19.91

Full Length

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
7/25	-10	13.86
10/18	-11	12.41
12/30	-12	13.86
14/35	-13	14.75
19/38	-14	15.52
24/40	-15	16.57
29/42	-16	18.02
34/45	-17	19.77
40/50	-18	21.85
45/50	-19	23.17
50/50	-20	26.32
55/50	-21	30.30





HEI-STANDARD HEIDOLPH, MAG- NETIC STIRRER, MR HEI-STANDARD

According to the motto “just stir and heat”, our entry model of the Hei-Standard was manufactured with two rotary knobs to enable direct access to the two main functions. The speed and temperature are set using a scale. The maximum values are 1.400 rpm and 300 °C.

This magnetic stirrer is very easy to use and is equipped with the most important safety features. The heating function can be activated separately.

The patented Kera-Disk® footprint made of anodized aluminum, is chemical-resistant, scratch-proof, and has a diameter of 135 or 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The material used also enables the fastest heating times.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±5 °C	±5 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	—	—
Timer	—	—
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110521	HEI-036110519

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
135 mm	HEI-036110521	CALL
145 mm	HEI-036110519	1,224.09





HEI-TEC
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-TEC

Hei-Tec is the classic model among magnetic stirrers. It enables users to gently stir up to 1,400 rpm and to heat up to a temperature of 300°C with a high degree of precision. These features, along with its robust construction and sophisticated functionalities such as key illumination, encompass our mantra of "Research made easy!"

The patented Kera-Disk® footprint made of anodized aluminum, is chemically resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The material used also enables the fastest heating times.

The Hei-Tec magnetic stirrer provides a digital display for setting your desired temperature exactly to the degree. This precise temperature without overshooting is controlled by two selectable heating modes (FAST/PRECISE) and the optional external temperature sensor Pt1000.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±1 °C	±1 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	—	—
Timer	—	—
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110620 & HEI-036110583	HEI-036110550 & HEI-036110582

<u>Plate Diameter</u>	<u>With Pt1000</u>	<u>CODE</u>	<u>Price</u>
135 mm	No	HEI-036110620	CALL
135 mm	Yes	HEI-036110583	1,347.59
145 mm	No	HEI-036110550	1,223.18
145 mm	Yes	HEI-036110582	1,347.10



HEI-PLATE-
SILVER-1
HEIDOLPH, MAG-
NETIC STIRRER, HEI-
PLATE, SILVER 1
PACKAGE

This package includes:

- Magnetic Stirrer Hei-Tec
- Temperature sensor Pt1000 (AISI 316Ti)
- Pt1000 clamping system (includes support rod and attachment with cable inlet)

<u>CODE</u>	<u>Price</u>
HEI-036110573	1,467.81



**HEI-CONNECT
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-CONNECT**

In our proven Hei-PLATE magnetic stirrer line, the Hei-Connect combines gentle stirring (up to 1,400 rpm) with a precise heating function (up to 300 °C). Unique in its robust design and secure functionality, this model stands out with additional features giving you complete control and an easy, accurate documentation of your process parameters.

The unique Kera-Disk® footprint is chemically resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The anodized aluminum from which it is made enables the fastest possible heating times.

The Hei-Connect magnetic stirrer provides a digital display for setting your desired temperature exactly to the degree. This precise temperature without overshooting is controlled by two selectable heating modes (FAST/PRECISE) and the optional external temperature sensor Pt1000.

To facilitate process control and documentation, the Hei-Connect is equipped with a timer and an RS 232 interface. The free Hei-Control Software is included in the scope of delivery.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±1 °C	±1 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	yes (RS 232)	yes (RS 232)
Timer	yes	yes
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110602 & HEI-036110604	HEI-036110601 & HEI-036110603

<u>Plate Diameter</u>	<u>With Pt1000</u>	<u>CODE</u>	<u>Price</u>
135 mm	No	HEI-036110602	1,780.15
135 mm	Yes	HEI-036110604	1,724.99
145 mm	No	HEI-036110601	1,720.81
145 mm	Yes	HEI-036110603	1,724.99



**HEI-PLATE-
SILVER-2
HEIDOLPH, MAG-
NETIC STIRRER, HEI-
PLATE, SILVER 2
PACKAGE**

This package includes:

- Magnetic Stirrer Hei-Connect
- Temperature sensor Pt1000 (AISI 316Ti)
- Pt1000 clamping system (includes support rod and attachment with cable inlet)
- Interface cable RS 232

<u>CODE</u>	<u>Price</u>
HEI-036110605	2,133.76



HEI-MIX-S
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-MIX S

The Hei-Mix S is the first choice for titrations and biochemical applications such as those associated with operating a small fermenter. The PVDF (thermoplastic fluoropolymer) footprint is of white color: In this way, color changes during the application can be precisely tracked.

The Hei-Mix S also has a robust housing made of polyamide and is suitable for continuous operation with stirring volumes of up to 5 liters. Thanks to a wide speed range of up to 2,200 rpm, you can mix your sample quickly but gently. Efficient work is therefore guaranteed.

In addition, you save space in your laboratory because the Hei-Mix S requires only 126 x 80 x 140 mm of space with a footprint of 104 mm in diameter.

Specifications

Rotation speed range	100 – 2,200 rpm
Speed accuracy	±5 %
Max. stirring capacity (H ₂ O)	5 l
Hotplate temperature	—
Heating power	—
Accuracy temperature setting	—
Temperature accuracy with external temp. sensor	—
Safety circuit hotplate	—
Plate diameter ø	104 mm
Plate material	PVDF
Sensor breakage protection	—
Residual heat indicator	—
Smooth start	yes
Analog / digital interface	—
Timer	—
Protection class DIN EN 60529	IP 21
Product Number	HEI-036110460

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
104 mm	HEI-036110460	439.09



HEI-MIX-L
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-MIX L

Based on our proven magnetic stirrer series with heating function, the Hei-Mix L was especially developed for applications with thermolabile substances. This is because this model has no heating, and the heat from the motor is also not transferred to the footprint.

The Hei-Mix L magnetic stirrer without heating function is ideal for applications up to 20 liters and can gently stir your solution in a speed range of 100-1.400 rpm. In addition, the rotation speed ramps up slowly until it has reached the desired value. This prevents splashes, uneven starts, or jumps of the stirring rod.

The patented Kera-Disk® footprint made of aluminum with a ceramic coating, is chemical-resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint.

Specifications

Rotation speed range	100 – 1,400 rpm
Speed accuracy	±2 %
Max. stirring capacity (H ₂ O)	20 l
Hotplate temperature	—
Heating power	—
Accuracy temperature setting	—
Temperature accuracy with external temp. sensor	—
Safety circuit hotplate	—
Plate diameter ø	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	—
Residual heat indicator	—
Smooth start	yes
Analog / digital interface	—
Timer	—
Protection class DIN EN 60529	IP 32
Product Number	HEI-036110465

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
145 mm	HEI-036110465	812.00





HEI-TOR-C
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE CORE

Heidolph's lightest overhead stirrer is here – with a torque of 40 Ncm!

Thanks to its weight of 2.3 kg, the Hei-TORQUE Core is easier to carry than the other models and can be mounted on a stand and/or in various closed systems. However, this does not mean that this stirrer will be less powerful.

The additional name "Core" emphasizes that it is a model of selected functions and important safety features that provide tangible help with any stirring task. Above all, the Hei-TORQUE Core scores with its simple operation: The quick-action chuck (Quick Chuck) can be opened and closed very easily without a key. The "Max" button allows you to reach the maximum speed of 2,000 rpm in no time. Thanks to the display, you can keep an overview of all application parameters.

The Hei-TORQUE Core has a quick-action chuck with a diameter of 10.5 mm and can therefore be combined with a variety of stirring tools. To achieve the best possible homogeneity, it is suitable for viscosities up to 10,000 mPa s or volumes up to 25 liters (H₂O).

Specifications

Number of speed gears	1
Rotation speed range	2 – 2,000 rpm
Rotation speed indicator	digital monochrom 2"
Speed control	electronic
Max. torque	40 Ncm
Torque indicator	symbol
Overheat protection	automatic cut-out
Viscosity max.	10,000 mPa s
Stirring cap. (H ₂ O), max.	25 l
Through-shaft design	✓
Shaft diameter, max.	10.5 mm
Counter/ Timer	✓
Analog / digital interface	—
Power rating motor input	105 W
Protection class DIN EN 60529	IP 42
Product number	HEI-036090005

<u>CODE</u>	<u>Price</u>
HEI-036090005	1,868.62



HEI-TOR-P
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE PRECISION

The devices of the Hei-TORQUE Precision line are Heidolph high performance overhead stirrers.

The Hei-TORQUE Value 100 is a overhead stirrer with a wide speed range (10 – 2,000 rpm) and a maximum torque of 100 Ncm. It can powerfully stir viscosities up to 60,000 mPas or volumes up to 50 liters (H₂O).

The Hei-TORQUE Precision 200 laboratory stirrer is ideal for the powerful stirring of viscosities up to 100,000 mPas or volumes up to 50 liters (H₂O). It has a wide speed range (10 – 2,000 rpm) and a maximum torque of 200 Ncm.

The Hei-TORQUE Precision 400 laboratory stirrer is ideal for the powerful stirring of viscosities up to 250,000 mPas or volumes up to 100 liters (H₂O). Thanks to its 2-gear stage design, it stirs particularly powerfully in the speed range up to 400 rpm and is therefore particularly suitable for applications with highly viscous media that require mixing in the lower speed range. However, operation at speeds of up to 2,000 rpm is also possible in the second speed.

In addition, the Hei-TORQUE Precision offers, above all, the possibility of ramp programming, process monitoring (including timer function, torque trend display as a value), as well as the necessary equipment for documenting your application parameters. For this it is equipped with two interfaces – USB and RS232 – which give you the greatest flexibility to connect the device to a PC, a programmable logic controller (PLC) or an automation system such as e.g. LabManager. The scope of delivery includes the free Hei-Control software for remote control of up to 4 devices via PC.

The overhead stirrer Hei-TORQUE Precision performs every stirring task with minimal noise thanks to the latest engine technology. The safety-related start/stop touch-function serves to minimize the risk of unintentional switching on.

Suitable for use in fume hoods or as a drive for reactor superstructures, the Hei-TORQUE Precision 100 has a quick-action chuck (quick chuck with safety ring) with a diameter of 10.5 mm, which can be combined with a large number of stirring tools.

Specifications

	1	1	2
Number of speed gears	1	1	2
Rotation speed range	10 – 2,000 rpm	10 – 2,000 rpm	10 – 400 rpm / 20 – 2,000 rpm
Rotation speed indicator	digital color 3.2"	digital color 3.2"	digital color 3.2"
Speed control	electronic	electronic	electronic
Max. torque	100 Ncm	200 Ncm	400 Ncm
Torque indicator	precise value	precise value	precise value
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity max.	60,000 mPa s	100,000 mPa s	250,000 mPa s
Stirring cap. (H ₂ O), max.	50 l	50 l	100 l
Through-shaft design	✓	✓	✓
Shaft diameter, max.	10.5 mm	10.5 mm	10.5 mm
Counter/ Timer	✓	✓	✓
Analog / digital interface	USB and RS 232	USB and RS 232	USB and RS 232
Power rating motor input	90 W	120 W	150 W
Protection class DIN EN 60529	IP 54	IP 54	IP 54
Product number	HEI-036093090	HEI-036093110	HEI-036093150

Max. Torque	CODE	Price
100 Ncm	HEI-036093090	2,746.20
200 Ncm	HEI-036093110	3,667.00
400 Ncm	HEI-036093150	5,076.00



**HEI-TOR-V
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE VALUE**

The Hei-TORQUE Value 100 is an overhead stirrer with a wide speed range (10 – 2,000 rpm) and a maximum torque of 100 Ncm. With it you can optimally stir viscosities up to 60,000 mPa s or volumes up to 50 liters (H₂O).

With Hei-TORQUE Value 200 you can optimally stir viscosities up to 100,000 mPa s or volumes up to 50 liters (H₂O). Thanks to a wide speed range from 10 to 2,000 rpm and a maximum torque of 200 Ncm, it works particularly powerful.

With Hei-TORQUE Value 400 you can optimally stir viscosities up to 250,000 mPa s or volumes up to 100 liters (H₂O). Thanks to its 2-gear stage design, it stirs particularly powerfully in the speed range up to 400 rpm and is therefore particularly suitable for applications with highly viscous media that require mixing in the lower speed range. However, operation at speeds of up to 2,000 rpm is also possible in the second speed.

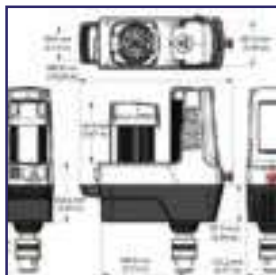
The Hei-TORQUE Value performs every stirring task with minimal noise thanks to the latest engine technology. This overhead stirrer is also very user-friendly in terms of operation and safety. The 2.4 inch display makes it very easy to set the application parameters and control the process (e.g. using the torque trend display). The safety-related start/stop touch-function serves to minimize the risk of unintentional switching on.

Suitable for use in fume hoods or as a drive for reactor superstructures, the Hei-TORQUE Value has a quick-action chuck (quick chuck with safety ring) with a diameter of 10.5 mm, which can be combined with a large number of stirring tools.

Specifications

Number of speed gears	1	1	2
Rotation speed range	10 – 2,000 rpm	10 – 2,000 rpm	10 – 400 rpm / 20 – 2,000 rpm
Rotation speed indicator	digital color 2.4"	digital color 2.4"	digital color 2.4"
Speed control	electronic	electronic	electronic
Max. torque	100 Ncm	200 Ncm	400 Ncm
Torque indicator	symbol	symbol	symbol
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity max.	60,000 mPa s	100,000 mPa s	250,000 mPa s
Stirring cap. (H ₂ O), max.	50 l	50 l	100 l
Through-shaft design	✓	✓	✓
Shaft diameter, max.	10.5 mm	10.5 mm	10.5 mm
Counter/ Timer	—	—	—
Analog / digital interface	—	—	—
Power rating motor input	90 W	120 W	150 W
Protection class DIN EN 60529	IP 54	IP 54	IP 54
Product number	HEI-036093030	HEI-036093050	HEI-036093070

<u>Max. Torque</u>	<u>CODE</u>	<u>Price</u>
100 Ncm	HEI-036093030	2,300.00
200 Ncm	HEI-036093050	3,220.00
400 Ncm	HEI-036093070	4,140.00



A powerful combination of torque and electronic sophistication. The robust ½ horsepower motor, PC/PLC communications and extensive features make the Caframo Crossover unparalleled in the market. Mixing up to 200 litres (55 gallons) of basic pre-mix, industrial pilot plant volumes, or full production batches, this portable mixer weighs only 12 kg (26.5 lb). The resistive touch screen enables simple feature operation (timers, alarms, rotation direction, resume on power up, start, stop) without removing your gloves! Control the mixer with a PC or PLC via USB, RS232 or 4-20 mA or data log speed and torque directly to a memory stick. Install immediately with standard 120 V cord set, and four bolt mounting. Optional plate or C-clamp set attaches the Crossover to a stand, drum or customer mount and allows optimal shaft angle in vessel. Includes chuck, chuck key, chuck shaft guard, installed screen protector, USB memory stick, mounting bolts, power cord, manual, calibration certificate and three year warranty.

Speed	50-1500 rpm		
Volume Maximum	200 L (55 US Gallons)		
Viscosity Maximum	180 000 mPa·s (180 000 cps)	CODE	Price
Torque Maximum	3000 N·cm (264 in-lbs = 4248 in-oz)	CLS-1540	4,113.50
Output Power	300 Watts (½ hp)		
Speed Display	Yes		
Speed – Low Range	50-299 rpm		
Speed – High Range	300-1500 rpm		
Speed Accuracy	Rolling average of 10 second period		
Torque Display	Yes		
Zero Torque	Yes		
Timer	Yes		
Alarm	Yes		
Connectivity Ports	Standard USB A, Mini USB B, DB9, 4-20 mA		
Through Shaft	Yes		
Chuck Maximum Shaft Diameter	16 mm (¾")		
Chuck and Shaft Guard	Yes		
Rotation Direction	Clockwise and counterclockwise		
Housing	Flame Retardant Nylon 6		
Weight	12 kg (26.5 lb)		
Voltage	120 volt		
Frequency	60 Hz		
Ambient Temperature Operation	5-40°C (41-104°F)		
Relative Humidity Operation	80%		
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.		
Warranty	3 years		

Mixer 120 volts, 60 Hz. Includes chuck, chuck key, chuck shaft guard, installed screen protector, USB memory stick, four mounting bolts, grounded North American cord set, and manual (digital and printed).

Features

- Resistive Touch Screen Display
- Intuitive Speed Adjustment
- Portable
- 120 V cord set
- Counter-clockwise rotation selection
- Name Customization
- Resume on Power up
- Torque Zero feature
- Cycle Timer
- Run Time Display
- Torque Min/Max Setting
- Audible Alarm
- PC/PLC connectivity
- Multiple com ports
- Data Logging
- Sealed Housing
- Quick Stop
- Installed Screen Protector
- Chuck Shaft Guard
- Adjustable Keyed Chuck
- Automatic Transmission
- Brushless DC motor – fan cooled
- Maintenance Free

Benefits

- Operate while wearing PPE or sterility gloves
- Precisely set desired speed or adjust on screen
- Meet the changing needs of multiple facilities
- Easy installation to North American grounded outlet
- Improve mixing and impeller functionality
- Assign an identifier name or number to each mixer
- Optional auto-start operation upon power restoration
- Monitor viscosity changes as they relate to torque
- Set total mixing time; stop mixing or sound alarm
- Track total mixing time from power up
- Stop mixing or sound alarm at desired torque reading
- Notification of desired time or torque level
- Integrate into existing monitoring and control systems
- Capability for RS232 RS485 PLC and Ethernet or PC
- Document results: speed / torque / time / date
- Protection in aggressive environments; wash down
- Easily access button to immediately stop mixing
- Protects display; replaceable if covered by splashes or dust
- Guard spinning chuck and upper shaft for safety
- Holds shaft securely; diameters up to 16 mm (¾ in)
- Shift gears without manually stopping mixer
- High efficiency no maintenance motor
- Always available – no required maintenance schedule

CLS-1540

CAFRAMO LAB SOLUTIONS®, OVER-HEAD STIRRER, CROSSOVER 1540, 115V





Caframo's Ultra Torque 1850 lives up to its name, delivering high torque mixing action within the footprint of a bench top overhead stirrer. This model is a proven performer for cream and gel formulations, paint grinds, premixes, and small scale production batches. The TENV housing and quality construction are a match in industrial, food, and pharma manufacturing environments. You are guaranteed to get more power out of your Caframo stirrer.

"These are strong running machines that get abused almost daily." Director of Operations, coatings toll manufacturer.



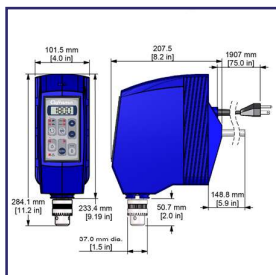
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



Speed	12-1800 rpm
Volume Maximum	80 L (21 US Gallons)
Viscosity Maximum	90 000 mPa·s (90 000 cps)
Torque Maximum	568 N·cm (50 in-lbs = 800 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	12-360 rpm
Speed – High Range	360-1800 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	568 N·cm (50 in-lbs = 800 in-oz)
Torque Maximum – High Speed	114 N·cm (10 in-lbs = 160 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC1850
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
ULTRA TORQUE, 115
VOLT

CODE Price
 CLS-BDC1850 1,540.20



The perfect combination of higher torque and higher speed, Caframo's Universal 3030 offers versatility to conquer the widest range of applications by a bench top stirrer. From larger batches of buffers and media to lotions and slurries, this stirrer will exceed your expectations. Ideal for workplaces with changing mixing needs as the business evolves, the 3030 will provide the most value for your overhead stirrer investment.

"I have purchased several of these over the years. They work great, never seem to break. I do not have any improvements to suggest." Energy technologies innovator.

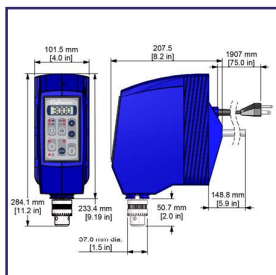
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



Speed	20-3000 rpm
Volume Maximum	60 L (15.5 US Gallons)
Viscosity Maximum	50 000 mPa·s (50 000 cps)
Torque Maximum	341 N·cm (30 in-lbs = 480 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	20-600 rpm
Speed – High Range	600-3000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	341 N·cm (30 in-lbs = 480 in-oz)
Torque Maximum – High Speed	68 N·cm (6 in-lbs = 96 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC3030
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
UNIVERSAL, 115
VOLT

CODE Price
 CLS-BDC3030 1,540.20



Caframo's Ultra Speed 6015 produces results in high speed applications, including emulsions, microencapsulations, low viscosity slurries and high shear dispersions of powders. Digital display and precision control of speed settings make repeatability of process easy. Safety features shut down the stirrer if there is overheating or torque overload, ensuring a long stirrer life. Operate with speeds up to 6000 rpm with peace of mind.

"If it doesn't say Caframo it is not a mixer." Scientific Director, cosmetics manufacturer.

Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.

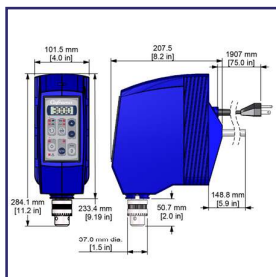


Speed	40-6000 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	170 N·cm (15 in-lbs = 240 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	40-1200 rpm
Speed – High Range	1200-6000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	170 N·cm (15 in-lbs = 240 in-oz)
Torque Maximum – High Speed	34 N·cm (3 in-lbs = 48 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.

Remember to order a stand, clamp and impeller for a complete system to start mixing.



Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC6015
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
ULTRA SPEED, 115
VOLT

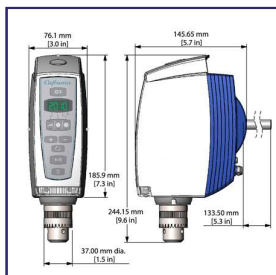
CODE Price
 CLS-BDC6015 1,540.20



Caframo has a history of great innovation in overhead stirrers. The BDC2010 stirrer is no exception and delivers 25% more power than the BDC2002 while keeping the same compact footprint, Stirlight™ and through shaft. The BDC2010 works smarter and allows the user complete mixing control. The stirring direction can be changed with the touch of the reversing button. The countdown timer times a stirring activity and beeps when completed. In xRxmode the stirrer is set up to continuously reverse from one direction to the other for a set length of time. (Picture the agitation mode of a top loading washing machine!)



Speed	40-2010 rpm (clockwise and/or counterclockwise)
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	90 N·cm (7.9 in-lbs = 127 in-oz)
Output Power	50 Watts (1/15 hp)
Speed Display	Yes
Speed Accuracy	± 1 rpm
Torque Display	No
Zero Torque	No
Timer	Countdown 1-2000 minutes (33.3 hours)
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Available
Rotation Direction	Clockwise and counterclockwise
xRx Mode	1-2000 minutes (33.3 hours)
Housing	Epoxy-coated zinc
Weight	Power Supply: 0.6 kg (1.2 lb), Stirrer: 3.0 kg (7 lb)
IP Rating	IP42
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA-22.2 Std No. 61010-1 & 61010-2-051 3rd Ed., UL/ANSI Std No. 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2 3rd Ed.
Warranty	3 years



Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes support rod, chuck, chuck key, external power supply, grounded North American power cord, and printed manual.

Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Clockwise and counterclockwise stirring
- Timer
- Stirlight™
- Sealed housing
- Brushless DC motor
- Digital display
- Through shaft
- Auto Start
- Electronic digital control

Benefits

- Stirring versatility
- Repeatability to process
- Allows monitoring of mixing properties of batches
- Keeps liquids and moisture out in aggressive environments
- High efficiency (less heat)
- Precise speed adjustment
- Easy impeller adjustment saves time
- Resumes stirring at last set speed automatically when power is restored
- Set speed is maintained as viscosity changes
- Automatic overload protection

CLS-BDC2010
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
REVERSING DIGITAL
WITH COUNTDOWN
TIMER

CODE	Price
CLS-BDC2010	1,240.30





Caframo's BDC2002 offers ultimate versatility and maximizes productivity. With the push of a button, the unique Stirlight™ lights up so that solutions can be seen clearly. Included in each purchase: Overhead stirrer motor, chuck, chuck key, support rod, external power supply, grounded power cord, manual in four languages (English, French, Spanish and German) and three year warranty.



Speed	40-2002 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	15 000 mPa·s (15 000 cps)
Torque Maximum	70 N·cm (6 in-lbs = 100 in-oz)
Output Power	40 Watts (1/18 hp)
Speed Display	Yes
Speed Accuracy	/- 1 rpm
Torque Display	No
Zero Torque	No
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Available
Rotation Direction	Clockwise only
Housing	Epoxy-coated zinc
Weight	Power Supply: 0.5 kg (1 lb), Stirrer: 3.0 kg (7 lb)
IP Rating	IP42
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA-22.2 Std No. 61010-1 & 61010-2-051 3rd Ed., UL/ANSI Std No. 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2 3rd Ed.
Warranty	3 years



Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes support rod, chuck, chuck key, external power supply, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Stirlight™
- Sealed housing
- Brushless DC motor
- Digital display
- Through shaft
- Auto Start
- Electronic digital control

Benefits

- Allows monitoring of mixing properties of batches
- Keeps liquids and moisture out in aggressive environments
- High efficiency (less heat)
- Precise speed adjustment
- Easy impeller adjustment saves time
- Resumes stirring at last set speed automatically when power is re-stored
- Set speed is maintained as viscosity changes
- Automatic overload protection

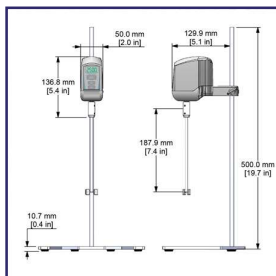
CLS-BDC2002
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
COMPACT DIGITAL,
100-240 VOLT

CODE	Price
CLS-BDC2002	988.30





The ultimate in compact design measuring only two by four inches. The BDC250 offers great capabilities in a small package; used in formulation, R&D, clinical research, education labs, anywhere a magnetic stirrer is used. It fits into small spaces and can be easily transported to other labs or classrooms. Everything you need assembled into a complete stirring package. Included in each purchase: overhead stirrer motor, integral clamp, stainless steel collet, external power supply, grounded power cord, stand, axial and radial mixing blades, mixing shaft, manual in four languages (English, French, Spanish and German) and three year warranty.



Speed	50-2500 rpm
Volume Maximum	2 L (0.5 US Gallon)
Viscosity Maximum	Water-like
Torque Maximum	10 N·cm (0.9 in-lbs = 14 in-oz)
Output Power	7 Watts (1/100 hp)
Speed Display	Yes
Speed Accuracy	± 10 rpm
Torque Display	No
Zero Torque	No
Timer	No
Through Shaft	No
Collet Shaft Diameter	6 mm (0.24")
Chuck Guard	No
Rotation Direction	Clockwise only
Housing	Chemical-resistant nylon
Weight	Power Supply: 0.105 kg (0.23 lb), Stirrer: 0.367 kg (0.81 lb)
IP Rating	IP42
Voltage	120 volt/230 volt must use Caframo power supply
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Stand Rod	500 mm (19 11/16")
Impeller Shaft Length	187 mm x 6.0 mm (7 3/8" x 0.24")
Radial and Axial Blades	12 mm x 30 mm (1/2" x 1 3/16")
Approvals – North America	Certified to applicable CSA and UL standards
Approvals – Europe	Certified to CE EMC Immunity standards
Warranty	3 years

CLS-BDC250 CAFRAMO LAB SOLUTIONS®, OVER- HEAD STIRRER, PETITE DIGITAL, 100- 240 VOLT

Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes integral clamp, collet, mixing shaft, axial and radial mixing blades, stand, power supply, grounded North American power cord, and printed manual.

Features

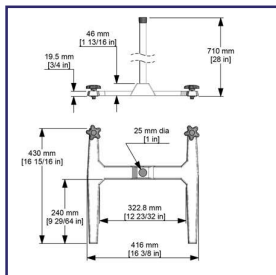
- Brushless DC motor
- Digital display
- Electronic digital control
- Auto Start
- Purchased as a complete package

Benefits

- High efficiency/less heat
- Easy to use and repeatable settings
- Precise speed adjustment
- Resumes stirring at last set speed automatically when power is restored
- Everything you need for the classroom or lab bench

CODE	Price
CLS-BDC250	387.30





CLS-A110 CAFRAMO LAB SO- LUTIONS®, SAFETY STAND WITH BASE

This durable stand provides excellent stability for bench stop stirrers even when agitating viscous materials. The wide base and H configuration allow for a wide range of vessel sizes, while the 711 mm (28 in) stand rod enables strong engagement with stand clamp. Portable and adaptable to address changing work spaces, equipment, and priorities. Additional rods of 965 mm (38 in) and 1219 mm (48 in) lengths are available, all interchangeable with the common base. The cast zinc-aluminum alloy base is coated for protection from corrosion and chemical spills.

Rod Diameter	25 mm (1 in)
Rod Length	711 mm (28 in)
Rod Material	304 stainless steel tube
Weight	5 kg (11 lb)
Base Material	Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
Base Footprint	416 W x 430 L mm (16 3/8 x 16 15/16 in)

A110	Safety stand with 711 mm (28 in) rod, stand base and allen key.
A110BASE	Safety stand base and allen key. Order rod separately (Parts ROD28, ROD38, ROD48)
ROD28	Stand rod only, 711 mm (28 in) length.
ROD38	Stand rod only, 965 mm (38 in) length.
ROD48	Stand rod only, 1219 mm (48 in) length.

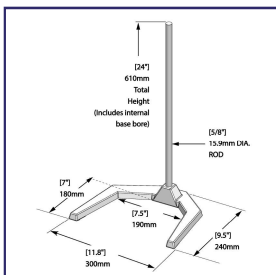
Features

- Wide base and H configuration
- Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- Compatible with three lengths of stand rods
- Rods interchangeable using same allen key

Benefits

- Excellent stability
- Chemical and corrosion resistant – durable and easy to clean
- Flexibility to mount stirrer higher for taller vessels and reaction systems
- Easy to adapt to process needs

Description	CODE	Price
Stand Only	CLS-A110	233.00
Base Only	CLS-A110BASE	182.90
Complete with 28" Rod	CLS-A110-28	292.20
Complete with 38" Rod	CLS-A110-38	318.80
Complete with 48" Rod	CLS-A110-48	344.40



CLS-A210 CAFRAMO LAB SO- LUTIONS®, COMPACT STAND WITH BASE

Sturdy stand in a smaller bench footprint, for Caframo compact stirrer models CLS-BDC2002 and CLS-BDC2010. The unique offset design accommodates Caframo clamp so stirrer locates impeller in centre of vessel. The cast zinc-aluminum alloy base is coated for protection from corrosion and chemical spills.

Compact stand with 610 mm (24 in) rod, stand base, and allen key

Rod Diameter	16 mm (5/8 in)
Rod Material	304 stainless steel
Weight	2.6 kg (5.7 lb)
Base Material	Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
Base Footprint	240 mm x 300 mm (9 1/2 in x 11 3/4 in)

Features

- Unique offset design centers impeller in vessel
- Base is cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- Small footprint

Benefits

- Base provides excellent stability for smaller sized stirrers
- Chemical and corrosion resistant – durable and easy to clean
- Able to use within limited bench space

CODE	Price
CLS-A210	206.40



**CLS-A215****CAFRAMO LAB SOLUTIONS®, COMPACT STAND WITH BASE**

Support stand for Caframo's CLS-BDC250 Petite Stirrer. Conveniently portable and easy to assemble for changing work stations or field work. The cast mild steel base is coated for protection from corrosion and chemical spills. Included as part of CLS-BDC250 stirrer package.

Petite stand with 500 mm (19 ¾ in) rod, stand base, and lock nut.

Rod Diameter	10 mm (¾")
Rod Length	500 mm (19 ¾")
Rod Material	304 stainless steel
Weight	900 g (2 lb)
Base Material	Cast mild steel coated with chemical resistant epoxy paint
Base Footprint	190 mm x 240 mm (7 ½" x 9 ⅝")

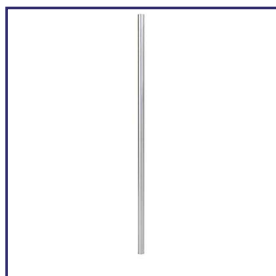
Features

- Base is mild steel coated with chemical resistant epoxy paint
- Small footprint
- Stand weighs less than 1 kg (2.2 lb)

Benefits

- Chemical and corrosion resistant – durable and easy to clean
- Excellent stability within limited bench space
- Easily portable

<u>CODE</u>	<u>Price</u>
CLS-A215	134.90

**CLS-ROD****CAFRAMO LAB SOLUTIONS®, STANDS & CLAMPS, STAND ROD**

Stand rod only, compatible with A110 stand base. Customize your A112 or A114 stand to fit your apparatus. Stand rod composed of 304 stainless steel, 965 mm (38 in) long and 25 mm (1 in) diameter.

Also available in additional lengths: ROD28 is 711 mm (28 in) and ROD48 is 1219 mm (48 in).

Rod Diameter	25 mm (1 in)
Rod Material	304 stainless steel tube

Features

- 304 stainless steel
- Compatible in A110 stand base
- Installed using base allen key

Benefits

- Chemically inert and corrosion resistant
- Flexibility to customize stand for taller vessels and chemical reaction systems
- Easy to adapt to apparatus needs

<u>Length</u>	<u>CODE</u>	<u>Price</u>
28"	CLS-ROD28	82.70
38"	CLS-ROD38	93.00
48"	CLS-ROD48	103.20

**CLS-A300****CAFRAMO LAB SOLUTIONS®, STANDS & CLAMPS, ACCESSORY ROD**

Accessory rod to be paired with A112, A113, and A114 stands. One or two rods can thread into the front legs of the stand base, determined by application. Useful for mounting accessories or reaction apparatus. Rod is 711 mm (28 in) long and 16 mm (⅝ in) diameter, with one threaded end and a stainless steel jam nut. Made of 303 stainless steel.

Accessory rod 711 x 16 mm (28 x ⅝ in), threaded with nut.

Rod Diameter	16 mm (⅝ in)
Rod Length	711 mm (28 in)
Rod Material	303 stainless steel

Features

- 303 stainless steel
- Threads into the front legs of the A112 A113 or A114 stand base

Benefits

- Chemically inert and corrosion resistant
- Able to mount additional reaction apparatus

<u>CODE</u>	<u>Price</u>
CLS-A300	130.20





A popular clamp for its durability, strength, and ease of use. Includes a convenient place to hold chuck key. The cast zinc-aluminum alloy is coated for protection from corrosion and chemical spills.

Features

- Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- No tool required
- Place to hold chuck key

Benefits

- Chemical and corrosion resistant – durable and easy to clean
- Easy and quick one-handed tightening
- Convenient and accessible location when key is needed



CLS-A120
CAFRAMO LAB SO-
LUTIONS®, FASTEN-
ING CLAMP

Accommodates Stirrer Rod

12.5 mm (½ in)

16 mm (⅝ in)

CODE

CLS-A120

CLS-A122

Price

94.00

104.20



CLS-A600SET
CAFRAMO LAB SO-
LUTIONS®, HIGH
SPEED COLLET SET

Achieve greater stability stirring at speeds 1800-6000 rpm. Set includes collet, 16 mm (⅝ in) 440 stainless steel shaft with an end turned down to 8 mm (⅝ in), and three impeller 316 stainless steel blades with 8 mm (⅝ in) bores. Shaft and blades have polished finish. Set includes straight blade A163, dispersion blade A164, and pitched blade propeller A165. Tools and hardware are included for installation to a 13 mm (½ in) motor output shaft of overhead stirrer. To be used with BDC3030 or BDC6015 overhead stirrers.

Collet, 16 mm (⅝ in) diameter shaft, straight blade A163, dispersion blade A164, pitched blade propeller A165, and allen key.

Speed Range	1800-6000 rpm
Fits Motor Shaft	13 mm (½ in)
Collet Material	316 stainless steel
Shaft Material	Polished 440 stainless steel
Shaft Length	260 mm (10 ¼ in)
Shaft Diameter	16 mm (⅝ in)
Impeller Bores	8 mm (⅝ in)
A163 Diameter	40 mm (1 ⅝ in)
A164 Diameter	48 mm (1 ⅞ in)
A165 Diameter	64 mm (2 ½ in)
Blade Rotation	Left hand
Weight	660 g (1.5 lb)
Weight	46 g (1.6 oz)

Features

- For high speed mixing (1800-6000 rpm)
- Chuck key or allen key attaches collet to output shaft
- Shaft has turned down end to 8 mm (⅝ in)

Benefits

- Greater stability for extended stirring at higher speeds
- No additional tools required
- Customize to any impeller with 8 mm (⅝ in) bore

CODE

CLS-A600SET

Price

556.90





CLS-S100
CAFRAMO LAB SO-
LUTIONS®, IMPELLER
SET

Shaft and impeller blades to fit collet of BDC250 stirrer, all electropolished 316L stainless steel. Includes one radial blade and one axial blade and interchangeable set screw. Is included in BDC250 stirrer package.

Mixing shaft, axial and radial mixing blades, and set screw.

Impeller Shaft Dimensions	188 x 6.0 mm (7 3/8 x 0.24 in)
Radial and Axial Blades Dimensions	13 x 30 mm (1/2 x 1 3/16 in)
Blade Rotation	Left hand
Material	Electropolished 316L stainless steel
Weight	40 g (1.4 oz)

Features

- Electropolished 316 L stainless steel
- Axial and radial blades included
- Set screw compatible with standard tool

Benefits

- Chemical and corrosion resistant
- Choice of two types of flow
- Blades easily interchangeable

<u>CODE</u>	<u>Price</u>
CLS-S100	89.70



CLS-CG1
CAFRAMO LAB SO-
LUTIONS®, CHUCK
GUARD

Implement safety with a quick snap of this clear polyurethane chuck guard to the stirrer housing. Creates barrier around moving chuck, as well as protects chuck from chemical splashes. Use with overhead stirrers BDC1850, BDC3030, and BDC6015. Easy to attach and remove.

Chuck guard, clear polyurethane

Material	Chemical-resistant polyurethane
Weight	14 g (0.5 oz), magnets

Features

- Magnets securely snap guard into place on stirrer housing over the chuck
- Creates a barrier around the spinning chuck
- Chemical-resistant polyurethane

Benefits

- Easy to install and remove
- Protects users from the moving chuck
- Protects the chuck from splashes

<u>CODE</u>	<u>Price</u>
CLS-CG1	65.20



CLS-CG5
CAFRAMO LAB SO-
LUTIONS®, CHUCK
GUARD

Implement safety by sliding this guard over the chuck. Creates barrier around moving chuck, with the snug fit protecting from splashing and corrosive fumes. Use with overhead stirrers BDC2002, BDC2010, BDC1850, BDC3030, BDC6015.

BDC1850, BDC3030, and BDC6015 have chuck guard CG1 included with stirrer

Material	Chemical-resistant vinyl
Fasteners	Slides onto chuck
Weight	18 g (0.65 oz)

Features

- Black chemical resistant vinyl
- Slides into place over the chuck

Benefits

- Protects the chuck from splashes
- Simple to install and remove

<u>CODE</u>	<u>Price</u>
CLS-CG5	16.30



CLS-13CSET
CAFRAMO LAB SO-
LUTIONS®, CHUCK
SET

Chuck is used with Caframo High Torque and Compact overhead stirrers, accepting impeller shafts up to 10 mm ($\frac{3}{8}$ in) diameter. Chuck key includes hex tool for removal from stirrer's output shaft for cleaning or replacement. Through shaft capability allows for easy adjustment of impeller height. Compatible with Caframo chuck guards CG1 and CG5.

Chuck and chuck key for Caframo High Torque and Compact stirrers, includes set screw and hex tool for installation.

Material	420 stainless steel
Through Shaft	Yes
Impeller Shaft Diameters	Adjustable to 10 mm ($\frac{3}{8}$ in)
Fits Motor Shaft	13 mm ($\frac{1}{2}$ in)
Multipurpose Tool	Chuck key and 2.5 mm hex tool in one
Weight	280 g (0.6 lb)

Features

- Accepts shafts up to 10 mm ($\frac{3}{8}$ in) diameter
- Through shaft
- 420 stainless steel
- Keyed chuck
- Chuck key includes 2.5 mm hex installation tool
- Available chuck guards CG1 and CG5

Benefits

- Adjustable for a wide range of shaft diameters
- Easy adjustment of impeller height
- High strength and high wear resistance
- Secure attachment for high torque mixing
- Tool provided for chuck installation and removal for cleaning
- Chuck guard option for safety and chuck protection from splashes

<u>CODE</u>	<u>Price</u>
CLS-13CSET	132.60



CLS-13CKEY
CAFRAMO LAB SO-
LUTIONS®, CHUCK
KEY

Chuck key from 13CSET. Firmly tightens the chuck to secure the mixing shaft in place, and loosens chuck for quick removal or adjustment of impeller. Includes 2.5 mm hex tool for installation and removal of chuck from stirrer's output shaft for cleaning or replacement.

Chuck key only for 13CSET chuck, includes hex tool for chuck installation.

Material	420 stainless steel
Multipurpose Tool	Chuck key and 2.5 mm hex tool in one
Dimensions	81 x 40 mm ($3 \frac{3}{16}$ x $1 \frac{9}{16}$ in)
Weight	40 g (1.4 oz)

Features

- 420 stainless steel
- Multipurpose tool

Benefits

- High strength and high wear resistance
- Chuck key and 2.5 mm hex tool provided for installation and removal of chuck

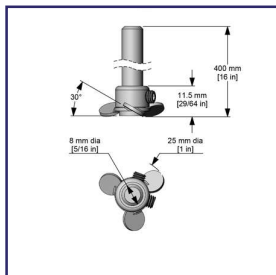
<u>CODE</u>	<u>Price</u>
CLS-13CKEY	25.50





Blade and shaft are conveniently bundled together, able to address a variety of stirring applications. This axial flow impeller is effective for low shear mixing. The 25 mm (1 in) diameter blade fixes to an 8 mm ($\frac{5}{16}$ in) diameter shaft with included set screws. Blade and shaft are both 316L stainless steel, with the propeller blade electropolished finish and the shaft with passivated finish.

Pitched blade propeller, 25 mm (1 in) diameter blade paired with 400 mm (16 in) shaft, includes set screws.



Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ in)
Blade Diameter	25 mm (1 in)
Blade Rotation	Left hand
Blade Material	Electropolished 316L stainless steel
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Shaft Material	Passivated 316L stainless steel
Weight	168 g (0.37 lb)

Features

- 316L stainless steel
- Secured to shaft with set screws
- Pitched blade propeller
- High speed low shear axial flow

Benefits

- Chemically inert and corrosion resistant
- Able to adjust position of impeller blade along shaft
- Scale up advantage if propeller used in production
- Serves a wide range of applications – a popular choice of impeller

CLS-A190
CAFRAMO LAB SO-
LUTIONS®, IMPELLER
& SHAFT

<u>CODE</u>	<u>Price</u>
CLS-A190	98.90



This popular impeller serves a wide range of stirring applications, pairing the blade and shaft in a convenient package. This axial flow impeller is effective for high speed, low to medium viscosity mixing. The 64 mm (2 $\frac{1}{2}$ in) diameter blade fixes to an 8 mm ($\frac{5}{16}$ in) diameter shaft with included set screws. Blade and shaft are electropolished 316L stainless steel. For low shear, high top to bottom pumping capacity with high gas injection, able to vortex 19 L (5 gal) of water at 3600 rpm. This product replaces the Pitched Blade Propeller Model CLS-A160.

Cast pitched blade propeller, 64 mm (2 $\frac{1}{2}$ in) diameter blade paired with 400 mm (16 in) shaft, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Blade Diameter	64 mm (2 $\frac{1}{2}$ in)
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Material	Electropolished 316L stainless steel
Weight	181 g (0.4 lb)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

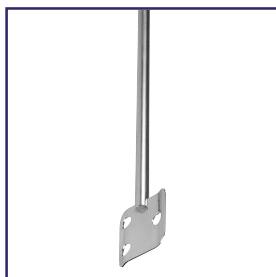
Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A166	115.20

CLS-A166
CAFRAMO LAB SO-
LUTIONS®, PRO-
PELLER & SHAFT,
PITCHED BLADE





CLS-A250
CAFRAMO LAB SO-
LUTIONS®, COMPACT
SQUARE BLADE

This tangential flow impeller is effective for low speed, high viscosity mixing. The 38 mm (1 ½") square blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. For stirring small volumes of viscous product.

Square blade impeller, 38 mm (1 ½ in) square blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	38 mm (1 ½") square blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	159 g (0.3 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A250	97.90



CLS-A150
CAFRAMO LAB SO-
LUTIONS®, SQUARE
BLADE IMPELLER

This tangential flow impeller is effective for low speed, high viscosity mixing. The 70 mm (2 ¾") square blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. For stirring small volumes of viscous product.

Square blade impeller, 70 mm (2 ¾ in) square blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	70 mm (2 ¾") square blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	180 g (0.4 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A150	98.90



CLS-A141
CAFRAMO LAB SO-
LUTIONS®, COLLAP-
SIBLE BLADE
IMPELLER

This radial flow impeller is a popular choice for high speed, low viscosity mixing in carboys or narrow neck flasks. The blades are pinned to an 8 mm (5/16") diameter shaft, fanning out with agitation to a maximum diameter of 90 mm (3 ½"). Blades and shaft are electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 1000 rpm.

Straight blade impeller, 10 – 90 mm (¾ – 3 ½ in) diameter blade, pinned to shaft

Flow Pattern	Radial
Blade Diameter	10 mm – 90 mm (¾" – 3 ½")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	127 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Collapsible blades enter any opening over 10 mm (¾ in) diameter
- Pinned to shaft

Benefits

- Chemically inert and corrosion resistant
- Fits in narrow neck vessels and carboys
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A141	91.80



CLS-A140
CAFRAMO LAB SO-
LUTIONS®, PIVOTING
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 60 mm (2 3/8") diameter straight blade is pinned to an 8 mm (5/16") diameter shaft, allowing blade to pivot with agitation. Blade and shaft are electropolished 316L stainless steel. A moderate shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 800 rpm.

Straight blade impeller, 60 mm (2 3/8 in) diameter blade, pinned to shaft

Flow Pattern	Radial
Blade Diameter	60 mm (2 3/8")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	126 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Pinned to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A140	96.90



CLS-A130
CAFRAMO LAB SO-
LUTIONS®, CROSSED
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 50 mm (2") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with high vortexing properties, creating a vortex in 19 L (5 gal) of water at 900 rpm.

Crossed blade impeller, welded to shaft

Flow Pattern	Radial
Blade Diameter	50 mm (2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	128 g (0.3 lb)

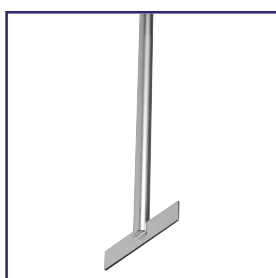
Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A130	91.80



CLS-A131
CAFRAMO LAB SO-
LUTIONS®, STRAIGHT
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 50 mm (2") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 1200 rpm.

Straight blade impeller, 50 mm (2 in) diameter blade, welded to shaft

Flow Pattern	Radial
Blade Diameter	50 mm (2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	128 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A131	91.80





CLS-A231

CAFRAMO LAB SOLUTIONS®, COMPACT STRAIGHT BLADE

This radial flow impeller is effective for high speed, low viscosity mixing. The 30 mm (1 ¼") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties.

Straight blade impeller, 32 mm (1 ¼ in) diameter blade, welded to shaft

Flow Pattern	Radial
Blade Diameter	30 mm (1 ¼")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	120 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A231	91.80



CLS-A163

CAFRAMO LAB SOLUTIONS®, STRAIGHT BLADE ONLY

Straight blade of 40 mm (1 ½") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear, low viscosity mixing with moderate vortexing, this blade will vortex 19 L (5 gal) of water at 1200 rpm.

Straight 40 mm (1 ⅝ in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in the A600SET high speed collet set.

Flow Pattern	Radial
Bore Diameter	8 mm (5/16")
Blade Diameter	40 mm (1 ½")
Blade Height	13 mm (½")
Material	Electropolished 316L stainless steel
Weight	20 g (0.71 oz)

Features

- Electropolished 316L stainless steel
- Straight blade

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A163	77.50





CLS-A164 CAFRAMO LAB SO- LUTIONS®, DISPER- SION BLADE ONLY

Dispersion blade of 48 mm (1 7/8") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear mixing at medium to high speeds.

Precision dispersion 48 mm (1 7/8 in) blade only, with 8 mm (5/16 in) bore, includes set screws

This blade is included in the A600SET high speed collet set.

Flow Pattern	Laminar
Bore Diameter	8 mm (5/16")
Blade Diameter	48 mm (1 7/8")
Material	Electropolished 316L stainless steel
Weight	38.4 g (1.35 oz)

Features

- Electropolished 316L stainless steel
- High shear

Benefits

- Chemically inert and corrosion resistant
- Broken particles are dispersed by the laminar flow set up by the blade

<u>CODE</u>	<u>Price</u>
CLS-A164	189.70



CLS-A165 CAFRAMO LAB SO- LUTIONS®, PITCHED BLADE ONLY

Pitched blade propeller of 65 mm (2 1/2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection, this blade will vortex 19 L (5 gal) of water at 3600 rpm.

Cast pitched blade propeller 64 mm (2 1/2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	65 mm (2 1/2")
Material	Electropolished 316L stainless steel
Weight	23 g (0.8 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A165	92.80





CLS-A551
CAFRAMO LAB SO-
LUTIONS®, TURBINE
3 BLADE PROPELLER
ONLY

Turbine blade of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear mixing with moderate vortexing.

Turbine 3 blade propeller 50 mm (2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

Flow Pattern	Radial
Bore Diameter	8 mm (5/16")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	16.2 g (0.6 oz)

Features

- Electropolished 316L stainless steel
- Turbine 3 blade propeller

Benefits

- Chemically inert and corrosion resistant
- High shear with moderate vortexing characteristics

<u>CODE</u>	<u>Price</u>
CLS-A551	39.00



CLS-A553
CAFRAMO LAB SO-
LUTIONS®, TURBINE
3 BLADE PROPELLER
ONLY

Turbine blade of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 9.5 mm (3/8") bore is compatible with Caframo shafts P-A713, P-A723, P-A733, P-A743, and P-A753. Set screws included. For high shear mixing with moderate vortexing.

Turbine 3 blade propeller 50 mm (2 in) blade only, with 9.5 mm (3/8 in) bore, includes set screws.

Flow Pattern	Radial
Bore Diameter	9.5 mm (3/8")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	15.9 g (0.6 oz)

Features

- Electropolished 316L stainless steel
- Turbine 3 blade propeller

Benefits

- Chemically inert and corrosion resistant
- High shear with moderate vortexing characteristics

<u>CODE</u>	<u>Price</u>
CLS-A553	39.00



CLS-A511
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 25 mm (1") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 25 mm (1 in) blade only, with 8 mm (5/16 in) bore, includes set screws

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	25 mm (1")
Material	Electropolished 316L stainless steel
Weight	7.0 g (0.25 oz)

Features

- 316L stainless steel
- Secured to shaft with set screws
- Pitched blade propeller
- High speed low shear axial flow

Benefits

- Chemically inert and corrosion resistant
- Able to adjust position of impeller blade along shaft
- Scale up advantage if propeller used in production
- Serves a wide range of applications – a popular choice of impeller

<u>CODE</u>	<u>Price</u>
CLS-A511	37.00





CLS-A521
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 38 mm (1 ½") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 38 mm (1 ½ in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	38 mm (1 ½")
Material	Electropolished 316L stainless steel
Weight	9.4 g (0.33 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A521	37.00



CLS-A531
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 50 mm (2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	12.9 g (0.46 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A531	37.00





CLS-A533
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 9.5 mm ($\frac{3}{8}$ ") bore is compatible with Caframo shafts P-A713, P-A723, P-A733, P-A743, and P-A753. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 50 mm (2 in) blade only, with 9.5 mm ($\frac{3}{8}$ in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	9.5 mm ($\frac{3}{8}$ ")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	12.9 g (0.46 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A533	37.00



CLS-A541
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 75 mm (3") diameter, composed of electropolished 316L stainless steel. The 8 mm ($\frac{5}{16}$ ") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 78 mm (3 in) blade only, with 8 mm ($\frac{5}{16}$ in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ ")
Blade Diameter	75 mm (3")
Material	Electropolished 316L stainless steel
Weight	29.7 g (1.0 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A541	41.00





Pitched blade turbine of 100 mm (4 in) diameter, composed of electropolished 316L stainless steel. The 8 mm ($\frac{5}{16}$ in) bore is compatible with all Caframo shafts. Set screws included. Axial flow with moderate shear for moderate viscosity mixing.

Pitched 4 blade turbine 100 mm (4 in) blade only, with 8 mm ($\frac{5}{16}$ in) bore, includes set screws.

Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ in)
Blade Diameter	100 mm (4 in)
Blade Rotation	Left hand
Pitch	45°
Material	Electropolished 316L stainless steel
Weight	46 g (1.6 oz)

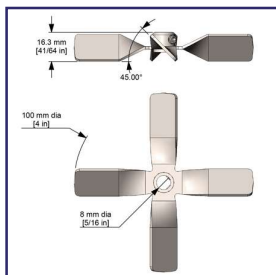
Features

- Electropolished 316L stainless steel
- Four-blade pitched turbine
- Moderate shear axial flow
- Secured to shaft with set screws

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if turbine used in production
- Serves a wide range of applications
- Able to add multiple blades along shaft and easy to clean

<u>CODE</u>	<u>Price</u>
CLS-A561	77.00



CLS-A561
CAFRAMO LAB SO-
LUTIONS®, 4 BLADE
PITCHED ONLY



A radial flow PTFE impeller for high speed, low viscosity mixing in narrow neck flasks. The blades are attached to an 8 mm ($\frac{5}{16}$ in) diameter PTFE-coated shaft, fanning out with agitation to a maximum diameter of 40 mm ($1\frac{1}{2}$ in). The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE Collapsible Impeller, up to 40 mm ($1\frac{5}{16}$ in) diameter blade

Flow Pattern	Radial
Blade Diameter	40 mm ($1\frac{1}{2}$ in)
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	91 g (0.2 lb)

Features

- PTFE blades
- Collapsible blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece

Benefits

- Excellent chemical (including acidic and caustic) resistance
- Fits in narrow neck vessels and Erlenmeyer flasks
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A180	205.80

CLS-A180
CAFRAMO LAB SO-
LUTIONS®, PTFE
COLLAPSIBLE IM-
PELLER





CLS-A183
CAFRAMO LAB SO-
LUTIONS®, PTFE AN-
CHOR PADDLE

A tangential flow PTFE impeller for low speed, higher viscosity mixing. The 80 mm (3 1/8") blade is attached to an 8 mm (5/16") diameter PTFE-coated shaft, designed for use in round bottom vessels and reaction flasks. The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE Anchor Paddle, 80 mm (3 1/8 in) blade

Flow Pattern	Tangential
Blade Diameter	80 mm (3 1/8")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	113 g (0.2 lb)

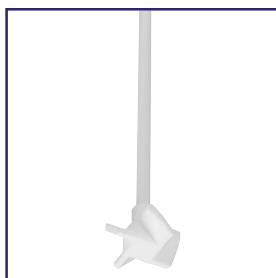
Features

- Tangential flow
- PTFE blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece

Benefits

- Effective for low speed medium to high viscosity mixing
- Excellent chemical (including acidic and caustic) resistance
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A183	294.00



CLS-A185
CAFRAMO LAB SO-
LUTIONS®, PTFE 4
BLADE PITCHED
PROPELLER

An axial flow PTFE impeller for high speed, low viscosity mixing. With 45° pitched blades, the 40 mm (1 1/2") diameter impeller is attached to an 8 mm (5/16") diameter PTFE-coated shaft. The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE 4 blade propeller, 40 mm (1 1/2 in) blade

Flow Pattern	Axial
Blade Diameter	40 mm (1 1/2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	113 g (0.2 lb)

Features

- PTFE blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece
- 45° blade pitch

Benefits

- Excellent chemical (including acidic and caustic) resistance
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing
- Right hand rotation (solution pushed downwards when propeller spins clockwise)

<u>CODE</u>	<u>Price</u>
CLS-A185	268.80





A712	Shaft – 305 mm (12 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 110 g (0.2 lb)
A162	Shaft – 406 mm (16 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 150 g (0.3 lb)
A722	Shaft – 457 mm (18 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 180 g (0.4 lb)
A742	Shaft – 610 mm (24 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 240 g (0.5 lb)

Use with: Any blade with an 8 mm ($\frac{5}{16}$ in) diameter bore

Features

- Passivated 316L stainless steel
- 8 mm ($\frac{5}{16}$ in) diameter

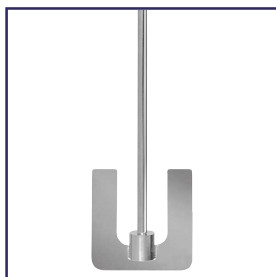
Benefits

- Chemically inert and corrosion resistant
- Fits blades having 8 mm ($\frac{5}{16}$ in) bore and majority of bench top overhead stirrer chucks

CLS-A162 CAFRAMO LAB SO- LUTIONS®, IM- PELLERS & SHAFTS, SHAFTS

	Material	Length	CODE	Price
	316 SS Electropolished	16 x 5/16"	CLS-A162	56.10
	316 SS Passivated	12 x 5/16"	CLS-A712	40.80
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	12 x 3/8"	CLS-A713	47.40
	316 SS Passivated	18 x 5/16"	CLS-A722	62.20
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	18 x 3/8"	CLS-A723	62.20
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	20 x 3/8"	CLS-A733	79.50
	316 SS Passivated	24 x 5/16"	CLS-A742	83.60
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	24 x 3/8"	CLS-A743	86.70
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	30 x 3/8"	CLS-A753	111.10





CLS-U044
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 4x4"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 102 mm x 102 mm (4" x 4") anchor blade is welded to an 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Fits the Sweep accessory covers SW4. The high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 102 x 102 mm (4 x 4 in) blade, welded to shaft.

Flow Pattern	Tangential
Blade Diameter	102 mm x 102 mm (4" x 4") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	280 g (0.6 lb)

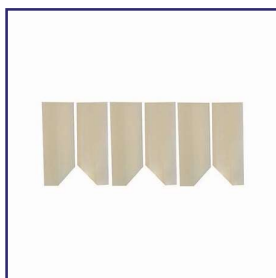
Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft
- Fits Sweep accessory SW4

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing
- Sweeps product from wall of standard 4 L beaker

<u>CODE</u>	<u>Price</u>
CLS-U044	201.90



CLS-SW4
CAFRAMO LAB SO-
LUTIONS®, SWEEP
BLADE

Maximize the stirring results of Caframo's U044 anchor impeller with the sweep blade accessory. Effectively move viscous product from vessel walls back to the centre for thorough mixing. The Silicone SCX 0570 is compliant with FDA 21 CFR 177.2600 and resilient to stir batches with viscosities up to 38,000 mPas. Compatible with a standard 4 L beaker for continuous sweeping while stirring. Ideal for formulating creams and lotions. Comes as a package of 6 (3 pairs). Please note a vessel clamp is required.

Sweep blades only, package of 6 (3 pairs)

Note: Vessel clamp is required, optimal performance using 4 L beaker

Material	Silicone SCX 0570 – Compliant with FDA 21 CFR 177.2600
Compatible Impeller	U044 anchor paddle
Blade Dimensions	152 x 55 mm (6 x 2 $\frac{3}{16}$ in)
Vessel	Standard 4 L beaker
Viscosity Range	0-38,000 mPas (0-38,000 cP)
Temperature Maximum	100 °C (210 °F)
Weight (U044SW)	1.5 kg (3.4 lb)
Weight (SW4)	0.5 kg (1.2 lb)

Features

- Viscosity range 0-38 000 mPas
- Sweeps product from vessel wall
- Heat tolerant up to 100 °C (210 °F)
- Silicone compliant for processes regulated by FDA 21 CFR 177.2600
- Molded silicone

Benefits

- Viscous product mixing
- No longer requires a spatula to scrape down
- Can be used in heated processes
- Material approved for repeated use in food processes
- Easily modified or customized by trimming with scissors

<u>CODE</u>	<u>Price</u>
CLS-SW4	76.50



CLS-U044SW
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE AND SWEEP
BLADE, 4x4"

Achieve enhanced process results with the addition of silicone sweep blades to our popular CLS-U044 anchor impeller. The impeller with sweep is effective for low speed, high viscosity mixing up to 38 000 mPa·s. The tangential flow 100 mm x 100 mm (4" x 4") anchor blade is welded to an 9.5 mm (3/8") diameter shaft, all electropolished 316L stainless steel. Sweep accessory blades slide over the anchor arms, enabling the combination to scrape sides of a standard 4 L beaker as it stirs. Sweep material silicone SCX 0570 is compliant with FDA 21 CFR 177.2600. A vessel clamp is required when using this impeller. Due to the torque required for effective stirring, we recommend using only with the Caframo overhead stirrer models CLS-BDC1850 and CLS-BDC3030.

U044 anchor paddle, sized 102 x 102 mm (4 x 4 in), with two sweep blades included

Vessel clamp is required, optimal performance using 4 L beaker

Flow Pattern	Tangential
Blade Diameter	102 mm x 102 mm (4" x 4") anchor blade
Blade and Sweep Diameter	145 mm (5 3/4 in)
Blade and Sweep Dimensions	150 x 145 mm (6 x 5 3/4 in)
Shaft Length	914 mm (36 in)
Shaft Diameter	9.5 mm (3/8 in)
Material – Impeller	Electropolished 316L stainless steel
Material – Sweep accessory	Silicone SCX 0570
Weight (U044SW)	1.5 kg (3.4 lb)
Weight (SW4)	0.5 kg (1.2 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Blade welded to shaft
- Viscosity range 0-38 000 mPa·s
- Sweeps product from vessel wall
- Heat tolerant up to 100 °C (210 °F)
- Silicone compliant for processes regulated by FDA 21 CFR 177.2600
- Molded silicone

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing
- Viscous product mixing
- No longer requires a spatula to scrape down
- Can be used in heated processes
- Material approved for repeated use in food processes
- Easily modified or customized by trimming with scissors

<u>CODE</u>	<u>Price</u>
CLS-U044SW	223.30



CLS-U022
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 2x2"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 50 mm x 50 mm (2" x 2") anchor blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 51 x 51 mm (2 x 2 in) blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	50 mm x 50 mm (2" x 2") anchor blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	180 g (0.4 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U022	176.40



CLS-U055
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 5×5"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 125 mm x 125 mm (5" x 5") anchor blade is welded to a 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 127 x 127 mm (5 x 5 in), welded to shaft

Flow Pattern	Tangential
Blade Diameter	125 mm x 125 mm (5" x 5") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	300 g (0.7 lb)

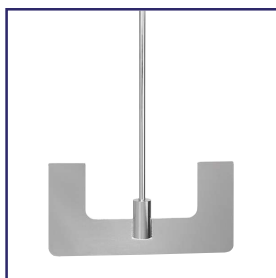
Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U055	217.20



CLS-U510
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 5×10"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 125 mm x 250 mm (5" x 10") anchor blade is welded to a 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall. Due to the torque required for effective stirring, we recommend the Caframo overhead stirrer CLS-BDC1850.

Anchor impeller, 127 x 254 mm (5 x 10 in) blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	125 mm x 250 mm (5" x 10") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	720 g (1.6 lb)

Features

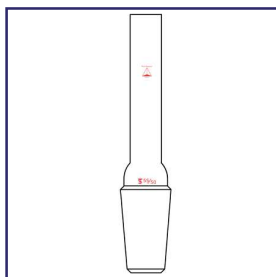
- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U510	257.00

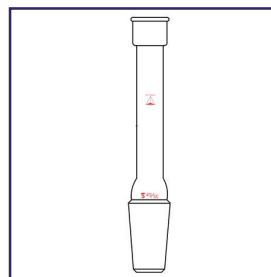




PRG-6150
BEARING, GLASS,
10 mm

All borosilicate glass bearing has a 10mm I.D. precision ground and polished finish. Used with shaft PRG-6205 with ground finish only (not polished). Lubrication is required for hours of operation.

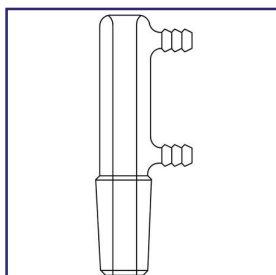
Joint Size	CODE	Price
19/38	-01	82.62
24/40	-02	88.97
29/42	-03	91.37
34/45	-04	92.64
45/50	-05	94.36
55/50	-06	88.17



PRG-6155
BEARING, GLASS,
WITH CUP

All borosilicate glass bearing has a 10mm I.D. precision ground and polished finish. Used with shaft PRG-6205 with ground finish only (not polished). Lubrication reservoir allows extended hours of operation.

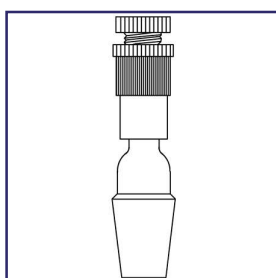
Joint Size	CODE	Price
19/38	-01	84.23
24/40	-02	90.56
29/42	-03	92.94
34/45	-04	94.22
45/50	-05	96.14
55/50	-06	109.32



PRG-6160
BEARING, GLASS,
JACKETED

All borosilicate glass bearing has a 10mm I.D. precision ground and polished finish. Used with shaft PRG-6205 with ground finish only (not polished). Circulatory jacket decreases frictional wear in extended stir operations. Lubrication is required between shaft and inner bearing.

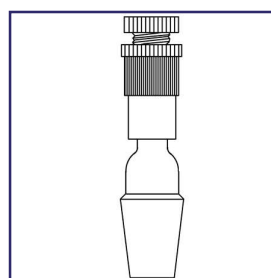
Joint Size	CODE	Price
24/40	-01	107.07
29/42	-02	110.02
45/50	-03	121.12



PRG-6165
BEARING, TEFLON®,
10 mm

Teflon® bearing operates grease-free and is designed for vacuum or pressures to 10⁻⁶. Glass to Teflon® connections are threaded with a compression and locking nut. Bearing has replacement seal for extended life. Use only with glass or stainless steel shaft with polished finishes.

Joint Size	CODE	Price
24/40	-01	231.94
29/42	-02	238.33
34/45	-04	258.98
45/50	-03	173.22
55/50	-06	189.11
Replacement Saddle	-07	9.92
Teflon® Inner Bearing	-08	31.17

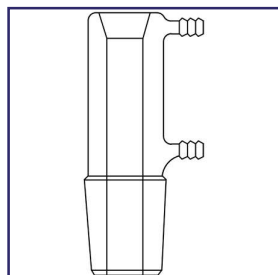


PRG-6170
BEARING, TEFLON®,
HEAVY DUTY, 19 mm

Teflon® bearing operates grease-free and is designed for vacuum or pressures to 10⁻⁶. Glass to Teflon® connections are threaded with a compression and locking nut. Bearing has replacement seal for extended life. Use only with glass shafts with polished finishes.

Joint Size	CODE	Price
34/45	-01	362.23
45/50	-02	373.38
55/50	-03	394.03
71/60	-04	516.34
Replacement Saddle O-Ring Only	-07	16.78
Teflon® Inner Bearing O-Ring Only	-08	108.95

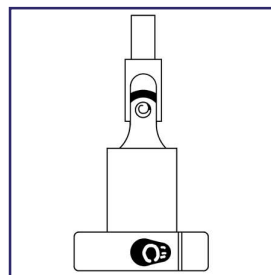




PRG-6175
BEARING, HEAVY
DUTY, GLASS, 19 mm

All borosilicate glass bearing has 19 mm I.D. precision ground and polished finish. Used only with PRG-6210 shafts with ground finish (not polished). Circulatory jacket reduces frictional wear in extended operations. Lubrication is still required between the shaft and bearing I.D.

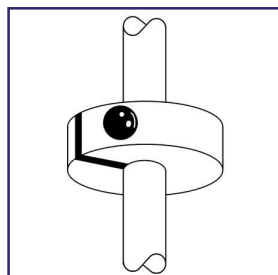
Joint Size	CODE	Price
45/50	-01	240.48
55/50	-02	247.04
71/60	-03	265.70



PRG-6180
UNIVERSAL SHAFT
ADAPTER

For connecting the stir shaft to the motor chuck. A split collar consists on the stirrer rod with the tightening of a set screw. A universal joint compensates for vibration and slight misalignment of assembly.

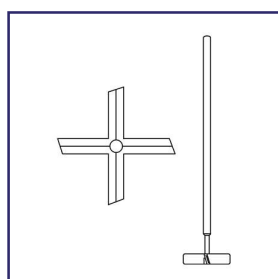
Size	CODE	Price
10 mm	-01	112.80
19 mm	-02	142.27



PRG-6185
SHAFT, SAFETY RE-
TAINER

Nylon collar prevents stirrer rod from slipping down and damaging the vessel especially in vacuum application.

Size	CODE	Price
10 mm	-01	20.82
19 mm	-02	39.05

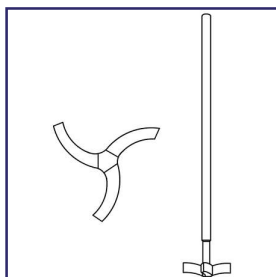


PRG-6187
SHAFT, 4-BLADE,
10 mm, GROUND AND
POLISHED

All borosilicate glass 10mm shafts are precision ground and polished. Four blades are fused on at 90° apart and angled at 15°. Blades push down in a clock-wise rotation. Other designs are available upon request.

Overall Length	Flask Capacity	Agitator O.D.	CODE	Price
445 mm	1 - 3 Lt	40 mm	-01	154.00
515 mm	3 - 5 Lt	65 mm	-02	166.06
590 mm	12 - 22 Lt	65 mm	-03	170.03

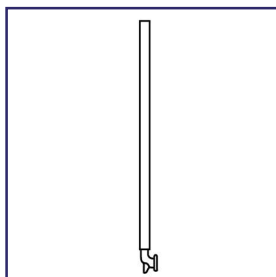




PRG-6188
SHAFT, 3-BLADE,
10 mm, GROUND AND
POLISHED

All borosilicate glass 10 mm shafts are precision ground and polished. Three curved blades are fused on at 120° apart. Blades are in a retreat sweep position in a clock-wise rotation. Other designs are available upon request.

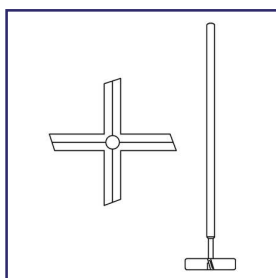
<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	40 mm	-01	154.00
515 mm	3 - 5 Lt	65 mm	-02	166.06
590 mm	12 - 22 Lt	65 mm	-03	170.03



PRG-6190
SHAFT, 10 mm O.D.,
GROUND AND POL-
ISHED

10 mm shafts are precision ground and polished. Lower bottom is designed to work with PRG-6215 banana blades. Used with bearing PRG-6165.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	-01	73.73
515 mm	3 - 5 Lt	-02	76.17
590 mm	12 - 22 Lt	-03	81.74

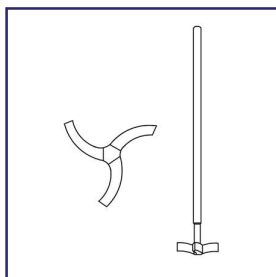


PRG-6192
SHAFT, 19 mm, 4-
BLADE, GROUND
AND POLISHED

19 mm shafts are precision ground and polished. Four 1/4" thick are fused on at 90° and angled at 15°. Blades push down in a clock-wise rotation. Other designs are available upon request.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	90 mm	-01	313.20
725 mm	12 - 22 Lt	90 mm	-02	316.33
950 mm	50 - 72 Lt	125 mm	-03	317.52



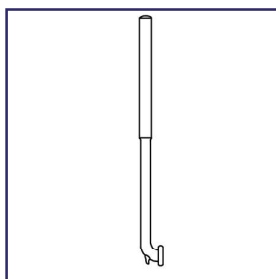


19 mm shafts are precision ground and polished. Three curved blades are fused on at 120° they have a retreat sweep curvature in a clock-wise rotation. Other designs are available upon request.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	90 mm	-01	313.20
725 mm	12 - 22 Lt	90 mm	-02	315.36
950 mm	50 - 72 Lt	125 mm	-03	317.52

PRG-6193

SHAFT, 19 mm, 3-BLADE, GROUND AND POLISHED

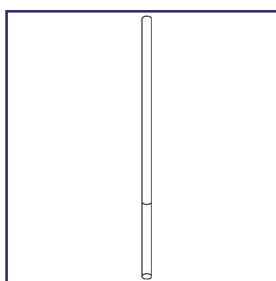


19 mm precision ground and polished. Low bottom is designed to work with banana blades PRG-6220, PRG-6225, and PRG-6230.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	-01	228.96
725 mm	12 - 22 Lt	-02	241.92
950 mm	50 - 72 Lt	-03	254.88

PRG-6195

SHAFT, 19 mm O.D., GROUND AND POLISHED



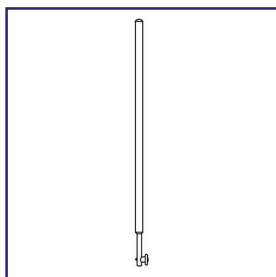
19 mm precision ground and polished. The straight lower portion is rough ground to secure on adjustable height compression fit impellers PRG-6212, PRG-6213, and PRG-6214.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
585 mm	11 - 51 Lt	-01	135.63
725 mm	12 - 22 Lt	-02	144.56
950 mm	50 - 72 Lt	-03	162.45

PRG-6197

SHAFT, 19 mm O.D., GROUND AND POLISHED

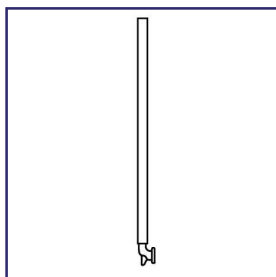




10 mm precision ground and polished finish 316 Stainless Steel. Lower button screws off and on to accommodate PRG-6215 banana blade.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 5 Lt	-01	142.48
515 mm	12 Lt	-02	167.63
590 mm	22 Lt	-03	192.76

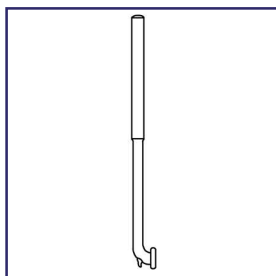
PRG-6200
SHAFT, 10 mm O.D.,
STAINLESS STEEL
ROD



10 mm shaft is precision ground (not polished) and designed to work with PRG-6150 and PRG-6155 glass bearings. See PRG-6215 for banana blades.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	-01	66.72
515 mm	3 - 5 Lt	-02	71.50
590 mm	12 - 22 Lt	-03	76.25

PRG-6205
SHAFT, 10 mm O.D.,
GROUND GLASS



19 mm precision ground (not polished) and designed to work with PRG-6175 glass bearing. For banana blade options see PRG-6220, PRG-6225 and PRG-6230.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	-01	177.13
725 mm	12 - 22 Lt	-02	183.35
950 mm	50 - 72 Lt	-03	204.78

PRG-6210
SHAFT, 19 mm O.D.,
GROUND GLASS





CW-005.5
COWIE®, PTFE
SHAFT STIRRING,
SHAFTS FOR BLADES

Shafts for Blades are for use with PTFE Stirrer Blades series CW-002.xxx.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

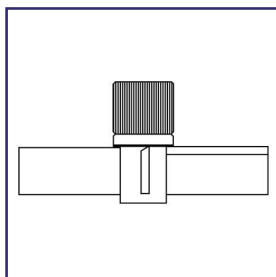
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

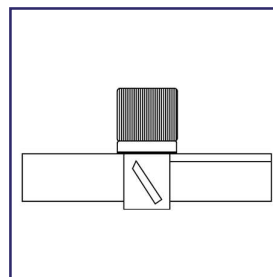
Shaft Ø	Length	CODE	Price
6 mm	300 mm	CW-005.530.1	50.90
6 mm	400 mm	CW-005.540.1	51.87
6 mm	500 mm	CW-005.550.1	52.84
8 mm	300 mm	CW-005.530.8.1	66.09
8 mm	400 mm	CW-005.540.8.1	66.94
8 mm	500 mm	CW-005.550.8.1	68.23
9.5 mm	550 mm	CW-005.555.1	66.56
9.5 mm	650 mm	CW-005.565.1	67.92
9.5 mm	650EX mm	CW-005.0565.1	75.33
9.5 mm	750EX mm	CW-005.0575.1	76.71
10 mm	650EX mm	CW-005.0565.10.1	84.04
10 mm	750EX mm	CW-005.0575.10.1	86.78
10 mm	1000EX mm	CW-005.05100.10.1	120.67
12 mm	650EX mm	CW-005.0565.12.1	137.69
12 mm	750EX mm	CW-005.0575.12.1	140.10
12 mm	1000EX mm	CW-005.05100.12.1	150.36
16 mm	750EX mm	CW-005.0575.16.1	188.12
16 mm	1000EX mm	CW-005.05100.16.1	201.71



Heavy duty Teflon® stirrer has four vertical blades at 90° apart and is height adjustable along the 19 mm shaft. Used with the PRG-6197 shafts.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
4"	-01	288.06
6"	-02	299.46

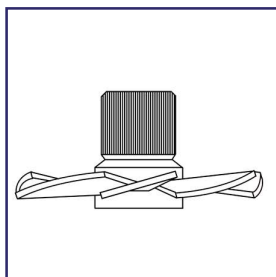
PRG-6212
PADDLE, ADJUSTABLE, 19 mm



Heavy duty Teflon® stirrer has four 45° angled blades at 90° apart and is height adjustable along the 19 mm shaft. Used with the PRG-6197 shafts.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
4"	-01	327.11
6"	-02	351.52

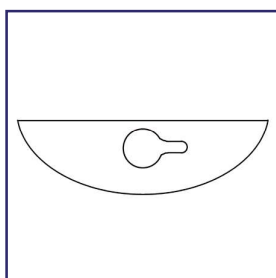
PRG-6213
PADDLE, ADJUSTABLE, 19 mm



Heavy duty Teflon® turbine has eight blades pitched at 15°. Pushes up in a clock-wise rotation. Height adjustable along the 19 mm shaft. Used with the PRG-6197 shafts.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
4"	-01	359.66
6"	-02	382.44

PRG-6214
TURBINE, ADJUSTABLE, 19 mm

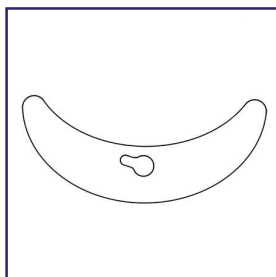


Made of 1/8" thick Teflon® material. Fits all 10 mm button style stirring shafts.

<u>Width x Length mm</u>	<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
19 x 48	100 ml	24/40	-01	14.75
19 x 60	250 - 300 ml	24/40	-02	15.46
19 x 75	500 - 1,000 ml	24/40	-03	16.49
24 x 110	2 - 3 Lt	29/42	-04	17.34
24 x 130	5 Lt	29/42	-05	19.26
35 x 180	12 Lt	45/50	-06	27.33
39 x 160	22 Lt	45/50	-07	38.17

PRG-6215
BLADE, TEFLON®, 10 mm

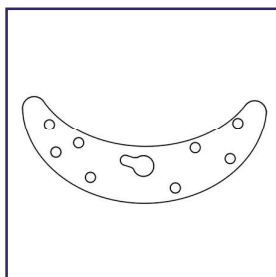




Banana style blade is 1/8" thick Teflon®. Shape follows the inside contour of the flask.

<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
500 ml	34/45	-01	28.96
1,000 ml	34/45	-02	36.46
2,000 ml	34/45	-03	38.43
3,000 ml	34/45	-04	45.97
5,000 ml	45/50	-05	55.78
12 Lt	45/50	-06	57.58
22 Lt	45/50	-07	78.08

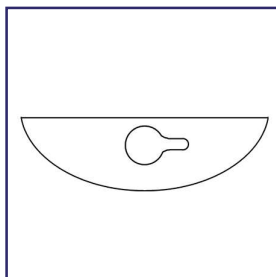
PRG-6220
BLADE, TEFLON®,
BANANA SHAPED,
19 mm



Perforated banana blades are 1/8" thick Teflon®. Shape follows the inside contour of the flask.

<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
500 ml	34/45	-01	28.96
1,000 ml	34/45	-02	36.46
2,000 ml	34/45	-03	38.43
3,000 ml	34/45	-04	45.97
5,000 ml	45/50	-05	55.78
12 Lt	45/50	-06	57.58
22 Lt	45/50	-07	78.08

PRG-6225
BLADE, TEFLON®,
BANANA SHAPED,
19 mm, WITH PER-
FORATIONS

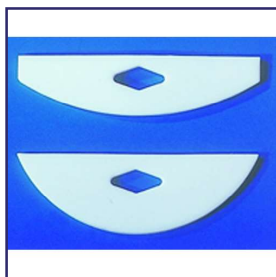


3/16" thick Teflon® blades are used with PRG-6190 and PRG-6195 19 mm stir shafts.

<u>Width x Length mm</u>	<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
35 x 74	1,000 ml	45/50	-01	41.91
35 x 93	3,000 ml	45/50	-02	50.29
35 x 130	5,000 ml	45/50	-03	62.03
35 x 150	12 Lt	45/50	-04	70.39
39 x 160	22 Lt	45/50	-05	83.81
44 x 175	50 Lt	55/50	-06	92.19
54 x 200	72 Lt	71/60	-07	100.59

PRG-6230
BLADE, HEAVY DUTY,
TEFLON®, 19 mm





CW-002
COWIE®, PTFE
SHAFT STIRRING,
STIRRER BLADES

Stirrer Blades fit all standard shafts for blades, totally inert and non-scratch. Hole diam 6.5mm, 3.2mm thick, PTFE Shafts for these blades are CW-005.5XX Series.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Blade Type	Dimensions W x Ht	CODE	Price
Plain End	65 mm x 25 mm	CW-002.1065.1	5.84
Plain End	75 mm x 25 mm	CW-002.1075.1	6.25
Plain End	105 mm x 25 mm	CW-002.1105.1	7.05
Plain End	125 mm x 25 mm	CW-002.1125.1	7.36
Plain End	150 mm x 25 mm	CW-002.1150.1	8.17
Square End	52 mm x 14 mm	CW-002.052.1	4.28
Square End	76 mm x 19 mm	CW-002.076.1	5.55
Square End	90 mm x 28 mm	CW-002.090.1	7.58



PRG-7240
STIR MOTOR, 1/3 HP
ELECTRIC

Powerful and reliable stir motor.

- Baldor Motor, 1/3 HP, 345 RPM, 3-phase
- Rated Applications: Conveyors, packaging machines, machine tools and laboratory equipment requiring constant speed.
- 5:1 Gear Reducer, smooth torque transmission, 55 lbs. TEFC
- Output Shaft is 3/4" diameter
- NEMA 12 Junction box, 14 gauge welded steel, oil resistant gaskets, wash down rated.
- Two temperature read outs, Type K large LED displays with splash guards by "Omega"
- Digital AC Motor Drive, 115V, soft start, fully programmable with pass codes, ramp delays, and run sequence, USB interface
- 3 Prong, 14/4 gauge cord by 12 foot

<u>CODE</u>	<u>Price</u>
-01	2,810.34

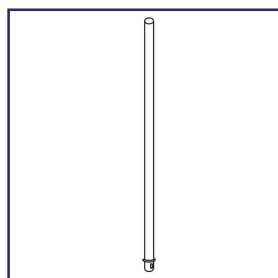


PRG-7200
STIR BEARING, PILOT
PLANT, "BIG BEAR"

Heavy duty bearing is constructed from a 25% glass filled Teflon®, having a very low frictional drag. Ideal for rotatory applications. The removable interior lip seal is a polyimide-imide (Torlon) material, which has a lower frictional drag. Bearing is rated for full vacuum and pressures to 5 psi. Temperature range of -350° to 500° F. Offered with a 45/50 inner O-Ring tapered joint connection or beaded pipe. See PRG-8022 for beaded pipe couplings. Bearings fit shafts with a 3/4" (19mm) and 1.14" (31.8mm) diameters.

<u>Shaft Size</u>	<u>Connection</u>	<u>CODE</u>	<u>Price</u>
19 mm	45/50 O-Ring	-12	1,297.11
19 mm	1.5" B.P.	-02	1,297.11
31.8 mm	2.0" B.P.	-01	1,344.60

<u>Replacement Components</u>			
19 mm Rotary Seal	-31	214.81	
31.8 mm Rotary Seal	-21	246.37	

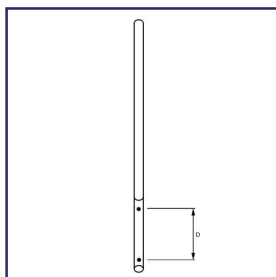


PRG-7204
STIR SHAFT, 1 1/4"

Heavy duty shafts are precision ground and polished to work with PRG-7200 stir bearing. The lower portion is designed to inter-lock with stir paddle PRG-7209. Functions in viscous environments.

<u>Vessel Size</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
20 Lt	32"	-01	501.26
30 Lt	36"	-02	514.26
50 Lt	50"	-03	556.57
75 Lt	58"	-04	554.96
100 Lt	62"	-05	569.61

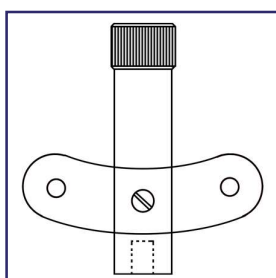
<u>Flask Size</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
12 Lt	26"	-11	441.05
22 Lt	30"	-12	481.71
50 Lt	36"	-13	499.62
72 Lt	48"	-14	537.06
100 Lt	54"	-15	569.61
200 Lt	60"	-16	582.62



Heavy duty shafts are precision ground and polished to work with PRG-7200 stir bearing. Shafts accept the fully adjustable paddles and impellers. Dimples are placed on shafts to accept agitator set pins.

<u>Length</u>	<u>"D"</u>	<u>CODE</u>	<u>Price</u>
30"	8"	-01	494.73
36"	8"	-02	496.36
42"	10"	-03	520.78
48"	10"	-04	533.79
54"	12"	-05	550.08
60"	12"	-06	563.09

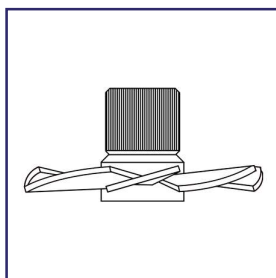
PRG-7206
STIR SHAFT, 1 1/4"



Fabricated from 25% glass filled Teflon® and used with PRG-7204 shafts. Inter-locking design functions in viscous environments. The bottom portion accepts the 1/2" pin from the PRG-7027 flush mount drain valve. Creating better stability during mixing operations. Offered to fit 3/4" and 1.25" shafts.

<u>CODE</u>	<u>Price</u>
-01	867.41

PRG-7209
PADDLE, 1 1/4"
SHAFT, USED WITH
STABILIZER PIN

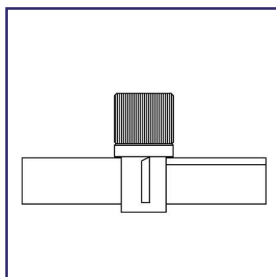


All Teflon® impeller has eight blades positioned at 15°. 1.25" compression fit to shafts and fully adjustable along shaft.

<u>Material</u>	<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
PTFE	5.0"	-01	673.75
PTFE	7.0"	-02	691.66
Glass Filled/TFE	5.0"	-11	1,025.28
Glass Filled/TFE	7.0"	-12	1,134.33

PRG-7212
TURBINE, ADJUSTABLE, 1 1/4" SHAFT,
8-BLADES

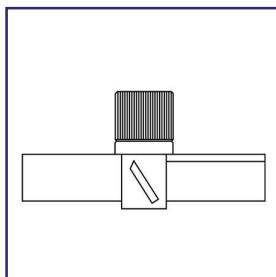




All Teflon® paddle has four blades vertically positioned. 1.25" compression fit to shaft and is fully adjustable along shaft.

<u>Material</u>	<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
PTFE	5.0"	-01	605.40
PTFE	7.0"	-02	664.00
Glass Filled/TFE	5.0"	-11	968.31
Glass Filled/TFE	7.0"	-12	1,057.06

PRG-7214
PADDLE, ADJUSTABLE, 1 1/4" SHAFT, 4-BLADES



All Teflon® turbine has four blades positioned at 45°. 1.25" compression fit to shaft and is fully adjustable along shaft.

<u>Material</u>	<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
PTFE	5.0"	-01	605.40
PTFE	7.0"	-02	664.00
Glass Filled/TFE	5.0"	-11	968.31
Glass Filled/TFE	7.0"	-12	1,085.49

PRG-7216
TURBINE, ADJUSTABLE, 1 1/4" SHAFT, 4-BLADES



CW-005.6
COWIE®, ADJUSTABLE ROTORS, 4
BLADE ANGLED TYPE
45°

Adjustable Rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut. Rotor diameters are nominal.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Measurement	Shaft Ø	Rotor Ø	CODE	Price
Imperial	1/4"	1 1/2"	CW-005.6.250.15	81.59
Imperial	5/16"	1 1/2"	CW-005.6.313.15	84.85
Imperial	3/8"	2 1/2"	CW-005.6.375.25	91.38
Imperial	1/2"	3 1/2"	CW-005.6.500.35	137.07
Imperial	5/8"	4"	CW-005.6.625.40	159.89
Metric	6 mm	40 mm	CW-005.606040	81.59
Metric	8 mm	40 mm	CW-005.608040	84.85
Metric	10 mm	60 mm	CW-005.610060	91.38
Metric	10 mm	90 mm	CW-005.610090	137.07
Metric	12 mm	70 mm	CW-005.612070	104.42
Metric	12 mm	90 mm	CW-005.612090	137.07
Metric	16 mm	100 mm	CW-005.616100	159.89





CW-005.7
COWIE®, ADJUSTABLE ROTORS, FLAT

Adjustable Rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut. Rotor diameters are nominal.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

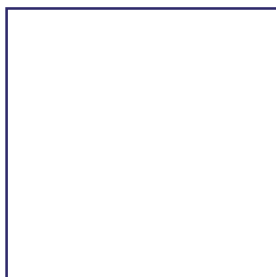
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Measurement</u>	<u>Shaft Ø</u>	<u>Rotor Ø</u>	<u>CODE</u>	<u>Price</u>
Imperial	1/4"	3"	CW-005.7.250.3	71.78
Imperial	5/16"	3"	CW-005.7.313.3	71.78
Imperial	3/8"	3"	CW-005.7.375.3	71.78
Imperial	1/2"	4"	CW-005.7.500.4	86.47
Imperial	5/8"	6"	CW-005.7.625.6	111.59
Metric	6 mm	70 mm	CW-005.706070	71.78
Metric	8 mm	70 mm	CW-005.708070	71.78
Metric	10 mm	70 mm	CW-005.710070	71.78
Metric	10 mm	100 mm	CW-005.710100	86.47
Metric	12 mm	100 mm	CW-005.712100	86.47
Metric	12 mm	150 mm	CW-005.712150	111.59
Metric	16 mm	100 mm	CW-005.716100	88.12
Metric	16 mm	150 mm	CW-005.716150	111.59



CW-005.9

COWIE®, ADJUSTABLE TURBINE

Adjustable Turbine Shaft Stirrers are for use with plain glass, metal or PTFE shafts.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
8	50	CW-005.90850	84.16
8	75	CW-005.90875	106.75
10	75	CW-005.91075	110.19
10	100	CW-005.910100	141.58
12	75	CW-005.91275	117.97
12	100	CW-005.912100	149.25
16	100	CW-005.916100	165.34
16	150	CW-005.916150	248.47





CW-005.3
COWIE®, ANCHOR

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

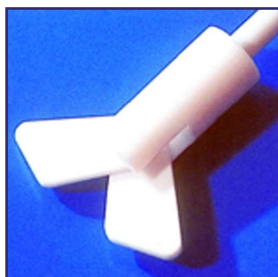
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø mm	Length mm	Rotor Ø mm	CODE	Price
6	300	80	CW-005.330.2	74.85
6	400	80	CW-005.340.2	75.75
6	500	80	CW-005.350.2	76.71
8	300	80	CW-005.330.8.2	93.86
8	400	80	CW-005.340.8.2	94.70
8	500	80	CW-005.350.8.2	95.91
9.5	550	100	CW-005.355.2	98.98
9.5	550	140	CW-005.355.1.2	109.12
9.5	650	100	CW-005.365.2	100.25
9.5	650	140	CW-005.365.1.2	110.42
9.5	650EX	140	CW-005.0365.1.2	110.42
9.5	750EX	140	CW-005.0375.1.2	118.86
10	550	100	CW-005.355.10.2	124.17
10	650EX	140	CW-005.0365.10.2	125.51
10	750EX	140	CW-005.0375.10.2	126.88
12	650EX	140	CW-005.0365.12.2	172.41
12	750EX	140	CW-005.0375.12.2	174.73
12	1000EX	140	CW-005.03100.12.2	191.14
16	750EX	140	CW-005.0375.16.2	271.14
16	750EX	180	CW-005.0375.16.1.2	271.14
16	1000EX	140	CW-005.03100.16.2	248.35
16	1000EX	180	CW-005.03100.16.1.2	248.35



CW-005.4
COWIE®,
CENTRIFUGAL

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

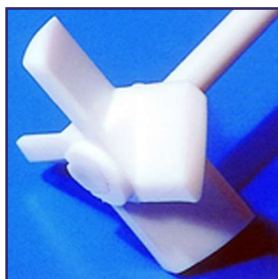
A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø mm	Length mm	Rotor Ø mm	CODE	Price
6	300	40	CW-005.430.2	83.35
6	400	40	CW-005.440.2	84.18
6	500	50	CW-005.450.2	85.18
8	300	40	CW-005.430.8.2	96.43
8	400	40	CW-005.440.8.2	97.18
8	500	50	CW-005.450.8.2	98.47
9.5	550	70	CW-005.455.2	101.97
9.5	650	70	CW-005.465.2	103.09
9.5	650EX	70	CW-005.0465.2	103.09
9.5	750EX	70	CW-005.0475.2	110.72
10	550	70	CW-005.455.10.2	116.20
10	650EX	70	CW-005.0465.10.2	117.34
10	750EX	70	CW-005.0475.10.2	118.57
12	650EX	80	CW-005.0465.12.2	151.43
12	750EX	80	CW-005.0475.12.2	153.54
12	1000EX	80	CW-005.04100.12.2	193.78
16	750EX	80	CW-005.0475.16.2	198.07
16	1000EX	80	CW-005.04100.16.2	208.46





CW-005.2
COWIE®, SCREW
PROPELLER

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

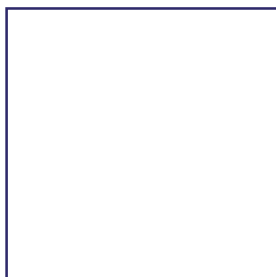
A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø mm	Length mm	Rotor Ø mm	CODE	Price
6	300	40	CW-005.230.2	91.10
6	400	40	CW-005.240.2	92.49
6	500	50	CW-005.250.2	98.46
8	300	40	CW-005.230.8.2	110.05
8	400	40	CW-005.240.8.2	110.91
8	500	50	CW-005.250.8.2	121.81
9.5	550	60	CW-005.255.2	139.92
9.5	650	60	CW-005.265.2	144.29
9.5	650EX	60	CW-005.0265.2	150.01
9.5	750EX	60	CW-005.0275.2	162.40
10	550	70	CW-005.255.10.2	162.84
10	650EX	70	CW-005.0265.10.2	165.51
10	750EX	70	CW-005.0275.10.2	167.51
12	650EX	80	CW-005.0265.12.2	207.17
12	750EX	80	CW-005.0275.12.2	209.61
12	1000EX	80	CW-005.02100.12.2	272.17
16	750EX	80	CW-005.0275.16.2	269.93
16	750EX	100	CW-005.0275.16.1.2	278.39
16	1000EX	100	CW-005.02100.16.2	328.17
16	1000EX	120	CW-005.02100.16.1.2	344.14





CW-005.8
COWIE®, RETREAT
CURVE

Retreat Curve Shaft Stirrers are a fully moulded product with a retreat angle of 30°.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

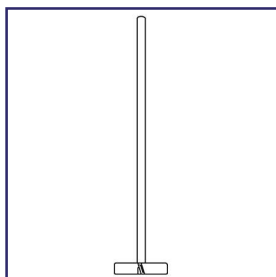
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

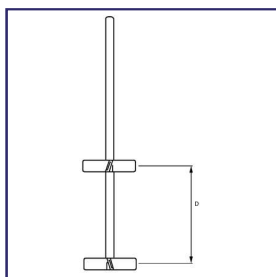
<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>Blade Height mm</u>	<u>CODE</u>	<u>Price</u>
8	300	50	10	CW-005.80850.300	112.70
8	300	75	15	CW-005.80875.300	128.29
8	400	50	10	CW-005.80850.400	116.13
8	400	75	15	CW-005.80875.400	131.68
10	400	50	10	CW-005.81050.400	127.91
10	400	75	10	CW-005.81075.400	138.75
10	500	50	10	CW-005.81050.500	131.52
10	500	75	10	CW-005.81075.500	147.03



PRG-7220
SHAFT AGITATOR,
ALL GLASS, HEAVY
DUTY, 1 1/4"

Heavy duty shaft is precision ground and polished to work with PRG-7200 bearing. 5/16" (8mm) thick glass blades are fused on at 15°. Other angles and configurations are available upon request.

Overall Length	Agitator O.D.	Number of Blades	CODE	Price
32"	110 mm	3	-01	846.26
36"	110 mm	3	-02	869.06
50"	175 mm	3	-03	939.04
58"	175 mm	3	-04	973.21
62"	175 mm	3	-05	995.99
32"	110 mm	5	-11	912.99
36"	110 mm	5	-12	935.78
50"	175 mm	5	-13	1,007.38
58"	175 mm	5	-14	1,039.93
62"	175 mm	5	-15	1,064.33

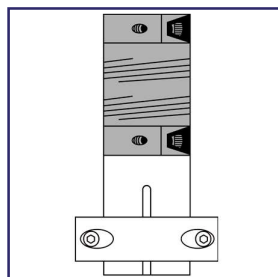


PRG-7228
SHAFT AGITATOR,
ALL GLASS, 1 1/4",
GROUND AND POL-
ISHED

Heavy duty shaft is precision ground and polished to work with PRG-7200 bearing. Upper blades are fused on at 15° pushing downward and 110 mm diameter. Lower set of blades are fused on at 45° and push upward. Blades are 5/16" thick (8mm). Other configurations are available upon request.

Overall Length	Agitator O.D.	"D"	Number of Blades	CODE	Price
32"	110 mm	9"	3	-01	955.30
36"	110 mm	13"	3	-02	978.09
50"	175 mm	20"	3	-03	1,048.05
58"	175 mm	21"	3	-04	1,082.23
62"	175 mm	25"	3	-05	1,105.01
32"	110 mm	9"	5	-11	1,013.88
36"	110 mm	13"	5	-12	1,036.68
50"	175 mm	20"	5	-13	1,106.66
58"	175 mm	21"	5	-14	1,140.84
62"	175 mm	25"	5	-15	1,163.62

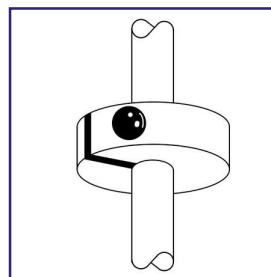




PRG-7230
SHAFT, UNIVERSAL
ADAPTER, 1 1/4"

Adapter fits the 1.25" diameter stir shaft and couple to the motor shaft. Helical couplings give flexibility from axial and angular mis-alignments. They dampen motor vibration and have zero backlash in start-up and stops. No lubrication is needed.

CODE Price
-01 372.67



PRG-7235
SHAFT, SAFETY RE-
TAINER, 1 1/4"

Nylon collar prevents shaft from slipping through the bearing and damaging the vessel.

CODE Price
-01 46.86



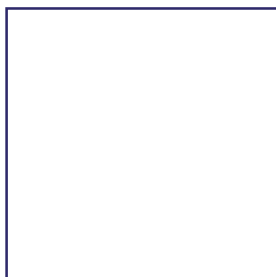
CW-PC710
COWIE®, HIGH PER-
FORMANCE SHAFT
GUIDE WITH NPT
THREAD

COWIE® HP Shaft Guides provide an effective guide for use with GLASS and METAL Shaft Stirrers over a wide range of temperature without shedding particles from the seal whilst maintaining vacuum. The seal is made from a specially formulated PTFE-PEEK composite and this material is also used to provide a moulded-in guide ring to aid alignment of the shaft. The maximum recommended speeds are 500rpm continuous or 800rpm intermittent. HP Shaft Guides have an NPT thread for direct assembly into COWIE® Reactor Lids. PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>Shaft Ø mm</u>	<u>NPT Thread</u>	<u>Height mm</u>	<u>AF Hex mm</u>	<u>CODE</u>	<u>Price</u>
19	1"	80	40	CW-PC710.1925.PK	279.95
16	1"	80	40	CW-PC710.1625.PK	221.33
12	1"	67	40	CW-PC710.1225.PK	156.24
10	1"	67	40	CW-PC710.1025.PK	162.75
8	1"	67	40	CW-PC710.0825.PK	171.92
10	3/4"	63	28	CW-PC710.1019.PK	156.24
8	3/4"	63	28	CW-PC710.0819.PK	156.24


CW-PC709
**COWIE®, UNIVERSAL
STIRRER GUIDE WITH
NPT THREAD**

COWIE® Universal Stirrer Guides have an NPT Screw Thread Fitting for direct assembly into COWIE® Reactor Lids or NPT Extension Adapters and can be used with PTFE Shaft Stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi) performance
- No shedding
- Maximum recommended speeds are continuous 500rpm, intermittent 800rpm

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

Shaft Ø mm	NPT Thread	Height mm	Guide Ø mm	CODE	Price
8	3/4"	63	44	CW-PC709.0819.PK	CALL
8	3/4"	106	44	CW-PC709.0819	380.58
8	1"	67	44	CW-PC709.0825.PK	CALL
8	1"	110	44	CW-PC709.0825	380.58
10	3/4"	63	44	CW-PC709.1019.PK	CALL
10	3/4"	106	44	CW-PC709.1019	380.58
10	1"	67	44	CW-PC709.1025.PK	CALL
10	1"	110	44	CW-PC709.1025	380.58
12	3/4"	106	44	CW-PC709.1219.PK	CALL
12	3/4"	106	44	CW-PC709.1219	445.33
12	1"	67	54	CW-PC709.1225.PK	CALL
12	1"	112	54	CW-PC709.1225	445.33
16	1"	80	54	CW-PC709.1625.PK	CALL
16	1"	112	54	CW-PC709.1625	445.33
19	1"	80	54	CW-PC709.1925.PK	CALL


CW-005.0
COWIE®, HIGH PERFORMANCE SHAFT GUIDE

COWIE® HP Shaft Guides provide an effective guide for use with GLASS and METAL Shaft Stirrers over a wide range of temperature without shedding particles from a specially formulated PTFE-PEEK seal whilst maintaining vacuum. In the version designated .PK a moulded-in PTFE-PEEK guide ring located at the end of the taper provides a guide to assist alignment of the shaft. For the PEEK version use the suffix .PK – eg, 005.0.0619.PK The maximum recommended speeds are 500rpm continuous or 800rpm intermittent. Replacement parts available.

Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Cone Type	Shaft Ø mm	Joint Size	Height mm	Ring Ø mm	CODE	Price
A - Full Length	6	19/22	60	42	CW-005.0.0619	182.91
A - Full Length	6	24/40	60	42	CW-005.0.0624	199.53
A - Full Length	8	19/38	60	42	CW-005.0.0819	182.91
A - Full Length	8	24/40	60	42	CW-005.0.0824	199.53
A - Full Length	10	24/40	60	42	CW-005.0.1024	199.53
A - Full Length	10	29/42	60	50	CW-005.0.1029	207.83
A - Full Length	10	34/45	60	50	CW-005.0.1034	216.13
A - Full Length	10	45/50	60	58	CW-005.0.1045	232.84
A - Full Length	12	29/42	70	50	CW-005.0.1229	199.53
A - Full Length	16	34/45	70	50	CW-005.0.1634	282.69
A - Full Length	19	45/50	70	58	CW-005.0.1945	357.50
A - Full Length, PEEK Seal	6	19/22	60	42	CW-005.0.0619.PK	CALL
A - Full Length, PEEK Seal	6	24/40	60	42	CW-005.0.0624.PK	CALL
A - Full Length, PEEK Seal	8	19/38	60	42	CW-005.0.0819.PK	201.21
A - Full Length, PEEK Seal	8	24/40	60	42	CW-005.0.0824.PK	219.57
A - Full Length, PEEK Seal	10	24/40	60	42	CW-005.0.1024.PK	219.57
A - Full Length, PEEK Seal	10	29/42	60	50	CW-005.0.1029.PK	228.70
A - Full Length, PEEK Seal	10	34/45	60	50	CW-005.0.1034.PK	237.85
A - Full Length, PEEK Seal	10	45/50	60	58	CW-005.0.1045.PK	256.17
A - Full Length, PEEK Seal	12	29/42	70	50	CW-005.0.1229.PK	219.57
A - Full Length, PEEK Seal	16	34/45	70	50	CW-005.0.1634.PK	310.98
A - Full Length, PEEK Seal	19	45/40	70	58	CW-005.0.1945.PK	424.04
B - Medium Length, PEEK Seal	6	19/26	60	42	CW-005.00.0619.PK	CALL
B - Medium Length, PEEK Seal	6	24/29	60	42	CW-005.00.0624.PK	CALL
B - Medium Length, PEEK Seal	8	19/26	60	42	CW-005.00.0819.PK	174.13
B - Medium Length, PEEK Seal	8	24/29	60	42	CW-005.00.0824.PK	174.13
B - Medium Length, PEEK Seal	10	24/29	60	42	CW-005.00.1024.PK	174.13
B - Medium Length, PEEK Seal	10	29/32	60	58	CW-005.00.1029.PK	184.37
B - Medium Length, PEEK Seal	10	45/50	60	50	CW-005.00.1045.PK	240.71
B - Medium Length, PEEK Seal	12	29/32	60	50	CW-005.00.1229.PK	209.99
B - Medium Length, PEEK Seal	16	34/35	70	50	CW-005.00.1634.PK	292.01
B - Medium Length, PEEK Seal	16	45/40	70	58	CW-005.00.1645.PK	307.30
B - Medium Length, PEEK Seal	19	45/40	70	58	CW-005.00.1945.PK	332.89


CW-005.1
**COWIE®, UNIVERSAL
STIRRER GUIDE**

COWIE® Universal Stirrer Guides for use with standard taper ground glass joints can be used with PTFE Shaft Stirrers and glass and metal shaft stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi)
- No shedding
- Maximum recommended speeds; continuous 500rpm, intermittent 800rpm

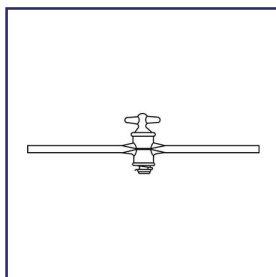
Replacement parts available.

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture. PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

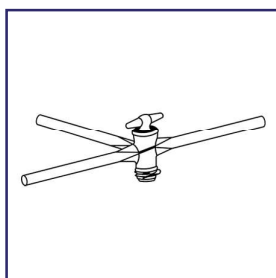
<u>Cone Type</u>	<u>Shaft Ø mm</u>	<u>Joint Size</u>	<u>Height mm</u>	<u>Guide Ø mm</u>	<u>CODE</u>	<u>Price</u>
A - Full Length	6	19/22	96	45	CW-005.101.1.7	465.16
A - Full Length	6	24/40	96	45	CW-005.102.7	465.16
A - Full Length	8	24/40	96	45	CW-005.104.7	465.16
A - Full Length	10	24/40	96	45	CW-005.105.7	465.16
A - Full Length	10	29/42	96	45	CW-005.106.7	465.16
A - Full Length	12	29/42	110	55	CW-005.108.7	544.27
A - Full Length	16	34/45	110	55	CW-005.111.7	544.27
A - Full Length	16	45/50	110	55	CW-005.112.7	544.27
B - Medium Length	6	19/26	96	45	CW-005.201.7	422.86
B - Medium Length	6	24/29	96	45	CW-005.202.7	422.86
B - Medium Length	8	19/26	96	45	CW-005.203.7	422.86
B - Medium Length	8	24/29	96	45	CW-005.204.7	422.86
B - Medium Length	10	24/29	96	45	CW-005.205.7	422.86
B - Medium Length	10	29/32	96	45	CW-005.206.7	422.86
B - Medium Length	10	34/35	96	45	CW-005.207.7	422.86
B - Medium Length	12	29/32	110	55	CW-005.208.7	494.80
B - Medium Length	12	34/35	110	55	CW-005.209.7	494.80
B - Medium Length	16	34/35	110	55	CW-005.211.7	494.80
B - Medium Length	16	45/40	110	55	CW-005.212.7	494.80



PRG-255
STOPCOCK,
STRAIGHT BORE -
GLASS

Stopcock has a solid glass plug with a straight through hole. Supplied with a retainer clip.

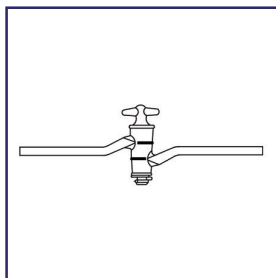
Bore mm	Plug Size	Complete		Plug Only	
		CODE	Price	CODE	Price
1	12/30	-01	43.68	-11	22.24
2	12/30	-02	40.52	-12	21.44
4	17/40	-03	51.17	-13	23.04
6	20/44	-04	59.19	-14	29.38
8	25/52	-05	94.12	-15	60.40
10	35/56	-06	123.92	-16	75.45



PRG-260
STOPCOCK, T-BORE -
GLASS

Solid glass plug allows 2 to 3 ports to interact. 90° angle. Supplied with retainer clip.

Bore mm	Plug Size	Complete		Plug Only	
		CODE	Price	CODE	Price
1	17/40	-01	59.10	-11	22.87
2	17/40	-02	59.10	-12	22.87
4	20/44	-03	70.06	-13	29.79
6	20/44	-04	98.19	-14	30.33

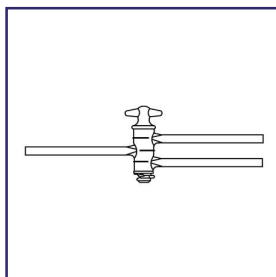


PRG-265
STOPCOCK, SINGLE
OBLIQUE BORE

Solid glass has a single diagonal bore. Supplied with retainer clip.

Bore mm	Plug Size	Complete		Plug Only	
		CODE	Price	CODE	Price
2	12.6/40	-01	68.79	-11	37.75
4	17.35/5	-02	83.26	-12	37.75

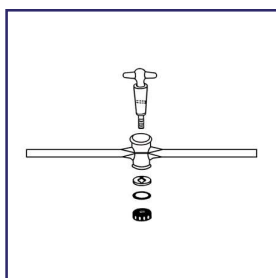




PRG-270
STOPCOCK, DOUBLE
OBLIQUE BORE

Solid glass plug has two parallel diagonal bores. Supplied with retainer clip.

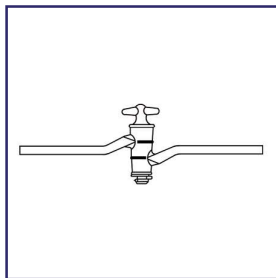
<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	14.5/50	-01	92.15	-11	41.30
4	12.2/56	-02	106.46	-12	49.25



PRG-275
STOPCOCK,
STRAIGHT BORE,
PRESSURE

Solid glass plug with lower thread. Allows a Teflon washer, O-ring and retaining nut to be used for continuous tension.

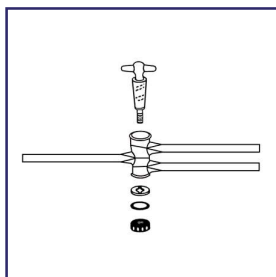
<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12/30	-01	62.78
4	17/40	-02	81.98



PRG-280
STOPCOCK,
T-BORE,
PRESSURE

Solid glass plug with lower thread. Allows a Teflon washer, O-ring and retaining nut to be used for continuous tension. Solid glass plug has a T-shaped bore so that any two or all three ports can interact.

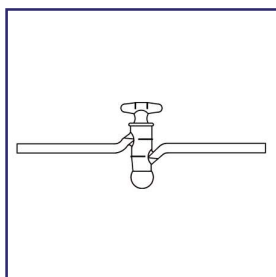
<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	17/40	-01	107.08



Solid glass plug with lower thread. Allows a Teflon washer, O-ring and retaining nut to be used for continuous tension. Solid glass plug has a T-shaped bore so that any two or all three ports can interact. With two parallel oblique bores.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	14.5/50	-01	92.15
4	16.2/56	-02	106.46

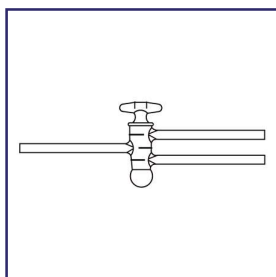
**PRG-285
STOPCOCK,
DOUBLE OBLIQUE
BORE,
PRESSURE**



Hollow plug with a single oblique bore. A single hole 90° from the lower stem is used to evacuate the lower chamber. Matching serial number provided on plug and barrel.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12.6/40	-01	102.79
4	17.35/5	-02	125.99

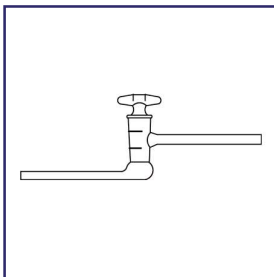
**PRG-290
STOPCOCK,
HOLLOW PLUG,
OBLIQUE, HIGH VAC-
UUM**



Hollow plug with a single oblique bore. A single hole 90° from the lower stem is used to evacuate the lower chamber. Matching serial number provided on plug and barrel. With two parallel oblique bores.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	14.5/50	-01	155.15
4	16.2/56	-02	190.67

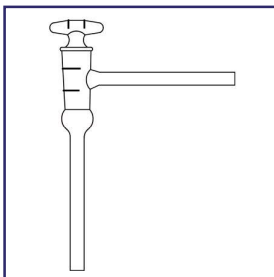
**PRG-295
STOPCOCK,
HOLLOW PLUG, DOU-
BLE OBLIQUE, HIGH
VACUUM**



With lower sidearm connected to a vacuum source. Pressure in the chamber will hold the plug in place. Matching serial number is provided on plug and barrel.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12.6/40	-01	89.12
4	17.35/50	-02	105.64
6	17.35/50	-03	135.52

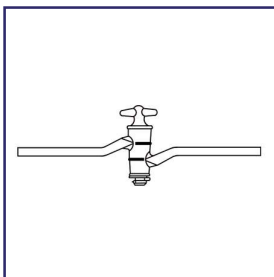
PRG-300
STOPCOCK,
HOLLOW PLUG, OFF-
SET, HIGH VACUUM



With lower sidearm connected to a vacuum source, pressure in the chamber will hold the plug in place. Plug and barrel are serialized.

<u>Bore mm</u>	<u>Plug Size</u>	<u>CODE</u>	<u>Price</u>
2	12.6/40	-01	89.12
4	17.35/50	-02	105.64
6	17.35/50	-03	135.52

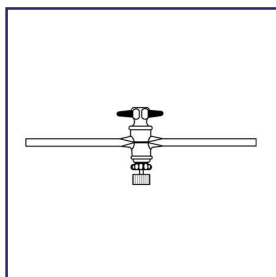
PRG-305
STOPCOCK,
HOLLOW PLUG, 90°
ANGLE, HIGH VAC-
UUM



Solid Teflon plug with through hole and threaded retainer nut.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	11/25	-01	47.19	-11	15.74
4	15.2/30	-02	64.03	-12	17.95
6	16/35	-03	79.46	-13	26.39
8	24/40	-04	149.35	-14	95.31
10	24/40	-05	160.46	-15	96.91

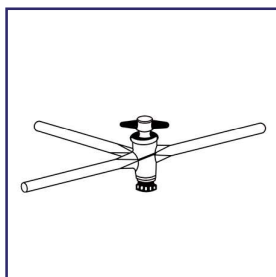
PRG-310
STOPCOCK,
STRAIGHT BORE,
TEFLON



Teflon plug with a threaded needle valve controls the rate of flow through the valve.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	11/25	-01	95.31	-11	63.97
4	15.2/30	-02	116.29	-12	66.72

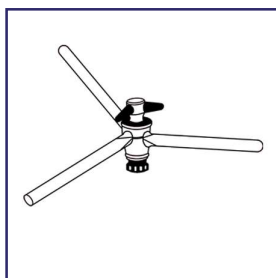
PRG-315
STOPCOCK,
STRAIGHT BORE,
METERING PLUG, TE-
FLON



Solid Teflon plug has a T-shaped bore so that any 2 or all 3 stems may be connected at one time.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	15.2/30	-01	93.26	-11	35.10
4	16/35	-02	112.33	-12	42.11
6	24/40	-03	157.93	-13	52.91

PRG-320
STOPCOCK
T-BORE, TEFLON

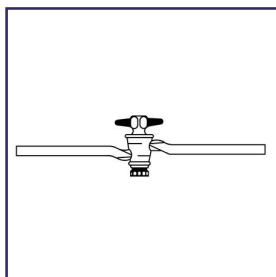


Solid Teflon plug has 120° "V" bore to enact two stems, isolating one stem.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	15.2/30	-01	95.17	-11	41.30
4	16/35	-02	106.77	-12	44.63

PRG-325
STOPCOCK, 120°
BORE, TEFLON

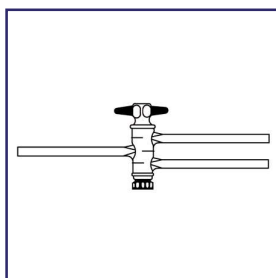




Teflon plug has a diagonal bore and threaded retainer nut.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	15.2/30	-01	74.35	-11	32.57

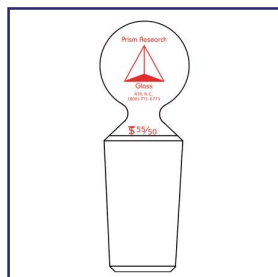
PRG-330
STOPCOCK,
SINGLE OBLIQUE
BORE, TEFLON



Teflon plug has dual diagonal bores and threaded retainer nut.

<u>Bore mm</u>	<u>Plug Size</u>	<u>Complete</u>		<u>Plug Only</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
2	12.9/44	-01	89.59	-11	33.68
4	14.4/44	-02	104.70	-12	40.02
6	20/65	-03	206.55	-13	116.47

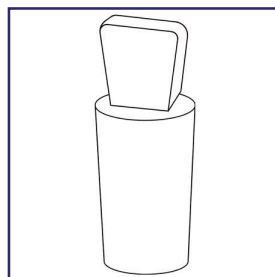
PRG-335
STOPCOCK,
DOUBLE OBLIQUE
BORE, TEFLON



PRG-6100
STOPPER, FULL
LENGTH, PENNY
HEAD

Hollow, light weight, borosilicate glass.

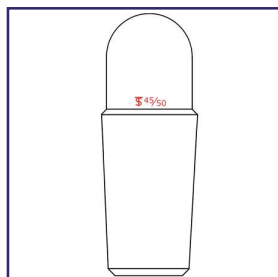
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	-01	20.55
12/30	-02	22.39
14/35	-03	24.68
19/38	-04	24.68
24/40	-05	28.41
29/42	-06	30.35
34/45	-07	39.95
45/50	-08	55.51
55/50	-09	61.09



PRG-6105
STOPPER, FULL
LENGTH, TEFLON

Hollow, light weight, virgin Teflon.

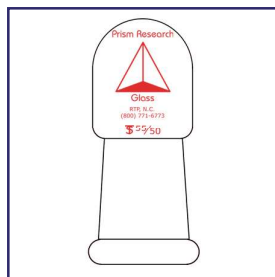
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	-01	15.93
12/30	-02	16.78
14/35	-03	20.13
19/38	-04	25.99
24/40	-05	26.81
29/42	-06	32.69
34/45	-07	43.58
45/50	-08	60.36



PRG-6110
STOPPER, FULL
LENGTH, GLASS

Hollow domed top stopper.

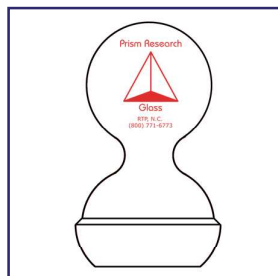
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	-01	13.37
12/30	-02	13.61
14/35	-03	14.22
19/38	-04	14.22
24/40	-05	20.81
29/42	-06	22.43
34/45	-07	42.89
45/50	-08	62.09
55/50	-09	65.73



PRG-6115
STOPPER, FULL
LENGTH, CAP

Hollow domed top. Outer tapered joint.

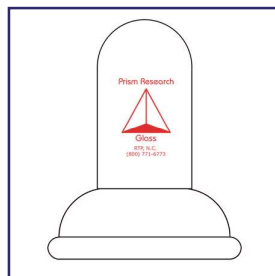
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	-01	13.37
12/30	-02	13.61
14/35	-03	14.22
19/38	-04	14.22
24/40	-05	20.81
29/42	-06	22.43
34/45	-07	42.89
45/50	-08	62.09
55/50	-09	65.73



PRG-6120
STOPPER, BALL
JOINT, PENNY HEAD

Borosilicate glass stopper is available with or without O-Ring grooves. Silicate O-Ring provided.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
12/5	-01	20.03
18/9	-02	23.46
28/15	-03	24.66
35/20	-04	25.64
35/25	-05	25.64

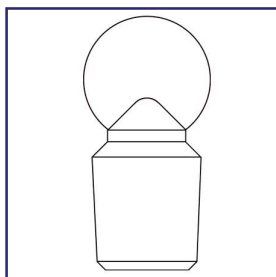


PRG-6125
STOPPER, SOCKET,
CAP

Borosilicate glass stopper. Socket joint.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
12/5	-01	19.24
18/9	-02	20.03
28/15	-03	24.66
35/20	-04	27.24
35/25	-05	29.85

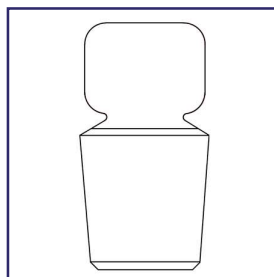




Hollow borosilicate glass stopper.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
9	-01	8.24
13	-02	9.24
16	-03	11.85
19	-04	12.34

PRG-6130
GLASS STOPPER
PLUGS, PENNY HEAD

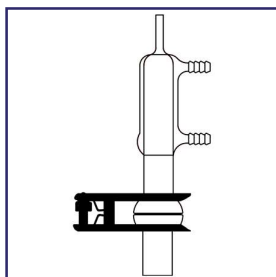


Teflon stopper plug.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
9	-01	13.40
13	-02	14.27
16	-03	15.08
19	-04	16.78
22	-05	20.13
27	-06	26.81
32	-07	33.52
38	-08	50.29

PRG-6135
TEFLON STOPPER
PLUG



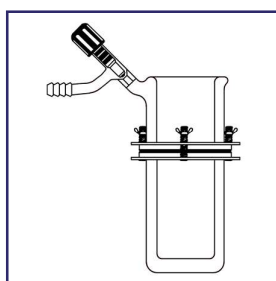


**PRG-6260
SUBLIMATOR, MICRO**

Sublimate collects on inside wall of condenser. Bottom flask connects with an O-Ring face seal joint. Two sizes are available for your selection. Complete units come with a Viton O-Ring and clamp.

Description	Size A	Size B
Flask, Inside Diameter, mm	20	30
Flask, Length, mm	50	45
Viton O-Ring, mm (PRG-365)	20	30
Pinch Clamp (PRG-1705)	35	50

Description	Size A		Size B	
	CODE	Price	CODE	Price
Complete	-01	CALL	-11	173.76
Condenser Only	-02	CALL	-12	140.64
Flask Only	-03	CALL	-13	28.49



**PRG-6265
SUBLIMATOR**

Vessel connection is an O-Ring seal Duran flange. Vessel flask has a 90mm I.D. and a 17mm gap to the condenser cylinder for optimal sublimate collection. 0-8mm Teflon vacuum control valve with 3/8" serrated hose barb.

Description	CODE	Price
Complete	-01	658.63
Flask Only	-02	151.25
Condenser Only	-03	433.66

Pinch Clamp	PRG-1705
Viton O-Ring	PRG-365

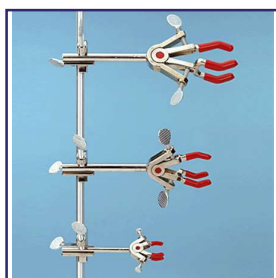




PRG-1720
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

<u>Single Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	1.8 cm	16.6 cm	1.5 cm	-01	68.04
Medium	4.3 cm	23.0 cm	3.5 cm	-02	60.48
Large	5.9 cm	26.6 cm	4.7 cm	-03	59.40



PRG-1722
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, DUAL AD-
JUSTMENT

UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

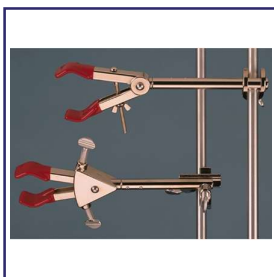
<u>Dual Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	2.8 cm	15.6 cm	1.4 cm	-01	59.40
Medium	6.5 cm	22.2 cm	3.4 cm	-02	60.48
Large	10.0 cm	26.1 cm	4.7 cm	-03	68.04



PRG-1725
LABJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE OR
DUAL ADJUSTMENT

LabJaws™ are available in three sizes. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	2.8 cm	14.8 cm	2.1 cm	-01	52.92
Single / Medium	6.2 cm	21.9 cm	3.4 cm	-02	56.16
Single / Large	8.4 cm	26.5 cm	4.9 cm	-03	58.32
Dual / Small	3.6 cm	16.7 cm	2.1 cm	-11	52.92
Dual / Medium	5.8 cm	22.9 cm	3.5 cm	-12	56.16
Dual / Large	9.3 cm	27.0 cm	4.8 cm	-13	58.32



PRG-1730
LABJAWS™ By
TROEMNER, 2-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	6.5 cm	21.5 cm	2.4 cm	-01	43.20
Single / Large	8.0 cm	23.3 cm	2.4 cm	-02	46.44
Dual / Small	6.5 cm	22.5 cm	2.4 cm	-11	43.20
Dual / Large	8.6 cm	25.0 cm	2.4 cm	-12	46.44



PRG-1735
LABJAWS™ By
TROEMNER, SWIVEL
CLAMPS

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary. Swivel clamps are used to hold apparatus near the frame. The swivel clamps have an integral holder for attaching to a lattice frame or other apparatus. The holding angle of swivel clamps is fully adjustable through 360° of rotation and can be locked in place once desired position is achieved.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	12.6 cm	2.4 cm	-01	43.20
2-Prong Large	8.0 cm	13.8 cm	2.5 cm	-02	45.36
3-Prong Medium	6.5 cm	14.3 cm	3.5 cm	-03	59.40



PRG-1738
LABJAWS™ By
TROEMNER, FIXED
POSITION CLAMPS

Fixed position clamps are used to hold apparatus near the frame where no adjustment is required after set up. Fixed position clamps have an integral holder but can not be rotated after attachment to a lab frame or other apparatus.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	9.5 cm	2.4 cm	-01	41.04
3-Prong Medium	5.8 cm	10.7 cm	3.5 cm	-02	50.76





6.3 cm diameter knob with 3.1 cm slot in the center that will accept thumbscrews supplied with the UltraJaws™ and LabJaws™ multi-purpose clamps. Makes tightening of clamps easier on the hands and wrists.

<u>CODE</u>	<u>Price</u>
-01	42.64

PRG-1740
ULTRAJAWS™ By
TROEMNER, THUMB-
SCREW KNOB



Quick and secure slip-on chain connection with large easy-to-turn adjusting knob. Holds apparatus firmly but gently in place at any angle. Accommodates large round or irregular shaped objects. 14.2 cm extension arm.

<u>Size</u>	<u>Holding Ability</u>	<u>CODE</u>	<u>Price</u>
Small	up to 17 cm diameter	-01	72.36
Large	up to 28 cm diameter	-02	104.76

PRG-1742
LABJAWS™ By
TROEMNER, CHAIN
CLAMP



Ideal for large cylindrical glassware and similar objects. Stainless steel construction, available in four sizes. Holds 64 mm to 165 mm apparatus, with 18 cm extension arm.

<u>Range</u>	<u>CODE</u>	<u>Price</u>
64 - 89 mm	-01	84.24
95 - 114 mm	-02	86.40
121 - 140 mm	-03	87.48
140 - 165 mm	-04	87.48

PRG-1750
LABJAWS™ By
TROEMNER, COLUMN
CLAMP



5.8cm long. Self-tapping screw allows mounting directly to wall. Holds 5mm to 10 mm diameter thermometer or other glass apparatus.

<u>CODE</u>	<u>Price</u>
-01	38.88

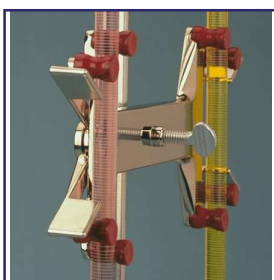
PRG-1752
LABJAWS™ By
TROEMNER, WALL
CLAMP



PRG-1755
LABJAWS™ By
TROEMNER, HEAVY
DUTY TAPERED
CLAMP

Heavy Duty 4-prong double adjustment clamps are designed to hold large vessels with ground glass joint necks. The small clamp can hold up to a size 24/40 joint. The large clamp can hold up to a size 34/45 joint. Extension length on both clamps is 22.8 cm.

<u>Size</u>	<u>Max Joint Size</u>	<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
Small	24/40	35.2 cm	-01	CALL
Large	34/45	38.0 cm	-02	CALL



PRG-1757
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP

Hold one or two burets from micro size to 100 ml. Scissor-like mechanism adjusts simply with a squeeze, yet grips firmly. Attached to standard support rod or frame with built-in hook connector.

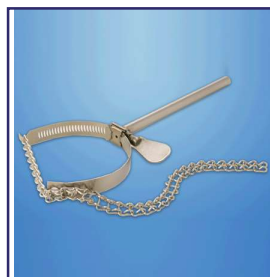
<u>Max Grip Size</u>	<u>Jaw Type</u>	<u>CODE</u>	<u>Price</u>
100 ml	Spring	-01	75.60



PRG-1760
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP &
STAND

Buret clamp stand is a white porcelain base, 34 cm x 18 cm, support is 60 cm high aluminum rod.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Stand	-01	211.68
Clamp & Stand	-02	294.84



PRG-1765
LABJAWS™ By
TROEMNER, NESTER
EXTENSION CLAMP

Securely holds distillation columns and odd-shaped glassware. Holds 3.8 cm to 10.2 cm apparatus.

<u>CODE</u>	<u>Price</u>
-01	91.29

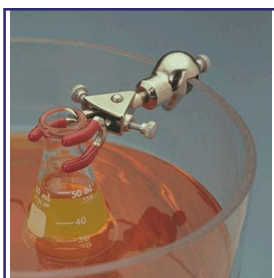




PRG-1767
LABJAWS™ By
TROEMNER, KETTLE
COVER CLAMP

Holds flask and cover together firmly. Three insulated spring-activated clamping arms. Stainless steel springs.

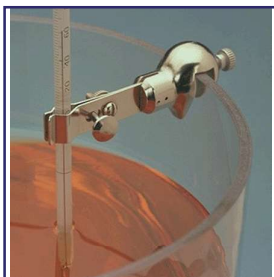
<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
1000 ml	-01	166.02
4000 ml	-02	168.40



PRG-1770
LABJAWS™ By
TROEMNER, LARGE
WATER BATH CLAMP

Holds a variety of apparatus, including glass tubes and thermometers, on glass water bath walls of varying thickness. For 5 mm to 9 mm bath walls. Holds irregular-shaped objects.

<u>Maximum Grip Size</u>	<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
3.3 cm	9.3 cm	-01	56.16

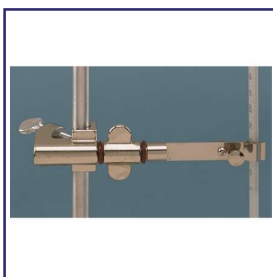


PRG-1771
LABJAWS™ By
TROEMNER, SMALL
WATER BATH CLAMP

For up to 9 mm glass water bath walls. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
6.4 cm	-01	37.80





PRG-1772
LABJAWS™ By
TROEMNER, THER-
MOMETER SWIVEL
CLAMP

Adjust to any angle. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
12.2 cm	-01	50.76



PRG-1775
LABJAWS™ By
TROEMNER, THER-
MOMETER EXTEN-
SION CLAMP

Extension length is 12.5 cm. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
21 cm	-01	34.36



PRG-1777
LABJAWS™ By
TROEMNER, RE-
PLACEMENT
SLEEVES FOR
CLAMP

Available in Vinyl or in Fiberglass.

<u>Clamp Size / Style</u>	<u>Sleeve Material</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
Medium 2-Prong	Vinyl	2 / Pack	-01	14.04
Large 2-Prong	Vinyl	2 / Pack	-02	14.04
Medium 2-Prong	Fiberglass	2 / Pack	-03	14.04
Large 2-Prong	Fiberglass	2 / Pack	-04	14.04
Small 3-Prong	Vinyl	3 / Pack	-05	14.04
Medium 3-Prong	Vinyl	3 / Pack	-06	14.04
Large 3-Prong	Vinyl	3 / Pack	-07	14.04
Small 3-Prong	Fiberglass	3 / Pack	-08	14.04
Medium 3-Prong	Fiberglass	3 / Pack	-09	14.04
Large 3-Prong	Fiberglass	2 / Pack	-10	14.04



PRG-1780
LABJAWS™ By
TROEMNER, ELEC-
TRODE SUPPORT
CLAMP

Permits suspension of electrodes at any angle. Designed with an integral holder which accepts up to 2.1 cm diameter.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
14.7 cm	-01	79.92



PRG-1782
LABJAWS™ By
TROEMNER, SUSPEN-
SION CLAMP

Holds thermometers, potash bulbs, drying tubes and other apparatus. Designed with an integral holder which accepts up to 2.1 cm diameter rod.

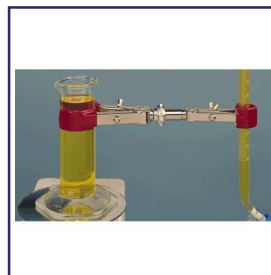
<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	38.88



Supports tubing and other apparatus. Designed with an integral holder which accepts up to 21.1 cm diameter rod.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	102.60

PRG-1785
LABJAWS™ By
TROEMNER, SUP-
PORT CLAMP



Locks securely in desired position. Holds two different sized objects: 6.5 cm maximum grip on small two prong and 8.0 cm maximum grip on large two prong. 360° swivel.

<u>Swivels</u>	<u>CODE</u>	<u>Price</u>
360°	-01	54.00

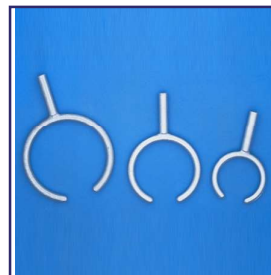
PRG-1787
LABJAWS™ By
TROEMNER, DOUBLE
JAW UTILITY CLAMP



For supporting beakers, mantles and petri dishes. 15.5 cm diameter. Aluminum support plate.

<u>CODE</u>	<u>Price</u>
-01	90.72

PRG-1790
LABJAWS™ By
TROEMNER, SUP-
PORT PLATE



For supporting funnels and boiling flask, open rings allow items easily to pass in and out of support. Arm length is 5.7 cm. Holds 7.6 cm to 12.7 cm apparatus. Rod arm is 1.27 cm diameter.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
7.6 cm	-01	37.80
10.2 cm	-02	48.60
12.7 cm	-03	66.96

PRG-1792
LABJAWS™ By
TROEMNER, OPEN
RINGS





Corrosion-resistant frames and rods. Individual rods are available in standard lengths from 4 cm to 244 cm. May be mounted vertically or horizontally. Combined with LabJaws™ accessories, these frames and rods can be adjusted to fit any need. 1.3 cm diameter rods with chamfered ends for easy location and smooth fit. Available in aluminum, fiberglass, or stainless steel.



**PRG-1800
LABJAWS™ By
TROEMNER, LAB
FRAME RODS, ALUMI-
NUM, FIBERGLASS,
OR STAINLESS
STEEL**

Aluminum		
Length	CODE	Price
4 cm - 1 5/8"	-01	8.64
5 cm - 2"	-02	11.88
15 cm - 6"	-03	14.04
31 cm - 12"	-04	20.52
46 cm - 18"	-05	21.60

61 cm - 24"	-06	27.00
91 cm - 36"	-07	29.16
122 cm - 48"	-08	45.36
153 cm - 60"	-09	51.84
183 cm - 72"	-10	57.24
244 cm - 96"	-11	72.36

Fiberglass		
Length	CODE	Price
4 cm - 1 5/8"	-21	CALL
5 cm - 2"	-22	CALL
15 cm - 6"	-23	CALL
31 cm - 12"	-24	CALL
46 cm - 18"	-25	CALL

61 cm - 24"	-26	CALL
91 cm - 36"	-27	CALL
122 cm - 48"	-28	CALL
153 cm - 60"	-29	CALL
183 cm - 72"	-30	CALL
244 cm - 96"	-31	CALL

Stainless Steel		
Length	CODE	Price
4 cm - 1 5/8"	-41	12.96
5 cm - 2"	-42	12.96
15 cm - 6"	-43	16.20
31 cm - 12"	-44	27.00
46 cm - 18"	-45	35.64
61 cm - 24"	-46	44.28
91 cm - 36"	-47	60.48
122 cm - 48"	-48	76.68
153 cm - 60"	-49	89.64
183 cm - 72"	-50	106.92
244 cm - 96"	-51	139.32





PRG-1810
LABJAWS™ By
TROEMNER, CHANNEL CONNECTOR

Special connector fastens lab frame rod to steel connector. Loosen the connector or slide up or down for easy adjustment of rod position.

CODE	Price
-01	28.08



PRG-1812
LABJAWS™ By
TROEMNER, LAB FRAME FOOT

For mounting rods to counter-tops, floors, walls. Low profile design. Supplied with 3 screws.

CODE	Price
-01	30.24



PRG-1815
LABJAWS™ By
TROEMNER, HORIZONTAL MOUNTING BARS - WITH COUPLER

Threaded end for direct installation into channels. Comes with spring couple for use in steel 41 mm (1.61") channel. Locking nut included. Use with steel channel frames.

Length	CODE	Price
5.1 cm - 2"	-01	34.56
10.2 cm - 4"	-02	37.80
15.2 cm - 6"	-03	41.04
20.3 cm - 8"	-04	44.28



PRG-1817
LABJAWS™ By
TROEMNER, SMALL LAB FRAME, 24 x 24

Ideal for small setups where space is limited. Frame measures 61 cm x 61 cm (24" x 24"). Frame consists of eight 5 cm rods, two 46 cm rods, eight 61 cm rods, eighteen "S" connectors, four rod end connectors, and four lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	545.40
Fiberglass	-02	CALL
Stainless Steel	-03	928.80



PRG-1820
LABJAWS™ By
TROEMNER, MEDIUM LAB FRAME, 24 x 48

Convenient for distillation and general setups. Frame measures 61 cm x 122 cm (24" x 48"). Frame consists of eight 5 cm rods, two 46 cm rods, five 61 cm rods, two 91 cm rods, four 122 cm rods, twenty-four "S" connectors, four rod end connectors, and four lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	685.80
Fiberglass	-02	CALL
Stainless Steel	-03	1,317.60



PRG-1822
LABJAWS™ By
TROEMNER, LARGE LAB FRAME, 48 x 48

Complex glassware setups easily accommodated. Can be mounted on the floor. Frame measures 122 cm x 122 cm (48" x 48"). Frame consists of ten 5 cm rods, three 46 cm rods, two 91 cm rods, ten 122 cm rods, thirty-eight "S" connectors, four rod end connectors, and six lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	1,058.40
Fiberglass	-02	CALL
Stainless Steel	-03	1,852.20





PRG-1825
LABJAWS™ By
TROEMNER, EXTRA
LARGE LAB FRAME,
48 x 72

For greatest versatility in most demanding setups. Frame measures 122 cm x 183 cm (48" x 72"). Frame consists of six 5 cm rods, six 3 cm rods, two 61 cm rods, seven 122 cm rods, five 183 cm rods, forty-five "S" connectors, four rod end connectors, and eight lab frame feet. Available in aluminum, fiberglass, or stainless steel.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
Aluminum	-01	1,463.40
Fiberglass	-02	CALL
Stainless Steel	-03	2,035.80



PRG-1827
LABJAWS™ By
TROEMNER, HEAVY
DUTY LAB FRAME, 72
x 78

Strong, but lightweight frame for stable floor mounted applications. Free standing unit is specifically designed for heavy duty work such as pilot plant set-ups or temporary lab space. Frame measures 183 cm x 198 cm (72" x 78"). Frame consists of an outside frame assembly made of lightweight but strong channel steel. Also contains fifteen "S" connectors, sixteen channel connectors, five 122 cm rods, and three 183 cm rods for constructing internal lab frame lattice. Available in aluminum, fiberglass, or stainless steel.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
Aluminum	-01	2,116.80
Fiberglass	-02	CALL
Stainless Steel	-03	3,952.80



PRG-1830
LABJAWS™ By
TROEMNER, CHRO-
MATOGRAPHY LAB
FRAME, 24 x 24 x 48

Specifically for chromatography applications. Designed for use with chromatography cabinets frame measures 61 cm wide x 61 cm long, 122 cm height (24" x 24" x 48"). Frame consists of eight 61 cm rods, one end to end connector, two "S" connectors, four rod end connectors, and four lab frame feet.

<u>CODE</u>	<u>Price</u>
-01	257.04



PRG-1832
LABJAWS™ By
TROEMNER, REGU-
LAR HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. Used wherever clamping at 90° is required. Holds clamps, lab frames and rods up to 1.6 cm diameter.

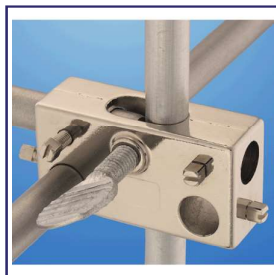
<u>CODE</u>	<u>Price</u>
-01	28.08



PRG-1835
LABJAWS™ By
TROEMNER, JUMBO
HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. For heavy duty applications. Quality aluminum construction for maximum grip strength. Holds up to 2.2 cm rods.

<u>CODE</u>	<u>Price</u>
-01	41.04



PRG-1837
LABJAWS™ By
TROEMNER, MULTI-
ROD CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Maximum adjustment capability with one connector for rods and clamps up to 1.27 cm diameter. Holds rods at 90° in both horizontal and/or vertical configurations.

<u>CODE</u>	<u>Price</u>
-01	44.28



PRG-1840
LABJAWS™ By
TROEMNER, SWIVEL
HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. Allows tilting of clamp at any angle in parallel planes. May be reversed for inner or outer adjustment screw orientation. Holds clamps and rods up to 2.1 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	37.80



PRG-1842
LABJAWS™ By
TROEMNER, ALL PO-
SITION HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. Permits adjustment at any angle, in any plane. Surpasses standard holder capabilities. Holds rods up to 2.1 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	73.44



PRG-1845
LABJAWS™ By
TROEMNER, END-TO-
END CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Allows length extension of clamps and rods. Sturdy construction. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	29.16





PRG-1847
LABJAWS™ By
TROEMNER, HOOK
CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Easy to use. Allows one handed adjustment of rods.

CODE Price
-01 16.20



PRG-1850
LABJAWS™ By
TROEMNER, LATTICE
CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Low profile. Sturdy aluminum construction. Allows rods to be held in cross-connection or perpendicular fashion. Holds rods up to 1.27 cm in diameter.

CODE Price
-01 249.48



PRG-1852
LABJAWS™ By
TROEMNER, END
ROD CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Holds rods or clamps firmly at 90°. Used for semi-permanent installations. Holds rods up to 1.27 cm in diameter.

CODE Price
-01 19.44



PRG-1855
LABJAWS™ By
TROEMNER, "S" CON-
NECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Ergonomic contouring for easy adjustment. Allows maximum gripping of lab frames. Holds rods up to 1.27 cm in diameter.

CODE Price
-01 27.00



PRG-1857
LABJAWS™ By
TROEMNER, UNIVER-
SAL STIRRER
MOUNTING BRACKET

Corrosion resistant, ensures precise fit and powerful holding ability. Supports 2 kg or less. Mounts apparatus to lab frames.

CODE Price
-01 12.96



PRG-1860
LABJAWS™ By
TROEMNER, WRENCH

Corrosion resistant. Adjusts all rod connectors. Sturdy construction.

CODE Price
-01 63.72



Every flow control device resists corrosion and rust. Easy one-hand operation. Convex bearing surfaces and rounded edges protect tubing. Two sizes available; regular and heavy duty. Adjustment screw with over sized head for accurate regulation. Built in side lugs for foot mounting. Tubing retainer screw. Heavy duty hosecock has large handwheel for ease of flow adjustment. Unique design offers unparalleled control. Works well with heavy duty Nylon braided tubing.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Regular up to 1.7 cm Tubing	-01	30.24
Heavy Duty up to 2.8 cm Tubing	-02	CALL

PRG-1862
LABJAWS™ By
TROEMNER, HOSE-
COCK, REGULAR OR
HEAVY DUTY



Add this option to PRG-1862 for bench or table mounting.

<u>CODE</u>	<u>Price</u>
-01	10.80

PRG-1867
LABJAWS™ By
TROEMNER, HOSE-
COCK FOOT



Similar to a regular hosecock but with a 14.5 cm bottom mounted extension rod for attachment to rods.

<u>CODE</u>	<u>Price</u>
-01	49.78

PRG-1870
LABJAWS™ By
TROEMNER, HOSE-
COCK EXTENSION
CLAMP



Designed to quickly start and stop flow. Provides for complete closure without damaging tubing and operated with a simple squeeze. Accommodates up to 1.2 cm tubing.

Description

Regular: For routing stop/start flow operation

Variable: For precise flow adjustment and duplication of flow rates

Heavy Duty: Equipped with heavy duty spring for tough jobs, ensures complete closure

CODE Price

-01 CALL

-02 CALL

-03 31.32



PRG-1872
LABJAWS™ By
TROEMNER, PINCH-
COCKS



Heavy duty support, 43 cm by 33 cm. Supplied with one stainless steel mast, 19 mm diameter.

CODE Price

-01 355.32

PRG-1880
HEAVY DUTY SUP-
PORT



Aluminum bracket has 4.3 cm clamp opening, accepts 1.3 cm rods.

<u>CODE</u>	<u>Price</u>
-01	268.92

PRG-1882
**SHELF GRIP SUP-
PORT**



Convenient high load capacity with safety locks. Stainless steel top and bottom platform. Over-sized knobs for smooth adjustment. Level lifting action.

<u>Platform Size</u>	<u>Vertical Lift</u>	<u>Maximum Load</u>	<u>CODE</u>	<u>Price</u>
Mini: 8 x 8 cm	5 - 12 cm	8 kg	-01	221.70
Standard: 15 x 15 cm	7 - 25 cm	15 kg	-02	228.84
Large: 20 x 20 cm	7 - 31 cm	20 kg	-03	308.22
Jumbo: 31 x 31 cm	13 - 50 cm	65 kg	-04	334.30

PRG-1885
LAB LIFTS

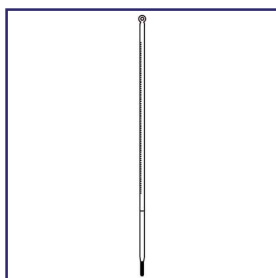




PRG-6330
CELSIUS, TOTAL IM-
MERSION

Thermometer is calibrated for total immersion conditions. Graduations are as listed below with 1°C subdivisions. Thermometer is mercury filled with a nitrogen head. Diameter is 6-7mm with an enamel-backed outside. Top of thermometer is finished with a suspension ring.

<u>Actual Range C°</u>	<u>Subdivision C°</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
-35 to +51	1	305	-01	27.80
-20 to +110	1	305	-02	27.80
-20 to +151	1	305	-03	30.08
-10 to +205	1	350	-04	31.40
-10 to +260	1	350	-05	31.61
-10 to +315	1	380	-06	35.31
-10 to +360	1	400	-07	36.37
-10 to +405	1	400	-08	38.22



PRG-6335
CELSIUS, 76 mm IM-
MERSION

Thermometer is calibrated for 76 mm immersion conditions. Graduations are as listed below with 1°C subdivisions. Thermometer is mercury filled with a nitrogen head. Diameter is 6-7mm with an enamel-backed outside. Top of thermometer is finished with a suspension ring.

<u>Actual Range C°</u>	<u>Subdivision C°</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
-35 to +51	1	305	-01	27.64
-15 to +60	1	255	-02	27.64
-20 to +110	1	305	-03	27.64
-20 to +151	1	305	-04	27.64
-10 to +205	1	350	-05	32.03
-10 to +260	1	350	-06	34.92
-10 to +315	1	380	-07	37.91
-10 to +360	1	400	-08	42.66
-10 to +405	1	400	-09	42.66

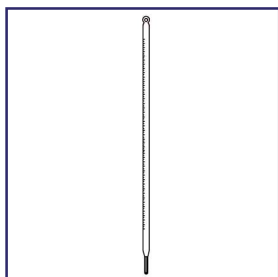


PRG-6340
YELLOW BACK, CEL-
SIUS, STANDARD
TAPER 10/30 JOINTS

Mercury filled thermometer with a nitrogen head. The immersions are measured from the bottom of the 10/30 joint. Calibrations are in 1° C subdivisions.

		-10 to 110° C		-10 to 150° C		-10 to 250° C		-10 to 360° C	
<u>mm</u>	<u>Inches</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
25	1	-01	39.19	-02	40.59	-03	42.57	-04	45.03
50	2	-05	39.19	-06	39.19	-07	42.57	-08	45.03
75	3	-09	38.43	-10	39.63	-11	41.40	-12	44.14
100	4	-13	38.92	-14	40.22	-15	41.46	-16	44.79
125	5	-17	39.51	-18	40.79	-19	42.78	-20	45.43
150	6	-21	40.22	-22	41.29	-23	43.37	-24	46.01
190	7.5	-25	41.46	-26	42.78	-27	44.63	-28	47.29
215	8.5	-29	42.78	-30	43.95	-31	45.95	-32	48.29
250	10	-33	44.04	-34	45.26	-35	47.31	-36	49.90
280	11	-37	44.63	-38	45.95	-39	48.00	-40	50.58
300	12	-41	50.59	-42	46.53	-43	48.72	-44	50.96

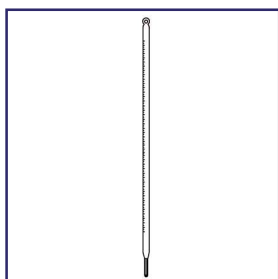




For lower temperature applications.

Actual Range	Subdivision	Overall Length mm	CODE	Price
0 to +230° F	2° F	305	-01	35.02
-15 to +110° C	1° C	305	-02	35.02
-50 to +50° C	1° C	305	-03	35.02
-100 to +50° C	1° C	305	-04	75.45
-200 to +30° C	1° C	350	-05	136.46

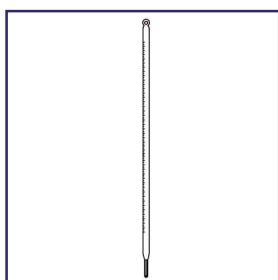
PRG-6345
RED LIQUID, CELSIUS
AND FAHRENHEIT,
TOTAL IMMERSION



Mercury filled with a nitrogen head. Use for 76 mm immersion conditions. Graduations are listed in Fahrenheit.

Actual Range F°	Subdivision F°	Overall Length mm	CODE	Price
-31 to +124	1	305	-01	24.14
-4 to +230	2	305	-02	24.36
-4 to +304	2	305	-03	24.36
-4 to +400	2	350	-04	28.50
-14 to +500	2	350	-05	28.91
-14 to +600	2	380	-06	32.46
-14 to +700	2	405	-07	37.70

PRG-6350
FAHRENHEIT, TOTAL
IMMERSION



Mercury filled with a nitrogen head. Use for total immersion conditions. Graduations are listed in Fahrenheit.

Actual Range F°	Subdivision F°	Overall Length mm	CODE	Price
-31 to +124	1	305	-01	24.36
-4 to +230	2	305	-02	23.91
-4 to +304	2	305	-03	25.37
-14 to +400	2	350	-04	29.49
-14 to +500	2	350	-05	29.32

PRG-6355
FAHRENHEIT, 76 mm
IMMERSION





Thermometer, Short, Celsius

<u>Actual Range C°</u>	<u>Subdivision C°</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
0 to +150	2	102	-01	31.38
100 to +250	2	127	-02	31.81
0 to +300	2	152	-03	34.05

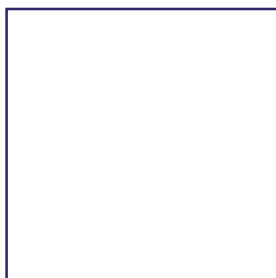
PG-9340
MICRO CELSIUS,
SHORT



Thermometer, Centigrade, Standard Taper 7/12 Inner Member

<u>Actual Range C°</u>	<u>Stem Length Below Joint mm</u>	<u>CODE</u>	<u>Price</u>
0 to +150	20	-01	58.58
0 to +300	20	-02	58.58
0 to +150	50	-03	60.58
0 to +300	50	-04	60.58
0 to +150	70	-05	65.12
0 to +300	70	-06	65.12
0 to +300	100	-07	75.51

PG-9342
MICRO, CENTIGRADE,
STANDARD TAPER
7/12 INNER MEMBER

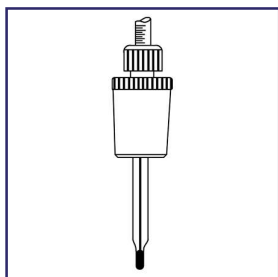


Thermometer, Centigrade, Partial Immersion, Standard Taper 10/18 Joint, Yellow Back

<u>Actual Range C°</u>	<u>Subdivision C°</u>	<u>Immersion Length mm</u>	<u>CODE</u>	<u>Price</u>
-20 to +150	1	25	-01	58.58
-10 to +300	1	25	-02	58.58
-10 to +150	1	25	-03	58.58
-20 to +300	1	50	-04	60.58
-10 to +150	1	50	-05	60.58
-10 to +300	1	50	-06	60.58

PG-9344
MICRO, CENTIGRADE,
PARTIAL IMMERSION,
STANDARD TAPER
10/18 JOINT, YELLOW
BACK



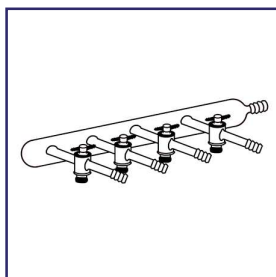


PG-9072
MICRO ADAPTER,
THERMOMETER, TE-
FLON

Compression nut allows for vertical adjustment of thermometers or bleed tubes with an O.D. of 6-7 mm. Supplied complete with O-Ring.

<u>Joint Size</u>	<u>For Use with Joint Sizes</u>	<u>CODE</u>	<u>Price</u>
10/18	10/18, 10/30	-01	26.73
14/20	14/20, 14/35	-02	29.53
19/22	19/22, 19/38	-03	CALL
24/25	24/25, 24/40	-04	41.29
29/26	29/26, 29/42	-05	CALL

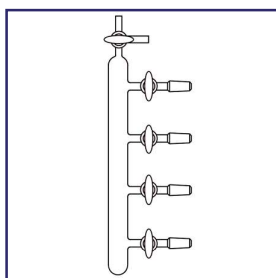




PRG-6500
MANIFOLD, TEFLON

General purpose vacuum manifold is equipped with 4mm straight through Teflon stopcocks spaced approximately 65mm apart. Body diameter is 1.0" and has 3/8" hose barb connections. Other designs are available upon request.

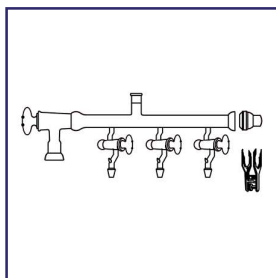
Number of Ports	Overall Length mm	Vacuum Connection			
		Right		Left	
		CODE	Price	CODE	Price
4	350	-01	425.78	-02	425.78
6	530	-03	584.68	-04	584.68



PRG-6505
MANIFOLD, 4-PORT,
SINGLE BODY

Four port single vacuum manifold is equipped with 4mm straight through glass stopcocks. A T-bore stopcock on one end provides a vacuum source control. Body diameter is 1.0" and ports are approximately 110mm apart. Other designs are available upon request. Vacuum grease is recommended.

Joint	Overall Length mm	CODE	Price
14/20	425	-01	850.57
19/22	425	-02	854.13
24/40	700	-03	858.91

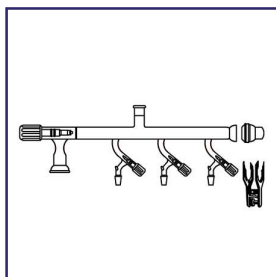


PRG-6510
MANIFOLD, OBLIQUE
STOPCOCK

Ports have a Hi-Vac single oblique glass stopcock to a tapered inner joint. Spaced approximately 110mm apart. 19/22 top joint is for a vacuum gauge. Main stopcock has 8mm bore and 35/25 socket ends. 35/25 ball O-Ring stopper plug and pinch clamp are supplied. Vacuum grease is recommended.

Number of Ports	Overall Length mm	14/20 Joint		19/22 Joint	
		CODE	Price	CODE	Price
3	480	-01	875.46	-02	880.09
4	590	-03	1,017.59	-04	1,020.14
5	700	-05	1,118.60	-06	1,125.67

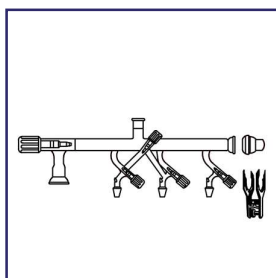




PRG-6515
MANIFOLD, PTFE
VALVE

Grease-Free manifold use Teflon metering valves. 0-12mm valve on main body and 0-4mm on ports. 19/22 top joint is for a vacuum gauge and 35/25 socket end ports. 35/25 ball O-Ring plug and pinch clamp are provided.

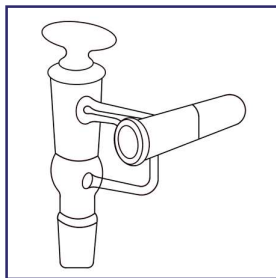
Number of Ports	Overall Length mm	14/20 $\frac{1}{8}$ Joint		19/22 $\frac{1}{4}$ Joint	
		CODE	Price	CODE	Price
3	480	-01	875.70	-02	878.51
4	590	-03	969.13	-04	972.33
5	700	-05	1,065.35	-06	1,072.08



PRG-6520
MANIFOLD, PTFE
VALVE, MODIFIED

Grease-Free manifold use Teflon metering valves. 0-12mm valve on main body and 0-4mm on ports. 19/22 top joint is for a vacuum gauge and 35/25 socket end ports. 35/25 ball O-Ring plug and pinch clamp are provided.

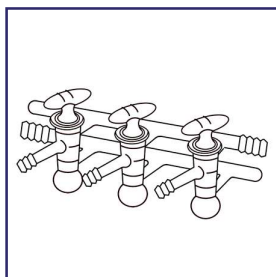
Number of Ports	Overall Length mm	14/20 $\frac{1}{8}$ Joint		19/22 $\frac{1}{4}$ Joint	
		CODE	Price	CODE	Price
3	480	-01	963.28	-02	966.37
4	590	-03	1,066.06	-04	1,069.55
5	700	-05	1,171.88	-06	1,179.30



PRG-6525
MANIFOLD GAUGE
ADAPTER

Fits with PRG-6515 and PRG-6520 manifold vacuum gauge port.

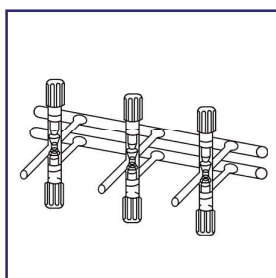
Lower $\frac{1}{8}$ Joints	Overall Height x Width mm	CODE	Price
19/22	115 x 75	-01	300.84



PRG-6530
MANIFOLD, DOUBLE
OBLIQUE

All glass 4mm double oblique high vacuum stopcocks with reservoir cups on the bottom. Main chamber is approximately 3/4" O.D. and 110mm between the ports. 3/8" hose barb ports. Vacuum grease recommended.

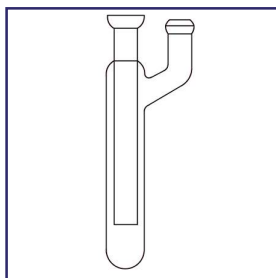
<u>Number of Ports</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
3	280	-01	626.91
4	365	-02	816.36
5	450	-03	1,005.62



PRG-6535
MANIFOLD, DOUBLE
TEFLON VALVES

Grease-free manifold uses dual metering valves for each port. Valves are approximately 110mm apart. Main chamber O.D. of 3/4".

<u>Number of Ports</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
3	280	-01	699.04
4	365	-02	842.04
5	450	-03	961.21

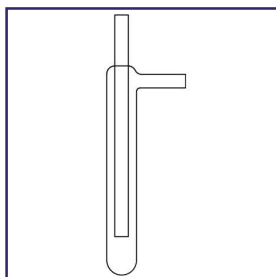


PRG-6540
TRAP

Modular vacuum trap connects to manifolds PRG-6515, PRG-6520 and PRG-6525, and to the pumping system. Trap prevents solvent from entering pump when used with PRG-5195 and PRG-5200 Dewars. 35/25 ball joint has a Viton O-Ring seal. Trap dimensions are 45mm O.D. x 320mm long.

<u>d Joints</u>	<u>Overall Height x Width mm</u>	<u>CODE</u>	<u>Price</u>
35/25	370 x 105	-01	285.97

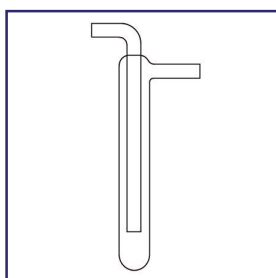




PRG-6545
TRAP, ONE PIECE

Traps protect vacuum pump from solvent vapors when used with a dry ice Dewar. See PRG-5195 and PRG-5200 for Dewar flasks.

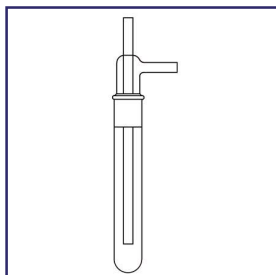
<u>O.D. of Body mm</u>	<u>Length of Body mm</u>	<u>O.D. of Stems mm</u>	<u>CODE</u>	<u>Price</u>
25	200	10	-01	55.74
30	225	13	-02	59.46
35	250	16	-03	59.90
38	250	20	-04	65.95
45	275	25	-05	80.36
51	300	30	-06	106.62
70	325	41	-07	143.08



PRG-6550
TRAP, ONE PIECE, 90°

Traps protect vacuum pump from solvent vapors when used with a dry ice Dewar. See PRG-5195 and PRG-5200 for Dewar flasks. Inlet tube is bent at 90° away from outlet tube.

<u>O.D. of Body mm</u>	<u>Length of Body mm</u>	<u>O.D. of Stems mm</u>	<u>CODE</u>	<u>Price</u>
25	200	10	-01	61.72
30	225	13	-02	65.90
35	250	16	-03	70.16
38	250	20	-04	77.29
45	275	25	-05	90.53
51	300	30	-06	119.85
70	325	41	-07	161.24

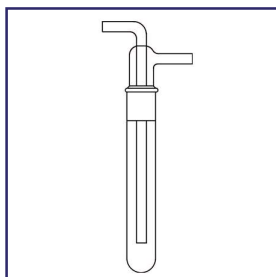


PRG-6555
TRAP, TWO PIECE

Traps protect vacuum pumps from solvent vapors when used with a dry ice Dewar. See PRG-5195 and PRG-5200 for Dewar flasks. Two piece design provides easy clean-up and waste removal.

<u>O.D. of Body mm</u>	<u>Length of Body mm</u>	<u>O.D. of Stems mm</u>	<u>Complete</u>		<u>Body Only</u>		<u>Stopper Only</u>	
			<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
32	200	10	-04	102.70	-05	34.68	-06	69.15
38	225	13	-07	116.70	-08	43.56	-09	73.99
48	250	20	-13	157.97	-14	65.69	-15	92.94
60	300	30	-19	214.78	-20	80.36	-21	135.41
75	325	41	-22	302.19	-23	117.21	-24	185.56

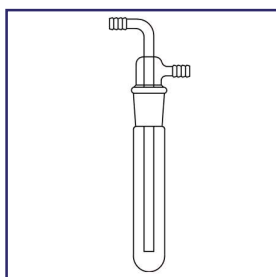




PRG-6560
TRAP, TWO PIECE,
90°

Traps protect vacuum pumps from solvent vapors when used with a dry ice Dewar. See PRG-5195 and PRG-5200 for Dewar flasks. Two piece design provides easy clean-up and waste removal.

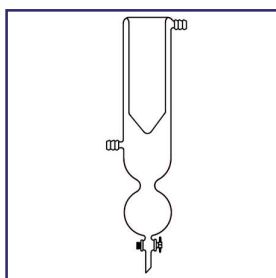
O.D. of Body mm	Length of Body mm	O.D. of Stems mm	£ Joints	Complete CODE	Price	Body Only CODE	Price	Stopper Only CODE	Price
32	200	10	29/42	-04	101.79	-05	34.37	-06	70.17
38	225	13	34/45	-07	117.46	-08	43.11	-09	78.56
48	250	20	45/50	-13	160.17	-14	65.69	-15	95.11
60	300	30	55/50	-19	218.59	-20	80.36	-21	139.70
75	325	41	71/60	-22	308.40	-23	117.21	-24	192.21



PRG-6565
TRAP, TWO PIECE,
SERRATED HOSE
CONNECTIONS

Two piece trap provides easy clean-up and waste removal. Inlet tube is bent at 90° away from outlet tube. Hose barbs for 1/2" I.D. hosing are on inlet/outlet tubes.

O.D. of Body mm	Length of Body mm	£ Joints	Complete CODE	Price	Body Only CODE	Price	Stopper Only CODE	Price
32	200	29/42	-01	110.69	-03	34.68	-02	79.07
38	225	34/45	-04	126.35	-06	43.11	-05	87.57
48	250	45/50	-07	169.05	-09	65.69	-08	104.01
60	300	55/50	-10	227.50	-12	80.36	-11	148.57
75	325	71/60	-13	317.30	-15	117.21	-14	201.14

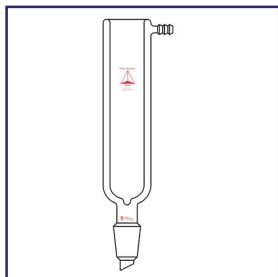


PRG-6570
TRAP, DEWAR TYPE

Dry ice or liquid Nitrogen reduces vapor to a condensate and collects in the lower reservoir. 4mm stopcock is available in Teflon or glass.

Description	Teflon		Glass	
	CODE	Price	CODE	Price
1000 ml Trap	-01	550.26	-02	542.38
2000 ml Trap	-03	568.19	-04	560.16

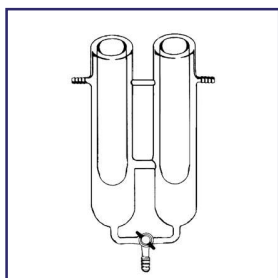




With large opening at the top of condenser for dry ice or liquid nitrogen. Condensation happens rapidly with large surface area. Serrated barb fits a 3/8" I.D. tube. For micro applications see PG-9108.

Inside I.D.	Depth of Condenser	24/40 Joint		29/42 Joint	
		CODE	Price	CODE	Price
40	200	-01	179.93	-02	185.55
50	250	-03	228.54	-04	234.10
75	300	-05	280.44	-06	286.03

PRG-1980
CONDENSER, DEWAR

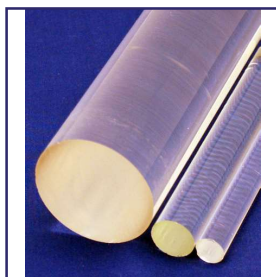


Twin chamber dry ice has a 500 ml chamber capacity and a 200 ml dry ice capacity. 3/8" ports are located at top of trap to connect to rotary evaporator and to vacuum. Bottom drain stopcock allows drainage from each chamber individually.

CODE	Price
-01	703.17

PRG-1982
DEWAR





**PQ-0100
ROD, GE 214**

Semiconductor grade of clear fused quartz. The quartz rod has excellent dimensional stability with minimal airlines and inclusions. Sold in 48" lengths.

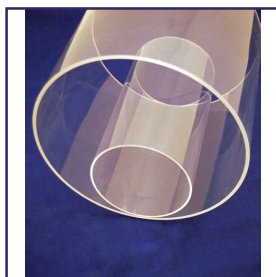
<u>Diameter mm</u>	<u>CODE</u>	<u>Price</u>
2	-02	2.20
3	-03	2.86
4	-04	4.84
5	-05	7.04
6	-06	10.56
8	-08	16.28
10	-10	23.54
12	-12	34.10
14	-14	55.00
16	-16	70.40
19	-19	104.5
20	-20	110.00



**PQ-0105
TUBE, GE 214**

Quartz tube, GE 214 direct draw, semiconductor grade of clear fused quartz. Excellent visual, thermal and mechanical properties with low hydroxyl content and tight dimensional tolerances. Tube length is 48". Other tube sizes available per request.

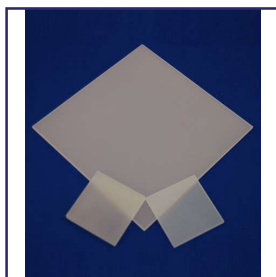
<u>I.D. mm</u>	<u>O.D. mm</u>	<u>CODE</u>	<u>Price</u>	<u>I.D. mm</u>	<u>O.D. mm</u>	<u>CODE</u>	<u>Price</u>
2	4	-2.4	5.50	25	28	-25.28	48.18
2	6	-2.6	14.96	27	30	-27.30	53.02
3	4	-3.4	3.96	28	32	-28.32	77.00
4	8	-4.8	16.94	30	33	-30.33	61.38
4	6	-4.6	6.82	30	36	-30.36	144.98
5	7	-5.7	8.58	32	35	-32.35	141.90
6	8	-6.8	9.24	35	38	-35.38	71.50
6	10	-6.10	21.34	36	40	-36.40	92.40
6	12	-6.12	31.90	40	43	-40.43	77.00
7	9	-7.9	11.22	42	45	-42.45	83.38
8	10	-8.10	11.88	45	48	-45.48	91.96
8	12	-8.12	15.40	46	50	-46.50	121.88
9	15	-9.15	46.86	48	52	-48.52	130.90
10	14	-10.14	30.58	50	55	-50.55	140.80
11	13	-11.13	15.84	52	58	-52.58	270.60
12	14	-12.14	13.86	53	57	-53.57	158.18
13.5	19	-135.19	55.00	55	59	-55.59	160.60
15	18	-15.18	32.12	60	64	-60.64	174.90
16	20	-16.20	52.58	60	65	-60.65	284.63
18	22	-18.22	CALL	64	68	-64.68	187.00
20	23	-20.33	42.24	66	70	-66.70	224.40
22	25	-22.25	40.48	70	75	-70.75	371.25



**PQ-0107
TUBE, GE 214 LD**

Quartz tube, GE 214 LD, semiconductor grade of clear fused quartz. Excellent visual, thermal and mechanical properties with low hydroxyl content and tight dimensional tolerances. Larger bore tubes are furnace drawn and sized on lathe. Tube length is 48". Other tube sizes available per request.

<u>I.D. mm</u>	<u>O.D. mm</u>	<u>CODE</u>	<u>Price</u>	<u>I.D. mm</u>	<u>O.D. mm</u>	<u>CODE</u>	<u>Price</u>
75	80	-75.80	538.18	150	156	-150.156	1,061.50
80	85	-80.85	547.25	155	161	-155.161	1,089.00
85	90	-85.90	596.75	160	166	-160.166	1,001.00
90	95	-90.95	603.63	165	171	-165.171	1,038.95
95	100	-95.100	721.33	170	176	-170.176	979.00
101.6	106.6	-101.106	539.00	176	184	-176.184	1,518.00
105	110	-105.110	712.25	184	190	-184.190	1,056.00
110	115	-110.115	734.25	190	196	-190.196	1,342.00
115	120	-115.120	763.95	195	201	-195.201	1,298.00
120	125	-120.125	768.63				
125	130	-125.130	841.50				
130	135	-130.135	726.00				
135	141	-135.141	770.00				
140	146	-140.146	980.38				
145	151	-145.151	1,006.50				



PLATE, GROUND FINISH, SQUARE

Quartz square plate, 15-30 micron ground finish, GE 124 semiconductor grade material.

PQ-1062
1/16" (0.0625")

Dimensions	CODE	Price
1" x 1"	-1.1	CALL
1.5" x 1.5"	-15.15	8.75
2" x 2"	-2.2	12.90
2.5" x 2.5"	-25.25	20.00
3" x 3"	-3.3	21.25
3.5" x 3.5"	-35.35	27.50
4" x 4"	-4.4	37.50
5" x 5"	-5.5	38.75
6" x 6"	-6.6	53.75
8" x 8"	-8.8	98.75
10" x 10"	-10.10	146.25
12" x 12"	-12.12	210.00

PQ-1125
1/8" (0.125")

Dimensions	CODE	Price
1" x 1"	-1.1	5.00
1.5" x 1.5"	-15.15	8.75
2" x 2"	-2.2	13.75
2.5" x 2.5"	-25.25	21.25
3" x 3"	-3.3	27.50
3.5" x 3.5"	-35.35	31.25
4" x 4"	-4.4	38.75
5" x 5"	-5.5	45.00
6" x 6"	-6.6	61.25
8" x 8"	-8.8	107.50
10" x 10"	-10.10	220.00
12" x 12"	-12.12	238.75

PQ-1188
3/16" (0.188")

Dimensions	CODE	Price
1" x 1"	-1.1	6.25
1.5" x 1.5"	-15.15	12.50
2" x 2"	-2.2	16.25
2.5" x 2.5"	-25.25	27.50
3" x 3"	-3.3	30.00
3.5" x 3.5"	-35.35	45.00
4" x 4"	-4.4	47.50
5" x 5"	-5.5	61.25
6" x 6"	-6.6	73.75
8" x 8"	-8.8	127.50
10" x 10"	-10.10	248.75
12" x 12"	-12.12	285.00

PQ-1250
1/4" (0.250")

Dimensions	CODE	Price
1" x 1"	-1.1	7.50
1.5" x 1.5"	-15.15	12.50
2" x 2"	-2.2	21.25
2.5" x 2.5"	-25.25	30.00
3" x 3"	-3.3	38.75
3.5" x 3.5"	-35.35	48.75
4" x 4"	-4.4	61.25
5" x 5"	-5.5	77.50
6" x 6"	-6.6	85.00
8" x 8"	-8.8	148.75
10" x 10"	-10.10	286.25
12" x 12"	-12.12	332.50

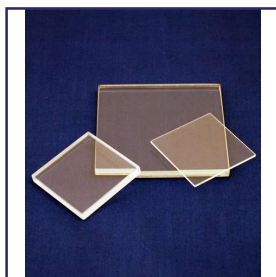
PQ-1313
5/16" (0.313")

Dimensions	CODE	Price
1" x 1"	-1.1	CALL
1.5" x 1.5"	-15.15	CALL
2" x 2"	-2.2	CALL
2.5" x 2.5"	-25.25	CALL
3" x 3"	-3.3	CALL
3.5" x 3.5"	-35.35	CALL
4" x 4"	-4.4	CALL
5" x 5"	-5.5	CALL
6" x 6"	-6.6	CALL
8" x 8"	-8.8	CALL
10" x 10"	-10.10	CALL
12" x 12"	-12.12	CALL

PQ-1375
3/8" (0.375")

Dimensions	CODE	Price
1" x 1"	-1.1	CALL
1.5" x 1.5"	-15.15	CALL
2" x 2"	-2.2	CALL
2.5" x 2.5"	-25.25	CALL
3" x 3"	-3.3	CALL
3.5" x 3.5"	-35.35	CALL
4" x 4"	-4.4	CALL
5" x 5"	-5.5	CALL
6" x 6"	-6.6	CALL
8" x 8"	-8.8	CALL
10" x 10"	-10.10	CALL
12" x 12"	-12.12	CALL





**PLATE, GROUND AND
POLISHED FINISH,
SQUARE**

Semiconductor grade material made from GE 124 clear fused Ingots. All edges are broken. Our laser cutting service can provide quartz plate cut to your specifications.

**PQ-2062
1/16" (0.0625")**

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
1" x 1"	-1.1	8.75
1.5" x 1.5"	-15.15	15.00
2" x 2"	-2.2	22.50
2.5" x 2.5"	-25.25	27.50
3" x 3"	-3.3	40.00
3.5" x 3.5"	-35.35	47.50
4" x 4"	-4.4	62.50
5" x 5"	-5.5	91.25
6" x 6"	-6.6	130.00
8" x 8"	-8.8	19*2.50
10" x 10"	-10.10	300.00
12" x 12"	-12.12	427.50

**PQ-2125
1/8" (0.125")**

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
1" x 1"	-1.1	8.75
1.5" x 1.5"	-15.15	16.25
2" x 2"	-2.2	23.75
2.5" x 2.5"	-25.25	32.50
3" x 3"	-3.3	45.00
3.5" x 3.5"	-35.35	53.75
4" x 4"	-4.4	71.25
5" x 5"	-5.5	95.00
6" x 6"	-6.6	137.50
8" x 8"	-8.8	222.50
10" x 10"	-10.10	373.75
12" x 12"	-12.12	500.00

**PQ-2188
3/16" (0.188")**

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
1" x 1"	-1.1	8.75
1.5" x 1.5"	-15.15	17.50
2" x 2"	-2.2	25.00
2.5" x 2.5"	-25.25	36.25
3" x 3"	-3.3	53.75
3.5" x 3.5"	-35.35	60.00
4" x 4"	-4.4	83.75
5" x 5"	-5.5	105.00
6" x 6"	-6.6	141.25
8" x 8"	-8.8	253.75
10" x 10"	-10.10	403.75
12" x 12"	-12.12	575.00

**PQ-2250
1/4" (0.250")**

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
1" x 1"	-1.1	10.00
1.5" x 1.5"	-15.15	20.00
2" x 2"	-2.2	27.50
2.5" x 2.5"	-25.25	46.25
3" x 3"	-3.3	53.75
3.5" x 3.5"	-35.35	65.00
4" x 4"	-4.4	95.00
5" x 5"	-5.5	117.50
6" x 6"	-6.6	163.75
8" x 8"	-8.8	285.00
10" x 10"	-10.10	451.25
12" x 12"	-12.12	641.25

**PQ-2313
5/16" (0.313")**

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
1" x 1"	-1.1	CALL
1.5" x 1.5"	-15.15	CALL
2" x 2"	-2.2	CALL
2.5" x 2.5"	-25.25	CALL
3" x 3"	-3.3	CALL
3.5" x 3.5"	-35.35	CALL
4" x 4"	-4.4	CALL
5" x 5"	-5.5	CALL
6" x 6"	-6.6	CALL
8" x 8"	-8.8	CALL
10" x 10"	-10.10	CALL
12" x 12"	-12.12	CALL

**PQ-2375
3/8" (0.375")**

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
1" x 1"	-1.1	CALL
1.5" x 1.5"	-15.15	CALL
2" x 2"	-2.2	CALL
2.5" x 2.5"	-25.25	CALL
3" x 3"	-3.3	CALL
3.5" x 3.5"	-35.35	CALL
4" x 4"	-4.4	CALL
5" x 5"	-5.5	CALL
6" x 6"	-6.6	CALL
8" x 8"	-8.8	CALL
10" x 10"	-10.10	CALL
12" x 12"	-12.12	CALL





**DISC, GROUND FIN-
ISH**

Quartz disc, 15-30 micron ground finish, GE 124 semiconductor grade material.

PQ-1062D
1/16" (0.0625") Thick

Diameter	CODE	Price
1"	-01	5.00
1.5"	-01.5	6.25
2"	-02	7.50
2.5"	-02.5	10.00
3"	-03	12.50
3.5"	-03.5	25.00
4"	-04	31.25
5"	-05	48.75
6"	-06	57.50
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-1125D
1/8" (0.125") Thick

Diameter	CODE	Price
1"	-01	5.00
1.5"	-01.5	8.75
2"	-02	7.50
2.5"	-02.5	10.00
3"	-03	13.75
3.5"	-03.5	28.75
4"	-04	35.00
5"	-05	48.75
6"	-06	65.00
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-1188D
3/16" (0.188") Thick

Diameter	CODE	Price
1"	-01	6.25
1.5"	-01.5	10.00
2"	-02	17.50
2.5"	-02.5	CALL
3"	-03	20.00
3.5"	-03.5	33.75
4"	-04	42.50
5"	-05	62.50
6"	-06	78.75
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-1250D
1/4" (0.250") Thick

Diameter	CODE	Price
1"	-01	6.25
1.5"	-01.5	12.50
2"	-02	18.75
2.5"	-02.5	18.75
3"	-03	25.00
3.5"	-03.5	36.25
4"	-04	43.75
5"	-05	62.50
6"	-06	96.25
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

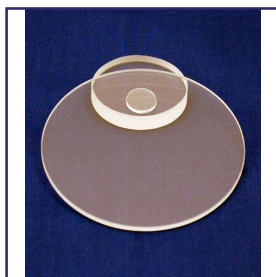
PQ-1313D
5/16" (0.313") Thick

Diameter	CODE	Price
1"	-01	CALL
1.5"	-01.5	CALL
2"	-02	CALL
2.5"	-02.5	CALL
3"	-03	CALL
3.5"	-03.5	CALL
4"	-04	CALL
5"	-05	CALL
6"	-06	CALL
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-1375D
3/8" (0.375") Thick

Diameter	CODE	Price
1"	-01	CALL
1.5"	-01.5	CALL
2"	-02	CALL
2.5"	-02.5	CALL
3"	-03	CALL
3.5"	-03.5	CALL
4"	-04	CALL
5"	-05	CALL
6"	-06	CALL
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL





DISC, GROUND AND POLISHED FINISH

Semiconductor grade material made from clear fused GE 124 Ingots. All edges are broken. Our laser cutting service can provide quartz plate cut to your specifications.

PQ-2062D
1/16" (0.0625") Thick

Diameter	CODE	Price
0.5"	-005	6.25
0.75"	-0075	5.00
1"	-01	7.50
1.5"	-01.5	12.50
2"	-02	20.00
2.5"	-02.5	25.00
3"	-03	36.25
3.5"	-03.5	42.50
4"	-04	52.50
5"	-05	82.50
6"	-06	118.75
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-2125D
1/8" (0.125") Thick

Diameter	CODE	Price
0.5"	-005	7.50
0.75"	-0075	7.50
1"	-01	7.50
1.5"	-01.5	13.75
2"	-02	21.25
2.5"	-02.5	27.50
3"	-03	38.75
3.5"	-03.5	45.00
4"	-04	56.25
5"	-05	86.25
6"	-06	123.75
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-2188D
3/16" (0.188") Thick

Diameter	CODE	Price
0.5"	-005	8.75
0.75"	-0075	8.75
1"	-01	8.75
1.5"	-01.5	13.75
2"	-02	21.25
2.5"	-02.5	28.75
3"	-03	40.00
3.5"	-03.5	46.25
4"	-04	57.50
5"	-05	91.25
6"	-06	130.00
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-2250D
1/4" (0.250") Thick

Diameter	CODE	Price
0.5"	-005	10.00
0.75"	-0075	8.75
1"	-01	11.25
1.5"	-01.5	16.25
2"	-02	25.00
2.5"	-02.5	31.25
3"	-03	45.00
3.5"	-03.5	53.75
4"	-04	66.25
5"	-05	102.50
6"	-06	147.50
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-2313D
5/16" (0.313") Thick

Diameter	CODE	Price
0.5"	-005	CALL
0.75"	-0075	CALL
1"	-01	CALL
1.5"	-01.5	CALL
2"	-02	CALL
2.5"	-02.5	CALL
3"	-03	CALL
3.5"	-03.5	CALL
4"	-04	CALL
5"	-05	CALL
6"	-06	CALL
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-2375D
3/8" (0.375") Thick

Diameter	CODE	Price
0.5"	-005	CALL
0.75"	-0075	CALL
1"	-01	CALL
1.5"	-01.5	CALL
2"	-02	CALL
2.5"	-02.5	CALL
3"	-03	CALL
3.5"	-03.5	CALL
4"	-04	CALL
5"	-05	CALL
6"	-06	CALL
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

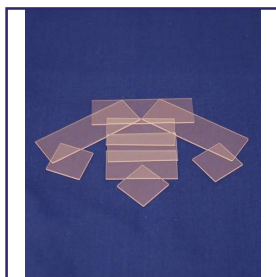
PQ-2500D
1/2" (0.500") Thick

Diameter	CODE	Price
0.5"	-005	25.00
0.75"	-0075	28.75
1"	-01	27.50
1.5"	-01.5	38.75
2"	-02	41.25
2.5"	-02.5	53.75
3"	-03	80.00
3.5"	-03.5	47.50
4"	-04	102.50
5"	-05	140.00
6"	-06	222.50
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

PQ-2750D
3/4" (0.750") Thick

Diameter	CODE	Price
0.5"	-005	31.25
0.75"	-0075	51.25
1"	-01	28.75
1.5"	-01.5	43.75
2"	-02	52.50
2.5"	-02.5	67.50
3"	-03	103.75
3.5"	-03.5	131.25
4"	-04	176.25
5"	-05	223.75
6"	-06	263.75
8"	-08	CALL
10"	-10	CALL
12"	-12	CALL

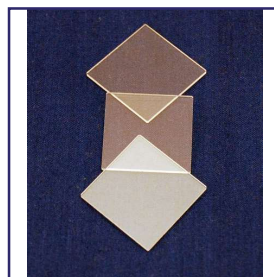




PQ-2040
MICROSCOPE
SLIDES, GROUND
AND POLISHED FIN-
ISH

Quartz microscope slides, polished, 2-3 micron finish, GE124 semiconductor grade material, 1mm thick.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
25 x 25 mm	-01	10.00
50 x 25 mm	-02	13.75
75 x 25 mm	-03	15.00

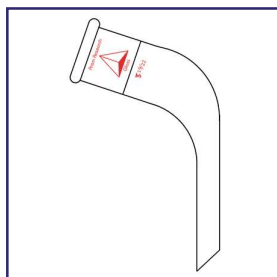


PQ-2030
COVER SLIP

Quartz cover slip, polished, 2-3 micron finish, GE124 semiconductor grade material.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
19 x 19 mm	-01	CALL

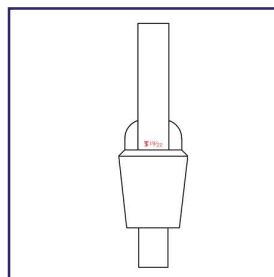




PG-9000
105 BEND

Micro scale adapter with 105° bend. Connection is a standard taper joint.

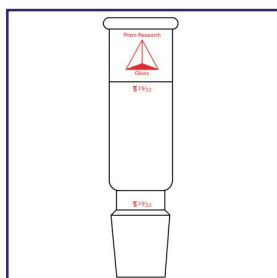
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	27.02
19/22	-02	27.34



PG-9002
STRAIGHT

Straight micro scale adapter with standard taper joint.

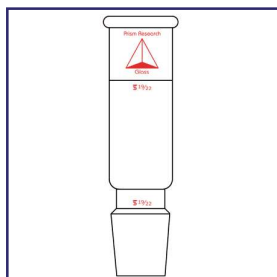
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	27.21
19/22	-02	28.18



PG-9004
STRAIGHT, 90mm

Micro scale adapter for straight through connections. 90 mm between the two standard taper joints.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	42.28
19/22	-02	43.53

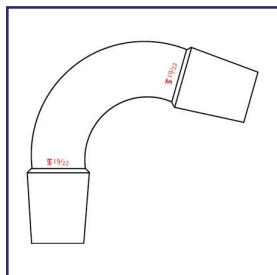


PG-9006
**REDUCING AND EN-
LARGING**

Micro scale adapter for reducing or enlarging connections. All joints are standard taper.

Top Outer		Bottom Inner		<u>CODE</u>	<u>Price</u>	Top Outer		Bottom Inner		<u>CODE</u>	<u>Price</u>
<u>Joint</u>		<u>Joint</u>				<u>Joint</u>		<u>Joint</u>			
10/30		14/20		-01	32.45	19/22		24/40		-14	37.48
10/30		19/22		-02	33.10	19/22		29/26		-15	39.07
14/20		10/30		-03	32.45	19/22		29/42		-16	39.07
14/20		19/22		-04	33.10	19/22		34/35		-17	45.20
14/20		19/38		-05	33.10	19/22		14/20		-18	34.17
14/20		24/25		-06	33.61	19/22		19/22		-19	37.00
14/20		24/40		-07	34.18	24/24		14/20		-20	35.08
14/20		29/26		-08	37.60	24/25		19/22		-21	42.78
14/20		29/42		-09	37.60	24/25		19/38		-22	42.78
14/20		34/45		-10	46.23	24/40		14/20		-23	35.78
19/22		14/20		-11	34.18	24/40		19/22		-24	37.80
19/22		19/38		-12	36.14	29/26		14/20		-25	37.60
19/22		24/25		-13	37.23	29/26		19/22		-26	39.07

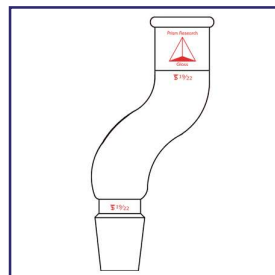




PG-9008
75 BEND

Adapter, 75° bend, same size standard taper inner joints at both ends, micro scale.

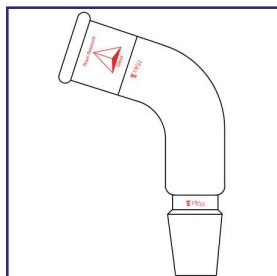
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	35.69
19/22	-02	39.29



PG-9010
OFFSET

Adapter, off-set. One standard taper inner joint and one standard taper outer joint of the same size.

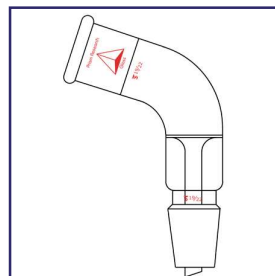
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	38.64
19/22	-02	39.07



PG-9012
105 BEND

Adapter, 105° bend, one standard taper inner joint and one standard taper outer joint of the same size.

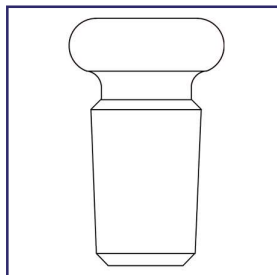
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	39.28
19/22	-02	39.91



PG-9014
105 BEND

Adapter, 105° bend with a standard taper inner joint with a sealed-in drip tip at one end and a standard taper outer joint at the other. Both joints are the same size.

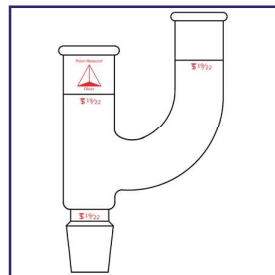
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	45.65
19/22	-02	41.00



PG-9016
BUSHING

Adapter, Bushing

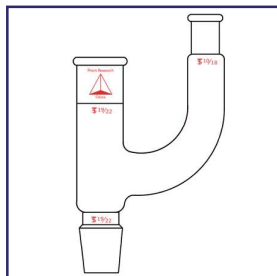
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	32.97
14/20	-02	32.97
19/22	-03	32.97



PG-9018
THREE WAY, CLAISEN

Three-way Claisen adapter with all standard taper joints the same size.

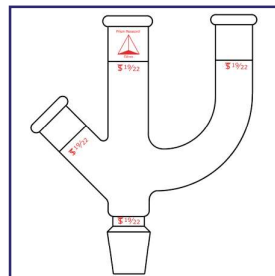
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	63.75
19/22	-02	65.76



PG-9020
THREE WAY

Adapter, three-way, standard taper joints, side arm has a 10/18 outer joint. The side tube will accept a 25mm immersion thermometer.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	79.66
19/22	-02	81.77

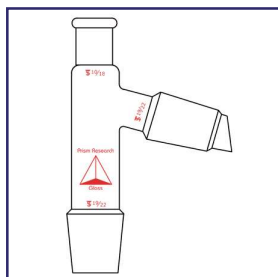


PG-9022
CLAISEN

Adapter, Claisen, three top standard taper outer joints and one lower standard taper inner joint. All joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	97.21
19/22	-02	98.09

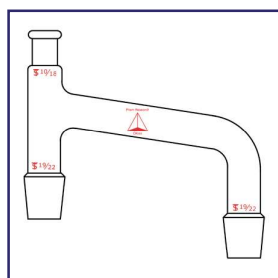




PG-9024
THREE-WAY

Adapter, three-way, standard taper joints, side tube at 75° angle with drip tip, thermometer top joint.

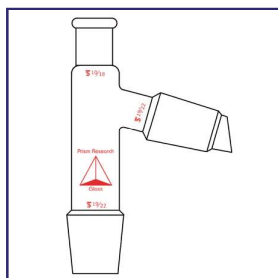
<u>Joint</u>	<u>Thermometer Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	10/18	-01	58.32
19/22	7/12	-02	59.50
19/22	10/18	-03	60.54



PG-9026
CONNECTING, 75
ANGLE SIDE ARM

Adapter, connecting, 75° angle side arm, upper joint will accept a 25mm immersion thermometer. Both lower inner joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	64.69
19/22	-02	66.99

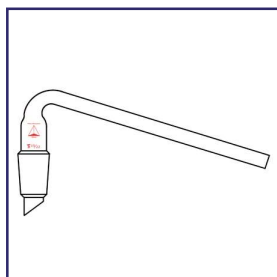


PG-9028
CLAISEN

Adapter, Claisen, side take-off arm is at a 75° angle with a top outer joint for an immersion thermometer.

<u>Joint</u>	<u>Thermometer Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	10/18	-01	108.38
19/22	7/12	-02	109.54
19/22	10/18	-03	111.71

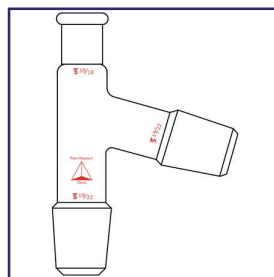




PG-9030
DISTILLING

Adapter, Distilling

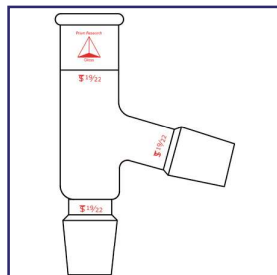
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	30.68
19/22	-02	31.46



PG-9032
3-WAY, 75° SIDE ARM
WITH THERMOMETER
JOINT

Adapter, three-way, side arm at 75° bend. Inner joints on side arm and bottom are the same size. 10/18 outer joint at the top will accept a 25mm immersion thermometer.

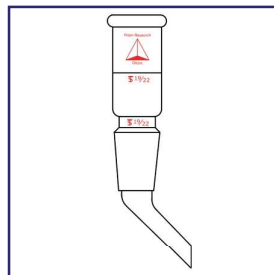
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	50.77
19/22	-02	52.00



PG-9034
3-WAY, 75° SIDE ARM

Adapter, three-way, side arm at 75° bend. Top outer joint, inner joint on side arm and inner bottom joint are the same size.

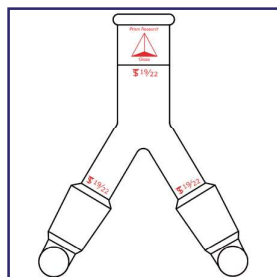
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	52.27
19/22	-02	53.76



PG-9036
ADDITION OR DIS-
TRIBUTING

Adapter, addition or distributing. Top outer joint with an angled stem and an inner joint above the stem. Used to distribute liquid into collectors and reaction flasks.

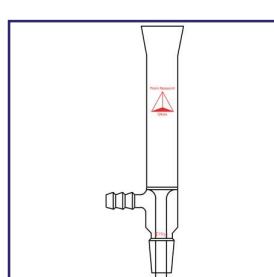
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	47.71
19/22	-02	48.64



PG-9038
3-WAY

Adapter, three-way. Top outer joint, inner joints on both angled bottom arms with drip tips. All joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	71.49
19/22	-02	73.45

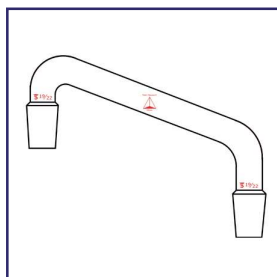


PG-9040
FILTRATION, VACUUM

Adapter, Filtration, Vacuum

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	62.33
19/22	-02	65.71

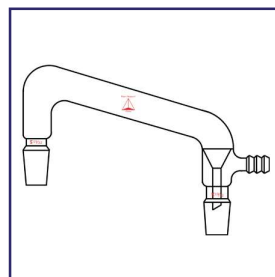




PG-9042
CONNECTING

Adapter, connecting. Parallel connecting inner joints are at a 75° angle. Micro scale.

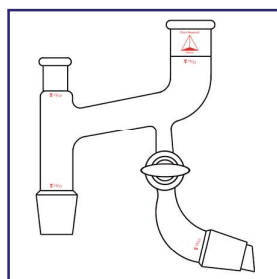
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	54.43
19/22	-02	55.69



PG-9044
DISTILLING, VACUUM,

Adapter, Vacuum, Distilling. Parallel connecting inner joints are at a 75° angle. With a vacuum port and inner drip tip.

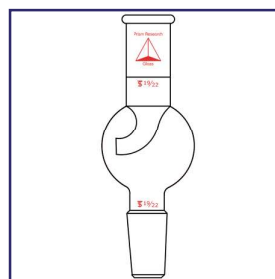
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	82.62
19/22	-02	83.47



PG-9046
DISTILLING, HEAD

Adapter, Distilling Head. All joints are the same size except for the 10/18 joint located on the uptake for 25mm immersion thermometer. Located underneath the side arm is a 2mm Teflon stop-cock.

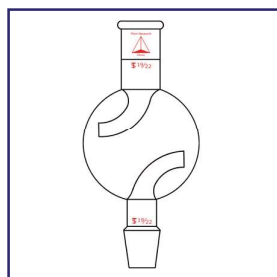
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	169.95
19/22	-02	172.60



PG-9048
KJELDAHL TRAP

Adapter, Kjeldahl Trap. Top outer joint and bottom inner joint. Both joints are the same size.

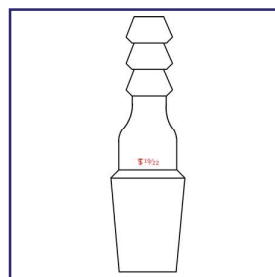
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	62.42
19/22	-02	64.36



PG-9050
KJELDAHL TRAP

Adapter, Straight, Kjeldahl Trap. Top outer joint and a bottom inner joint. Both joints are the same size.

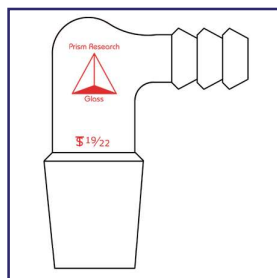
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	103.72
19/22	-02	105.21



PG-9052
INLET, STANDARD
TAPER, HOSE BARB

Adapter, Inlet, Bottom Inner Joint, Hose Barb Connection at the Top.

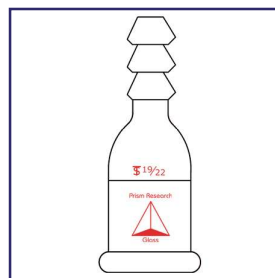
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	21.86
19/22	-02	22.94



PG-9054
90° INLET, STANDARD
TAPER, HOSE BARB

Adapter, Inlet, 90° Bend at Top with a Hose Barb Connection, Standard Taper Inner Joint at the Bottom.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	21.78
19/22	-02	22.86

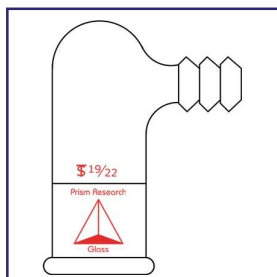


PG-9056
OUTLET, STANDARD
TAPER, HOSE BARB

Adapter, Outlet, Bottom Outer Joint, Hose Barb Connection at the Top.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	23.42
19/22	-02	24.36



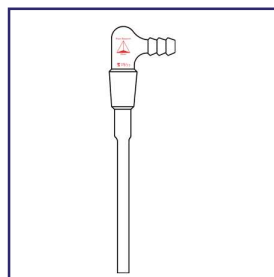


PG-9058

90° OUTLET, STANDARD TAPER, HOSE BARB

Adapter, Outlet, 90° Bend at Top with a Hose Barb Connection, Inner Joint at the Bottom.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	26.39
19/22	-02	27.53

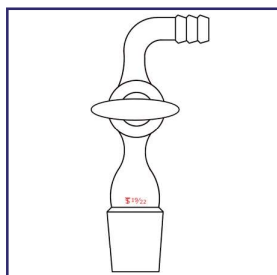


PG-9060

90° OUTLET, STANDARD TAPER, HOSE BARB, WITH EXTENSION

Adapter, Inlet, Extended, 90° Bend at Top with a Hose Barb Connection, Inner Joint with Tapered Tube Extension. Used for ventilation. Allows reactants to be tested below the interior surface.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	33.54
19/22	-02	35.16

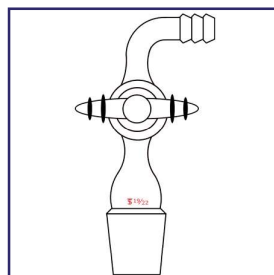


PG-9062

90° INLET, GLASS STOPCOCK, HOSE CONNECTION

Adapter, Inlet, 90° Bend at Top with a Glass Stopcock and Hose Barb Connection, Standard Taper Inner Joint at the Bottom.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	58.80
19/22	-02	61.11

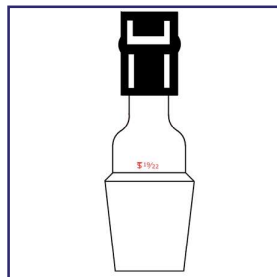


PG-9064

90° INLET, TFE STOPCOCK, HOSE CONNECTION

Adapter, Inlet, 90° Bend, 2mm TFE Stopcock and Hose Connection

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	79.60
19/22	-02	81.37



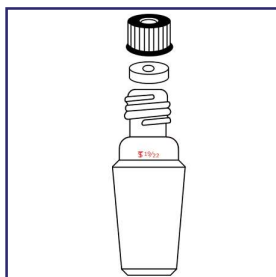
PG-9066

THERMOMETER, STRAIGHT, STANDARD TAPER

Adapter, Thermometer, Standard Taper Inner Joint. Rubber filament is supplied with adapter for thermometer connection.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	20.17
19/22	-02	20.38

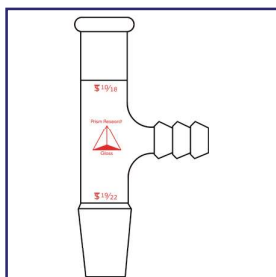




Adapter, Threaded, Standard Taper Inner Joint at the Bottom. #14 GL cap and Teflon seal ring makes a compression seal with thermometers. Used for vacuum testing.

	Glass Only		Complete	
<u>Joint</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	29.20	-03	48.54
19/22	-02	29.85	-04	49.45

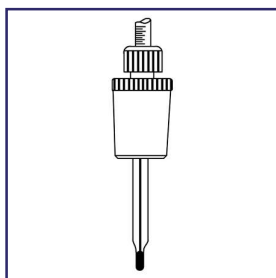
PG-9068
THREADED, STANDARD TAPER



Adapter, Thermometer, Bushing Style. Standard Taper Bottom Inner Joint, 10/18 Standard Taper Top Outer Joint. Side hose connection. Used for vacuum testing.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	47.60
19/22	-02	51.43

PG-9070
THERMOMETER, BUSHING STYLE, STANDARD TAPER

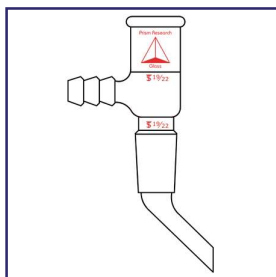


Compression nut allows for vertical adjustment of thermometers or bleed tubes with an O.D. of 6-7mm. Supplied complete with O-Ring.

<u>Joint</u>	<u>For Use with Joint Sizes</u>	<u>CODE</u>	<u>Price</u>
10/18	10/18, 10/30	-01	CALL
14/20	14/20, 14/35	-02	CALL
19/22	19/22, 19/38	-03	CALL
24/25	24/25, 24/40	-04	CALL
29/26	29/26, 29/42	-05	CALL

PG-9072
THERMOMETER, TEF-
FLON

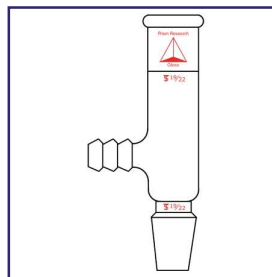




PG-9074
ADDITION OR DIS-
TRIBUTING

Adapter, addition or distribut-
ing. Top outer joint with side
hose connection, setting on
an angled stem with inner
joint above the stem. Used to
distribute liquid into collectors
and reaction flasks.

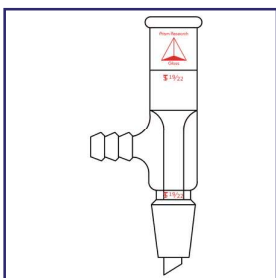
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	51.28
19/22	-02	52.81



PG-9076
STRAIGHT, VACUUM,
STANDARD TAPER

Adapter, straight with added
vacuum port. Standard taper
top outer joint and standard
taper bottom inner joint are
the same size. (Connecting
adapter with added vacuum
port)

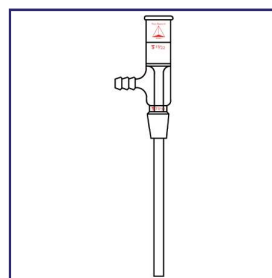
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	47.60
19/22	-02	51.43



PG-9078
STRAIGHT, VACUUM,
STANDARD TAPER,
INNER DRIP TIP

Adapter, straight with added
vacuum port and inner drip
tip. Standard taper top outer
joint and standard taper bot-
tom inner joint are the same
size.

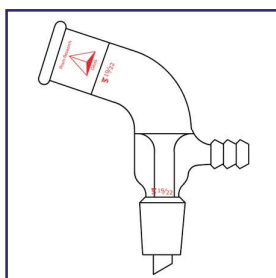
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	51.55
19/22	-02	52.96



PG-9080
STRAIGHT, VACUUM,
STANDARD TAPER,
SEALED-IN DELIVERY
TUBE

Adapter, Straight, Vacuum.
Sealed-in inner delivery tube
extends 90mm below the end
of the bottom inner joint. Top
outer joint and bottom inner
joint are the same size.

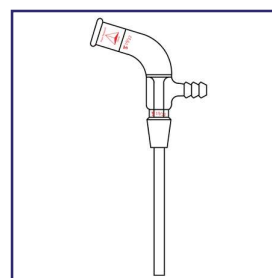
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	49.47
19/22	-02	50.15



PG-9082
105°, VACUUM, STAN-
DARD TAPER, INNER
DRIP TIP

Adapter, 105° bend with
added vacuum port and inner
drip tip. Top outer joint and
bottom inner joint are the
same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	53.97
19/22	-02	55.64

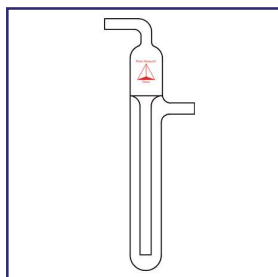


PG-9084
105°, VACUUM, STAN-
DARD TAPER,
SEALED-IN DELIVERY
TUBE

Adapter, 105° Bend, Vacuum.
Sealed-in inner delivery tube
extends 90mm below the end
of the bottom inner joint. Top
outer joint and bottom inner
joint are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	53.89
19/22	-02	55.67

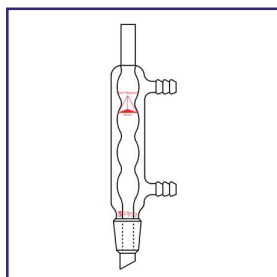




Bubbler, mineral oil, 8mm O.D. connections, 40ml volume below sidearm.

<u>CODE</u>	<u>Price</u>
-01	49.58

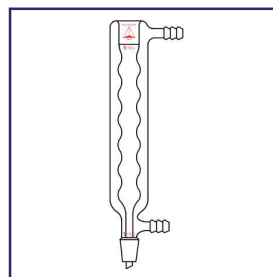
PG-9100
MINERAL OIL



PG-9102
ALLIHN, DRIP TIP

Condenser, Allihn. Water-cooled inner joint at bottom with a drip tip.

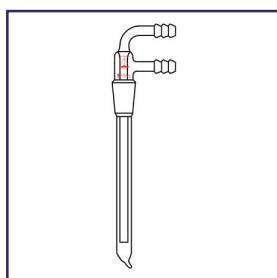
Joint	CODE	Price
14/20	-01	84.86
19/22	-02	86.12



PG-9104
ALLIHN, DRIP TIP

Condenser, Allihn. Top outer joint, water-cooled inner joint at bottom with a drip tip. Both joints are the same size.

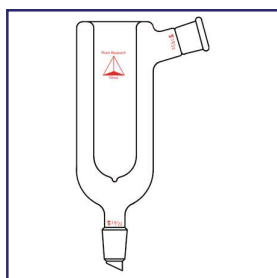
Joint	CODE	Price
14/20	-01	99.28
19/22	-02	100.29



PG-9106
COLD FINGER, DRIP TIP

Condenser, cold finger, inner joint near the top and a drip tip at the bottom.

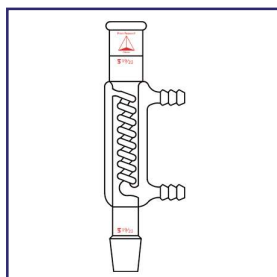
Joint	CODE	Price
14/20	-01	69.35
19/22	-02	70.73



PG-9108
DEWAR

Condenser, Dewar. Rapid condensation of gaseous solvents is made possible with a large opening at tip for use with dry ice.

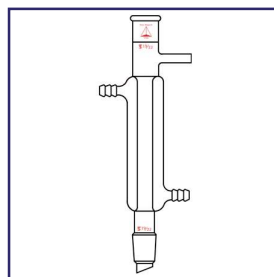
Inside Depth x Dia.	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
90 x 37 mm	-01	179.64	-02	183.17
90 x 70 mm	-03	179.64	-04	183.17
120 x 31 mm	-05	191.12	-06	193.01



PG-9110
DOUBLE COOLING

Condenser, double cooling.
Top outer joint and bottom
inner joint are the same size.
Jacket length is 80mm.

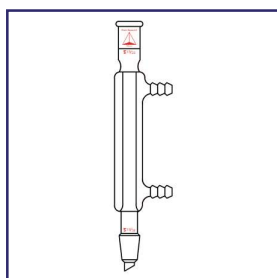
<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	142.69
19/22	-02	145.27



PG-9112
LIEBIG

Condenser, Liebig, top outer
joint, bottom inner joint with
drip tip. Both joints are the
same size. Jacket length is
110mm. A side tube near the
top allows for vacuum attach-
ment.

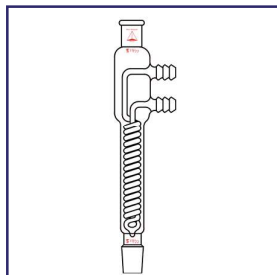
<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	87.03
19/22	-02	89.47



PG-9114
LIEBIG, NO HOLD UP

Condenser, Liebig, no hold-up, top outer joint and bottom inner joint with drip tip. Jacket length is 100mm.

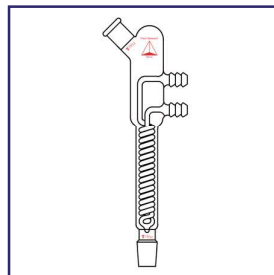
<u>Top Joint</u>	<u>Bottom Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	79.49
14/20	14/35	-02	80.06
19/22	19/22	-03	82.04
19/22	19/38	-04	85.79



PG-9116
REFLUX, COIL TYPE

Condenser, reflux, coil type,
top outer joint, bottom inner
joint. Coil on inside of jacket
forms a drip tip at the bottom.
Overall length is 200mm.

<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	163.71
19/22	-02	167.27

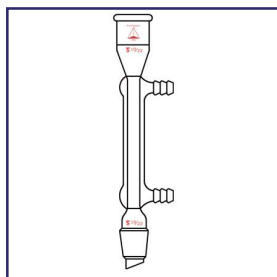


PG-9118
REFLUX, COIL TYPE

Condenser, reflux, coil type,
top outer joint, bottom inner
joint. Coil on inside of jacket
forms a drip tip at the bottom.
Overall length is 200mm. Top
joint is at an angle.

<u>Top Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	168.79
19/22	-02	194.36

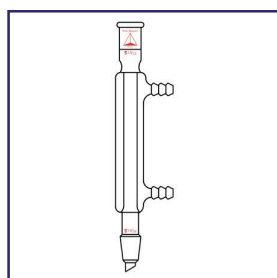




PG-9120
WEST

Condenser, West, top outer joint, bottom inner joint with drip tip. Both joints are the same size. Overall length of jacket is 110mm.

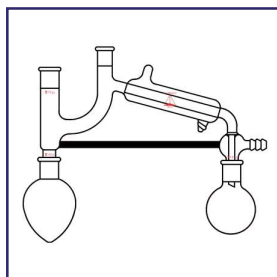
<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	85.67
19/22	-02	88.59



PG-9122
WEST, JACKETED

Condenser, West, jacketed. Water cooled outer top joint, bottom inner joint with drip tip. Both joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	103.20	-02	108.94
19/22	-03	106.23	-04	112.04

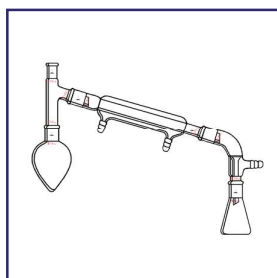


PG-9124
DISTILLING APPARA-
TUS

Distilling apparatus, consists of a Claisen adapter and a condenser with vacuum take-off and drip tip sealed together as a single unit. All joints are the same size except a 10/18 thermometer joint located on the side arm of the adapter to accept 25mm immersion thermometer.

<u>Description</u>	14/20		19/22	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	342.91	-11	334.25
Claisen Head Only	-02	379.90	-12	340.15

	<u>CODE</u>	<u>Price</u>
Distilling Flask, 50ml	PG-9210	26.33
Receiving Flask, 25ml	PG-9204	28.58

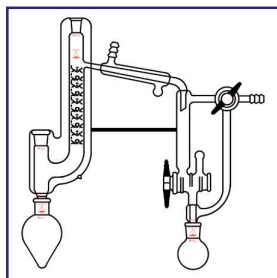


PG-9126
DISTILLING APPARA-
TUS

Distilling apparatus, consists of a Claisen adapter and a condenser with vacuum take-off and drip tip sealed together as a single unit. All joints are the same size except a 10/18 thermometer joint located on the side arm of the adapter to accept 25mm immersion thermometer.

<u>Description</u>	14/20		19/22	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	255.86	-11	266.13

	<u>CODE</u>	<u>Price</u>
Distilling Flask, 50ml	PG-9210	26.33
Distilling Adapter	PG-9024	60.54
Condenser	PG-9114	82.04
Vacuum Adapter	PG-9082	55.64
Erlenmeyer Flask, 25ml	PG-9232	25.33



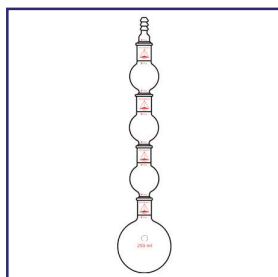
PG-9128
DISTILLING APPARA-
TUS, VACUUM, TE-
FLON STOPCOCKS

The jacketed Vigreux head has an attached condenser with standard taper 10/18 outer thermometer joints at the top of both the main and column tubes for 25mm immersion thermometers. All other joints are the same size with two 2mm Teflon stopcocks for valve control.

<u>Description</u>	14/20		19/22	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	871.68	-11	828.41
Distilling Head Only	-02	876.97	-12	832.68

	<u>CODE</u>	<u>Price</u>
50ml Pear Shaped Flask	PG-9210	26.33
25ml Round Bottom Receiving Flask	PG-9204	28.58

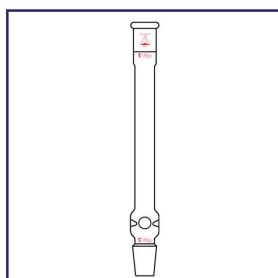




Distilling bulb, Kugelrohr, 14/20 standard taper outer and inner joints.

Size ml	CODE	Price
10	-01	42.78
25	-02	46.90
50	-03	48.41
100	-04	50.60

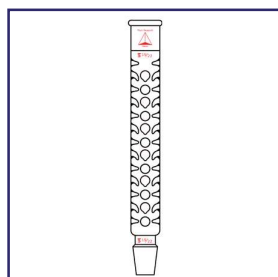
PG-9130
BULB, KUGELROHR



Distilling column, plain, standard taper bottom inner joint and the same size top outer joint. Indentations above the lower joint are used to support packing materials.

Joint	Length for Packing Material mm	CODE	Price
14/20	130	-01	53.96
19/22	130	-02	55.20
14/20	250	-03	57.46
19/22	250	-04	56.74

PG-9132
COLUMN, PLAIN

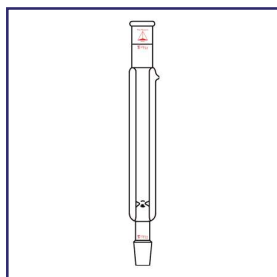


Distilling column, Vigreux, standard taper top outer joint, standard taper bottom inner joint. Both joints are the same size the indented portion makes up the column length.

Joint	Column Length mm	CODE	Price
14/20	100	-01	72.97
19/22	100	-02	76.85
14/20	130	-03	73.92
19/22	130	-04	78.22
14/20	300	-05	98.34
19/22	300	-06	102.45

PG-9134
COLUMN, VIGREUX

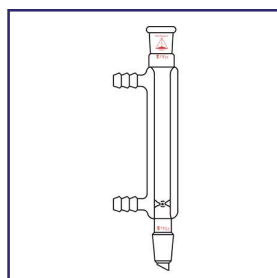




Distilling column, jacketed. Evacuated column has indents at the bottom for packing support.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	260.70
19/22	-02	263.36

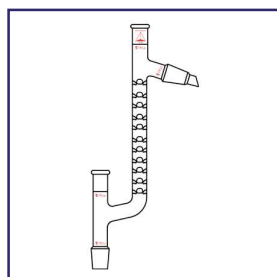
PG-9136
COLUMN, JACKETED



Distilling column, jacketed. Evacuated column has indents at the bottom for packing support. Water jacketed.

<u>Joint</u>	<u>Jacket Length mm</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	80.66
14/20	200	-02	90.17
19/22	110	-03	83.25
19/22	200	-04	92.76

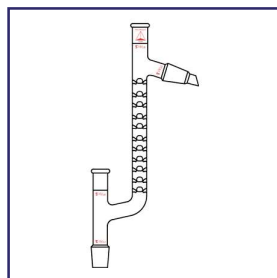
PG-9138
COLUMN, JACKETED



Distilling head, Claisen style head and long Vigreux column. Both top outer joints are 10/18 thermometer joints for 25mm immersion. Inner joints are the same size. Side port has drip tip.

<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	126.83
19/22	100	-02	149.06
14/20	200	-03	130.52
19/22	200	-04	153.00

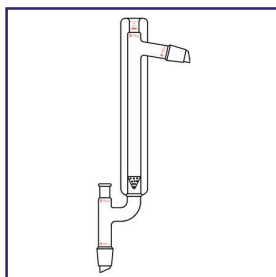
PG-9140
**HEAD, CLAISEN-VI-
GREUX**



Distilling head, Claisen style head and long Vigreux column. Both top outer joints are 10/18 thermometer joints for 25mm immersion. Inner joints are the same size. Side port has drip tip. With an added evacuated jacket.

<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	420.28
19/22	100	-02	426.19
14/20	200	-03	438.26
19/22	200	-04	441.88

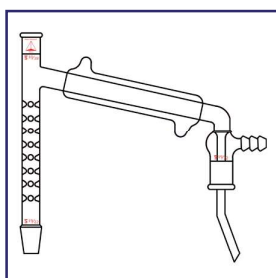
PG-9142
**HEAD, CLAISEN-VI-
GREUX, JACKETED**



Distilling head, Claisen type, jacketed. Claisen style adapter with long distillation column with a honeycomb style support for packing. Both top outer joints are 10/18 thermometer joints for 25mm immersion. Inner joints are the same size.

<u>Size Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	150	-01	448.55
19/22	150	-02	452.35
14/20	300	-03	454.76
19/22	300	-04	459.12

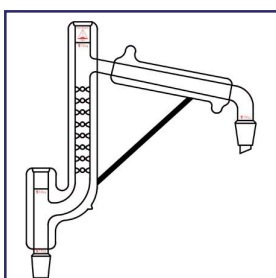
PG-9144
HEAD, CLAISEN
TYPE, JACKETED



Distilling head, Vigreux. Vigreux column has added West condenser at a 75° angle as a side arm with a vacuum port and extended drip tip. Top of column has a 10/18 outer joint for 25mm immersion thermometer. All other joints are the same size.

<u>Column Size Joint</u>	<u>Adapter Size Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	247.08
19/22	19/22	-02	CALL

PG-9146
HEAD, VIGREUX

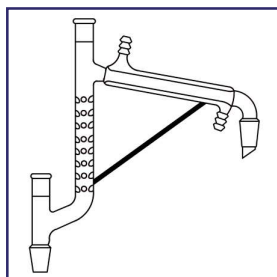


Claisen style head with long evacuated Vigreux column with a West condenser as a side arm. Tops of columns have 10/18 outer joints for 25mm immersion thermometer. Both lower joints are the same size.

<u>Size Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	517.98
19/22	100	-02	521.84
14/20	200	-03	536.59
19/22	200	-04	540.08

PG-9148
HEAD, CLAISEN-VI-
GREUX WITH CON-
DENSER, JACKETED

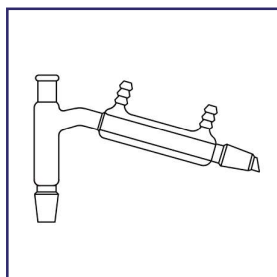




Claisen style distilling head with long Vigreux column with a West condenser as a side arm. Tops of columns have 10/18 outer joints for 25mm immersion thermometer. Both lower joints are the same size.

<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	110	-01	199.45
19/22	100	-02	202.22
14/20	200	-03	224.04
19/22	200	-04	227.51

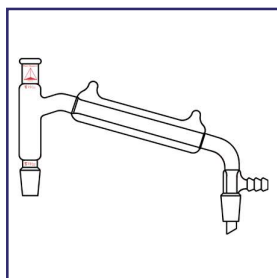
PG-9150
HEAD, CLAISEN-VI-
GREUX WITH CON-
DENSER



Distilling head, uptake has a sealed-in Liebig condenser at a 75° Angle with an inner drip tip. All joints are the same size.

<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	127.00
19/22	100	-02	129.82
14/20	200	-03	133.67
19/22	200	-04	134.51

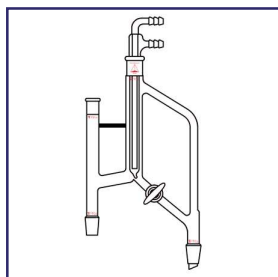
PG-9152
DISTILLING HEAD



Distilling head. Uptake has a sealed-in Liebig condenser at a 75° angle with an inner drip tip angled downward and a vacuum port. All joints are the same size.

<u>Joint</u>	<u>Length Indented mm</u>	<u>CODE</u>	<u>Price</u>
14/20	100	-01	136.66
19/22	100	-02	142.05

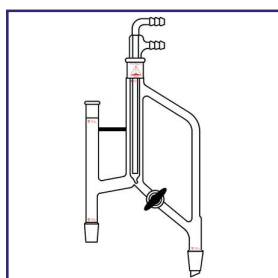
PG-9154
DISTILLING HEAD



Distillation head refluxes with the insertion of a cold finger. Condensate flow is controlled with the positioning of drip tip on bottom of cold finger. Uptake outer joint is a 10/18 for 75mm immersion. Valve is 2mm glass stopcock for flow control. All other joints are the same size. (Cold finger supplied with complete set)

Description	Joint	CODE	Price
Complete	14/20	-01	351.58
Distilling Head Only	14/20	-02	278.81
Complete	19/22	-03	354.09
Distilling Head Only	19/22	-04	281.71

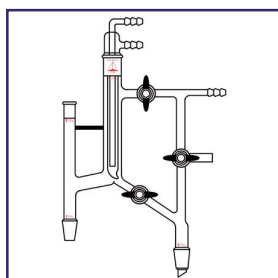
PG-9156
**HEAD, VARIABLE RE-
FLUX**



Distillation head refluxes with the insertion of a cold finger. Condensate flow is controlled with the positioning of drip tip on bottom of cold finger. Uptake outer joint is a 10/18 for 75mm immersion. Valve is 2mm Teflon stopcock for flow control. All other joints are the same size. (Cold finger supplied with complete set)

Description	Joint	CODE	Price
Complete	14/20	-01	380.9
Distilling Head Only	14/20	-02	302.97
Condenser	14/20	PG-9106-01	69.35
Complete	19/22	-10	382.07
Distilling Head Only	19/22	-11	304.15
Condenser	19/22	PG-9106-02	70.73

PG-9158
**HEAD, VARIABLE RE-
FLUX, TEFLON**

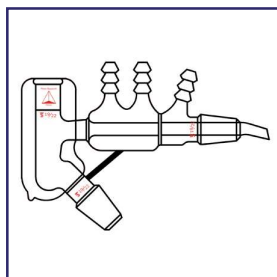


Distillation head refluxes with the insertion of a cold finger. Condensate flow is controlled with the positioning of drip tip on bottom of cold finger. Uptake outer joint is a 10/18 for 75mm immersion. Valve is 2mm Teflon stopcock for flow control. All other joints are the same size. With two Teflon stopcocks in the pressure equalizing arm to allow removal of the receiver without interruption of the distilling process. (Cold finger supplied with complete set)

Description	Joint	CODE	Price
Complete	14/20	-01	470.02
Distilling Head Only	14/20	-02	401.12
Condenser	14/20	PG-9106-01	69.35
Complete	19/22	-10	471.24
Distilling Head Only	19/22	-11	402.28
Condenser	19/22	PG-9106-02	70.73

PG-9160
**HEAD, VARIABLE RE-
FLUX, TEFLON**

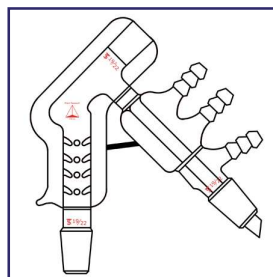




Distilling head, short path, vacuum jacketed. 10/18 thermometer joint on top for 25mm immersion.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	418.22
19/22	-02	424.13

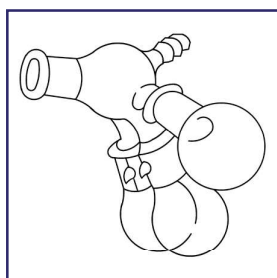
PG-9162
HEAD, SHORT PATH,
VACUUM JACKETED



Distilling head, vacuum jacketed, Vigreux, 10/18 thermometer joint on top for 25mm immersion. The extended uptake tube contains a short Vigreux column.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	529.52
19/22	-02	535.40

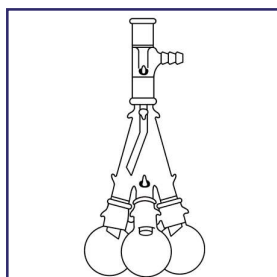
PG-9164
HEAD, VACUUM
JACKETED, VIGREUX



Distilling receiver. Vacuum adapter with three receivers 45° apart. All receiver joints are 14/20 with drip tips on inner member. (Supplied with springs)

<u>Description</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
Complete	14/20	-01	207.44
Vacuum Adapter Only	14/20	-02	121.40
Replacement Spring Only	14/20	PRG-1710	25.08
Receiving Flasks, 150 ml	14/20	PG-9202	24.70
Complete	19/22	-11	197.97
Vacuum Adapter Only	19/22	-12	118.86
Replacement Spring Only	19/22	PRG-1710	25.08
Receiving Flasks, 150 ml	19/22	PG-9202	27.53

PG-9170
RECEIVER

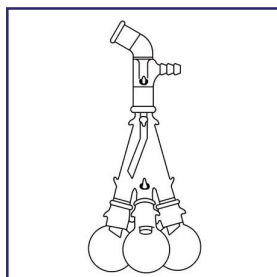


Distilling receiver consists of a vacuum adapter, distribution adapter and four 15ml receiver flasks. Adapter has extended drip tip angled for distillate delivery. All receivers have a 14/20 outer joints.

<u>Description</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
Complete	14/20	-01	317.64
Vacuum Adapter Only	14/20	-02	54.95
Distributing Adapter Only	14/20	-03	147.12
Receiving Flasks, 150 ml	14/20	PG-9202	24.70
Complete	19/22	-11	318.26
Vacuum Adapter Only	19/22	-12	51.75
Distributing Adapter Only	19/22	-13	165.89
Receiving Flasks, 150 ml	19/22	PG-9202	27.53

PG-9172
RECEIVER WITH
ADAPTER

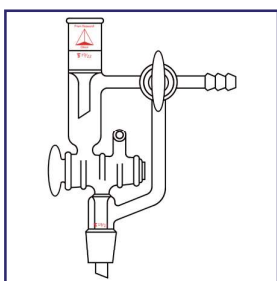




PG-9174
RECEIVER WITH
ADAPTER, 105°

Distilling receiver consists of a vacuum adapter, distribution adapter and four 15ml receiver flasks. Adapter has extended drip tip angled at 105° for distillate delivery. All receivers have 14/20 outer joints.

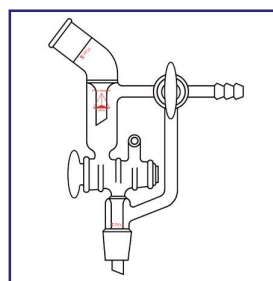
Description	Joint	CODE	Price
Complete	14/20	-01	323.67
Vacuum Adapter Only	14/20	-02	54.24
Distributing Adapter Only	14/20	-03	144.98
Receiving Flasks, 150 ml	14/20	PG-9202	24.70
Complete	19/22	-11	367.82
Vacuum Adapter Only	19/22	-12	55.33
Distributing Adapter Only	19/22	-13	163.48
Receiving Flasks, 150 ml	19/22	PG-9202	27.53



PG-9176
RECEIVER

Distilling receiver has a bypass between reservoir and delivery end, which has a sealed-in oblique stopcock. Receiver capacity is approximately 2.5ml. Both joints are the same size.

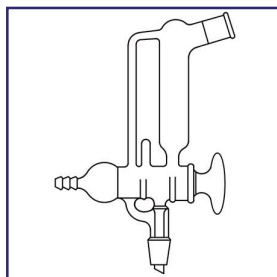
Joint	CODE	Price
14/20	-01	335.60
19/22	-02	365.99



PG-9178
RECEIVER

Distilling receiver has a bypass between reservoir and delivery end, which has a sealed-in oblique stopcock. Receiver capacity is approximately 2.5 ml. Both joints are the same size. Top is at a 105° angle.

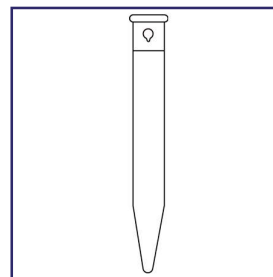
Joint	CODE	Price
14/20	-01	350.21
19/22	-02	379.10



PG-9180
RECEIVER

Distilling receiver has a bypass between reservoir and delivery end, which has a sealed-in oblique stopcock. Receiver capacity is approximately 2.5 ml. Both joints are the same size. Top is at a 105° angle. With an additional special stopcock for removal or replacement without interrupting distillation.

Joint	CODE	Price
14/20	-01	343.14
19/22	-02	348.57

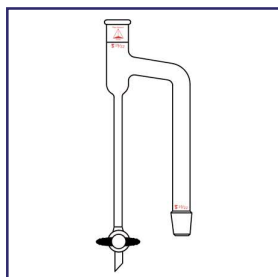


PG-9182
RECEIVER, GRADUATED

Distilling receiver, graduated. A 12ml cylindrical tube with tapered bottom. Graduated to contain in 1/10ml subdivisions from the bottom to 2ml, and in 2/10ml from 2ml to 12ml. With standard taper outer joint and glass hooks.

Joint	CODE	Price
14/20	-01	45.48
19/22	-02	45.83

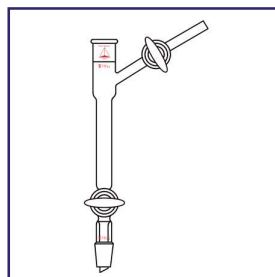




Distilling receiver, graduated. The tube is graduated from 0ml to 2 ml subdivisions with a 2mm glass stopcock near the bottom. Both joints the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	169.95
19/22	-02	175.35

PG-9186
RECEIVER, GRADU-
ATED

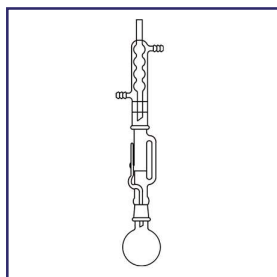


Distilling receiver, graduated. The tube is graduated from 0ml to 2ml subdivisions with a 2mm Teflon stopcock near the bottom. Both joints are the same size.

<u>Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	236.70
19/22	-02	238.08

PG-9188
RECEIVER, GRADU-
ATED

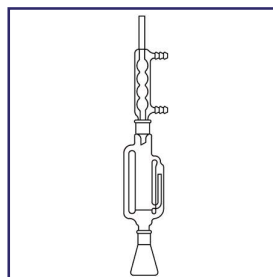




PG-9190
APPARATUS, SOXH-
LET

Extraction apparatus, Soxhlet. Continuous reflux apparatus consisting of Allihn type condenser; extractor and round bottom flask. All joints are 19/22.

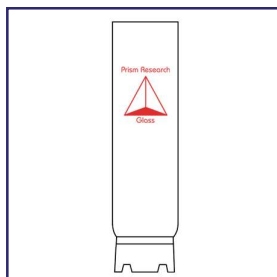
Description	CODE	Price
Complete	-01	294.50
Extractor Only	-02	185.59
Flask, 25ml, Only	PG-9202	27.53
Condenser Only	-03	81.32



PG-9192
APPARATUS, LIQUID-
LIQUID

Extraction apparatus, liquid-liquid. Continuous reflux apparatus consisting of Allihn type condenser; extractor and round bottom flask. All joints are 19/22.

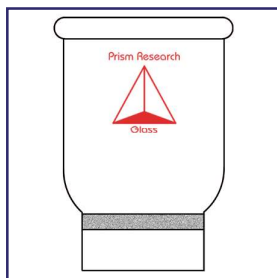
Description	CODE	Price
Complete	-01	264.26
Extractor Only	-02	153.95
Flask, 25ml, Only	PG-9202	27.53
Condenser Only	PG-9102	86.12



PG-9194
THIMBLE WITH
FRITTED DISC

Extraction thimble, with sealed-in fritted coarse porosity disc 10mm in diameter. The overall length of the thimble is 50mm. Available in coarse (C) porosity.

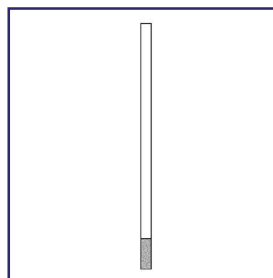
Length mm	CODE	Price
50	-01	41.53
40	-02	41.53



PG-9196
FILTER CRUCIBLE

Filter crucible. Sealed-in fritted disc is 200mm in diameter. 15ml capacity.

Porosity	CODE	Price
Coarse	-01	26.50
Medium	-02	26.50
Fine	-03	26.50

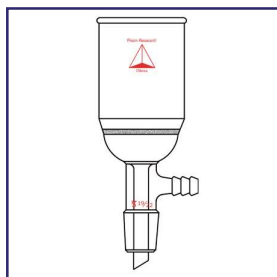


PG-9198
FILTER TUBE

Filter tube with flat bottomed fritted cylinder at one end. Overall length is approximately 135mm.

Porosity	CODE	Price
Coarse	-01	35.97
Medium	-02	37.83
Fine	-03	39.86

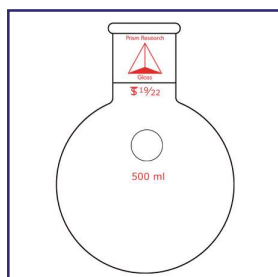




Filter funnel, Buchner with sealed-in drip tip and vacuum port.

PG-9200
FILTER FUNNEL,
BUCHNER, WITH VAC-
UUM ADAPTER

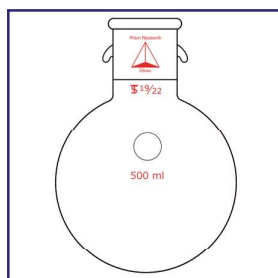
<u>Capacity ml</u>	<u>Frit Diameter mm</u>	<u>Joint</u>	<u>Coarse Porosity</u>		<u>Medium Porosity</u>		<u>Fine Porosity</u>	
			<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
15	20	14/20	-01	87.52	-21	87.52	-31	87.52
15	20	19/22	-02	88.77	-22	88.77	-32	88.77
30	30	14/20	-03	93.02	-23	93.02	-33	93.02
30	30	19/22	-04	94.32	-24	94.32	-34	94.32
60	40	14/20	-05	94.59	-25	94.59	-35	94.59
60	40	19/22	-06	95.58	-26	95.58	-36	95.58



PG-9202
ROUND BOTTOM,
SHORT NECK WITH
OUTER MEMBER

Flask, round bottom, short neck, with standard taper outer joint.

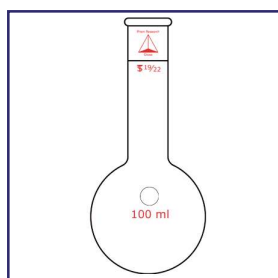
Capacity ml	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
2	-01	22.71	-02	27.53
4	-03	22.71	-04	27.53
5	-05	24.83	-06	27.53
6	-07	24.83	-08	27.53
10	-09	24.83	-10	27.53
15	-11	24.83	-12	27.53
20	-13	24.70	-14	27.53
25	-15	24.70	-16	27.53
35	-17	24.70	-18	27.53
50	-19	24.70	-20	27.53
65	-21	24.70	-22	27.53
100	-23	24.70	-24	27.53
125	-25	24.70	-26	27.53
200	-27	24.70	-28	27.53
250	-29	27.40	-30	29.10
300	-31	29.10	-32	32.85
500	-33	29.10	-34	32.85



PG-9204
ROUND BOTTOM,
SHORT NECK WITH
OUTER MEMBER,
WITH HOOKS

Flask, round bottom, short neck, outer joint, with hooks.

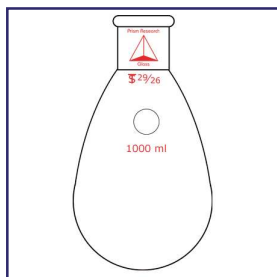
Capacity ml	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
2	-01	24.77	-02	26.77
4	-03	24.77	-04	24.77
5	-05	27.68	-06	28.58
6	-07	27.68	-08	28.58
10	-09	27.68	-10	27.74
15	-11	27.68	-12	28.58
20	-13	27.68	-14	28.58
25	-15	27.68	-16	28.58
35	-17	27.68	-18	28.58
50	-19	27.68	-20	28.58
65	-21	27.68	-22	28.58
100	-23	27.68	-24	28.58
125	-25	27.68	-26	28.58
200	-27	27.68	-28	28.58
250	-29	30.11	-30	33.10
300	-31	32.26	-32	36.19
500	-33	32.26	-34	36.19



PG-9206
ROUND BOTTOM,
LONG NECK WITH
OUTER MEMBER

Flask, round bottom, long neck, with standard taper outer joint.

Capacity ml	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
10	-01	29.98	-02	31.48
25	-03	29.98	-04	31.48
50	-05	29.98	-06	31.48
100	-07	29.98	-08	31.48

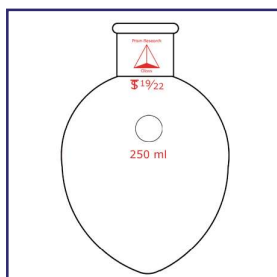


PG-9208

ROUND BOTTOM, IMPROVED, SHORT NECK WITH OUTER MEMBER

Flask, round bottom, improved, short neck, standard taper outer joint. Upper portion is tapered allowing for easier removal of solids and liquids.

Capacity ml	14/20 Joint		19/22 Joint		24/25 Joint		29/26 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
10	-01	25.72	-02	26.72	—	—	—	—
25	-03	25.72	-04	27.68	—	—	—	—
50	-05	26.03	-06	27.77	-07	29.17	-08	30.79
100	-09	26.28	-10	28.54	-11	30.34	-12	30.92
200	-13	34.16	-14	34.97	-15	34.46	-16	34.82
500	-17	37.00	-18	38.89	-19	42.14	-20	40.51
1000	—	—	—	—	-21	43.57	-22	45.00

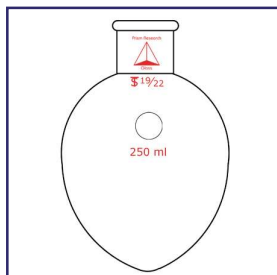


PG-9210

PEAR SHAPED, SHORT NECK WITH OUTER MEMBER

Flask, pear shaped, short neck, with standard taper outer joint.

Capacity ml	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
2	-01	25.93	-02	26.33
4	-03	25.93	-04	26.33
5	-05	25.93	-06	26.33
6	-07	25.93	-08	26.33
10	-09	25.93	-10	26.33
15	-11	25.93	-12	26.33
20	-13	25.93	-14	26.33
25	-15	25.93	-16	26.33
35	-17	25.93	-18	26.33
50	-19	25.93	-20	26.33
65	-21	25.93	-22	26.33
75	-23	25.93	-24	26.33
100	-25	26.84	-26	27.33
250	-27	30.46	-28	31.59



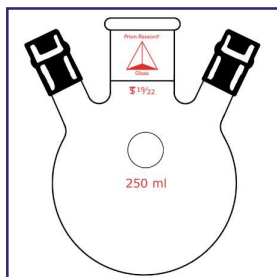
PG-9212

ROUND BOTTOM, SIDE INLET TUBE, SHORT NECK WITH OUTER MEMBER

Flask, round bottom, short neck, side inlet tube, with standard taper outer joint. Furnished with a rubber filament for attachment to the side of a thermometer, gas inlet tube or bleed tube.

Capacity ml	14/20 Joint		19/22 Joint	
	CODE	Price	CODE	Price
5	-01	33.43	-02	33.95
10	-03	33.43	-04	33.95
25	-05	33.43	-06	33.95
50	-07	33.43	-08	33.95
100	-09	34.05	-10	34.91
250	-11	34.69	-12	36.14

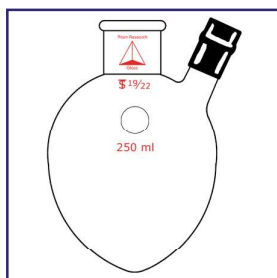




Flask, round bottom, short neck, two side inlet tubes, with standard taper outer joint.

Capacity ml	₹ 14/20 Joint		₹ 19/22 Joint	
	CODE	Price	CODE	Price
50	-01	41.94	-02	42.94
100	-03	44.15	-04	45.43
250	-05	48.58	-06	49.95

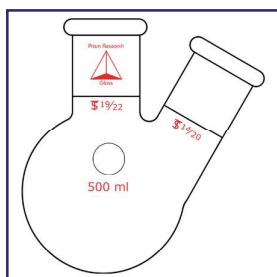
PG-9214
ROUND BOTTOM,
TWO SIDE INLET
TUBES, SHORT NECK
WITH OUTER
MEMBER



Flask, pear-shaped, short neck, side inlet tube, with standard taper outer joint. Supplied with rubber filament.

Capacity ml	₹ 14/20 Joint		₹ 19/22 Joint	
	CODE	Price	CODE	Price
5	-01	35.09	-02	35.48
6	-03	35.09	-04	35.48
10	-05	35.09	-06	35.48
15	-07	35.09	-08	35.48
20	-09	35.09	-10	35.48
25	-11	35.09	-12	35.48
50	-13	35.09	-14	35.48
100	-15	35.48	-16	37.16
250	-17	39.42	-18	41.94

PG-9216
PEAR SHAPED, SIDE
INLET TUBE, SHORT
NECK WITH OUTER
MEMBER

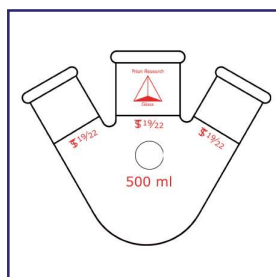


Flask, round bottom, two-neck, with standard taper outer joints.

Capacity ml	₹ Center Neck Joint		₹ 10/18 Joint		₹ 14/20 Joint		₹ 19/22 Joint		₹ 7/12 Joint	
			CODE	Price	CODE	Price	CODE	Price	CODE	Price
15	14/20		-01	51.01	-02	52.07	-03	53.16	-04	53.52
15	19/22		-05	52.86	-06	52.45	-07	54.50	-08	55.46
25	14/20		-09	51.01	-10	52.07	-11	53.52	-12	53.52
25	19/22		-13	52.86	-14	52.45	-15	54.50	-16	55.46
50	14/20		-17	52.07	-18	53.19	-19	54.41	-20	54.50
50	19/22		-21	53.94	-22	55.58	-23	57.52	-24	56.34
100	14/20		-25	52.07	-26	53.19	—	—	—	—
100	19/22		-27	53.94	-28	55.58	—	—	—	—
250	14/20		-29	52.07	-30	53.19	—	—	—	—
250	19/22		-31	53.94	-32	55.58	—	—	—	—
500	14/20		-33	52.07	-34	53.19	—	—	—	—
500	19/22		-35	53.94	-36	55.02	—	—	—	—

PG-9218
ROUND BOTTOM,
TWO-NECK WITH
OUTER MEMBERS

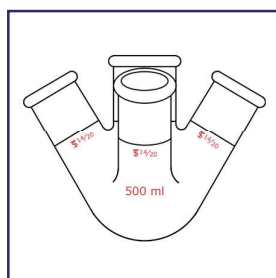




PG-9220
ROUND BOTTOM,
THREE-NECK WITH
OUTER MEMBERS

Flask, round bottom, three-neck, with standard taper outer joints.

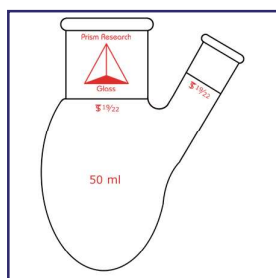
Capacity ml	Center Neck Joint	14/20 Joint		19/22 Joint	
		CODE	Price	CODE	Price
25	14/20	-01	64.95	—	—
25	19/22	-02	66.69	-03	74.12
50	14/20	-04	67.32	—	—
50	19/22	-05	69.27	-06	69.64
100	14/20	-07	67.32	—	—
100	19/22	-08	69.27	-09	69.64
250	14/20	-10	68.14	—	—
250	19/22	-11	69.27	-12	69.64
500	14/20	-13	73.50	—	—
500	19/22	-14	74.67	-15	75.67



PG-9222
ROUND BOTTOM,
FOUR-NECK WITH
OUTER MEMBERS

Flask, round bottom, four-neck, with a standard taper 19/22 center neck and three standard taper 14/20 side necks.

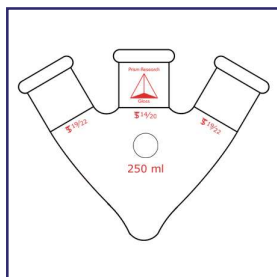
Capacity ml	CODE	Price
25	-01	92.52
50	-02	92.52
100	-03	92.52
250	-04	94.30
500	-05	100.40



PG-9224
PEAR SHAPED, TWO-
NECK WITH OUTER
MEMBERS

Flask, pear shaped, two-neck, with standard taper outer joints.

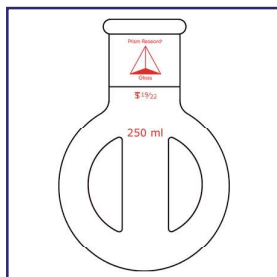
Capacity ml	Center Neck Joint	7/12 Joint		10/18 Joint		14/20 Joint		19/22 Joint	
		CODE	Price	CODE	Price	CODE	Price	CODE	Price
6	14/20	-01	49.39	-02	49.95	—	—	—	—
6	19/22	-03	51.57	-04	51.57	—	—	—	—
10	14/20	-05	49.39	-06	49.95	-07	50.46	—	—
10	19/22	-08	51.57	-09	51.75	-10	52.86	—	—
15	14/20	-11	49.39	-12	49.95	-13	50.46	—	—
15	19/22	-14	51.57	-15	51.75	-16	52.86	-17	57.33
20	14/20	-18	49.39	-19	49.95	-20	50.46	—	—
20	19/22	-21	51.57	-22	51.74	-23	52.86	-24	57.33
25	14/20	-25	49.39	-26	49.95	-27	50.46	—	—
25	19/22	-28	51.57	-29	51.75	-30	52.86	-31	57.33
50	14/20	-32	49.39	-33	49.95	-34	50.46	—	—
50	19/22	-35	51.57	-36	51.75	-37	52.86	-38	57.33



PG-9226
PEAR SHAPED,
THREE-NECK WITH
OUTER MEMBERS

Flask, pear-shaped, three-neck, with standard taper outer joints.

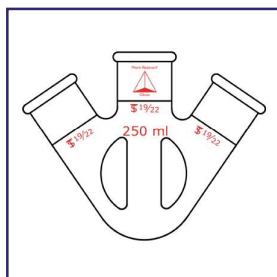
Capacity ml	Center Neck Joint	14/20 Joint		19/22 Joint	
		CODE	Price	CODE	Price
15	14/20	-01	79.31	—	—
15	19/22	-02	79.74	-03	81.68
25	14/20	-04	79.31	—	—
25	19/22	-05	79.74	-06	81.68
50	14/20	-07	79.31	—	—
50	19/22	-08	79.74	-09	81.68
100	14/20	-10	79.31	—	—
100	19/22	-11	79.74	-12	81.68
250	14/20	-13	80.48	—	—
250	19/22	-14	81.04	-15	83.47



PG-9228
ROUND BOTTOM, IN-
DENTED, OUTER
MEMBER, MORTON
STYLE

Flask has four equally spaced indentations on the body, allowing for better agitation which promotes mixing while being stirred.

Capacity ml	14/20 Joint	19/22 Joint
	CODE Price	CODE Price
25	-01 62.17	-02 63.21
50	-03 62.17	-04 63.14
100	-05 62.17	-06 63.21
250	-07 64.01	-08 65.41

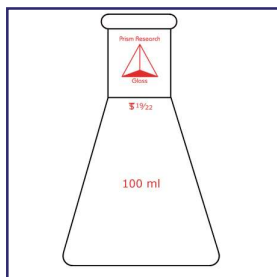


PG-9230
ROUND BOTTOM,
THREE-NECK, IN-
DENTED, OUTER
MEMBERS, MORTON
STYLE

Flask has four equally spaced indentations on the body, allowing for better agitation which promotes mixing while being stirred. Center neck and two side necks are positioned 180 degrees apart.

Capacity ml	14/20 Joint	19/22 Joint
	CODE Price	CODE Price
25	-01 106.19	-02 115.36
50	-03 107.75	-04 117.75
100	-05 113.33	-06 119.63
250	-07 122.46	-08 129.62

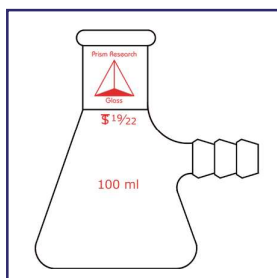




Flask, Erlenmeyer, standard taper outer joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
5	-01	22.47	-02	23.50
10	-03	22.47	-04	23.50
15	-05	22.47	-06	23.50
25	-07	24.40	-08	25.33
50	-09	24.40	-10	25.33
100	-11	25.11	-12	27.76

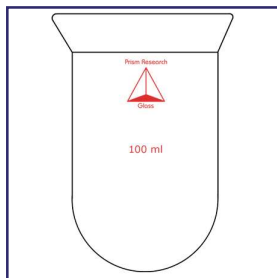
PG-9232
ERLENMEYER,
OUTER MEMBER



Flask, filter, heavy wall, standard taper outer joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
10	-01	35.80	-02	37.66
25	-03	35.80	-04	37.66
50	-05	36.47	-06	38.54
100	-07	48.56	-08	50.09

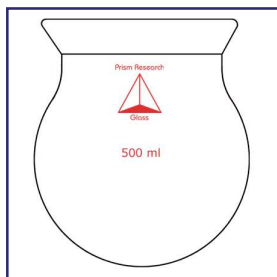
PG-9234
FILTER, HEAVY WALL,
OUTER MEMBER



Reaction vessel has a 60 mm I.D. Duran O-Ring flange. Leak-free seals can be obtained by use of an O-Ring or grease.

Capacity ml	Approximate Height mm	CODE	Price
50	65	-01	45.21
100	95	-02	48.16

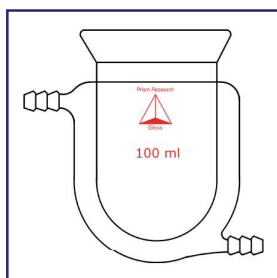
PG-9236
REACTION VESSEL,
CYLINDRICAL



PG-9238
REACTION VESSEL,
SPHERICAL

Reaction vessel has a 60 mm I.D. Duran O-Ring flange and spherical body. Leak-free seal can be obtained by use of an O-Ring or grease.

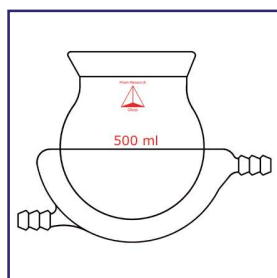
Capacity ml	CODE	Price
200	-01	54.08
250	-02	54.08
300	-03	57.33
500	-04	60.96



PG-9240
REACTION VESSEL,
CYLINDRICAL, JACK-
ETED

Reaction vessel has a 60mm I.D. Duran O-Ring flange and a jacket surrounding the body. Hose connections are positioned to optimize heating or cooling circulation. Jacket not included in height.

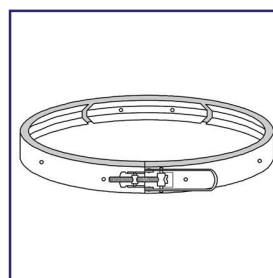
Capacity ml	Approximate Height mm	CODE	Price
100	110	-01	202.51



PG-9242
MICRO, REACTION
VESSEL, SPHERICAL,
JACKETED

Reaction vessel has a 60mm I.D. Duran O-Ring flange and spherical body. With a jacket surrounding it's lower half. Hose connections are positioned to optimize heating and cooling circulation.

Capacity ml	CODE	Price
200	-01	217.27
300	-02	233.64
500	-03	252.32

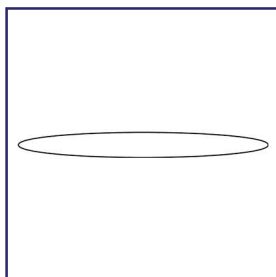


PRG-188
FLANGE, DURON

Duron flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

Fits Flange I.D. mm	CODE	Price
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11

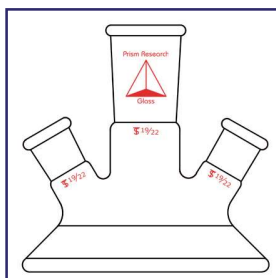




**PRG-187
DURON O-RING**

O-Rings are offered in Silicone or FEP Encapsulated Silicone and fit the PRG-184 flanges.

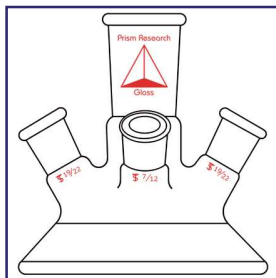
<u>Fits Flange I.D. mm</u>	<u>Material</u>	<u>CODE</u>	<u>Price</u>
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22



**PG-9246
MICRO, REACTION
VESSEL COVER,
THREE NECK**

Three-neck cover with all joints 180° apart.

<u>Center Neck ⚙ Joints</u>	<u>Side Neck ⚙ Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	-01	147.22
19/22	14/20	-02	150.74
19/22	19/22	-03	153.47

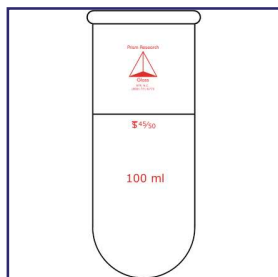


**PG-9248
MICRO, REACTION
VESSEL COVER,
FOUR NECK**

Cover, reaction flask, four-neck with standard taper outer joints on three side necks and a center neck. Two side necks are 180° apart and the third is the same distance from the two. The bottom has a 60mm I.D. and is ground to prevent leakage.

<u>Center Neck ⚙ Joints</u>	<u>Side Neck ⚙ Joints</u>	<u>Thermometer Neck ⚙ Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	14/20	10/18	-01	161.47
19/22	14/20	10/18	-02	161.49
19/22	19/22	10/18	-03	166.72
14/20	14/20	7/12	-04	160.89
19/22	14/20	7/12	-05	163.32
19/22	19/22	7/12	-06	166.14

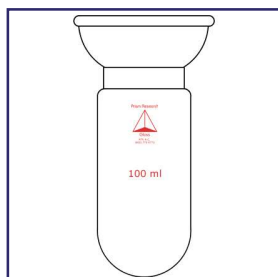




Flask, body reaction, cylindrical, round bottom with standard taper outer joint on top.

<u>Capacity ml</u>	<u>Joints</u>	<u>CODE</u>	<u>Price</u>
50	45/50	-01	47.35
100	45/50	-02	48.44

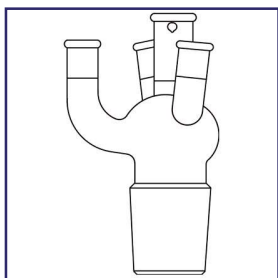
PG-9250
MICRO, BODY REAC-
TION, CYLINDRICAL



Flask, body reaction, cylindrical, round bottom with a socket joint on top.

<u>Capacity ml</u>	<u>Joints</u>	<u>CODE</u>	<u>Price</u>
50	65/40	-01	50.77
100	65/40	-02	52.53

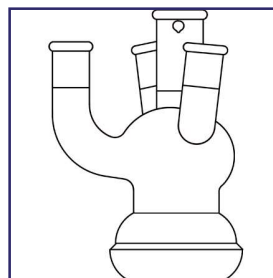
PG-9252
MICRO, BODY REAC-
TION, CYLINDRICAL



Flask head, reaction, four-neck. Side necks are 120° apart. Two are at a slant, one is straight. Bottom flask connection is a 45/50 inner joint.

<u>Side Neck</u>	<u>Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	178.77	
19/22	-02	179.03	

PG-9254
MICRO, REACTION
HEAD, FOUR NECK

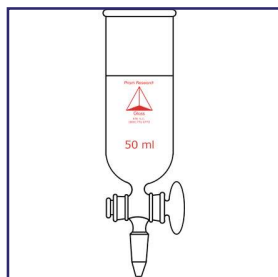


Flask head, reaction, four-neck. Side necks are 120° apart. Two are at a slant, one is straight. Bottom flask connection is a 65/40 ball joint.

<u>Side Neck</u>	<u>Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	193.44	
19/22	-02	195.97	

PG-9256
MICRO, REACTION
HEAD, FOUR NECK

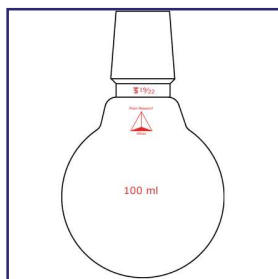




Flask body, reaction, cylindrical. Includes a 2mm stopcock outlet on the bottom above a standard taper 14/20 inner joint.

Capacity ml	Joint Sizes	CODE	Price
50	§ 45/50	-01	170.20
50	§ 65/40	-02	181.46
100	§ 45/50	-03	173.14
100	§ 65/40	-04	183.09

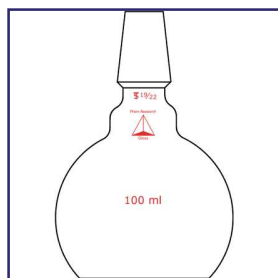
PG-9258
MICRO, REACTION
BODY, CYLINDRICAL,
WITH STOPCOCK



Flask, round bottom, short neck, with standard taper inner joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
25	-01	26.97	-02	27.23
50	-03	26.97	-04	27.23
100	-05	26.97	-06	27.23

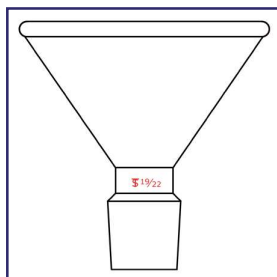
PG-9260
MICRO, ROUND BOT-
TOM, SHORT NECK,
WITH STANDARD
TAPER INNER JOINT



Flask, flat bottom, short neck, with standard taper inner joint.

Capacity ml	§ 14/20 Joint		§ 19/22 Joint	
	CODE	Price	CODE	Price
25	-01	27.34	-02	27.61
50	-03	27.34	-04	27.61
100	-05	29.16	-06	29.40

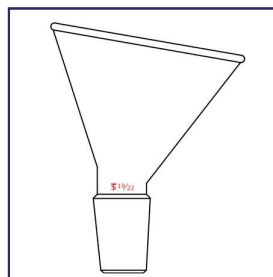
PG-9262
MICRO, FLAT BOT-
TOM, SHORT NECK,
WITH STANDARD
TAPER INNER JOINT



PG-9264
POWDER

Powder funnel, 50mm diameter, with a standard taper inner joint on the bottom.

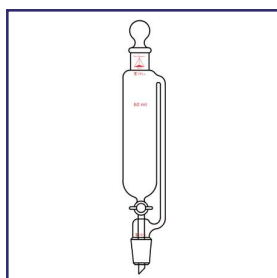
§ Joints	CODE	Price
14/20	-01	34.79
19/22	-02	39.77



PG-9266
POWDER, OFFSET

Powder funnel, offset, 50mm diameter, with a straight side to be used with multi-neck flasks. With a standard taper inner joint on the bottom.

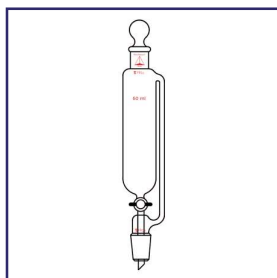
§ Joints	CODE	Price
14/20	-01	35.60
19/22	-02	37.78



PG-9270
**PRESSURE EQUAL-
IZING**

Funnel, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Both joints are the same size. 2mm glass stopcock supplied.

Capacity ml	§ 14/20 Joints		§ 19/22 Joints	
	CODE	Price	CODE	Price
10	-01	140.10	-02	143.36
25	-03	140.10	-04	143.36
60	-05	140.10	-06	143.36

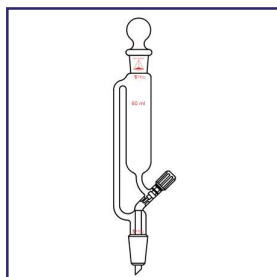


PG-9272
**PRESSURE EQUAL-
IZING, TEFLON**

Funnel, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Both joints are the same size. 2mm Teflon stopcock supplied.

Capacity ml	§ 14/20 Joints		§ 19/22 Joints	
	CODE	Price	CODE	Price
10	-01	168.53	-02	171.71
25	-03	168.53	-04	171.71
60	-05	168.53	-06	171.71

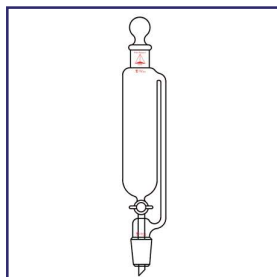




Funnel, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Both joints are the same size. With a 0-4mm Teflon threaded valve.

<u>Capacity ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	168.07	-02	169.19
25	-03	173.47	-04	174.57
60	-05	173.47	-06	174.57

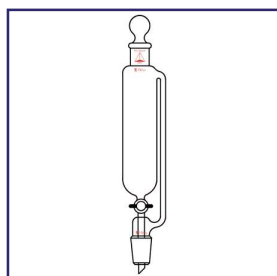
PG-9274
**PRESSURE EQUAL-
IZING, TEFLON
THREADED VALVE**



Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm glass stopcock supplied.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	0.20	-01	182.26	-02	217.39
25	0.50	-03	203.56	-04	223.82
60	1.00	-05	244.84	-06	252.87

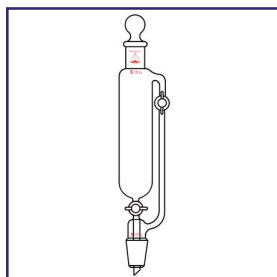
PG-9276
**PRESSURE EQUAL-
IZING, GRADUATED**



Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm Teflon stopcock supplied.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	0.20	-01	209.36	-02	223.38
25	0.50	-03	240.44	-04	225.34
60	1.00	-05	269.47	-06	270.93

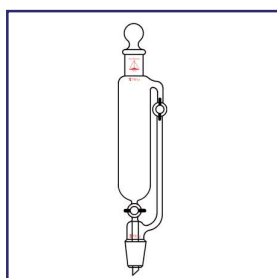
PG-9278
**PRESSURE EQUAL-
IZING, GRADUATED,
TEFLON**



PG-9280
**PRESSURE EQUAL-
IZING, GRADUATED**

Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. An additional stopcock on the arm allows the funnel to fill without being exposed to the atmosphere, two 2mm glass stopcocks supplied.

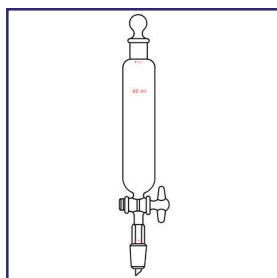
Capacity ml	Subdivisions ml	14/20 Joints		19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	241.63	-02	245.52
25	0.50	-03	275.86	-04	248.84
60	1.00	-05	253.07	-06	284.23



PG-9282
**PRESSURE EQUAL-
IZING, GRADUATED,
TEFLON**

Funnel, graduated, pressure equalizing, standard taper top outer joint, standard taper bottom inner joint with a sealed-in drip tip. Calibration lines in ascending and descending order from the stopcock and capacity line. An additional stopcock on the arm allows the funnel to fill without being exposed to the atmosphere. Two Teflon stopcocks supplied.

Capacity ml	Subdivisions ml	14/20 Joints		19/22 Joints	
		CODE	Price	CODE	Price
10	0.20	-01	285.64	-02	289.96
25	0.50	-03	294.95	-04	290.53
60	1.00	-05	325.74	-06	329.84

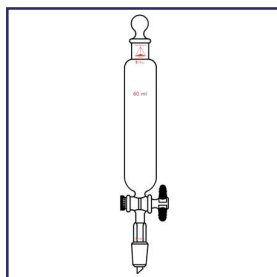


PG-9284
**SEPARATORY, CYLIN-
DRICAL**

Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm glass stopcock.

Capacity ml	14/20 Joints		19/22 Joints	
	CODE	Price	CODE	Price
10	-01	99.53	-02	100.97
25	-03	99.53	-04	100.97
60	-05	99.53	-06	100.97

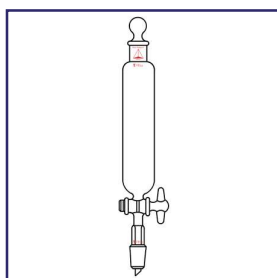




Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm Teflon stopcock.

<u>Capacity ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	132.02	-02	133.04
25	-03	132.02	-04	133.04
60	-05	132.02	-06	133.04

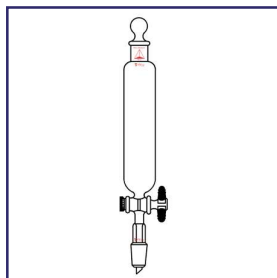
PG-9286
SEPARATOR, CYLIN-
DRICAL, TEFLON



Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm glass stopcock.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	0.20	-01	152.10	-02	165.38
25	0.50	-03	166.77	-04	168.88
60	1.00	-05	170.76	-06	171.88

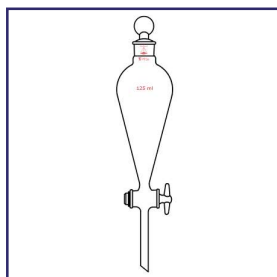
PG-9288
SEPARATOR, CYLIN-
DRICAL, GRADUATED



Funnel, separatory, cylindrical, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. Calibration lines in ascending and descending order from the stopcock and capacity line. 2mm Teflon stopcock.

<u>Capacity ml</u>	<u>Subdivisions ml</u>	<u>§ 14/20 Joints</u>		<u>§ 19/22 Joints</u>	
		<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	0.20	-01	167.67	-02	175.32
25	0.50	-03	169.37	-04	179.66
60	1.00	-05	172.21	-06	185.86

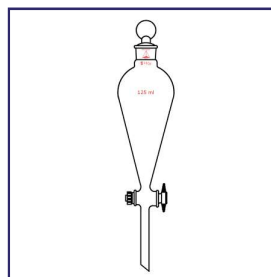
PG-9290
SEPARATOR, CYLIN-
DRICAL, GRADU-
ATED, TEFLON



Funnel, separatory, squibb with a 2mm straight bore stopcock. Supplied with a standard taper 14/20 stopper.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
10	-01	69.01
25	-02	69.01
60	-03	69.01
125	-04	69.01

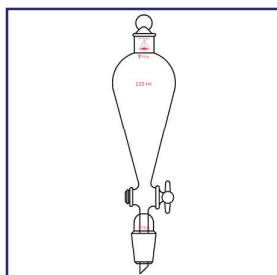
PG-9292
SEPARATORY,
SQUIBB



Funnel, separatory, squibb with a 2mm Teflon stopcock. Supplied with a standard taper 14/20 stopper.

<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
10	-01	95.10
25	-02	95.10
60	-03	95.10
125	-04	95.10

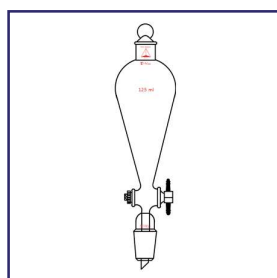
PG-9294
SEAPARTORY,
SQUIBB, TEFLON
PLUG



Funnel, separatory, squib, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm glass stopcock and 14/20 stopper included.

<u>Capacity ml</u>	<u>14/20 Joints</u>		<u>19/22 Joints</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	109.27	-02	110.51
25	-03	109.27	-04	110.51
60	-05	109.27	-06	110.51
125	-07	121.32	-08	127.56

PG-9296
SEPARATORY,
SQUIBB

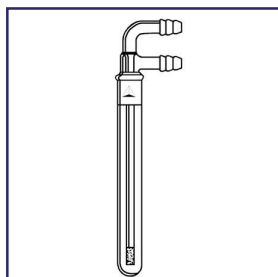


Funnel, separatory, squib, standard taper top outer joint, standard taper bottom inner joint with sealed-in drip tip. Both joints are the same size. 2mm Teflon stopcock and 14/20 stopper included.

<u>Capacity ml</u>	<u>14/20 Joints</u>		<u>19/22 Joints</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
10	-01	117.36	-02	118.26
25	-03	117.36	-04	118.26
60	-05	119.49	-06	150.74
125	-07	120.57	-08	150.74

PG-9298
SEPARATORY,
SQUIBB, TEFLON
PLUG

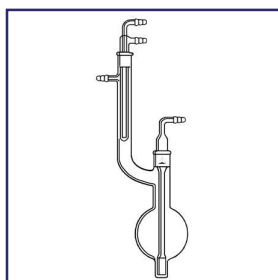




Gas washing bottle with an inner medium porosity fritted 5mm tube.

<u>Joints</u>	<u>Outside Diameter of Body mm</u>	<u>Length Body mm</u>	<u>CODE</u>	<u>Price</u>
14/20	17	110	-01	80.22
19/22	22	110	-03	81.80

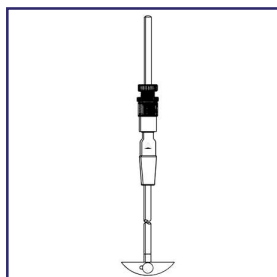
PG-9300
**BOTTLE, GAS WASH-
ING**



Hydrogenation apparatus with gas inlet tube or dispersion tube for hydrogen gas has medium porosity frit. Side arm on flask holds a cold finger for refluxing.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	230.69
Flask	-02	102.67
Inlet Tube	-03	61.05
Condenser	-04	67.00

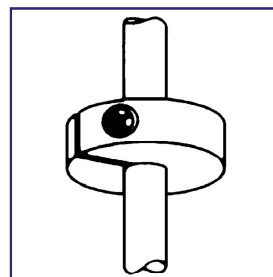
PG-9302
**HYDROGENATION
APPARATUS**



PG-9310
CHESEPEAKE, FOR
ATMOSPHERE, PRES-
SURE OF VACUUM

Stirrer, Chesapeake, for atmosphere, pressure or vacuum. Stirring rod is adapted by a Teflon sleeve and a Neoprene O-Ring, eliminating glass to glass or metal to glass contact.

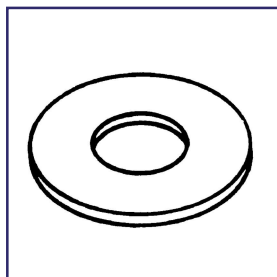
<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete with Teflon Blade	-01	210.72
Bearing Only	-02	127.11
Polished Shaft	-03	83.62



PG-9312
SAFETY RETAINER

Used to prevent the shaft from slipping and damaging flasks. Also prevents contaminants from entering flask. Made of nylon.

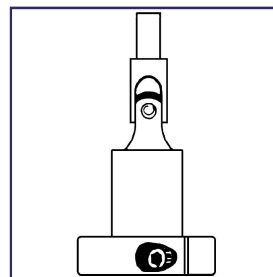
<u>CODE</u>	<u>Price</u>
-01	12.11



PG-9314
TEFLON WASHERS

Replacement Teflon washers for stirring rods for PG-9310. Sold in packages of twelve.

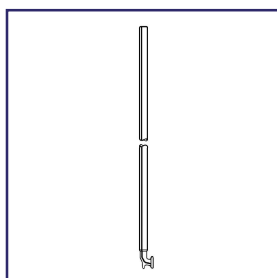
<u>Size</u>	<u>CODE</u>	<u>Price</u>
10 mm	-01	CALL



PG-9316
SHAFT ADAPTER
WITH UNIVERSAL
JOINT

For connecting a 10 mm diameter stirrer shaft to the chuck for the stirrer motor. The universal joint compensates for vibration and misalignment of the stirrer shaft. Split collar will clamp down on stir shaft as set screw is tightened.

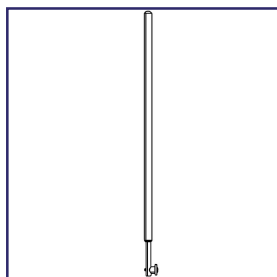
<u>Size</u>	<u>CODE</u>	<u>Price</u>
10 mm	-01	81.20



PG-9318
SHAFT, GLASS ROD

Used with all standard stirrers with 10 mm precision tube. Side button bottom to attach to stirrer blades.

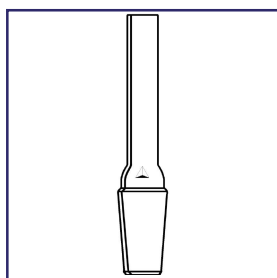
<u>Flask Capacity ml</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
100 to 5000	445	-01	44.12



Precision ground and polished, diameter 10 mm. For use with PG-9310 bearing with Teflon bearing surface, or other bearings having a Teflon interface with same bore. Button at bottom for attachment of any of the stirrer blades.

<u>Flask Capacity ml</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
100 to 5000	445	-01	53.9

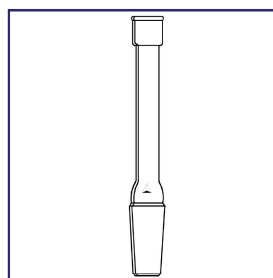
PG-9320
SHAFT, STAINLESS
STEEL ROD



Standard taper inner joint. 10 mm I.D. bearing. Lubricant well at top to hold lubricant for lengthy testing.

<u>Fl Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	CALL
19/22	-02	CALL
24/25	-03	CALL
29/26	-04	89.61

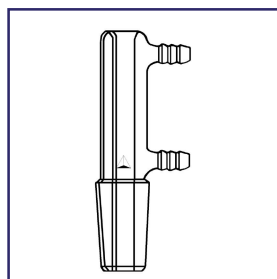
PG-9322
BEARING, GLASS



Standard taper inner joint. 10 mm I.D. bearing. With a large lubricant well at top to hold lubricant for lengthy testing.

<u>Fl Joints</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	CALL
19/22	-02	CALL
24/25	-03	81.28
29/26	-04	CALL

PG-9324
BEARING, PRECI-
SION, GLASS SLEEVE

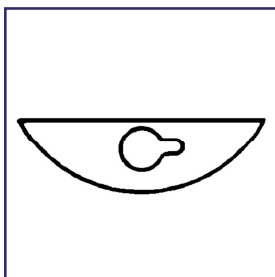


10 mm I.D. bearing jacketed for cooling which allows operation at higher RPMs.

<u>Fl Joints</u>	<u>CODE</u>	<u>Price</u>
19/22	-01	CALL
24/25	-02	CALL
29/26	-03	CALL

PG-9326
BEARING, PRECISION

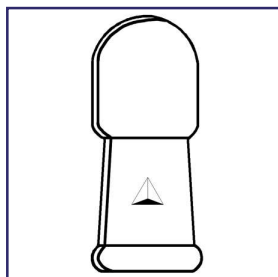




Blade is 1/8" thick. For standard shafts with side button for attachment of blade. Minimum standard taper joint clearance standard taper 24/40. Ball and socket joints are 35/20.

<u>Flask Capacity ml</u>	<u>Width mm</u>	<u>Length mm</u>	<u>CODE</u>	<u>Price</u>
100	19	48	-01	10.64
250 to 300	19	60	-02	12.45
500 to 1000	19	75	-03	13.17

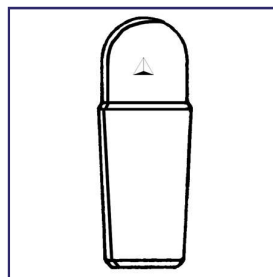
PG-9328
BLADE, TEFLON



Stopper, cap style, full length,
standard taper outer joint.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	14.84
19/27	-02	15.53

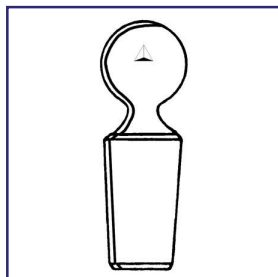
PG-9330
CAP STYLE, STAN-
DARD TAPER



Stopper, hollow cylindrical, full
length, standard taper inner
joint.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
10/18	-01	14.60
14/20	-02	15.53
19/27	-03	15.53

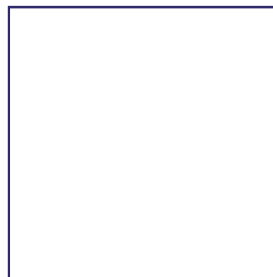
PG-9332
HOLLOW, CYLINDRI-
CAL, STANDARD
TAPER



Stopper, hollow pennyhead,
full length, standard taper
inner joint.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	16.04
19/27	-02	17.18

PG-9334
HOLLOW PENNY-
HEAD, STANDARD
TAPER

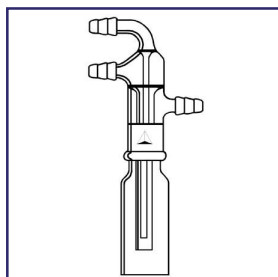


Stopper, Teflon, full length,
standard taper inner joint.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
10/18	-01	12.75
14/20	-02	14.63
19/27	-03	17.03

PG-9336
TEFLON, FULL
LENGTH, STANDARD
TAPER

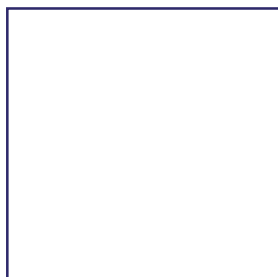




Sublimation apparatus, vacuum. Cold finger provides sublimation up to 500mg under vacuum. Flat bottom cylinder provides stability. All joints are standard taper 24/25.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Complete	-01	128.7
Flask Only	-02	33.36
Condenser Only	-03	95.32

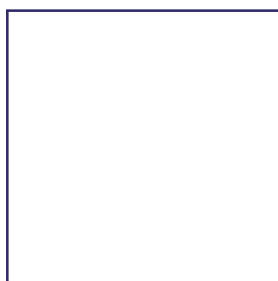
PG-9338
VACUUM APPARATUS



Thermometer, Short, Celsius

<u>Range C°</u>	<u>Subdivision C°</u>	<u>Overall Length mm</u>	<u>CODE</u>	<u>Price</u>
0 to 150	2	102	-01	31.38
100 to 250	2	127	-02	31.81
0 to 300	2	152	-03	34.05

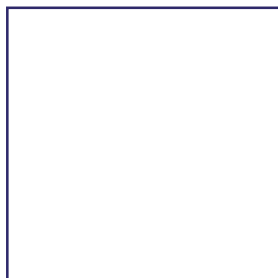
PG-9340
SHORT, CELSIUS



Thermometer, Centigrade, 7/12 Inner Member

<u>Range C°</u>	<u>Stem Length Below Joint mm</u>	<u>CODE</u>	<u>Price</u>
0 to 150	20	-01	58.58
0 to 300	20	-02	58.58
0 to 150	50	-03	60.58
0 to 300	50	-04	60.58
0 to 150	70	-05	65.12
0 to 300	70	-06	65.12
0 to 300	100	-07	75.51

PG-9342
CENTIGRADE, 7/12
INNER MEMBER

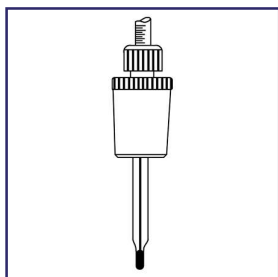


Thermometer, Centigrade, Partial Immersion, With 10/18 Joint, Yellow Back

<u>Range C°</u>	<u>Subdivision C°</u>	<u>Immersion Length mm</u>	<u>CODE</u>	<u>Price</u>
-20 to +150	1	25	-01	58.58
-10 to +300	1	25	-02	58.58
-10 to +150	1	25	-03	58.58
-20 to +300	1	50	-04	60.58
-10 to +150	1	50	-05	60.58
-10 to +300	1	50	-06	60.58

PG-9344
CENTIGRADE, PAR-
TIAL IMMERSION,
WITH 10/18 JOINT,
YELLOW BACK



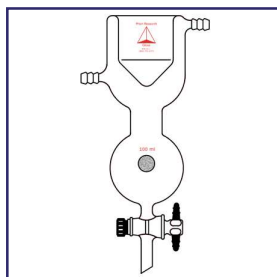


Compression nut allows for vertical adjustment of thermometers or bleed tubes with an O.D. of 6-7mm. Supplied complete with O-Ring.

<u>Joint</u>	<u>For Use with Joint Sizes</u>	<u>CODE</u>	<u>Price</u>
10/18	10/18, 10/30	-01	26.73
14/20	14/20, 14/35	-02	29.53
19/22	19/22, 19/38	-03	CALL
24/25	24/25, 24/40	-04	41.29
29/26	29/26, 29/42	-05	CALL

PG-9072
THERMOMETER,
ADAPTER, TEFLON

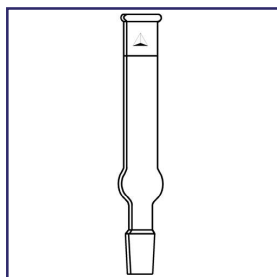




Vacuum trap, micro, Dewar type. Small scale dry ice condenser trap. Dry ice chamber is 25mm x 60mm. Lower reservoir has a capacity of 100ml and either a 2mm Glass or Teflon stopcock as a drain.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
With Glass Stopcock	-01	273.38
With Teflon Stopcock	-02	282.48

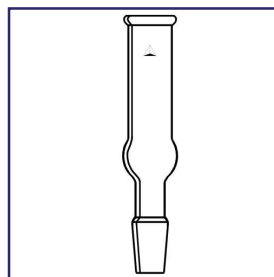
PG-9123
VACUUM TRAP,
DEWAR TYPE



Tube, drying, straight, standard taper top outer joint and standard taper bottom inner joint. Both joints are the same size. 125mm overall length.

<u>Size Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	40.71
19/22	-02	44.77

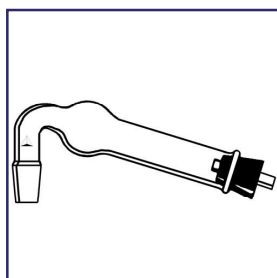
PG-9350
DRYING, STRAIGHT



Tube, drying, straight, standard taper inner joint on the bottom with a plain finish on the top. 125mm overall length.

<u>Size Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	27.16
19/22	-02	28.15

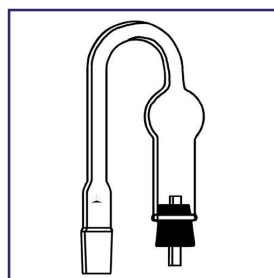
PG-9352
DRYING, STRAIGHT



Tube, drying, with a 75° bend near the standard taper inner joint at the bottom, has a plain finish on the top. 125mm overall length.

<u>Size Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	31.39
19/22	-02	33.78

PG-9354
DRYING, 75° BEND



Short tube connected to a longer tube with a smaller diameter at a 90° angle. Long tube has a standard taper inner joint on the end.

<u>Size Joint</u>	<u>CODE</u>	<u>Price</u>
14/20	-01	33.70
19/22	-02	34.40

PG-9356
DRYING, 90° BEND



Pilot Plant Reaction Systems



The Jacketed Pilot Plant Systems are supported on a mobile structure with locking swivel casters. The framework is constructed from heavy gauge 316 welded stainless steel. This unique frame is a "PRISM" design. It allows the operator to move around the reactor freely without any interference of overhead bars and fixed motor mounts. The motor support mast allows 30" of vertical movement and 360° rotation. The condenser and other apparatus are supported by vertical 3/4" stainless steel posts.

The jacketed vessels have a 200/300 mm flat ground flange and a 2" beaded pipe opening at the bottom. This opening accepts a detachable flush mount drain valve with a 25mm drain port. The heating/cooling jacket and drain valve have 1.0" beaded pipe fittings to accept detachable hose barbs.

The domed lid is fitted with a beaded pipe connection for more reliable and durable connections. Beaded pipe ends are coupled together using a hi-temp 450°F clamp. These grease-free connections are very robust and allow misalignment during set-up and break-down. Using beaded pipe fittings, these systems can operate under full vacuum.

The system is powered by an AC drive 1/2 hp motor and controller. The digital controller has the full range of programmability with 4-digit security pass code, ramp time and speed control and USB connection for interface. The motor is equipped with a 5:1 speed reducer, 55 lbs. of torque. This unit comes wired for 115 volt, single phase; other voltages are available as well as XP.

A 1 1/4" diameter stir agitator assembly is included in the systems. The "Big Bear" is the rotary feed through bearing that makes the difference. It is constructed of 25% glass filled Teflon® and houses the rotary lip seal. It is rated for full vacuum in all stages of operation. The lower agitator blade is also glass filled Teflon® and mates with the drain valve pin to eliminate shaft whip.

NOTE: Many pilot plant systems need to be customized and Prism Research Glass, Inc. understands your unique requirements. Please contact us and we can help you get the right system.





PRG-7500-01

**20 LITER CYLINDRICAL
JACKETED REACTOR**

Call for a Quote.

Components Needed

PRG-7505-01

**30 LITER CYLINDRICAL
JACKETED REACTOR**

Call for a Quote.

Pilot Plant Reaction System Components

PRG-7510-01

**50 LITER CYLINDRICAL
JACKETED REACTOR**

Call for a Quote.

<u>Description</u>	<u>Quantity</u>	<u>20 Liter</u>	<u>30 Liter</u>	<u>50 Liter</u>
Jacketed Vessel	1	PRG-7010-01	PRG-7010-02	PRG-7010-03
Drain Valve Flush Seal, 2" BP	1	PRG-7027-01	PRG-7027-01	PRG-7027-01
Domed Lid, 300mm Flat Flange, 6-Port	1	PRG-7055-03	PRG-7055-03	PRG-7055-03
Detachable Hose Barb, 1" BP	1	PRG-7453-04	PRG-7453-04	PRG-7453-04
Coupling and Insert, 300mm	1	PRG-7070-02	PRG-7070-02	PRG-7070-02
TFE Gasket, 300mm	1	PRG-7075-02	PRG-7075-02	PRG-7075-02
Temperature Monitor, Digital	1	PRG-5430-01	PRG-5430-01	PRG-5430-01
1/2hp AC Drive Motor/Controller with 5:1 Gear Reducer, 115 Volt	1	PRG-7140-02	PRG-7140-02	PRG-7140-02
Stirrer Bearing, 1 1/4" Glass Filled Teflon®	1	PRG-7100-01	PRG-7100-01	PRG-7100-01
Stirrer Shaft, 1 1/4"	1	PRG-7204-01	PRG-7204-03	PRG-7204-03
Agitator Blade, Lower 7"	1	PRG-7109-01	PRG-7109-01	PRG-7109-01
Agitator Turbine, 8 Blade, 5" Diameter Upper	1	PRG-7112-05	PRG-7112-05	PRG-7112-05
Stirrer Shaft Universal	1	PRG-7130-01	PRG-7130-01	PRG-7130-01
Stirrer Shaft Collar	1	PRG-7135-01	PRG-7135-01	PRG-7135-01
"Squat" Quad-Coil Condenser with Detachable Hose Barbs, 3.0" BP	1	PRG-7448-03	PRG-7448-03	PRG-7448-12
Thermo-well, Immersion, 1 1/2" BP	1	PRG-7100-22	PRG-7100-28	PRG-7100-36
Dip Tube, Immersion, 1 1/2" BP	1	PRG-7110-22	PRG-7110-28	PRG-7110-36
Adapter, 90° 3.0" BP to Hose Barb	1	PRG-7448-03	PRG-7135-01	PRG-7135-20
Adapter, 45° 3.0" BP to 3.0" BP	2	PRG-8002-25	PRG-8002-25	PRG-8002-25
End Cap	1	PRG-8016-05	PRG-8016-05	PRG-8016-06
Coupling, 1" BP	3	PRG-8022-03	PRG-8022-03	PRG-8022-03
Coupling, 1.5" BP	3	PRG-8022-04	PRG-8022-04	PRG-8022-04
Coupling, 2.0" BP	2	PRG-8022-05	PRG-8022-05	PRG-8022-05
Coupling, 3.0" BP	4	PRG-8022-06	PRG-8022-06	PRG-8022-06
Support Structure, Welded 316 Stainless Steel, Locking Swivel Casters, Fully Adjustable Motor Mount	1	PRG-7500-03	PRG-7500-03	PRG-7500-03
Jumbo Holder	2	PRG-1835-01	PRG-1835-01	PRG-1835-01
Chain Clamp, Jumbo	2	PRG-1742-02	PRG-1742-02	PRG-1742-02





**PRG-7515-01****75 LITER CYLINDRICAL
JACKETED REACTOR**

Call for a Quote.

PRG-7520-01**100 LITER CYLINDRICAL
JACKETED REACTOR**

Call for a Quote.

Optional Distillation/Splitter**PRG-2438-12**
12 Liter Reservoirs
Call for a Quote.**PRG-2438-22**
22 Liter Reservoirs
Call for a Quote.**Components Needed****Pilot Plant Reaction System Components**

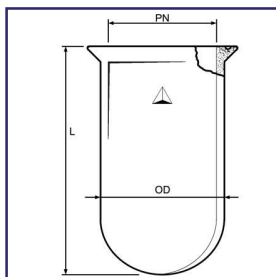
<u>Description</u>	<u>Quantity</u>	<u>75 Liter</u>	<u>100 Liter</u>
Jacketed Vessel	1	PRG-7010-04	PRG-7012-05
Drain Valve Flush Seal, 2" BP	1	PRG-7027-01	PRG-7027-01
Domed Lid, 300mm Flat Flange, 6-Port	1	PRG-7055-03	PRG-7055-03
Detachable Hose Barb, 1" BP	3	PRG-7453-04	PRG-7453-04
Coupling & Insert, 300mm	1	PRG-7070-02	PRG-7070-02
TFE Gasket, 300mm	1	PRG-7075-02	PRG-7075-02
Temperature Monitor, Digital	1	PRG-5430-01	PRG-5430-01
1/2hp AC Drive Motor/Controller with 5:1 Gear Reducer, 115 Volt	1	PRG-7140-02	PRG-7140-02
Stirrer Bearing, 1 1/4" Glass Filled Teflon®	1	PRG-7100-01	PRG-7100-01
Stirrer Shaft, 1 1/4"	1	PRG-7104-04	PRG-7104-04
Agitator Blade, Lower 7"	1	PRG-7109-01	PRG-7109-01
Agitator Turbine, 8 Blade, 5" Dia. Upper	1	PRG-7112-05	PRG-7112-05
Stirrer Shaft Universal	1	PRG-7130-01	PRG-7130-01
Stirrer Shaft Collar	1	PRG-7135-01	PRG-7135-01
"Squat" Quad-Coil Condenser with Detachable Hose Barbs	1	PRG-7448-13	PRG-7448-13
Adapter, 45° Sweep Elbow	1	PRG-8002-25	PRG-8002-26
End Cap	1	PRG-8016-05	PRG-8016-06
Coupling, 1.0" BP	3	PRG-8022-03	PRG-8022-03
Coupling, 1.5" BP	3	PRG-8022-04	PRG-8022-04
Coupling, 2.0" BP	3	PRG-8022-05	PRG-8002-05
Coupling, 3.0" BP	4	PRG-8022-06	PRG-8002-06
Coupling, 4.0" BP	3	PRG-8022-07	PRG-8022-07
Thermo-well, 36" Immersion, 1 1/5" BP			
Dip Tube, 20" Immersion, 1 1/5" BP	1	PRG-7100-36	PRG-7100-36
	1	PRG-7100-20	PRG-7100-20
Support Structure, Welded 316 Stainless Steel, Locking Swivel Casters, Fully Adjustable Motor Mount	1	PRG-7500-04	PRG-7500-04
Jumbo Holder			
Chain Clamp, Jumbo	2	PRG-1835-01	PRG-1835-01
	2	PRG-1742-02	PRG-1742-02
Adapter, 90° 3.0" BP to Hose Barb			
Adapter, 90° 4.0" BP to 2.0" BP	1	PRG-7453-20	——
	1	——	PRG-8004-14



Custom Pilot Plant Systems

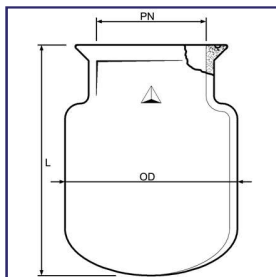


Prism Research Glass, Inc. has the capabilities to create custom Pilot Plant Systems for you.



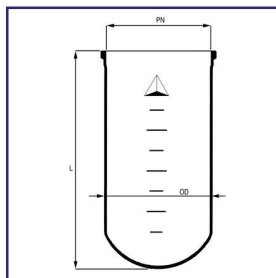
Cylindrical, reaction vessel has a flange tooled flat with an O-Ring groove and finely ground to prevent leaks. Flanges can either be sealed with an O-Ring or grease. For clamps see PRG-188, for O-Rings see PRG-187.

Volume ml	PN mm	OD mm	L mm	Style	CODE	Price
500	100	105	135	A	-01	214.88
1,000	100	105	210	A	-02	229.00
2,000	150	160	205	A	-03	267.75
3,000	150	160	280	A	-04	315.29
4,000	150	160	355	A	-05	387.53
10,000	200	215	440	A	-06	942.39



Volume L	PN mm	OD mm	L mm	Style	CODE	Price
15	200	260	375	B	-07	1,082.23
20	200	260	484	B	-08	1,173.37
30	200	315	735	B	-09	2,216.64
50	200	315	935	B	-10	2,801.30
75	200	457	775	B	-11	5,564.19
100	200	457	1,035	B	-12	6,135.43
150	200	457	1,335	B	-13	8,592.82
200	200	457	1,560	B	-14	11,196.71

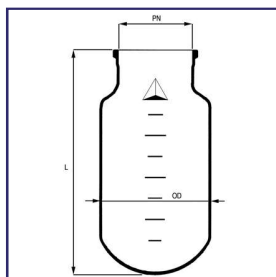
PRG-5220
CYLINDRICAL



Heavy duty vessels have a flat ground DN flange. Rated for full vacuum at nominal working pressures to 7psi.

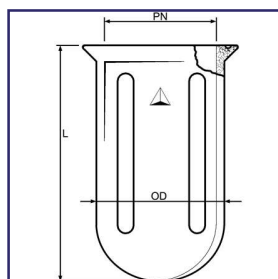
Volume L	PN mm	OD mm	L mm	Style	CODE	Price
10	200	215	490	A	-10	1,134.33
20	300	315	375	A	-01	1,596.51
30	300	315	520	A	-02	2,296.30
50	300	315	840	A	-03	2,906.60
75	300	315	1050	A	-11	3,215.80

Volume L	PN mm	OD mm	L mm	Style	CODE	Price
50	300	415	690	B	-13	5,045.02
75	300	415	800	B	-04	5,757.84
100	300	486	890	B	-14	9,408.16
150	300	486	1,210	B	-15	10,724.77
200	300	486	1,340	B	-16	14,850.31



PRG-7000
PILOT PLANT, CYLIN-
DRICAL

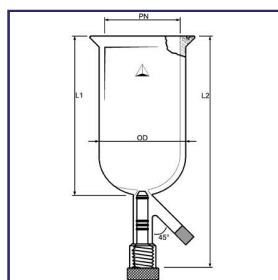




Cylindrical, reaction vessel has a flange tooled flat with an O-Ring groove and finely ground to prevent leaks. Flanges can either be sealed with an O-Ring or grease. Four Morton indents are added for improved mixing. For clamps see PRG-188, for O-Rings see PRG-187.

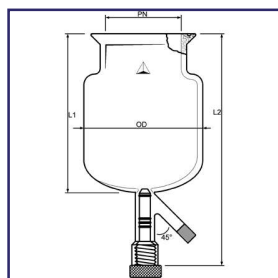
Volume ml	PN mm	OD mm	L mm	CODE	Price
500	100	105	135	-01	245.01
1,000	100	105	210	-02	265.50
2,000	150	160	205	-03	301.26
3,000	150	160	280	-04	369.33
4,000	150	160	355	-05	433.99
10,000	200	215	440	-06	1,086.44

PRG-5225
CYLINDRICAL, IN-
DENTS



Cylindrical reaction vessel has a flange surface tooled flat with an O-Ring groove and finely ground. Leak free seals can be achieved either by use of an O-Ring or grease. When using a greased application under vacuum, the O-Ring groove acts as a barrier, not allowing grease into the chamber and causing contamination. The drain valve in a closed position seats flush to the inside radius of the vessel. This eliminates dead space and allows complete stirring of contents. The drain spout is a heavy wall tubulation with an etched tip to work with a compression fitting. For clamps see PRG-188, for O-Ring see PRG-187.

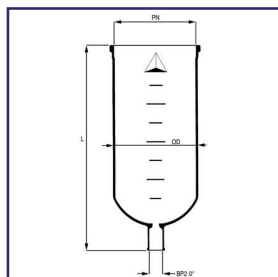
Volume ml	PN mm	OD mm	L1 mm	L2 mm	Drain Valve Size	Style	CODE	Price
500	100	105	135	270	0-12	A	-01	687.57
1,000	100	105	210	345	0-12	A	-02	709.69
2,000	150	160	205	400	0-12	A	-03	830.54
3,000	150	160	280	475	0-12	A	-04	861.17
4,000	150	160	355	550	0-12	A	-05	878.19
10,000	200	215	440	640	0-20	A	-06	1,492.37



PRG-5227
CYLINDRICAL, DRAIN
VALVE

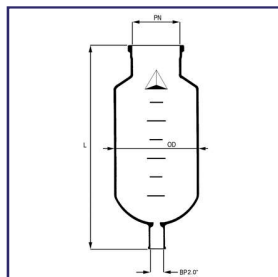
Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Valve Size	Style	CODE	Price
15	200	260	375	575	0-20	B	-07	1,837.68
20	200	260	485	685	0-20	B	-08	2,070.09
30	200	315	735	935	0-20	B	-09	2,514.78
50	200	315	935	1,135	0-20	B	-10	3,208.64
75	200	457	775	975	0-20	B	-11	6,314.43
100	200	457	1,035	1,235	0-20	B	-12	6,822.18
150	200	457	1,335	1,535	0-20	B	-13	20,598.37
200	200	457	1,560	1,760	0-20	B	-14	24,232.41





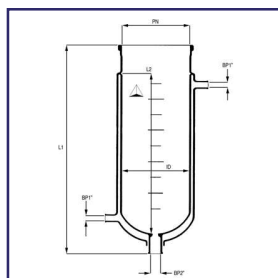
Heavy duty cylindrical vessels have a flat ground DN flange. Drain port connection is a 2.0" beaded pipe and has a 1.0" drain orifice. Drain valve PRG-7025 and PRG-7027 extended body are used with these vessels. Drain valve port will pass through a heat mantle with a bottom opening.

Volume L	PN mm	OD mm	L mm	Style	CODE	Price
10	200	215	550	A	-10	1,594.88
20	300	315	550	A	-01	2,022.90
30	300	315	670	A	-02	2,804.04
50	300	315	920	A	-03	3,474.56
75	300	315	1,300	A	-14	4,092.97



Volume L	PN mm	OD mm	L1 mm	Style	CODE	Price
50	300	415	750	B	-13	5,549.54
75	300	415	1,090	B	-04	6,319.31
100	300	486	950	B	-15	9,732.03
150	300	486	1,275	B	-16	11,212.99
200	300	486	1,400	B	-17	15,948.80

PRG-7005
PILOT PLANT, CYLIN-
DRICAL, DRAIN
VALVE

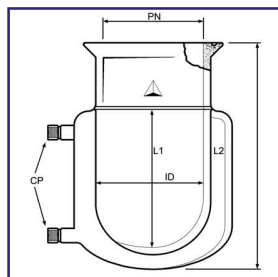


Vessel is jacketed for heating and cooling capacities. The vessel has a 200 or 300mm I.D. flat ground flange. The upper portion of the jacket is hard fused and the lower portion is sealed with an ultra durable Flouro-Silicone to allow for thermal transitions. The jacket ports are a 1.0" beaded pipe connection. The lower drain valve is attached by use of a 2.0" beaded pipe connection. The valve in a closed position seats flush to the interior bottom for zero dead space. Reactor is suited for full vacuum and normal working pressures to 7psi. Temperature range - 60°C to 200°C with a maximum temperature deviation of 90°C.

Volume L	Jacket Volume L	PN mm	ID mm	L1 mm	L2 mm	CODE	Price
10	7	200	200	600	380	-11	5,377.03
20	6	300	300	560	310	-01	8,347.07
30	8	300	300	685	460	-02	8,832.05
50	13	300	300	940	710	-03	9,587.18
75	TBD	TBD	431	870	TBD	-04	12,000.66
100	TBD	TBD	431	1,095	TBD	-05	14,080.54

PRG-7010
PILOT PLANT, JACK-
ETED, LOWER DRAIN
PORT



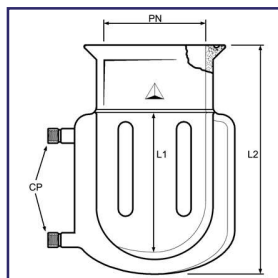


PRG-5230
CYLINDRICAL, JACK-
ETED

Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. The circulatory jacket is offered with detachable hose connections. Internal threaded ports are supplied with a Nylon bushing and Polypropylene barb. Teflon® is available upon request. 1.0" beaded pipe ports are sold separately. See PRG-8022-03 for couplings and PRG-8030 for adapter selection.

Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	CODE	Price
250	60	60	75	145	#11	-00	621.22
500	100	100	130	210	#11	-01	489.67
1,000	100	100	205	285	#11	-02	663.85
2,000	150	150	200	295	#15	-03	747.14
3,000	150	150	275	370	#15	-04	936.05
4,000	150	150	350	445	#15	-05	1,118.15

Volume L	PN mm	ID mm	L1 mm	L2 mm	CP Size	CODE	Price
10	200	200	436	540	#25	-06	2,944.85
15	200	200	500	605	#25	-07	4,249.72
20	200	200	610	725	#25	-08	5,354.26
30	200	300	645	750	BP 1"	-09	7,595.23
50	200	300	915	1,020	BP 1"	-10	9,015.96

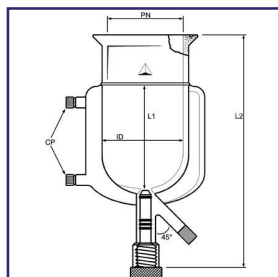


PRG-5233
CYLINDRICAL, JACK-
ETED, WITH MORTON
INDENTS

Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded joints are supplied with Nylon bushings and Polypropylene barbs. 1.0" beaded pipe connections are sold separately. See PRG-8022-03 for coupling and PRG-8030 for port selection. Four Morton indents are added for increased stirring performance.

Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	CODE	Price
250	60	60	75	145	#11	-00	593.29
500	100	97	130	210	#11	-01	729.08
1,000	100	97	205	285	#11	-02	786.29
2,000	150	143	200	295	#15	-03	886.70
3,000	150	143	275	370	#15	-04	1,089.22
4,000	150	143	350	445	#15	-05	1,300.24
10,000	200	200	695	540	#15	-06	3,252.29



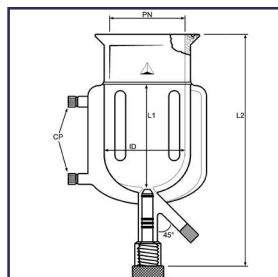


PRG-5235
**CYLINDRICAL, JACK-
ETED, DRAIN VALVE**

Vessels have a Duron® style O-Ring flange. Flanges can be sealed either with an O-Ring or grease. Circulatory jacket is offered with removable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. 1.0" beaded pipe port connections are sold separately. See PRG-8022-03 for coupling and PRG-8030 for port selections. Drain valve stem seats flush to interior of bottom radius. Drain tube is nominal O.D. size and can be used with standard compression fittings.

Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
125	TBD	TBD	TBD	TBD	TBD	TBD	-125	941.05
250	60	60	245	320	#11	0-12	-00	997.34
500	100	100	130	335	#11	0-12	-01	1,043.27
1,000	100	100	205	410	#11	0-12	-02	1,062.01
2,000	150	150	200	600	#15	0-12	-03	1,232.17
3,000	150	150	275	675	#15	0-12	-04	1,327.48
4,000	150	150	350	750	#15	0-12	-05	1,555.55
5,000	TBD	TBD	TBD	TBD	TBD	TBD	-05.5	1,778.01

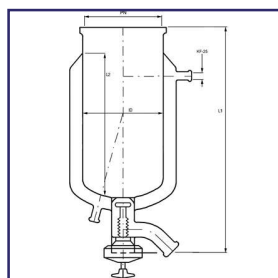
Volume L	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
10	200	200	435	635	#25	0-20	-06	3,950.41
15	200	200	550	795	#25	0-20	-07	6,379.52
20	200	200	660	860	#25	0-20	-08	CALL
30	200	300	590	790	BP 1"	0-20	-09	8,910.17
50	200	300	840	1,040	BP 1"	0-20	-10	9,618.12



PRG-5240
**CYLINDRICAL, JACK-
ETED, DRAIN VALVE,
WITH INDENTATIONS**

Vessel has Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulator jacket has internal threads for detachable hose barbs. Supplied with Nylon bushings and Polypropylene barbs. Drain valve stem seats flush to inside radius of vessel bottom. Drain drip stem is a nominal O.D. for us with a standard compression fitting. Four equally spaced baffle indents improve stirring activity.

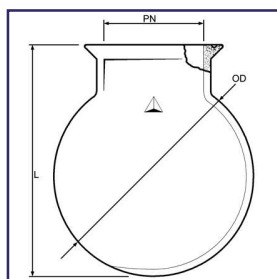
Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
250	TBD	TBD	TBD	TBD	TBD	TBD	-250	CALL
500	100	100	130	335	#11	0-12	-01	1,143.68
1,000	100	100	205	410	#11	0-12	-02	1,162.42
2,000	150	150	200	600	#15	0-12	-03	1,334.25
3,000	150	150	275	675	#15	0-12	-04	1,429.60
4,000	150	150	350	750	#15	0-12	-05	1,659.38
10,000	200	200	436	635	#15	0-20	-06	4,386.03



PRG-7012
**PILOT PLANT, JACK-
ETED, DRAIN VALVE**

Reaction vessels are jacketed for heating and cooling capabilities. The vessels have a 300mm I.D. flat ground flange and hard fused circulatory jacket – no Silicone seals. Jacket ports are a KF-25 ball connection. The drain valve seats flush to vessel interior and has a DN-50 ball discharge port. Temperature range is -40°C to 180°C with a maximum thermal change of 90°C. Maximum temperature for the 100 liter is 140°C. Rated for full vacuum and normal working pressures to 7 psi.

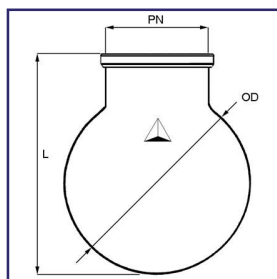
Volume L	Jacket Volume L	PN mm	L1 mm	L2 mm	CODE	Price
15	19	300	665	400	-01	4,819.50
30	25	300	875	560	-02	7,915.32
50	31	300	945	545	-03	9,525.60
100	38	300	1,305	905	-04	14,061.60



PRG-5245
SPHERICAL, ROUND
BOTTOM

Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. For clamps see PRG-188 and O-Rings see PRG-187.

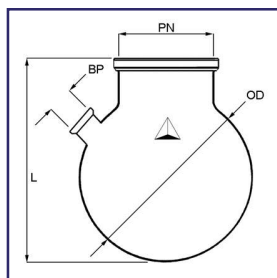
<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2,000	100	161	200	-01	275.72
3,000	100	185	225	-02	304.63
5,000	150	221	270	-03	410.17
12,000	150	295	365	-04	549.73
22,000	150	350	420	-05	769.25
50,000	200	457	530	-06	2,163.26
72,000	200	520	590	-07	2,416.04
100,000	200	610	720	-08	6,080.66
200,000	200	750	890	-09	9,853.65



PRG-7014
PILOT PLANT, FLASK

Pilot plant reactor flask has a heavy duty flat ground flange. Spherical vessels have a 200mm or 300mm I.D. flat ground flange.

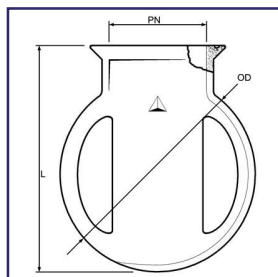
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
22	200	343	450	-11	781.17
50	200	457	580	-01	1,334.49
50	300	457	590	-02	1,822.71
72	200	520	670	-03	2,408.60
72	300	520	670	-04	2,896.81
100	300	610	735	-05	3,922.11
200	300	750	890	-06	8,918.31



PRG-7018
PILOT PLANT, FLASK,
SIDE PORT

Spherical vessels have a 200mm or 300mm I.D. flat ground flange. The charge port is a beaded pipe connection. Other connections are available upon request.

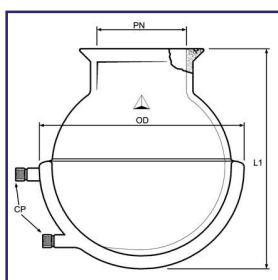
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
22	200	343	450	-11	989.47
50	200	457	580	-01	2,506.24
72	200	520	670	-02	3,075.83
100	300	610	760	-05	5,598.35
200	300	750	900	-06	11,571.01



Vessels have Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Four Morton baffle indents are evenly spaced around perimeter for improved stirring. For clamps see PRG-188 and O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2,000	100	161	200	-01	326.75
3,000	100	185	225	-02	362.51
5,000	150	221	270	-03	488.45
12,000	150	295	365	-04	656.84
22,000	150	350	420	-05	925.85

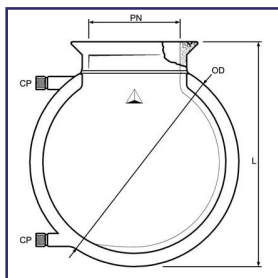
PRG-5250
SPHERICAL, MOTON
BAFFLE INDENTS



Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded joints are supplied with Nylon bushings and Polypropylene barbs. For clamps see PRG-188 and O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2,000	100	221	240	-01	825.98
3,000	100	221	255	-02	888.84
5,000	150	295	370	-03	1,005.54
12,000	150	350	475	-04	2,873.01

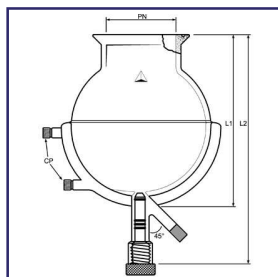
PRG-5255
SPHERICAL, HALF
JACKETED



Vessel have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. For clamps see PRG-188 and for O-Rings see PRG-187.

<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2,000	100	221	295	-01	846.26
3,000	100	221	255	-02	968.31
5,000	150	295	370	-03	1,513.53
12,000	150	350	460	-04	3,601.50

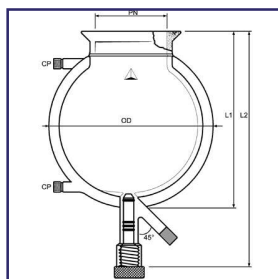
PRG-5257
SPHERICAL, FULL
JACKET



PRG-5260
SPHERICAL, HALF
JACKET, FLUSH
MOUNT DRAIN VALVE

Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. For clamps see PRG-188 and O-Rings see PRG-187. Drain valve 0-12mm seats flush to interior radius bottom.

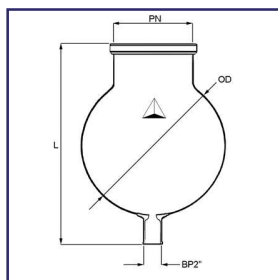
<u>Volume ml</u>	<u>PN mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>CP Size</u>	<u>Valve Bore</u>	<u>CODE</u>	<u>Price</u>
2,000	100	295	410	#11	0-12	-01	1,140.24
3,000	100	295	410	#11	0-12	-02	1,203.08
5,000	150	370	505	#15	0-12	-03	1,319.79
12,000	150	460	595	#15	0-20	-04	3,187.29



PRG-5262
SPHERICAL, FULL
JACKET, FLUSH
MOUNT DRAIN VALVE

Vessel has a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Circulatory jacket is offered with detachable hose barbs. Internal threaded ports are supplied with Nylon bushings and Polypropylene barbs. Drain valve seats flush to the interior radiused bottom. For clamps see PRG-188 and for O-Ring see PRG-187.

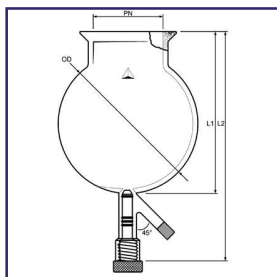
<u>Volume ml</u>	<u>PN mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>OD mm</u>	<u>CP Size</u>	<u>Valve Bore</u>	<u>CODE</u>	<u>Price</u>
2,000	100	295	360	221	#11	0-12	-01	1,310.08
3,000	100	295	360	221	#11	0-12	-02	1,428.90
5,000	150	370	550	295	#15	0-12	-03	1,980.59
12,000	150	460	640	350	#15	0-20	-04	4,084.84



PRG-7016
PILOT PLANT, FLASK,
DRAIN PORT

Spherical vessels have a 200mm or 300mm I.D. flat ground flange. Drain valve attached by use of a 2.0" beaded pipe connection. Valve stem seats flush to interior of vessel and has a 1.0" drain opening.

<u>Volume L</u>	<u>PN mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
22	200	600	343	-11	927.63
50	200	730	457	-01	1,969.19
50	300	730	457	-02	2,522.53
72	200	820	520	-03	2,799.18
72	300	820	520	-04	3,222.32
100	300	910	610	-05	4,866.03
200	300	1,050	750	-06	9,797.10



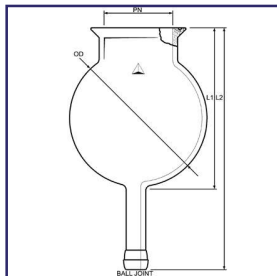
PRG-5265
SPHERICAL, DRAIN
PORT

Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. Drain valve stem seats flush to the interior radius bottom. Valve drip stem is a nominal size to accommodate a standard size compression fitting. For clamps see PRG-188 and O-Ring see PRG-187.

Volume ml	PN mm	OD mm	L1 mm	L2 mm	Valve Bore	CODE	Price
2,000	100	161	200	335	0-12	-01	662.68
3,000	100	185	225	360	0-12	-02	735.04
5,000	150	221	270	465	0-12	-03	994.67
12,000	150	295	365	560	0-20	-04	1,330.31
22,000	150	350	520	615	0-20	-05	1,858.13
50,000	200	457	530	725	0-20	-06	2,633.67
72,000	200	520	595	785	0-20	-07	2,926.14
100,000	200	610	720	870	0-20	-08	4,735.82
200,000	200	750	890	1,040	0-20	-09	11,081.15

PRG-5266
SPHERICAL, OPEN
DRAIN PORT

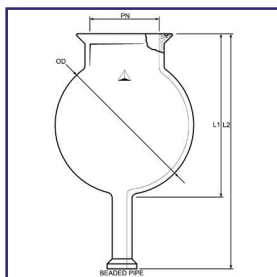
Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. The open drain port is designed to fit through a heat mantle. Three options for outlet port, for drain valve options see PRG-5269 and PRG-5270. For couplings see PRG-1705, PRG-8022 & PRG-7070.



Ball Joint Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	150	295	365	480	28/15	-01	1,282.77
22	150	350	420	535	28/15	-02	1,802.21
50	200	457	530	655	35/25	-03	2,362.78
72	200	520	590	715	35/25	-04	2,634.01
100	200	610	720	685	50/30	-05	4,309.67
200	200	750	890	1,015	50/30	-06	10,184.99

Ball joints with O-Ring grooves are available upon request.

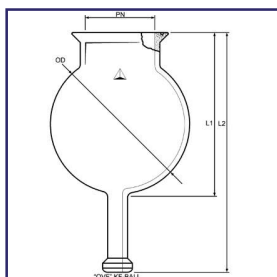


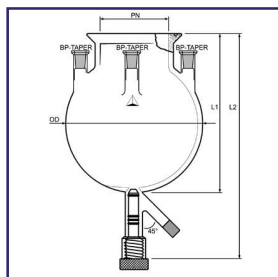
Beaded Pipe Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	150	295	365	480	1.0"	-11	1,370.27
22	150	350	420	535	1.0"	-12	1,946.39
50	200	457	530	655	1.5"	-13	2,551.81
72	200	520	590	715	1.5"	-14	2,844.73
100	200	610	720	685	2.0"	-15	4,654.45
200	200	750	890	1,015	2.0"	-16	10,999.79

"QVF" KF Ball Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	150	295	365	480	KF-25	-21	1,402.85
22	150	350	420	535	KF-25	-22	1,978.95
50	200	457	530	655	KF-25	-23	2,584.36
72	200	520	590	715	KF-25	-24	2,877.30
100	200	610	720	685	KF-50	-25	4,686.99
200	200	750	890	1,015	KF-50	-26	11,032.33





PRG-5267
FLANGED TOP,
THREE TAPERED
JOINT SIDE PORTS
AND DRAIN VALVE

Reaction flasks have a Duron® style O-Ring flange and tapered joints side ports. Top rim of 45/50 joints is a tooled 2.0" beaded pipe connection. Drain valve seated flush to interior contour of flask. Valve stem has Teflon covered O-Ring seals.

Volume L	PN mm	OD mm	L1 mm	L2 mm	Valve Bore	CODE	Price
12	100	295	365	490	0-20	-01	1,165.23
22	100	350	420	545	0-20	-02	1,544.42
50	150	457	530	655	0-20	-03	2,709.67
72	200	520	590	715	0-20	-04	3,469.68
100	200	610	720	985	0-20	-05	6,153.32
200	200	750	890	1,015	0-20	-06	13,540.21

Other "BP-Taper" connections available upon request are 1.0" bp x 24/40 outer and 1.5" bp x 29/42 outer.

PRG-5268
FLANGE TOP AND
SIDE PORTS, OPEN
DRAIN PORT

Flasks have a Duron® O-Ring style flange top and 45/50 tapered side ports. Top rim of joints have a tooled beaded pipe connection, dual purpose joint. The drain port is extended to fit through a heat mantle. Three style connections are available to suit your needs.

Ball Joint Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	28/15	-01	969.94
22	100	350	420	545	28/15	-02	1,349.13
50	150	457	530	655	35/25	-03	2,595.74
72	200	520	590	715	35/25	-04	3,274.39
100	200	610	720	685	50/30	-05	5,958.02
200	200	750	890	1,015	50/30	-06	13,344.92

Ball joints with O-Ring grooves are available upon request.

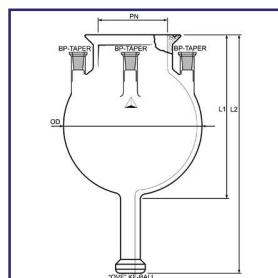
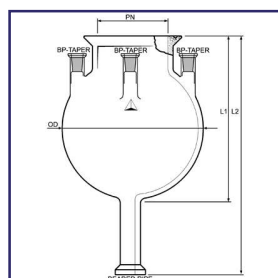
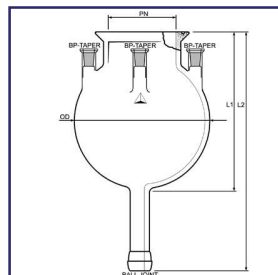
Beaded Pipe Connection

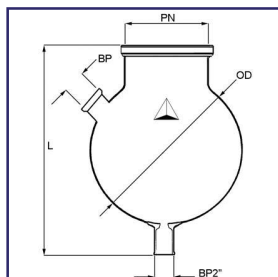
Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	1.0"	-11	969.94
22	100	350	420	545	1.0"	-12	1349.13
50	150	457	530	655	1.5"	-13	2595.74
72	200	520	590	715	1.5"	-14	3274.39
100	200	610	720	685	2.0"	-15	5958.02
200	200	750	890	1,015	2.0"	-16	13344.92

"QVF" KF Ball Connection

Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	KF-25	-21	1018.77
22	100	350	420	545	KF-25	-22	1,397.96
50	150	457	530	655	KF-25	-23	2,595.74
72	200	520	590	715	KF-25	-24	3,323.20
100	200	610	720	685	KF-50	-25	6,006.84
200	200	750	890	1,015	KF-50	-26	13,426.30

Other "BP-Taper" connections available upon request are 1.0" bp x 24/40 outer and 1.5" bp x 29/42 outer.





Spherical vessels have a 200mm or 300mm I.D. flat ground flange. The charge port is a beaded pipe connection. Drain valve attaches with the use of a 2.0" beaded pipe connection.

Volume L	PN mm	L mm	OD mm	CODE	Price
22	200	450	343	-11	989.47
50	200	730	457	-01	2,506.24
72	200	820	520	-03	3,075.83
100	300	910	610	-05	5,598.35
200	300	1,050	750	-06	11,571.01

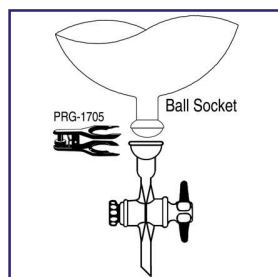
PRG-7020

**PILOT PLANT, FLASK,
CHARGE PORT AND
DRAIN PORT**

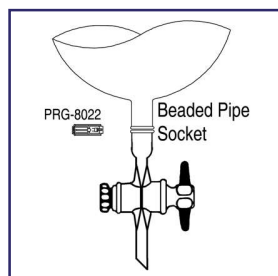
PRG-5269

**DRAIN VALVE ADAPT-
ERS, TEFLON® STOP-
COCKS**

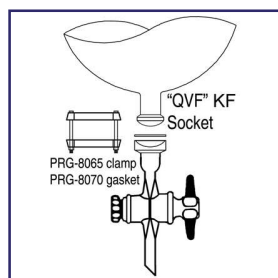
Stopcock adapter offer three connections, spherical ball joints, beaded pipe and "QVF" KF joints. Several options within each grouping for your selection to match mate with vessel connection. All style plugs have threaded nut retainer.



Socket Joint	Bore Size	Material	Plug Size	CODE	Price
28/15	6	Glass	20 x 44	-01	166.32
28/15	6	TFE	16 x 35	-02	166.32
28/15	10	Glass	35 x 56	-03	228.68
28/15	10	TFE	24 x 40	-04	228.68
35/25	6	Glass	20 x 44	-05	180.19
35/25	6	TFE	16 x 35	-06	180.19
35/25	10	Glass	35 x 56	-07	249.48
35/25	10	TFE	24 x 40	-08	249.48
50/30	10	Glass	35 x 56	-09	277.19
50/30	10	TFE	24 x 40	-10	277.19



Beaded Pipe	Bore Size	Material	Plug Size	CODE	Price
1.0"	6	Glass	20 x 44	-21	166.32
1.0"	6	TFE	16 x 35	-22	166.32
1.0"	10	Glass	35 x 56	-23	228.68
1.0"	10	TFE	24 x 40	-24	228.68
1.5"	10	Glass	35 x 56	-25	236.96
1.5"	10	TFE	24 x 40	-26	266.77
2.0"	10	Glass	35 x 56	-27	279.28
2.0"	10	TFE	24 x 40	-28	279.28

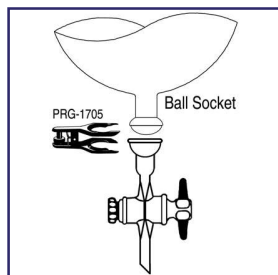


"QVF" KF Socket	Bore Size	Material	Plug Size	CODE	Price
KF-25	6	Glass	20 x 44	-31	191.80
KF-25	6	TFE	16 x 35	-32	191.80
KF-25	10	Glass	35 x 56	-33	259.62
KF-25	10	TFE	24 x 40	-34	259.62
KF-50	10	Glass	35 x 56	-35	295.09
KF-50	10	TFE	24 x 40	-36	295.09





PRG-5270 DRAIN VALVE ADAPT- ERS, HIGH VOLUME, TEFLON® STOP- COCKS

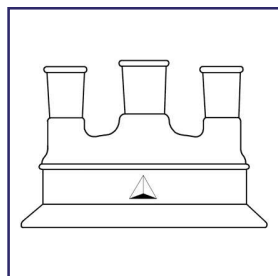
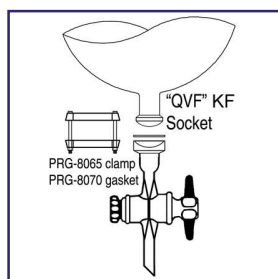
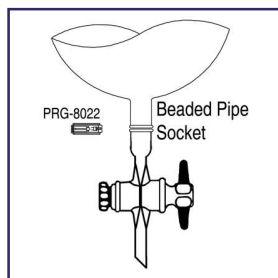


Valve have Teflon® covered O-Ring seals. Adapter offer three connections: spherical ball joints, beaded pipe and "QVF" KF joints. Several options within each grouping for your selection to match mate with vessel connection drain spout is a nominal standard size for use with a compression fitting. All exposed parts are either Glass or Teflon®.

<u>Socket Joint</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
28/15	0-12	-02	213.11
35/25	0-12	-03	219.08
35/25	0-20	-04	365.13
50/30	0-12	-05	278.69
50/30	0-20	-06	412.82

<u>Beaded Pipe</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
1.0"	0-12	-12	213.11
1.5"	0-12	-13	219.08
1.5"	0-20	-14	365.13
2.0"	0-12	-15	278.69
2.0"	0-20	-16	412.82

<u>"QVF" KF Socket</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
KF-25	0-12	-21	220.55
KF-50	0-20	-22	365.13
KF-50	0-20	-23	433.69

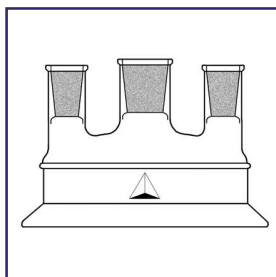


PRG-5275 LID, THREE NECK

Lids are a Duron® style flange and can be mated to both O-Ring and non O-Ring flanges from the Duron® family. Three top ports are standard taper joints. Other options are available upon request.

<u>Flange I.D. mm</u>	<u>Center Neck</u>	<u>Side Neck</u>	<u>CODE</u>	<u>Price</u>
100	24/40	24/40	-01	279.36
100	29/42	24/40	-02	285.93
150	24/40	24/40	-03	416.97
150	29/42	24/40	-04	422.48
150	29/42	29/42	-05	446.66
150	45/50	24/40	-06	442.49
200	45/50	24/40	-07	929.24
200	45/50	29/42	-08	934.36
200	45/50	45/50	-09	949.68



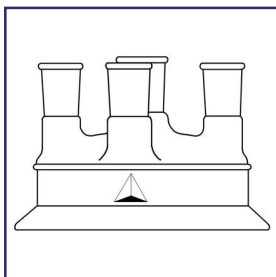


PRG-5277

**LID, THREE NECK,
WITH "BP-TAPER"
CONNECTIONS**

Lids are a Duron® style flange and can be mated to both O-Ring and non O-Ring flanges from the Duron® family. Three top ports are standard taper joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose joints. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	329.56
100	29/42 x 1.5"	24/40 x 1.0"	-02	425.30
150	24/40 x 1.0"	24/40 x 1.0"	-03	462.49
150	29/42 x 1.5"	24/40 x 1.0"	-04	467.81
150	29/42 x 1.5"	29/42 x 1.5"	-05	476.77
150	45/50 x 2.0"	24/40 x 1.0"	-06	487.16
200	45/50 x 2.0"	24/40 x 1.0"	-07	957.45
200	45/50 x 2.0"	29/42 x 1.5"	-08	957.90
200	45/50 x 2.0"	45/50 x 2.0"	-09	992.08

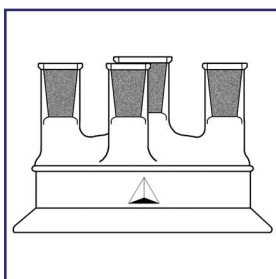


PRG-5280

LID, FOUR NECK

Lids are a Duron® style flange and can be mated to both O-Ring and non O-Ring flanges from the Duron® family. Three top ports are standard taper joints. Other options are available upon request.

Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	302.94
100	29/42	24/40	-02	309.75
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	459.51
150	45/50	24/40	-06	464.55
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59



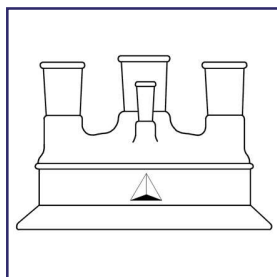
PRG-5282

**LID, FOUR NECK,
WITH "BP-TAPER"
CONNECTIONS**

Lids are a Duron® style flange and can be mated to both O-Ring and non O-Ring flanges from the Duron® family. Three top ports are standard taper joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose joints. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	359.75
100	29/42 x 1.5"	24/40 x 1.0"	-02	366.33
150	24/40 x 1.0"	24/40 x 1.0"	-03	494.58
150	29/42 x 1.5"	24/40 x 1.0"	-04	501.18
150	29/42 x 1.5"	29/42 x 1.5"	-05	511.04
150	45/50 x 2.0"	24/40 x 1.0"	-06	516.00
200	45/50 x 2.0"	24/40 x 1.0"	-07	994.50
200	45/50 x 2.0"	29/42 x 1.5"	-08	997.77
200	45/50 x 2.0"	45/50 x 2.0"	-09	1,034.91

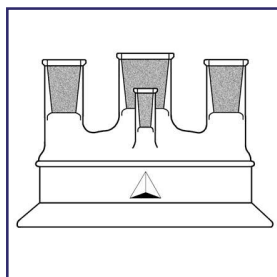




PRG-5285
LID, FOUR NECK, 90°
THERMOMETER
JOINT

Lids have a Duron® style flanges that mates to O-Ring or non O-Ring flanges from the Duron® family. Four top necks are tapered joints. The 4th neck to accommodate a thermometer. Other options are available upon request.

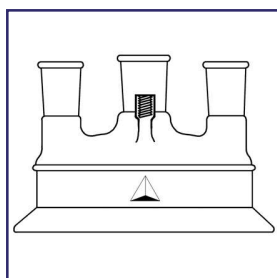
Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	306.32
100	29/42	24/40	-02	313.18
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	459.51
150	45/50	24/40	-06	464.63
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59



PRG-5287
LID, FOUR NECK, 90°
THERMOMETER
JOINT, WITH "BP-
TAPER" CONNEC-
TIONS

Lids have a Duron® style flange that mates to O-Ring or non O-Ring flanges from the Duron® family. Three top necks are "BP-Taper" joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose. The 4th joint is a 10/30 to accommodate a thermometer. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	355.59
100	29/42 x 1.5"	24/40 x 1.0"	-02	362.19
150	24/40 x 1.0"	24/40 x 1.0"	-03	487.16
150	29/42 x 1.5"	24/40 x 1.0"	-04	493.72
150	29/42 x 1.5"	29/42 x 1.5"	-05	506.56
150	45/50 x 2.0"	24/40 x 1.0"	-06	508.53
200	45/50 x 2.0"	24/40 x 1.0"	-07	964.68
200	45/50 x 2.0"	29/42 x 1.5"	-08	997.77
200	45/50 x 2.0"	45/50 x 2.0"	-09	1,005.12

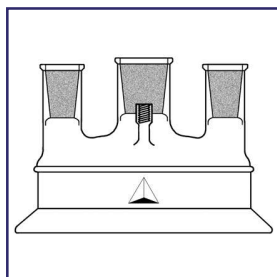


PRG-5290
LID, THREE NECK, 90°
THERMOMETER
PORT

Lids are Duron® style flange that mates to O-Ring or non O-Ring flanges from the Duron® family. Three 180° top neck are standard taper joints. A threaded 4th 90° port has 6-7mm O.D. compression fitting. Other options are available upon request.

Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	306.32
100	29/42	24/40	-02	313.18
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	464.63
150	45/50	24/40	-06	448.92
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59

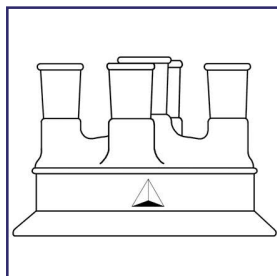




PRG-5292
LID, THREE NECK, 90°
THERMOMETER
JOINT WITH #7 INTER-
NAL THREAD, WITH
"BP-TAPER" CON-
NECTIONS

Lids have a Duron® style flange that mates to O-Ring or non O-Ring flanges from the Duron® family. Three top necks are "BP-Taper" joints. Top rim of tapered joints are tooled for beaded pipe connection. Dual purpose. The 4th joint is a 10/30 to accommodate a thermometer. Other options are available upon request.

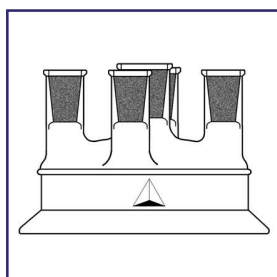
Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	338.66
100	29/42 x 1.5"	24/40 x 1.0"	-02	344.94
150	24/40 x 1.0"	24/40 x 1.0"	-03	463.96
150	29/42 x 1.5"	24/40 x 1.0"	-04	470.21
150	29/42 x 1.5"	29/42 x 1.5"	-05	479.61
150	45/50 x 2.0"	24/40 x 1.0"	-06	484.32
200	45/50 x 2.0"	24/40 x 1.0"	-07	940.04
200	45/50 x 2.0"	29/42 x 1.5"	-08	943.17
200	45/50 x 2.0"	45/50 x 2.0"	-09	957.26



PRG-5295
LID, FIVE NECK

Lids have a Duron® style flange that mates to O-Ring or non O-Ring flanges of the same Duron® family. Five top necks are standard taper joints. Other options are available upon request.

Flange I.D. mm	Center Neck	Side Neck	CODE	Price
150	24/40	24/40	-01	534.32
150	29/42	24/40	-02	541.19
150	29/42	29/42	-03	550.58
150	45/50	24/40	-04	555.28
150	45/50	(2) 29/42 (2) 24/40	-05	598.69
200	45/50	(2) 24/40 (2) 29/42	-06	937.23
200	45/50	(2) 45/50 (2) 29/42	-07	954.93
200	45/50	45/50	-08	992.06

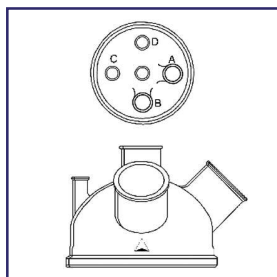


PRG-5297
LID, FIVE NECK, WITH
"BP-TAPER" CON-
NECTIONS

Lids have a Duron® style flange that mates to a O-Ring or non O-Ring flange from the Duron® family. Five top necks are a "BP-Tapered" joint. Top rim of joints are tooled to beaded pipe connection. Dual purpose connection. Other options are available upon request.

Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
150	24/40 x 1.0"	24/40 x 1.0"	-01	591.09
150	29/42 x 1.5"	24/40 x 1.0"	-02	1,047.63
150	29/42 x 1.5"	29/42 x 1.5"	-03	597.94
150	45/50 x 2.0"	24/40 x 1.0"	-04	608.76
200	29/42 x 1.5"	29/42 x 1.5"	-05	612.07
200	45/50 x 2.0"	24/40 x 1.0"	-06	994.23
200	45/50 x 2.0"	29/42 x 1.5"	-07	1,011.70
200	45/50 x 2.0"	(2) 45/50 x 2.0" (2) 24/40 x 1.0"	-08	1,037.84

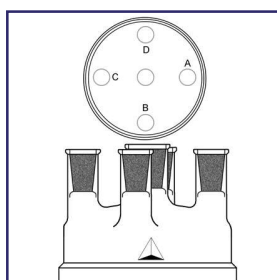




PRG-7050
PILOT PLANT, LID,
FIVE PORT

Heavy duty lids have a flat ground flange to mate with 200mm or 300mm flanged vessel. Connecting ports are a robust beaded pipe which has a misalignment factor of 3°. Other configurations can be accommodated upon request. (Vertical ports – 90°)

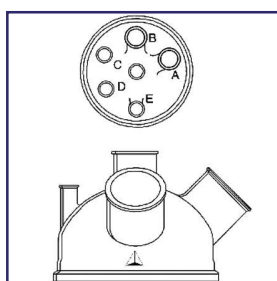
Flange I.D. mm	Center Neck	Side Necks				CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°		
200	1.5"	2.0"	2.0"	1.5"	1.5"	-01	1,964.30
300	2.0"	3.0"	2.0"	1.5"	1.5"	-02	2,245.84
300	2.0"	3.0"	3.0"	1.5"	1.5"	-03	2,294.68



PRG-7060
PILOT PLANT, LID,
BP-TAPER JONTS,
FIVE PORT

Heavy duty lids have a flat ground flange to mate with 200mm or 300mm flanged vessels. Connecting ports are a "BP-Taper" joint. The upper rim of the joint is a beaded pipe while the interior has a ground tapered joint. For example: a 2.0" beaded pipe connection has an interior 45/50 outer tapered joint tooled into it. It has dual functions and are super robust. Other configurations are available upon request.

Flange I.D. mm	Center Neck	Side Necks				CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°		
200	2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	24/40 1.0"	-01	2,110.79
300	2.0"	45/50 2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	-02	2,286.55

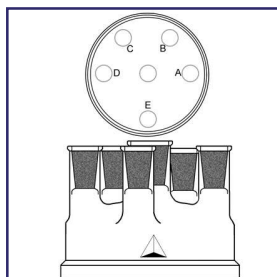


PRG-7055
PILOT PLANT, LID, SIX
PORT

Heavy duty lids have a flat ground flange to mate with 200mm or 300mm flanged vessels. Connecting ports are a robust beaded pipe which has a misalignment factor of 3°. Other configurations are available upon request. (Vertical – 90°)

Flange I.D. mm	Center Neck	Side Necks					CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 45°		
200	1.5"	2.0"	2.0"	1.5"	1.5"	1.5"	-01	2,099.39
300	2.0"	3.0"	2.0"	1.5"	1.5"	1.5"	-02	2,359.76
300	2.0"	3.0"	3.0"	1.5"	1.5"	1.5"	-03	2,506.24

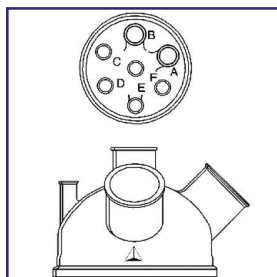




PRG-7065
PILOT PLANT, LID,
BP-TAPER JONTS,
SIX PORT

Heavy duty lids have a flat ground flange to mate with vessels with a 200mm or 300mm flange. Connecting port have a "BP-Taper" joint. The upper rim of the joint has a beaded pipe fitting while the interior has a ground tapered joint. For example: a 2.0" beaded pipe connection has a 45/50 outer joint tooled into it. It has dual function and is super robust. Other configurations are available upon request.

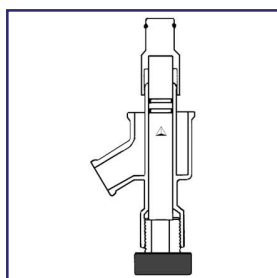
Flange I.D. mm	Center Neck	Side Necks						CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 90°			
200	2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	24/40 1.0"	24/40 1.0"	-01	2,197.03	
300	2.0"	45/50 2.0"	45/50 2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	-02	2,538.79	



PRG-7056
PILOT PLANT, LID,
SEVEN PORT

Heavy duty lids have a flat ground flange to mate with vessels with a 200mm or 300mm flange. Connecting ports are a robust beaded pipe which has a misalignment factor of 3°. Other configurations are available upon request. (Vertical – 90°)

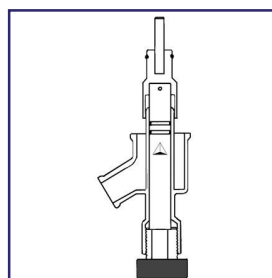
Flange I.D. mm	Center Neck	Side Necks						CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 45°	"E" 90°		
200	1.5"	2.0"	2.0"	1.0"	1.0"	1.0"	1.0"	-01	2,416.75
300	2.0"	3.0"	2.0"	1.5"	1.5"	1.5"	1.5"	-02	2,847.98
300	2.0"	3.0"	3.0"	1.5"	1.5"	1.5"	1.5"	-03	3,134.60



PRG-7025
PILOT PLANT, FLUSH
MOUNT DRAIN VALVE

Valve seats flush to the vessel interior. The Teflon® plunger has an encapsulated O-Ring seat to ensure a leak free closure. Two Kalrez® O-Rings create the seal further back on the valve shaft. In an open position, the discharge has a 25mm opening. Valve attaches to the vessel with a 2.0" beaded pipe. The discharge port is s 1.0" beaded pipe fitting.

Description	CODE	Price
Standard	-01	1,248.24
Extended	-02	1,284.03
Glass Portion Only	-10	558.20

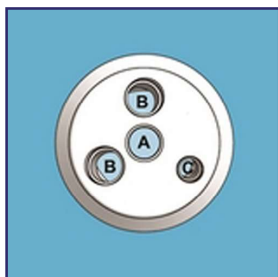


PRG-7027
PILOT PLANT, FLUSH
MOUNT DRAIN VALVE

Valve seats flush to vessel interior. A 1/2" stabilizer pin is installed to prevent shaft whip during stirring. An encapsulated O-Ring seats the valve plunger to the vessel bottom. Two Kalrez® O-Rings are further back on the valve stem. Valve connects to the vessel by use of a 2.0" beaded pipe fitting. The discharge port is a 1.0" beaded pipe fitting.

Description	CODE	Price
Standard	-01	1,149.41
Extended	-02	1,298.69
Pin	-31	CALL
Flush Set	-32	CALL
Stem	-33	CALL
Contol Knob	-34	CALL
Glass Portion	-35	CALL





CW-PC705
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, LIDS FOR
SELF ASSEMBLY
WITH REMOVABLE
PORTS

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is Pure, Chemically Resistant, Cleanable, and Durable.

The COWIE® Reactor Lid System is designed to meet these demands and provide a versatile and cost effective means for the assembly of a whole range of equipment in flanged reactors and similar vessels and offers these unique features.

- Screw-in assembly of fittings to give flexibility, versatility, and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

Flange mm	Port	Qty	NPT Thread	CODE	Price
60	A	1	1/2" Vertical Center Port	CW-PC705.060.003	162.52
	B	2	1/2" 10° x 10° Compound Angle		
	C	1	1/4" Vertical		
60	A	1	1/2" Vertical Center Port	CW-PC715.060.004	148.44
	B	3	1/2" 10° x 10° Compound Angle		
100	A	1	3/4" Vertical Raised Center Port	CW-PC705.100.002	242.18
	B	2	3/4" Vertical		
	C	1	1" 10° x 10° Compound Angle		
	D	3	1/4" Vertical		
100	A	1	3/4" Vertical Raised Center Port	CW-PC715.100.003	242.18
	B	2	3/4" Vertical Raised Center Port		
	C	2	3/4" 10° Angle		
	D	2	1/4" Vertical		
150	A	1	1" Vertical Center Port	CW-PC705.150.002	338.14
	B	2	1" Vertical		
	C	1	1" 10° x 10° Compound Angle		
	D	3	1/2" Vertical		
150	A	1	1" Vertical Center Port	CW-PC715.150.003	338.14
	B	3	1" Vertical		
	C	1	1" 10° x 10° Compound Angle		
	D	4	1/2" Vertical		
200	A	1	1" Vertical Center Port	CW-PC705.200.002	483.62
	B	3	1 1/2" Vertical		
	C	2	1" 10° x 10° Compound Angle		
	D	2	1/2" Vertical		
200	A	1	1" Vertical Center Port	CW-PC715.200.003	493.07
	B	3	1 1/2" Vertical		
	C	1	1" 10° Angle		
	D	1	1 1/2" 10° x 10° Compound Angle		
	E	2	1/2" Vertical		





CW-PC715 COWIE®, PTFE REAC- TOR LIDS AND FIT- TINGS, PREASSEMBLED LIDS WITH REMOV- ABLE PORTS

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is Pure, Chemically Resistant, Cleanable, and Durable.

The COWIE® Reactor Lid System is designed to meet these demands and provide a versatile and cost effective means for the assembly of a whole range of equipment in flanged reactors and similar vessels and offers these unique features.

- Screw-in assembly of fittings to give flexibility, versatility, and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>Flange mm</u>	<u>Base</u>	<u>Type</u>	<u>Taper Joint</u>	<u>Port Size</u>	<u>CODE</u>	<u>Price</u>
60	Center	Vertical	24/-	1/2" NPT	CW-PC715.060.001	188.65
	Side 1	10° x 10° Compound Angle	14/-	1/2" NPT		
	Side 2	10° x 10° Compound Angle	14/-	1/2" NPT		
	Side 3	10° x 10° Compound Angle	14/-	1/2" NPT		
60	Center	Vertical	24/-	1/2" NPT	CW-PC715.060.002	198.17
	Side 1	10° x 10° Compound Angle	19/-	1/2" NPT		
	Side 2	10° x 10° Compound Angle	19/-	1/2" NPT		
	Side 3	10° x 10° Compound Angle	19/-	1/2" NPT		
100	Center	Vertical	24/-	3/4" NPT	CW-PC715.100.001	342.03
	Side 1	Vertical	24/-	3/4" NPT		
	Side 2	10° Angle	24/-	3/4" NPT		
	Side 3	10° Angle	19/-	3/4" NPT		
	Side 4	10° x 10° Compound Angle	24/-	3/4" NPT		
100	Center	Vertical	29/-	3/4" NPT	CW-PC715.100.002	384.57
	Side 1	Vertical	24/-	3/4" NPT		
	Side 2	10° Angle	19/-	3/4" NPT		
	Side 3	10° Angle	24/-	3/4" NPT		
	Side 4	10° x 10° Compound Angle	29/-	3/4" NPT		
150	Center	Vertical	29/-	1" NPT	CW-PC715.150.001	505.51
	Side 1	Vertical	24/-	1" NPT		
	Side 2	Vertical	29/-	1" NPT		
	Side 3	10° Angle	45/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
150	Center	Vertical	34/-	1" NPT	CW-PC715.150.002	528.09
	Side 1	Vertical	29/-	1" NPT		
	Side 2	Vertical	29/-	1" NPT		
	Side 3	10° Angle	45/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
200	Center	Vertical	34/-	1" NPT	CW-PC715.200.001	707.22
	Side 1	Vertical	29/-	1" NPT		
	Side 2	Vertical	29/-	1" NPT		
	Side 3	10° Angle	29/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
	Side 5	10° Angle	45/-	1 1/2" NPT		
200	Center	Vertical	45/-	1" NPT	CW-PC715.200.002	782.34
	Side 1	Vertical	34/-	1" NPT		
	Side 2	Vertical	45/-	1" NPT		
	Side 3	10° Angle	24/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
	Side 5	10° Angle	45/-	1 1/2" NPT		





CW-PC702
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, BLANKING
NUTS FOR NPT
PORTS

NPT Blanking Nuts/Plugs are used to seal unused ports. To assemble simply screw the NPT Blanking Nut into a corresponding NPT port of the reactor lid.

<u>NPT Port</u>	<u>CODE</u>	<u>Price</u>
1/4"	CW-PC702.025	8.86
1/2"	CW-PC702.050	9.45
3/4"	CW-PC702.075	14.29
1.0"	CW-PC702.100	19.78
1.5"	CW-PC702.150	38.55



CW-PC713
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, EXTENSION
ADAPTERS

Male/Female NPT Extension Adapters optimise the use of NPT entry ports by the provision of additional port sizes and raising the height of the entry port from the lid. This gives even more flexibility of assembly and enables a greater range of fittings to be used – this is especially the case for 60mm lids with multiple ports where the use of an extension adapter allows the use of a central stirrer guide.

NPT Extension Adapters are manufactured in Glass Filled PTFE for improved mechanical strength.

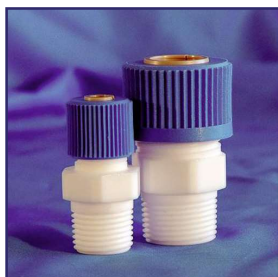
<u>Male NPT</u>	<u>Female NPT</u>	<u>Nominal Height</u>	<u>Max Shaft Ø</u>	<u>CODE</u>	<u>Price</u>
1/4"	1/2"	40 mm	8.5 mm	CW-PC713.025050.GF	33.11
1/2"	1/4"	36 mm	14 mm	CW-PC713.050025.GF	33.11
1/2"	1/2"	36 mm	14 mm	CW-PC713.050050.GF	33.11
1/2"	3/4"	46 mm	14 mm	CW-PC713.050075.GF	50.84
3/4"	3/4"	46 mm	18 mm	CW-PC713.075075.GF	60.04
3/4"	1"	46 mm	18 mm	CW-PC713.075100.GF	60.04
1"	1"	43 mm	24 mm	CW-PC713.100100.GF	62.96
1"	1 1/2"	43 mm	24 mm	CW-PC713.100150.GF	101.10



CW-PC701
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS,
REPLACEMENTS
PARTS

Seal pack includes 1 clamp nut, 1 nut, and 1 olive. Olive pack includes 5 replacement olives.

<u>Seal Pack</u>			<u>Olive 5 Pack</u>	
<u>Bore</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
1/8"	CW-PC701.0125	8.88	CW-PC701.125	11.53
1/4"	CW-PC701.0250	9.45	CW-PC701.250	14.45
5/16"	CW-PC701.0312	10.43	CW-PC701.312	12.48
1/2"	CW-PC701.0500	13.42	CW-PC701.500	16.96
9/16"	CW-PC701.0560	14.01	CW-PC701.560	16.24
5/8"	CW-PC701.0625	19.32	CW-PC701.625	20.06
3/4"	CW-PC701.0750	21.71	CW-PC701.750	21.43
1"	CW-PC701.01000	30.91	CW-PC701.1000	35.37
3 mm	CW-PC701.003	8.88	CW-PC701.03	11.53
6 mm	CW-PC701.006	9.45	CW-PC701.06	14.45
7 mm	CW-PC701.007	11.74	CW-PC701.07	11.98
8 mm	CW-PC701.008	10.43	CW-PC701.08	12.48
9 mm	CW-PC701.009	11.93	CW-PC701.09	14.73
12 mm	CW-PC701.012	13.42	CW-PC701.12	16.96
14 mm	CW-PC701.014	14.01	CW-PC701.14	16.24
16 mm	CW-PC701.016	19.32	CW-PC701.16	20.06
19 mm	CW-PC701.019	21.71	CW-PC701.19	21.43
25 mm	CW-PC701.025	30.91	CW-PC701.25	35.37

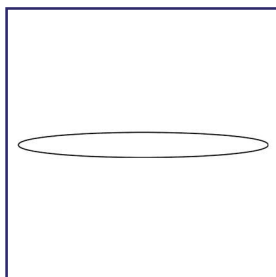


CW-PC701
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, NPT
COMPRESSION
SCREW FITTINGS

Compression Fittings are used with PTFE Reactor Lids to hold items such as temperature probes and sampling tubes securely in place. Compression fittings are manufactured from pure PTFE and include a PEEK olive to give a secure grip.

Compression fittings for standard taper ground glass joints are also available.

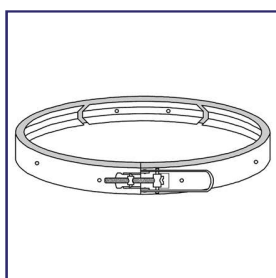
<u>NPT Thread</u>	<u>Bore</u>	<u>CODE</u>	<u>Price</u>	<u>NPT Thread</u>	<u>Bore</u>	<u>CODE</u>	<u>Price</u>
1/4"	1/8"	CW-PC701.025.125	23.59	3/4"	5/16"	CW-PC701.075.312	36.09
1/4"	1/4"	CW-PC701.025.250	21.23	3/4"	1/2"	CW-PC701.075.500	35.36
1/4"	3 mm	CW-PC701.025.03	22.54	3/4"	9/16"	CW-PC701.075.560	30.51
1/4"	6 mm	CW-PC701.025.06	22.61	3/4"	5/8"	CW-PC701.075.625	49.11
				3/4"	3/4"	CW-PC701.075.750	54.31
1/2"	1/4"	CW-PC701.050.250	31.31	3/4"	8 mm	CW-PC701.075.08	39.07
1/2"	5/16"	CW-PC701.050.312	29.55	3/4"	12 mm	CW-PC701.075.12	39.51
1/2"	1/2"	CW-PC701.050.500	31.61	3/4"	14 mm	CW-PC701.075.14	32.77
1/2"	9/16"	CW-PC701.050.560	32.88	3/4"	16 mm	CW-PC701.075.16	52.73
1/2"	6 mm	CW-PC701.050.06	33.55	3/4"	19 mm	CW-PC701.075.19	58.33
1/2"	7 mm	CW-PC701.050.07	30.93				
1/2"	8 mm	CW-PC701.050.08	30.93	1"	1/2"	CW-PC701.100.500	48.21
1/2"	9 mm	CW-PC701.050.09	31.65	1"	9/16"	CW-PC701.100.560	51.44
1/2"	12 mm	CW-PC701.050.12	33.76	1"	5/8"	CW-PC701.100.625	55.67
1/2"	14 mm	CW-PC701.050.14	35.90	1"	3/4"	CW-PC701.100.750	63.62
				1"	1"	CW-PC701.100.1000	70.64
				1"	8 mm	CW-PC701.100.08	45.21
				1"	12 mm	CW-PC701.100.12	53.46
				1"	14 mm	CW-PC701.100.14	55.25
				1"	16 mm	CW-PC701.100.16	59.80
				1"	19 mm	CW-PC701.100.19	68.33
				1"	25 mm	CW-PC701.100.25	77.36



**PRG-187
DURON® O-RING**

O-Rings are offered in Silicone or FEP Encapsulated Silicone and fit the PRG-184 flanges.

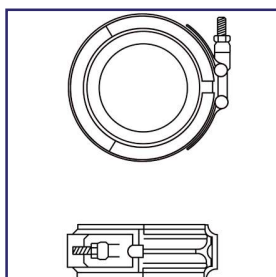
<u>Fits Flange I.D. mm</u>	<u>Material</u>	<u>CODE</u>	<u>Price</u>
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22
100	Silicone	-02	24.15
100	FEP-Silicone	-22	40.82
120	Silicone	-03	34.39
120	FEP-Silicone	-23	46.49
150	Silicone	-04	45.98
150	FEP-Silicone	-24	58.97
200	Silicone	-05	59.48
200	FEP-Silicone	-25	64.64



**PRG-188
FLANGE CLAMP,
DURON®**

Duron® flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

<u>Fits Flange I.D. mm</u>	<u>CODE</u>	<u>Price</u>
60	-01	88.27
100	-02	115.23
120	-03	126.21
150	-04	135.50
200	-05	156.11

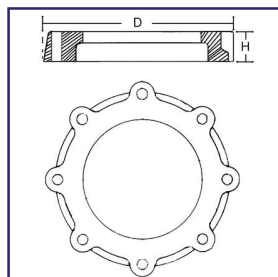


**PRG-8022
BEADED PIPE COU-
PLINGS**

Coupling assemblies consist of a .300 series stainless steel outer band with T-Bolt and hex nut; Viton liner and TFE seal ring. Designed for temperature service up to 450°F.

<u>Size</u>	<u>Max Torque</u>	<u>CODE</u>	<u>Price</u>
0.5"	TBD	-01	17.61
0.75"	TBD	-02	92.99
1.0"	35 lbs	-03	97.52
1.5"	50 lbs	-04	125.65
2.0"	60 lbs	-05	150.03
3.0"	75 lbs	-06	285.05
4.0"	80 lbs	-07	330.06
6.0"	90 lbs	-08	483.84

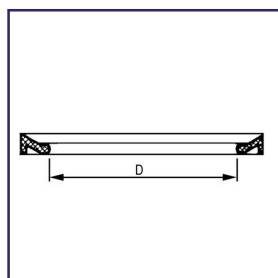




PRG-7070
PILOT PLANT COUPLING

Constructed from a heavy gauge aluminum and can be used to secure vessel to a fixed point. Packing material is a 70 durometer silicone. Comes complete with stainless steel bolts, washers and compression springs.

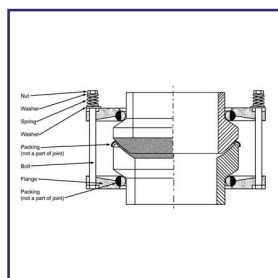
Flange Size	"D" mm	"H" mm	CODE	Price	Description	CODE	Price
200 mm	321	34	-01	455.69	200 mm Clamp Insert	-10	CALL
300 mm	428	36	-02	797.45	300 mm Clamp Insert	-11	CALL
400 mm	TBD	TBD	-03	1,401.22	Stainless Steel Nut and Bolt	-12	CALL
600 mm	TBD	TBD	-04	1,379.43	Compression Springs	-13	CALL
KF-25	TBD	TBD	-25	50.46			
KF-40	TBD	TBD	-40	69.04			
KF-50	TBD	TBD	-50	94.38			
KF-80	TBD	TBD	-80	137.94			
KF-100	TBD	TBD	-100	215.44			



PRG-7075
PILOT PLANT FLANGE GASKET

PTFE collar gasket is used in conjunction with the 200 and 300mm flat ground flange for pilot plant. Vessels have an operating temperature up to +200°C. The shape is suitable for high specific surface pressure, which is achieved with relatively low bolting loads.

Flange Size	"D" mm	CODE	Price
200 mm	220	-01	193.68
300 mm	321	-02	260.39
400 mm	TBD	-03	374.32
KF-15	TBD	-15	?????
KF-25	TBD	-25	29.29
KF-40	TBD	-40	32.55
KF-50	TBD	-50	39.07
KF-80	TBD	-80	106.94
KF-100	TBD	-100	215.44
KF-150	TBD	-150	CALL



PRG-7072
KF COUPLING ASSEMBLY

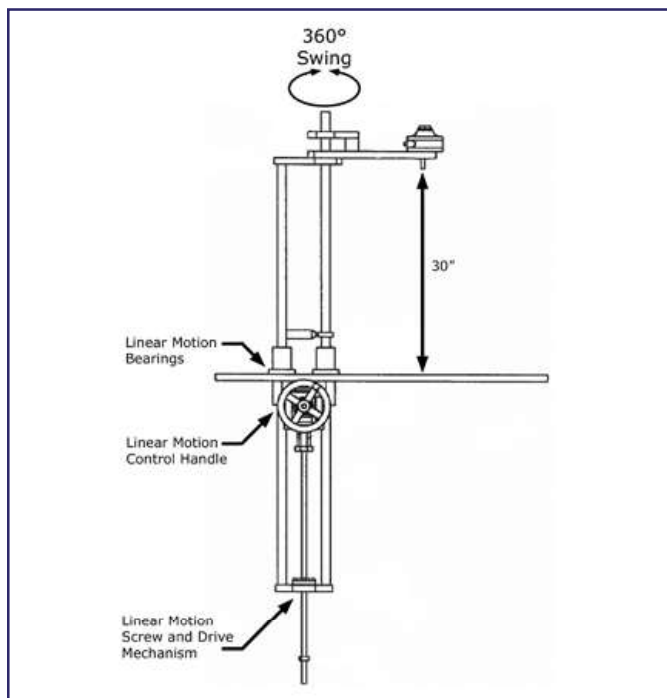
Coupling is constructed from a heavy gauge aluminum and is epoxy coated. The packing material is a 70 durometer silicone cord. The 15 and 25 sizes are phonolic plastic. Coupling is used with the ball and socket and flat ground connections.

KF Joint Size	Packing	CODE	Price
15	Phonolic	-15	CALL
25	Phonolic	-25	CALL
40	TBD	-40	CALL
50	Silicone	-50	CALL
80	Silicone	-80	CALL
100	Silicone	-100	CALL
150	Silicone	-150	CALL





Mobile Support Structures



The Prism Research Glass mobile support structure is strong and versatile to meet your lab's needs. Constructed of welded 316 stainless steel and set on lockable swivel casters, it is easily transportable yet strong enough for any application. The elevator system provides a fully adjustable motor mount. It has 30° of vertical motion and 360° rotation. It is easily collapsible to fit through low skirted ventilation hoods and door frames. It also eliminates timely dismantling and setup. Two 3/4" stainless steel posts (removable) are provided to support condensers and other apparatus.

PRG-7500-10 **CALL**
For use with with 10 Liter Vessels

Height 48"
Width 19"
Depth 28"

PRG-7500-03 **CALL**
For use with with 50 Liter Vessels

Height 62"
Width 30"
Depth 38"

PRG-7500-02 **CALL**
For use with with 20 and 30 Liter Vessels

Height 52"
Width 30"
Depth 38"

PRG-7500-02 **CALL**
For use with with 75 and 100 Liter Vessels

Height 62"
Width 34"
Depth 44"





PRG-7240
STIR MOTOR, 1/3 HP
ELECTRIC, PILOT
PLANT

Powerful and reliable stir motor.

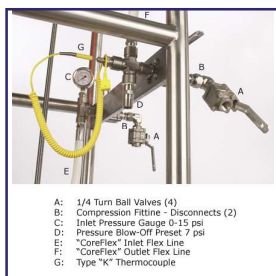
- Baldor Motor, 1/3 hp, 345 RPM, 3-Phase Rated Applications: Conveyors, packaging machines, machine tools and laboratory equipment requiring constant speed
- 5:1 Gear Reducer, smooth torque transmission, 55 lbs. TEFC
- Output shaft is 3/4" diameter
- NEMA 12 Junction Box, 14 gauge welded steel, oil resistant gaskets, wash down rated
- Two temperature reads outs, Type K large LED displays with splash guards by "Omega"
- Digital AC Motor Drive, 115V, soft start, fully programmable with pass codes, ramp delays and run sequence, USB interface
- 3 prong, 14/4 gauge cord by 12 foot

EXPLOSION RESISTANT MOTORS are available upon request. Explosion Proof NEMA control box can be mounted on the support structure. Or the control panels can be installed on mobile cart with 20 feet of ambient wiring.

AIR MOTORS are available. Prism Research Glass can properly size motor to the vessel, viscosity and application at hand.

For details on these options, please contact Steven J. Foscatto at sfoscatto@prismresearch-glass.com or call our toll free number at 800-771-6773.

CODE	Price
-01	CALL



PRG-7500
CIRCULATORY MANI-
FOLD

Manifold is used with vessels with circulatory jackets for thermal control. It offers high flow rates while protecting the vessel from over pressurization of fluid. All wetted parts are 316 Stainless Steel or Teflon and compatible with all silicone based fluids.

- A** 1/4 Turn Ball Valves (4)
- B** Compression Fitting-Disconnects(2)
- C** Inlet Pressure Gauge 0-15 psi
- D** Pressure Blow-off Preset 7 psi
- E** "CoreFlex" Inlet Flex Line
- F** "CoreFlex" Outlet Flex Line
- G** Type "K" Thermocouple

Temperature Range -53 to 204°C
Wetted Parts are 316 Stainless Steel or Teflon®
Threaded Connections 1/2" NPT
Compression Disconnects
Ball Valve Rated to 3400 psig
Flex hose rated for 1500 psig
1.0" BP Coupling rated for 100 psi
Compatible with Silicone based fluids
Components are "Swagelok"

NPT Size	CODE	Price
1/2"	-75	4,849.73
3/4"	-76	5,520.87
1.0"	-78	6,563.95



2 Liter Benchtop Reaction Unit



These benchtop units are mobile and user friendly. The “IKA” motor is mounted on dual telescopic posts and easily compressed to install and remove from fume hoods. Its extension ability allows for convenient assembly and attachment to the stir shaft. A 3/4” stainless steel support is removable and provides ample stability for the heaviest of apparatus.

The illustration shown is a 2 liter jacketed vessel with a 150mm O-Ring flanged connection. Its lower drain valve in a closed position seats flush to the inside radius of the vessel. The domed lid has 4 ports with a 45/50 center neck and (3) 29/42 side ports. Number 16 is the distillation splitter head using a 0-12 mm Teflon® valve to divert distillate back to the reactor or to the receiver flask. The receiver flask can be isolated to remove contents. Number 13 is the reflux coil condenser with a water jacket and detachable hose barbs.





**PRG-5217-04
2 Liter Jacketed Reactor Assembly
"Benchtop Scale"**

<u>Item Number</u>	<u>CODE</u>	<u>Description</u>
1	PRG-6238-01	IKA® Eurostar power control- visc
2	PRG-6180-02	Adapter universal, 19 mm
3	PRG-6185-02	Safety retainer, 19 mm (not shown)
4	PRG-6197-01	Stir shaft, 19 mm x 585 ovl
5	PRG-7200-02	Stir bearing, "Heavy Duty" 25% glass filled Teflon® (up grade item shown)
5	PRG-6170-02	Stir bearing, 19 mm 4-blade, 45°, 4" diam.
10	PRG-6213-01	150 mm domed lid, 4-port cn 45/50, side 29/42
6-7	PRG-5290-06	150 mm domed lid, 4-port cn 45/50, side 29/42
7-8	PRG-188-04	150 s.s. flange clamp
7-8	PRG-187-23	150 mm O-Ring PTFE encapsulated silicone
9	PRG-5235-03	2 Liter jacketed vessel, 150 mm flange,
11	PRG-220-05	(2) #15 detachable poly hose barbs, 5/8" o.d.
12	PRG-1181-04	Adapter, 29/42 to hose barb
13	PRG-1948-04	Jacketed coil condenser 300 mm jkt, 29/42 jt., #11 detachable hose barbs
14	PRG-1750-01	Column clamp, 64-89 mm
15	PRG-1832-01	(3) LabJaws™ 90°holder clamp
16	PRG-1091-02	Distillation splitter 0-12 valve, 29/42, 24/40 discharge port
17	PRG-1205-01	Off-set adapter, 24/40
18	PRG-5060-11	1 Liter reservoir flask, 24/40
19	PRG-1792-02	LabJaws™ column clamp
20	PRG-1750-04	Support rod, 3/4" s.s. x 38" 140-165mm
21	PRG-5218-30	Support stand, telescopic motor lift
22	PRG-5218-01	Julabo refrigerated/heating circulator

250 ml Assembly
PRG-5217-01

\$6,455.53

500 ml Assembly
PRG-5217-02

\$6,680.2

1000 ml Assembly
PRG-5217-03

\$6,742.22

2000 ml Assembly
PRG-5217-04

\$8,667.58

3000 ml Assembly
PRG-5217-05

\$8,705.20

4000 ml Assembly
PRG-5217-06

\$8,727.77

5000 ml Assembly
PRG-5217-5lt

\$6,715.00

10,000 ml Assembly
PRG-5217-10lt

\$9,660.80

20,000 ml Assembly
PRG-5217-20lt

\$15,020.66

Alternate size vessel and configurations are available,
Please contact Prism Research Glass Customer Service
Department for details. 800-771-6773





**JULABO
F SERIES, F250**

JULABO F Series Recirculating Coolers are a great way to replace tap water and are ideal for basic cooling tasks with 250 W to 1 kW cooling power. Models include a splash-proof membrane keypad with LED temperature display and integrated timer. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

May be used with water, water/glycol mixtures and silicone fluids.

The F250 comes with 8 and 10 mm hose barbs. The F500 / F1000 come with 8 and 12 mm hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 10 mm inner dia. (pump connections M10x1 male)

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

Specs-At-A-Glance

Cooling Capacity	0.09 kW @ -5 °C, 0.18 kW @ 0 °C, 0.21 kW @ 5 °C, 0.22 kW @ 10 °C, 0.24 kW @ 15 °C, 0.25 kW @ 20 °C
Working Temp Range (°C)	-10 ... +40
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	5.08
Dimensions W x L x H (in)	9.5 x 16 x 21
Fluid Type	Water, Other
Weight (lbs)	60
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9620025.02	3,874.00
230 V / 60 Hz	JB-9620025.13	3,874.00



**JULABO
F SERIES, F500**

JULABO F Series Recirculating Coolers are a great way to replace tap water and are ideal for basic cooling tasks with 250 W to 1 kW cooling power. Models include a splash-proof membrane keypad with LED temperature display and integrated timer. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

May be used with water, water/glycol mixtures and silicone fluids.

The F250 comes with 8 and 10 mm hose barbs. The F500 / F1000 come with 8 and 12 mm hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

Specs-At-A-Glance

Cooling Capacity	0.25 kW @ 0 °C, 0.3 kW @ 5 °C, 0.4 kW @ 10 °C, 0.5 kW @ 20 °C
Working Temp Range (°C)	0 ... +40
Pump Capacity Flow Rate (l/min)	24
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25
Dimensions W x L x H (in)	14.8 x 17.3 x 23.2
Fluid Type	Water, Other
Weight (lbs)	75
Power Options	115 V / 60 Hz, 230 V / 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9620050.02	5,582.00
230 V / 60 Hz	JB-9620050.13	5,582.00



**JULABO
F SERIES, F1000**

JULABO F Series Recirculating Coolers are a great way to replace tap water and are ideal for basic cooling tasks with 250 W to 1 kW cooling power. Models include a splash-proof membrane keypad with LED temperature display and integrated timer. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

May be used with water, water/glycol mixtures and silicone fluids.

The F250 comes with 8 and 10 mm hose barbs. The F500 / F1000 come with 8 and 12 mm hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

Specs-At-A-Glance

Cooling Capacity	0.35 kW @ 0 °C, 0.55 kW @ 5 °C, 0.7 kW @ 10 °C, 1 kW @ 20 °C
Working Temp Range (°C)	0 ... +40
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
Dimensions W x L x H (in)	14.8 x 19.3 x 25.2
Fluid Type	Water, Other
Weight (lbs)	99
Power Options	115 V / 60 Hz, 230 V / 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9620100.02	7,419.00
230 V / 60 Hz	JB-9620100.13	7,419.00



**JULABO
FL SERIES, FL300**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male) se mit M16x1 Außengewinde)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)

Specs-At-A-Glance

Cooling Capacity	0.1 kW @ -20°C , 0.15 kW @ -10°C , 0.2 kW @ 0°C , 0.3 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.8 x 19.7 x 23.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	86
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz

Power Options	CODE	Price
115 V / 60 Hz	JB-9660003.2	6,138.00
230 V / 60 Hz	JB-9660003.13	6,138.00



**JULABO
FL SERIES, FL601**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male) ss mit M16x1 Außengewinde)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)

Specs-At-A-Glance

Cooling Capacity	0.2 kW @ 20°C , 0.33 kW @ -10°C , 0.4 kW @ 0°C , 0.6 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
External Devices	Remote Control
Dimensions W x L x H (in)	12.6 x 19.7 x 23.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	106
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz

Power Options	CODE	Price
115 V / 60 Hz	JB-9661006.2	8,553.00
230 V / 60 Hz	JB-9661006.13	8,553.00



**JULABO
FL SERIES,
FL1201**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator

Specs-At-A-Glance

Cooling Capacity	0.3 kW @ 20°C , 0.6 kW @ -10°C , 0.9 kW @ 0°C , 1.2 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
External Devices	Remote Control
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	168
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9661012.2	8,818.00
115 V / 60 Hz	JB-9661012.2.CSA/UL	10,413.00
230 V / 60 Hz	JB-9661012.13	8,818.00
230 V / 60 Hz	JB-9661012.13.CSA/UL	10,413.00





**JULABO
FL SERIES,
FL1203**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)

Specs-At-A-Glance

Cooling Capacity	0.2 kW @ 20°C , 0.5 kW @ -10°C , 0.8 kW @ 0°C , 1.2 kW @ 20°C	
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$	
Pump Capacity Flow Rate (l/min)	40	
Heating or Cooling Capability	Cooling Only	
Pump Capacity Flow Pressure (psi)	7.25...43.51	
External Devices	Remote Control	
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2	
Fluid Type	Silicone, Water, Other	
Weight (lbs)	161	
Power Options	230 V / 60 Hz, 230 V / 60 Hz NRTL	

Power Options	CODE	Price
230 V / 60 Hz	JB-9663012.13	10,159.00
230 V / 60 Hz NRTL	JB-9663012.13.CSA/UL	11,720.00



**JULABO
FL SERIES,
FL1701**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure indicator

Specs-At-A-Glance

Cooling Capacity	0.35 kW @ -20°C , 0.8 kW @ 10°C , 1.1 kW @ 0°C , 1.7 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
External Devices	Remote Control
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	187
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9661017.2	9,449.00
115 V / 60 Hz NRTL	JB-9661017.2.CSA/UL	11,156.00
230 V / 60 Hz	JB-9661017.13	9,449.00
230 V / 60 Hz NRTL	JB-9661017.13.CSA/UL	11,156.00





**JULABO
FL SERIES,
FL1703**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.2 kW @ 20°C , 0.6 kW @ -10°C , 0.9 kW @ 0°C , 1.7 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	40
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	Remote Control
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	201
Power Options	230 V / 60 Hz, 230 V / 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 60 Hz	JB-9663017.13	9,449.00
230 V / 60 Hz NRTL	JB-9663017.13.CSA/UL	11,156.00



**JULABO
FL SERIES,
FL2503**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male) / 4 Außengewinde)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.5 kW @ 20°C , 1.2 kW @ -10°C , 1.5 kW @ 0°C , 2.5 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	40
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	Remote Control
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3
Weight (lbs)	271
Power Options	230 V / 50 Hz, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)

Power Options
230 V / 60 Hz

CODE
JB-9663025.13

Price
13,187.00



**JULABO
FL SERIES,
FL2506**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 each barbed fittings for tubing 1 inner dia (pumpconnections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pump pressure indicator
- By-pass valve to adjust pum pressure

Specs-At-A-Glance

Cooling Capacity	0.3 kW @ 10°C , 1 kW @ 0°C , 2.5 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	-15 ... +40
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	287
Power Options	230 V / 50 Hz, 230 V / 60 Hz

Power Options
230 V / 60 Hz

CODE
JB-9666025.13

Price
14,520.00



**JULABO
FL SERIES,
FL4003**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.65 kW @ -20°C , 1.5 kW @ -10°C , 2.4 kW @ 0°C , 4 kW @ 20°C	
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$	
Pump Capacity Flow Rate (l/min)	40	
Heating or Cooling Capability	Cooling Only	
Pump Capacity Flow Pressure (psi)	7.25...43.51	
External Devices	Remote Control	
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3	
Fluid Type	Silicone, Water, Other	
Weight (lbs)	271	
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz	
<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 60 Hz	JB-9663040.16	16,482.00



**JULABO
FL SERIES,
FL4006**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 inner dia. (pump connections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.05 kW @ -20°C , 0.9 kW @ -10°C , 1.9 kW @ 0°C , 4 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	346
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
230 V / 60 Hz

CODE
JB-9666040.16

Price
18,544.00



**JULABO
FL SERIES,
FL7006**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 inner dia. (pump connections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	1.55 kW @ 20°C , 3 kW @ -10°C , 5.1 kW @ 0°C , 7 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	30.7 x 33.5 x 58.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	556
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
230 V / 60 Hz

CODE
JB-9666070.16

Price
22,783.00



**JULABO
FL SERIES,
FL11006**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 I.W. (pump connections with G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	11 kW @ 20°C , 3 kW @ -20°C , 5 kW @ -10°C , 7.5 kW @ 0°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	30.7 x 33.5 x 58.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	547
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
230 V / 60 Hz

CODE
JB-9666110.16

Price
25,174.00



**JULABO
FL SERIES,
FL20006**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 inner dia. (pump connections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure
- Air cooled

Specs-At-A-Glance

Cooling Capacity	1.1 kW @ -20°C , 10 kW @ 0°C , 20 kW @ 20°C , 6 kW @ -10°C
Working Temp Range ($^{\circ}\text{C}$)	$-25 \dots +40$
Pump Capacity Flow Rate (l/min)	80
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	11.6...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	37.4 x 45.3 x 63.4
Fluid Type	Silicone, Water, Other
Weight (lbs)	794
Power Options	230 V / 3 Ph. / 60 Hz / 36 A, 400 V / 3 Ph. / 50 Hz / 18 A

Power Options
230 V / 60 Hz

CODE
JB-9666200.16

Price
38,458.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.06 kW @ -20 °C, 0.17 kW @ 0 °C, 0.22 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 15.4 x 25.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	57.4
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)



**JULABO
CORIO™,
CD-200F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012701.02	5,400.00
230 V / 60 Hz	JB-9012701.13	5,400.00



**JULABO
CORIO™,
CD-300F**

CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.

PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1

Specs-At-A-Glance

Cooling Capacity	0.11 kW @ -20 °C, 0.28 kW @ 0 °C, 0.31 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-25 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.6 x 26
Fluid Type	Silicone, Water, Other
Weight (lbs)	61.8
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012703.02	6,272.00
230 V / 60 Hz	JB-9012703.13	6,272.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.06 kW @ -30 °C, 0.18 kW @ -20 °C, 0.29 kW @ -10 °C, 0.53 kW @ 0 °C, 0.6 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 18.5 x 27.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	79.4
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)



**JULABO
CORIO™,
CD-600F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012704.02	7,899.00
230 V / 60 Hz	JB-9012704.13	7,899.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.06 kW @ -30 °C, 0.18 kW @ -20 °C, 0.29 kW @ -10 °C, 0.53 kW @ 0 °C, 0.6 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	4.8
External Devices	Remote Control
Dimensions W x L x H (in)	14.2 x 18.1 x 29.1
Fluid Type	Silicone, Water, Other
Weight (lbs)	87.9
Power Options	115 V / 60 Hz, 230 V / 60 Hz



**JULABO
CORIO™,
CD-601F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9012705.02	8,663.00
230 V / 60 Hz	JB-9012705.13	8,663.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.01 kW @ -40 °C, 0.07 kW @ -30 °C, 0.2 kW @ 20 °C, 0.35 kW @ -10 °C, 0.5 kW @ 0 °C, 0.9 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	4.8
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 29.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	114.6
Power Options	115 V / 60 Hz, 230 V / 60 Hz



**JULABO
CORIO™,
CD-900F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9012706.02	8,799.00
230 V / 60 Hz	JB-9012706.13	8,799.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.13 kW @ -40 °C, 0.27 kW @ -30 °C, 0.53 kW @ -20 °C, 0.75 kW @ -10 °C, 0.98 kW @ 0 °C, 1 kW @ 10 °C, 1 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	16.5 x 19.3 x 27.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	113.5
Power Options	115 V / 60 Hz, 230 V / 60 Hz



**JULABO
CORIO™,
CD-1000F**

Power Options	CODE	Price
115 V / 60 Hz	JB-9012707.02	10,663.00
230 V / 60 Hz	JB-9012707.13	10,663.00



CORIO™ CD Heating Circulator combinations with stainless steel bath tanks for routine laboratory tasks. Units include bright LED display and easy operation.

CORIO™ CD immersion circulator provides temperatures from +20 to +150 °C . Integrated pump enables temperature incubation for internal or external bath applications. A lever below the display enables simple adjustment between internal and external flow. Pump capacity: 15 L/min; 5.1 PSI. The integrated USB port provide external PC communication for control / monitoring and data logging.

The CORIO™ CD has M16x1 male pump connections and comes with sets of 8 and 12 mm hose barbs. Stainless steel tanks include drain port.

For internal and external temperature applications. High quality stainless steel bath tanks with bath lid, drain tap and integrated cooling coil.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.2 x 16.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	19.4
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL
Additional Options	NRTL (select voltage/frequency combinations only)



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012504.02	2,882.00
230 V / 60 Hz	JB-9012504.13	2,882.00
230 V / 60 Hz NRTL	JB-9012504.13.CSA/UL	3,682.00

**JULABO
CORIO™,
CD-BC4**



CORIO™ CD Heating Circulator combinations with stainless steel bath tanks for routine laboratory tasks. Units include bright LED display and easy operation.

CORIO™ CD immersion circulator provides temperatures from +20 to +150 °C . Integrated pump enables temperature incubation for internal or external bath applications. A lever below the display enables simple adjustment between internal and external flow. Pump capacity: 15 L/min; 5.1 PSI. The integrated USB port provide external PC communication for control / monitoring and data logging.

The CORIO™ CD has M16x1 male pump connections and comes with sets of 8 and 12 mm hose barbs. Stainless steel tanks include drain port.

For internal and external temperature applications. High quality stainless steel bath tanks with bath lid, drain tap and integrated cooling coil.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.5 x 17.4 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	22.1
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL
Additional Options	NRTL (select voltage/frequency combinations only)



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012506.02	3,341.00
230 V / 60 Hz	JB-9012506.13	3,341.00
230 V / 60 Hz NRTL	JB-9012506.13.CSA/UL	4,141.00

**JULABO
CORIO™,
CD-BC6**



CORIO™ CD Heating Circulator combinations with stainless steel bath tanks for routine laboratory tasks. Units include bright LED display and easy operation.

CORIO™ CD immersion circulator provides temperatures from +20 to +150 °C . Integrated pump enables temperature incubation for internal or external bath applications. A lever below the display enables simple adjustment between internal and external flow. Pump capacity: 15 L/min; 5.1 PSI. The integrated USB port provide external PC communication for control / monitoring and data logging.

The CORIO™ CD has M16x1 male pump connections and comes with sets of 8 and 12 mm hose barbs. Stainless steel tanks include drain port.

For internal and external temperature applications. High quality stainless steel bath tanks with bath lid, drain tap and integrated cooling coil.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 19.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	26.9
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)



**JULABO
CORIO™,
CD-BC12**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012512.02	3,689.00
230 V / 60 Hz	JB-9012512.13	3,689.00



JULABO CORIO™ CP Immersion Circulator for routine laboratory tasks. Unit includes bright LED display and easy operation. A quick connect bath clamp is included.

The CORIO™ CP immersion circulator provides temperatures to 200 °C for internal bath applications up to 50 L. The CP includes USB and RS232 ports for external PC control / communication and data-logging. With an optional pump set the CP can circulate to external applications with flow control via a manual lever. Adjustable pump speed enables flow rates from 8...27 L/min with pressures from 1.5...10.2 PSI.



- Precise temperature control
- For internal and external applications (accessories required)
- For bath tanks with a max. filling volume of 50 liters
- Bright, white, easy to read display
- Very quiet
- Easy operation
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	5.2 x 6.3 x 14.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	6.3
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013000.22	2,309.00
200 V - 230 V / 50 - 60 Hz	JB-9013000.33	2,309.00



**JULABO
CORIO™,
CP**



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.02 kW @ -20 °C, 0.1 kW @ -10 °C, 0.15 kW @ 0 °C, 0.2 kW @ 20 °C, 0.2 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 15.4 x 25.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	57.4
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-200F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013701.02	6,059.00
230 V / 50 - 60 Hz	JB-9013701.33	6,059.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.02 kW @ -20 °C, 0.1 kW @ -10 °C, 0.15 kW @ 0 °C, 0.2 kW @ 20 °C, 0.2 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	17.4 x 16.2 x 17.4
Fluid Type	Silicone, Water, Other
Weight (lbs)	55.2
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-201F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013702.02	6,059.00
230 V / 50 - 60 Hz	JB-9013702.33	6,059.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



**JULABO
CORIO™,
CP-300F**

Specs-At-A-Glance

Cooling Capacity	0.08 kW @ -20 °C, 0.19 kW @ -10 °C, 0.27 kW @ 0 °C, 0.3 kW @ 20 °C, 0.3 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-30 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.5 x 16.6 x 26
Fluid Type	Silicone, Water, Other
Weight (lbs)	61.8
Power Options	115 V / 60 Hz, 230 V / 60 Hz

Power Options

115 V / 60 Hz
230 V / 60 Hz

CODE

JB-9013703.02
JB-9013703.13

Price

6,845.00
6,845.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.54 kW @ 10 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 18.5 x 27.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	78.7
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-600F**

Power Options

115 V / 60 Hz
115 V / 60 Hz NRTL
230 V / 50 - 60 Hz

CODE

JB-9013704.02
JB-9013704.02.CSA/UL
JB-9013704.33

Price

8,395.00
8,395.00
8,395.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	14.2 x 18.1 x 29.1
Fluid Type	Silicone, Water, Other
Weight (lbs)	84.9
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-601F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013705.02	8,917.00
230 V / 50 - 60 Hz	JB-9013705.33	8,917.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.11 kW @ -30 °C, 0.31 kW @ 20 °C, 0.52 kW @ -10 °C, 0.8 kW @ 0 °C, 0.9 kW @ 20 °C, 0.9 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-38 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 29.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	114.6
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-900F**

Power Options

115 V / 60 Hz
115 V / 60 Hz NRTL
230 V / 50 - 60 Hz

CODE

JB-9013706.02
JB-9013706.02.CSA/UL
JB-9013706.33

Price

9,171.00
9,971.00
9,171.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.13 kW @ -40 °C, 0.27 kW @ -30 °C, 0.53 kW @ -20 °C, 0.75 kW @ -10 °C, 0.98 kW @ 0 °C, 1 kW @ 10 °C, 1 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-50 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	16.5 x 19.3 x 27.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	113.5
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-1000F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013707.02	10,941.00
230 V / 50 - 60 Hz	JB-9013707.33	10,941.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.13 kW @ -30 °C, 0.35 kW @ -20 °C, 0.6 kW @ -10 °C, 0.9 kW @ 0 °C, 0.95 kW @ 10 °C, 1 kW @ 20 °C
Heating Capacity (kW)	2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-38 ... +100
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	17.7 x 25.2 x 37.4
Fluid Type	Silicone, Water, Other
Weight (lbs)	163.1
Power Options	230 V / 50 – 60 Hz



**JULABO
CORIO™,
CP-1001F**

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9013708.33	13,424.00



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.2 x 16.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	19.4
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013405.22	3,645.00
200 V - 230 V / 50 - 60 Hz	JB-9013504.33	3,645.00



**JULABO
CORIO™,
CP-BC4**



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.5 x 17.4 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	22.1
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz NRTL



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013506.22	4,026.00
200 V - 230 V / 50 - 60 Hz	JB-9013506.33	4,026.00
200 V - 230 V / 50 - 60 Hz NRTL	JB-9013506.33.CSA/UL	4,826.00



**JULABO
CORIO™,
CP-BC6**



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 19.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	26.5
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



Power Options	CODE	Price
100 V - 115 V / 50 - 60 Hz	JB-9013512.22	4,341.00
200 V - 230 V / 50 - 60 Hz	JB-9013512.33	4,341.00



**JULABO
CORIO™,
CP-BC12**



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.5 x 18.9
Fluid Type	Silicone, Water, Other
Weight (lbs)	41.9
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013526.22	4,829.00
200 V - 230 V / 50 - 60 Hz	JB-9013526.33	4,829.00



**JULABO
CORIO™,
CP-BC26**



DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.



Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.02 kW @ -20 °C, 0.1 kW @ -10 °C, 0.15 kW @ 0 °C, 0.17 kW @ 10 °C, 0.2 kW @ 20 °C, 0.2 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 15.4 x 25.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	56.7
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz
Additional Options	Base Model, Analog Interface, Digital Interface



**JULABO
DYNEO™,
DD-200F**

Power Options	Additional Options	CODE	Price
115 V / 60 Hz	Base Model	JB-9021701.02	6,363.00
115 V / 60 Hz	Analog Interface	JB-9021701.02.A	7,054.00
115 V / 60 Hz	Digital Interface	JB-9021701.02.D	6,923.00
230 V / 50 - 60 Hz	Base Model	JB-9021701.33	6,363.00
230 V / 50 - 60 Hz	Analog Interface	JB-9021701.33.A	7,054.00
230 V / 50 - 60 Hz	Digital Interface	JB-9021701.33.D	6,923.00



DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.



Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.



Specs-At-A-Glance

Heating Capacity (kW) 1 @ 115 V, 2 @ 230 V
Cooling Capacity 0.08 kW @ -20 °C, 0.19 kW @ -10 °C, 0.27 kW @ 0 °C,
0.3 kW @ 10 °C, 0.3 kW @ 20 °C, 0.3 kW @ 200 °C

Heating or Cooling Capability Both
Working Temp Range (°C) -25 ... +200

Pump Capacity Flow Rate (l/min) 8...23

Pump Capacity Flow Pressure (psi) 1.5...8.7

External Devices Remote Control

Dimensions W x L x H (in) 9.4 x 16.5 x 26

Fluid Type Silicone, Water, Other

Weight (lbs) 61

Power Options 115 V / 60 Hz, 230 V / 60 Hz

Additional Options Base Model, Analog Interface, Digital Interface, NRTL



**JULABO
DYNEO™,
DD-300F**

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	Base Model	JB-9021703.02	6,823.00
115 V / 60 Hz	Analog Interface	JB-9021703.02.A	8,298.00
115 V / 60 Hz	Digital Interface	JB-9021703.02.D	8,210.00
115 V / 60 Hz	NRTL	JB-9021703.02.CSA/UL	7,963.00
230 V / 50 - 60 Hz	Base Model	JB-9021703.13	7,163.00
230 V / 50 - 60 Hz	Analog Interface	JB-9021703.13.A	8,298.00
230 V / 50 - 60 Hz	Digital Interface	JB-9021703.13.D	8,210.00
230 V / 50 - 60 Hz	NRTL	JB-9021703.13.CSA/UL	7,963.00



**JULABO
DYNEO™,
DD-600F**

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 18.5 x 27.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	79
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz
Additional Options	Base Model, Analog Interface, Digital Interface, NRTL

Power Options	Additional Options	CODE	Price
115 V / 60 Hz	Base Model	JB-9021704.02	8,386.00
115 V / 60 Hz	Analog Interface	JB-9021704.02.A	9,275.00
115 V / 60 Hz	Digital Interface	JB-9021704.02.D	9,283.00
115 V / 60 Hz	NRTL	JB-9021704.02.CSA/UL	9,186.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021704.33	8,386.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021704.33.A	9,275.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021704.33.D	9,283.00



**JULABO
DYNEO™,
DD-601F**

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.6 kW @ 10 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	14.2 x 18.1 x 29.1
Fluid Type	Silicone, Water, Other
Weight (lbs)	84.2
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	Base Model	JB-9021705.02	8,900.00
115 V / 60 Hz	Analog Interface	JB-9021705.02.A	9,795.00
115 V / 60 Hz	Digital Interface	JB-9021705.02.D	9,802.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021705.33	8,900.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021705.33.A	9,795.00
200 V - 230 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021705.33.A.CSA/UL	10,595.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021705.33.D	9,802.00
200 V - 230 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021705.33.D.CSA/UL	10,602.00
200 V - 230 V / 50 - 60 Hz	NRTL	JB-9021705.33.CSA/UL	10,595.00



**JULABO
DYNEO™,
DD-900F**

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.11 kW @ -30 °C, 0.31 kW @ 20 °C, 0.52 kW @ -10 °C, 0.8 kW @ 0 °C, 0.85 kW @ 10 °C, 0.9 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-38 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 29.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	114
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	Base Model	JB-9021706.02	9,464.00
115 V / 60 Hz	Analog Interface	JB-9021706.02.A	10,102.00
115 V / 60 Hz	Digital Interface	JB-9021706.02.D	10,111.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021706.33	9,464.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021706.33.A	10,102.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021706.33.D	10,111.00



**JULABO
DYNEO™,
DD-1000F**

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port. Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.11 kW @ -40 °C, 0.25 kW @ -30 °C, 0.51 kW @ -20 °C, 0.73 kW @ -10 °C, 0.96 kW @ 0 °C, 1 kW @ 10 °C, 1 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-50 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	16.5 x 19.3 x 27.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	112.9
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz

Power Options	Additional Options	CODE	Price
115 V / 60 Hz	Base Model	JB-9021707.02	11,261.00
115 V / 60 Hz	Analog Interface	JB-9021707.02.A	11,871.00
115 V / 60 Hz	Analog Interface and NRTL	JB-9021707.02.A.CSA/UL	12,671.00
115 V / 60 Hz	Digital Interface	JB-9021707.02.D	11,595.00
115 V / 60 Hz	Digital Interface and NRTL	JB-9021707.02.D.CSA/UL	12,395.00
115 V / 60 Hz	NRTL	JB-9021707.02.CSA/UL	12,061.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021707.33	11,261.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021707.33.A	11,871.00
200 V - 230 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021707.33.A.CSA/UL	12,671.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021707.33.D	11,595.00
200 V - 230 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021707.33.D.CSA/UL	12,395.00
200 V - 230 V / 50 - 60 Hz	NRTL	JB-9021707.33.CSA/UL	12,061.00



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.1 x 16.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	18.7
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



**JULABO
DYNEO™,
DD-BC4**

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021504.22	4,077.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021504.22.A	4,723.00
110 V - 115 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021504.22.A.CSA/UL	5,523.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021504.22.D	4,240.00
110 V - 115 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021504.22.D.CSA/UL	5,040.00
110 V - 115 V / 50 - 60 Hz	NRTL	JB-9021504.22.CSA/UL	4,877.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021504.33	4,077.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021504.33.A	4,723.00
200 V - 230 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021504.33.A.CSA/UL	5,523.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021504.33.D	4,240.00
200 V - 230 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021504.33.D.CSA/UL	5,040.00
200 V - 230 V / 50 - 60 Hz	NRTL	JB-9021504.33.CSA/UL	4,877.00



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.4 x 17.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	21.4
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



**JULABO
DYNEO™,
DD-BC6**

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021506.22	4,628.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021506.22.A	5,180.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021506.22.D	4,626.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021506.33	4,628.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021506.33.A	5,180.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021506.33.D	4,626.00



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



**JULABO
DYNEO™,
DD-BC12**

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Both
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 19.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	26.2
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz

Power Options	Additional Options	CODE	Price
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021512.22	4,655.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021512.22.A	5,539.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021512.22.D	4,760.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021512.33	4,655.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021512.33.A	5,539.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021512.33.D	4,760.00



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 18.9
Fluid Type	Silicone, Water, Other
Weight (lbs)	41.2
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



**JULABO
DYNEO™,
DD-BC26**

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021526.22	5,116.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021526.22.A	6,017.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021526.22.D	5,217.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021526.33	5,116.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021526.33.A	6,017.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021526.33.D	5,217.00



**JULABO
HIGHTECH,
CF31**

The Cryo-Compact refrigerated/heating circulators have a very small footprint which is ideal for placing on bench top or in a fume hood with limited space. Models feature M16x1 male pump connections for external temperature applications with 8 and 12 mm hose barbs.

The HighTech CF31/CF41 units have a working temperature range from -30(-40) to +200 °C and include a dual screen display with numeric keypad for easy data entry and instrument reading. RS232 port for external communication and Pt100 sensor connection for external monitoring and control. A 4-speed centrifugal pressure / suction pump provides 22-26 L/min flow with 5.8-10.2 psi pressure / 2.9-5.6 psi suction. Integrated programmer with 6 x 60 program steps.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- Ergonomic design and easy operation
- Small overall dimensions for lowest space requirement
- Splash-proof keypad
- Bright VFD display and interactive LCD dialog display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- Electronically adjustable pump stages
- External Pt100 sensor connection
- Integrated programmer with 6x60 program steps
- Early warning system for low liquid level
- 3-point calibration
- TCF Temperature Control Features
- Adjustable high temperature cut-off
- Classification 3 according to DIN12876-1
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath
- Front drain

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.15 kW @ -20 °C, 0.25 kW @ 0 °C, 0.32 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-30 ... +200
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	9.4 x 18.1 x 15.7
Fluid Type	Silicone, Water
Weight (lbs)	79
Power Options	115 V / 60 Hz, 230 V / 60 Hz

Power Options

115 V / 60 Hz
230 V / 60 Hz

CODE

JB-9400331.2
JB-9400331.13

Price

10,113.00
10,113.00



**JULABO
HIGHTECH,
CF41**

The Cryo-Compact refrigerated/heating circulators have a very small footprint which is ideal for placing on bench top or in a fume hood with limited space. Models feature M16x1 male pump connections for external temperature applications with 8 and 12 mm hose barbs.

The HighTech CF31/CF41 units have a working temperature range from -30(-40) to +200 °C and include a dual screen display with numeric keypad for easy data entry and instrument reading. RS232 port for external communication and Pt100 sensor connection for external monitoring and control. A 4-speed centrifugal pressure / suction pump provides 22-26 L/min flow with 5.8-10.2 psi pressure / 2.9-5.6 psi suction. Integrated programmer with 6 x 60 program steps.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- Ergonomic design and easy operation
- Small overall dimensions for lowest space requirement
- Splash-proof keypad
- Bright VFD display and interactive LCD dialog display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- Electronically adjustable pump stages
- External Pt100 sensor connection
- Integrated programmer with 6x60 program steps
- Early warning system for low liquid level
- 3-point calibration
- TCF Temperature Control Features
- Adjustable high temperature cut-off
- Classification 3 according to DIN12876-1
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath
- Front drain

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.28 kW @ -20 °C, 0.4 kW @ 0 °C, 0.47 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +200
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	11 x 18.1 x 18.1
Fluid Type	Silicone, Water
Weight (lbs)	92
Power Options	115 V / 60 Hz, 230 V / 60 Hz

Power Options

115 V / 60 Hz
230 V / 60 Hz

CODE

JB-9400341.2
JB-9400341.13

Price

11,188.00
11,188.00



**JULABO
HIGHTECH,
FP51-SL**

JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control
- Proportional cooling control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.26 kW @ -40 °C, 1 kW @ -20 °C, 1.5 kW @ 0 °C, 2 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-51 ... +200
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	18.1 x 21.7 x 35
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	198
Power Options	208 V / 3 Ph. / 60 Hz, 230 V / 3 Ph. / 50 Hz, 400 V / 3 Ph. / 50 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
208 V / 3 Ph. / 60 Hz, 230 V / 3 Ph. / 50 Hz, 400 V / 3 Ph. / 50 Hz	JB-9352751.16.N	16,668.00



JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.1 kW @ -60 °C, 0.65 kW @ -40 °C, 1.6 kW @ -20 °C, 2.8 kW @ 0 °C, 3 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-60 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	23.2 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	343
Power Options	230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

JULABO HIGHTECH, FP52-SL

Options	CODE	Price
FP52-SL-N	JB-9352752.16.N	33,810.00
FP52-SL-N150	JB-9352752.16.N150	37,607.00



JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.



Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



**JULABO
HIGHTECH,
FP55-SL**

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.13 kW @ -60 °C, 0.7 kW @ -40 °C, 2.2 kW @ -20 °C, 4.1 kW @ 0 °C, 5.2 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-60 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	33.5 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	400
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

<u>Power Options</u>
230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz
FP55-SL-N150

<u>CODE</u>	<u>Price</u>
JB-9352755.16.N	39,253.00
JB-9352755.16.N150	42,994.00



**JULABO
HIGHTECH,
FP89-HL**

JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units. The FP89-HL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring. An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.

Power requirement: two outlets 208-230V/60Hz/16A.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control
-

Specs-At-A-Glance

Heating Capacity (kW)	1.3 @ 230 V
Cooling Capacity	0.2 kW @ -80 °C, 0.58 kW @ -60 °C, 0.75 kW @ -40 °C, 0.88 kW @ -20 °C, 0.92 kW @ 0 °C, 1 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-90 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	21.7 x 23.6 x 36.2
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	297
Power Options	230 V / 50 Hz, 230 V / 60 Hz

Power Options

230 V / 50 - 60 Hz

CODE

JB-9312689.13

Price

28,261.00



JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.



Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



**JULABO
HIGHTECH,
FP90-SL**

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.15 kW @ -80 °C, 0.75 kW @ -60 °C, 1.35 kW @ -40 °C, 1.6 kW @ -20 °C, 1.7 kW @ 0 °C, 1.8 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-90 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	23.2 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	430

Power Options

FP90-SL-N
FP90-SL-N150

CODE

JB-9352790.16.N
JB-9352790.16.N150

Price

45,504.00
48,713.00



JULABO water-cooled Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.



Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



**JULABO
HIGHTECH,
FPW91-SL**

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.75 kW @ -80 °C, 2 kW @ -60 °C, 3.1 kW @ -40 °C, 3.7 kW @ -20 °C, 4.1 kW @ 0 °C, 4.5 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-91 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	33.5 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	653
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
FPW91-SL

CODE
JB-9352793.16.N

Price
58,079.00



**JULABO
HIGHTECH,
HE-4**

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications. Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level. Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100). HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump. All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +250
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.5 x 15.7
Fluid Type	Silicone, Water, Other
Weight (lbs)	24.2
Power Options	100 V – 115 V / 50 – 60 Hz, 100 V – 115 V / 50 – 60 Hz NRTL, 230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL
Additional Options	NRTL (select voltage/frequency combinations only)

Power Options	CODE	Price
100 V - 115 V / 50 - 60 Hz	JB-9212504.22	4,077.00
100 V - 115 V / 50 - 60 Hz NRTL	JB-9212504.22.CSA/UL	4,877.00
230 V / 50 - 60 Hz	JB-9212504.33	4,077.00
230 V / 50 - 60 Hz NRTL	JB-9212504.33.CSA/UL	4,877.00



**JULABO
HIGHTECH,
HL-4**

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20°C to $+250^{\circ}\text{C}$ or $+300^{\circ}\text{C}$. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of $\pm 0.01^{\circ}\text{C}$. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range ($^{\circ}\text{C}$)	$+20 \dots +250$
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.5 x 15.7
Fluid Type	Silicone, Water, Other
Weight (lbs)	24.2
Power Options	100 V – 115 V / 50 – 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V - 115 V / 50 - 60 Hz	JB-9312504.22	7,567.00
230 V / 50 - 60 Hz	JB-9312504.33	7,567.00



**JULABO
HIGHTECH,
SE-6**

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20°C to $+250^{\circ}\text{C}$ or $+300^{\circ}\text{C}$. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of $\pm 0.01^{\circ}\text{C}$. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range ($^{\circ}\text{C}$)	$+20 \dots +300$
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.9 x 17.3
Fluid Type	Silicone, Water
Weight (lbs)	29.7
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9252506.33	7,850.00
230 V / 50 - 60 Hz NRTL	JB-9252506.33.CSA/UL	8,650.00



**JULABO
HIGHTECH,
SE-12**

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20°C to $+250^{\circ}\text{C}$ or $+300^{\circ}\text{C}$. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of $\pm 0.01^{\circ}\text{C}$. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range ($^{\circ}\text{C}$)	$+20 \dots +300$
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	11.8 x 16.9 x 18.5
Fluid Type	Silicone, Water
Weight (lbs)	30.8
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9252512.33	7,894.00
230 V / 50 - 60 Hz NRTL	JB-9252512.33.CSA/UL	9,694.00



**JULABO
HIGHTECH,
SL-6**

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range (°C)	+20 ... +300
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.9 x 17.3
Fluid Type	Silicone, Water
Weight (lbs)	29.7
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

Power Options	CODE	Price
230 V / 50 - 60 Hz	JB-9352506.33	8,513.00
230 V / 50 - 60 Hz NRTL	JB-9352506.33.CSA/UL	9,313.00





**JULABO
HIGHTECH,
SL-12**

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range (°C)	+20 ... +300
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	11.8 x 16.9 x 18.5
Fluid Type	Silicone, Water
Weight (lbs)	30.8
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

Power Options	CODE	Price
230 V / 50 - 60 Hz	JB-9352512.33	8,677.00
230 V / 50 - 60 Hz NRTL	JB-9352512.33.CSA/UL	9,477.00



**JULABO
PRESTO®, A30**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)	2.3 @ 208 V / 60 Hz, 2.7 @ 230 V / 50 Hz
Cooling Capacity	0.05 kW @ -30 °C, 0.2 kW @ 20 °C, 0.3 kW @ 10 °C, 0.4 kW @ 0 °C, 0.5 kW @ -20 °C, 0.5 kW @ 100 °C, 0.5 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-30 ... +250
Pump Capacity Flow Rate (l/min)	25
Pump Capacity Flow Pressure (psi)	7.25
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	9.5 x 22.9 x 24
Fluid Type	Silicone, Fluorinert/Galden, Other
Weight (lbs)	137
Power Options	208 V / 60 Hz, 230 V / 50 Hz

Power Options
230 V / 50 Hz

CODE
JB-9420300.14

Price
17,668.00



**JULABO
PRESTO®, A40**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)	2.3 @ 208 V / 60 Hz, 2.7 @ 230 V / 50 – 60 Hz
Cooling Capacity	0.1 kW @ -40 °C, 0.3 kW @ -30 °C, 0.6 kW @ 20 °C, 0.9 kW @ 0 °C, 1.2 kW @ 100 °C, 1.2 kW @ 20 °C, 1.2 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +250
Pump Capacity Flow Rate (l/min)	16...40
Pump Capacity Flow Pressure (psi)	1.45...18.85
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	12.7 x 22.9 x 26
Fluid Type	Silicone, Fluorinert/Galden, Other
Weight (lbs)	174
Power Options	208 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options
230 V / 50 - 60 Hz

CODE
JB-9420401.14

Price
25,867.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust



Specs-At-A-Glance

Heating Capacity (kW)

5.5 @ 208 V, 6 @ 230 V, 6 @ 400 V

Cooling Capacity

0.3 kW @ -40 °C, 1 kW @ -30 °C, 1.8 kW @ 20 °C, 2.6 kW @ -10 °C, 3.3 kW @ 0 °C, 3.4 kW @ 200 °C, 3.5 kW @ 20 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-45 ... +250

Pump Capacity Flow Rate (l/min)

35...76

Pump Capacity Flow Pressure (psi)

6.74 ... 43.5 @ 208V, 6.74 ... 46.4 @ 230V, 6.74 ... 46.4 @ 400V

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

20.9 x 26.2 x 49.6

Fluid Type

Silicone, Fluorinert/Galden, Other

Weight (lbs)

463

Power Options

230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz



**JULABO
PRESTO®, A45**

Model	CODE	Price
A45	JB-9420452.16	43,866.00
A45t	JB-9420452.16.T	47,187.00



**JULABO
PRESTO®, A80**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)

1.5 @ 208 V / 60 Hz, 1.8 @ 230 V / 50 Hz

Cooling Capacity

0.1 kW @ -80 °C, 0.65 kW @ -60 °C, 1.1 kW @ -20 °C,
1.1 kW @ -40 °C, 1.1 kW @ 100 °C, 1.2 kW @ 0 °C, 1.2
kW @ 200 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-80 ... +250

Pump Capacity Flow Rate (l/min)

16...40

Pump Capacity Flow Pressure (psi)

1.45...18.85

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

16.9 x 25.6 x 49.5

Fluid Type

Silicone, Fluorinert/Galden

Weight (lbs)

362

Power Options

208 V / 60 Hz, 230 V / 50 Hz

Model	CODE	Price
A80	JB-9420801.14	43,047.00
A80t	JB-9420801.16.T	45,353.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



**JULABO
PRESTO®, A85**

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)	5.5 @ 208 V, 6 @ 230 V, 6 @ 400 V
Cooling Capacity	0.4 kW @ -80 °C, 2.2 kW @ -60 °C, 2.4 kW @ -20 °C, 2.4 kW @ -40 °C, 2.4 kW @ 0 °C, 2.5 kW @ 20 °C, 2.8 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-85 ... +250
Pump Capacity Flow Rate (l/min)	35...80
Pump Capacity Flow Pressure (psi)	6.96 ... 46.42 @ 400V, 6.96 ... 46.42 @ 230V, 6.96 ... 43.51 @ 208V
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	24.1 x 42.6 x 49.3
Fluid Type	Silicone, Fluorinert/Galden
Weight (lbs)	805
Power Options	230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

<u>Model</u>	<u>CODE</u>	<u>Price</u>
A80	JB-9420852.16	73,328.00
A80t	JB-9420852.16.T	79,238.00



**JULABO
PRESTO®, W40**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Water Cooled

Specs-At-A-Glance

Heating Capacity (kW)

Cooling Capacity

2.3 @ 208 V / 60 Hz, 2.7 @ 230 V / 50 – 60 Hz

0.3 kW @ -30 °C, 0.7 kW @ -40 °C, 0.8 kW @ -10 °C, 1 kW @ 0 °C, 1.2 kW @ 100 °C, 1.2 kW @ 20 °C, 1.2 kW @ 200 °C

Both

Heating or Cooling Capability

Working Temp Range (°C)

-40 ... +250

Pump Capacity Flow Rate (l/min)

16...40

Pump Capacity Flow Pressure (psi)

1.45...18.85

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

12.7 x 22.9 x 26

Fluid Type

Silicone, Fluorinert/Galden, Other

Weight (lbs)

172

Power Options

208 V / 60 Hz, 230 V / 50 – 60 Hz

Model

CODE

Price

W40

JB-9421401.14

26,866.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



**JULABO
PRESTO®, W50**

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top

Specs-At-A-Glance

Heating Capacity (kW)

5.5 @ 208 V, 6 @ 230 V, 6 @ 400 V

Cooling Capacity

0.6 kW @ -40 °C, 1.8 kW @ -30 °C, 3 kW @ -20 °C, 5 kW @ -10 °C, 6.5 kW @ 0 °C, 7 kW @ 200 °C, 7.5 kW @ 20 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-50 ... +250

Pump Capacity Flow Rate (l/min)

35...76

Pump Capacity Flow Pressure (psi)

6.74 ... 43.5 @ 208V, 6.74 ... 46.4 @ 230V, 6.74 ... 46.4 @ 400V

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

20.9 x 26.2 x 49.6

Fluid Type

Silicone, Fluorinert/Galden, Other

Weight (lbs)

463

Power Options

208 V – 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Model

CODE

Price

W50 JB-9421502.16 56,795.00

W50t JB-9421502.16.T 63,678.00





JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top



JULABO PRESTO®, W55

Specs-At-A-Glance

Heating Capacity (kW)

Cooling Capacity

12.5 @ 208 V, 15 @ 230 V, 15 @ 400 V

0.3 kW @ -50 °C, 1.2 kW @ -40 °C, 10 kW @ 0 °C, 13.5

kW @ 200 °C, 15 kW @ 20 °C, 2.5 kW @ -30 °C, 4 kW

@ 20 °C, 6.5 kW @ -10 °C

Both

-55 ... +250

Heating or Cooling Capability

Working Temp Range (°C)

Pump Capacity Flow Rate (l/min)

35...80

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

24 x 33.3 x 49.2

Fluid Type

Silicone, Fluorinert/Galden, Other

Weight (lbs)

634.9

Power Options

208 V – 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Model

CODE

Price

W55

JB-9421552.16

67,185.00



PRESTO W56 water-cooled highly dynamic temperature control unit. Range -56...+250 °C with 27 kW heating power and 25.8 kW cooling power at 20 °C.

- Powerful circulating pumps, electronically adjustable in stages or by setting the pressure value
- Choose between a magnetically coupled centrifugal pump or a magnetically coupled gear pump for pressures up to 3.2 bar and virtually constant flow rate at any pressure
- Integrated 5.7" industrial color touchscreen displays all essential information and enables simple fingertip control
- Extensive warning, protection, and monitoring functions with detailed self-explanatory messages
- ICC cascade control for extraordinary precision, temperature stability ± 0.05 °C ... ± 0.2 °C
- Ambient temperature range +5 °C to +40 °C
- Integrated programmer with real-time clock
- Filling level indicator and pump capacity displayed electronically
- Interface for SD memory card
- Connections for USB, Ethernet, RS232, and Alarm output
- Integrated Modbus
- Optional analog connections, RS485, Profibus DP
- 1-stage water-cooled refrigeration system
- Sealed design enables operation to 150 °C with glycol/water and accessories



Specs-At-A-Glance

Heating Capacity (kW)

27

Cooling Capacity

1.4 kW @ -50 °C, 11.5 kW @ -20 °C, 16.9 kW @ -10 °C,
19 kW @ 200 °C, 23.1 kW @ 0 °C, 25.8 kW @ 20 °C,
3.5 kW @ -40 °C, 7.1 kW @ -30 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-56 ... +250

Pump Capacity Flow Rate (l/min)

35...80

Pump Capacity Flow Pressure (psi)

7...46.4

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

23.6 x 37 x 64.6

Fluid Type

Silicone, Water/Glycol, Fluorinert/Galden

Weight (lbs)

849

Power Options

480 V / 3 PPE / 60 Hz, 400 V / PPE / 50 Hz



Model

CODE

Price

W56

JB-9421562.17

91,573.00



**JULABO
PRESTO®, W56**



**JULABO
PRESTO®, W80**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Water cooled

Specs-At-A-Glance

Heating Capacity (kW)

Cooling Capacity

1.5 @ 208 V / 60 Hz, 1.8 @ 230 V / 50 Hz

0.1 kW @ -80 °C, 0.65 kW @ -60 °C, 1.1 kW @ -20 °C,
1.1 kW @ -40 °C, 1.2 kW @ 0 °C, 1.2 kW @ 100 °C, 1.2
kW @ 20 °C, 1.2 kW @ 200 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-80 ... +250

Pump Capacity Flow Rate (l/min)

16...40

Pump Capacity Flow Pressure (psi)

1.45...18.85

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

16.9 x 25.6 x 49.5

Fluid Type

Silicone, Fluorinert/Galden

Weight (lbs)

351

Power Options

208 V / 60 Hz, 230 V / 50 Hz

<u>Model</u>	<u>CODE</u>	<u>Price</u>
W80	JB-9421801.14	43,047.00
W80t	JB-9421801.16.T	44,137.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



**JULABO
PRESTO®, W85**

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top

Specs-At-A-Glance

Heating Capacity (kW)	230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz
Cooling Capacity	0.4 kW @ -80 °C, 2.2 kW @ -60 °C, 2.4 kW @ -20 °C, 2.4 kW @ -40 °C, 2.4 kW @ 0 °C, 2.5 kW @ 20 °C, 2.8 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-85 ... +250
Pump Capacity Flow Rate (l/min)	35...80
Pump Capacity Flow Pressure (psi)	6.96 ... 46.42 @ 400 V, 6.96 ... 46.42 @ 230 V, 6.96 ... 43.51 @ 208 V
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	24.1 x 33.3 x 49.3
Fluid Type	Silicone, Fluorinert/Galden
Weight (lbs)	738.6
Power Options	208 V / 60 Hz, 230 V / 50 Hz

Model	CODE	Price
W85	JB-9421852.16	73,115.00
W85t	JB-9421852.16.T	79,192.00



**JULABO
PRESTO®, W91**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- Extremely fast cool-down and heat-up times
- Wide working temperature range without changing the bath fluid
- Very fast compensation of exothermic and endothermic reactions
- Unsurpassed power and efficiency
- Heating capacity up to 36 kW
- Ambient temperature range +5 °C to +40 °C
- Space optimized design creates more room directly next to the units
- Integrated 5.7" industrial color touchscreen displays all essential information and enables simple fingertip control
- Extensive warning, protection, and monitoring functions with detailed self-explanatory messages
- ICC cascade control for extraordinary precision, temperature stability ± 0.05 °C \square ± 0.2 °C
- Integrated programmer with real-time clock
- Filling level indicator and pump capacity displayed electronically
- Powerful circulating pumps, electronically adjustable in stages or by setting the pressure value
- Interface for SD memory card
- Connections for USB, Ethernet, RS232, and Alarm output
- Optional analog connections, RS485, Profibus DP, Modbus

Specs-At-A-Glance

Heating Capacity (kW)	18
Cooling Capacity	10.5 kW @ -30 °C, 10.5 kW @ -40 °C, 11 kW @ 0 °C, 11 kW @ 100 °C, 11 kW @ 20 °C, 11 kW @ 200 °C, 2 kW @ -80 °C, 8 kW @ -60 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-91 ... +250
Pump Capacity Flow Rate (l/min)	26...80
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	37.4 x 50 x 74.8
Fluid Type	Silicone, Fluorinert/Galden
Power Options	400 V / 3 Ph. / 50 Hz, 480 V / 3 Ph. / 60 Hz
Weight (lbs)	1698

Model	CODE	Price
W91	JB-9421912.17	CALL
W91tt	JB-9421912.17.TT	CALL



**JULABO
PRESTO®, W92**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- Powerful circulating pumps, electronically adjustable in stages or by setting the pressure value
- Choose between a magnetically coupled centrifugal pump or a magnetically coupled gear pump for pressures up to 5.5 bar and virtually constant flow rate at any pressure
- Integrated 5.7" industrial color touchscreen displays all essential information and enables simple fingertip control
- Extensive warning, protection, and monitoring functions with detailed self-explanatory messages
- ICC cascade control for extraordinary precision, temperature stability ± 0.05 °C \square ± 0.2 °C
- Ambient temperature range +5 °C to +40 °C
- Integrated programmer with real-time clock
- Filling level indicator and pump capacity displayed electronically
- Interface for SD memory card
- Connections for USB, Ethernet, RS232, and Alarm output
- Optional analog connections, RS485, Profibus DP, Modbus
- 2-stage water-cooled refrigeration system

Specs-At-A-Glance

Heating Capacity (kW)	18
Cooling Capacity	10.5 kW @ -30 °C, 10.5 kW @ -40 °C, 11 kW @ 20 °C, 2 kW @ -80 °C, 20 kW @ 0 °C, 27 kW @ 20 °C, 29 kW @ 100 °C, 31 kW @ 200 °C, 8 kW @ -60 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-92 ... +250
Pump Capacity Flow Rate (l/min)	26...80
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	37.4 x 50 x 74.8
Fluid Type	Silicone, Fluorinert/Galden
Power Options	400 V / 3 Ph. / 50 Hz, 480 V / 3 Ph. / 60 Hz
Weight (lbs)	1731

Model	CODE	Price
W92	JB-9421922.17	CALL
W92tt	JB-9421922.17.TT	CALL



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Space-saving model for use with one test tube rack



Specs-At-A-Glance

Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	0.5 @ 115 V, 0.5 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550504.22	988.00
230 V / 50 - 60 Hz	JB-9550504.33	988.00



**JULABO
PURA 4**



Lift-up, transparent bath cover for PURA 4 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550580	235.00

**JULABO
PURA 4, LIFT UP
BATH COVER**



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



Specs-At-A-Glance

Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.2 @ 115 V, 1.2 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550510.22	1,177.00
230 V / 50 - 60 Hz	JB-9550510.33	1,177.00



**JULABO
PURA 10**



Lift-up, transparent bath cover for PURA 10 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550581	305.00

**JULABO
PURA 10, LIFT UP
BATH COVER**



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



<u>Specs-At-A-Glance</u>	
Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.3 @ 115 V, 1.8 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550514.22	1,285.00
230 V / 50 - 60 Hz	JB-9550514.33	1,285.00



**JULABO
PURA 14**



Lift-up, transparent bath cover for PURA 14 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550582	321.00

**JULABO
PURA 14, LIFT UP
BATH COVER**



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



<u>Specs-At-A-Glance</u>	
Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.3 @ 115 V, 2 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V – 115 V / 60 Hz	JB-9550522.22	1,407.00
230 V / 50 - 60 Hz	JB-9550522.33	1,407.00



**JULABO
PURA 22**



Lift-up, transparent bath cover for PURA 22 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

<u>CODE</u>	<u>Price</u>
JB-9550583	389.00

**JULABO
PURA 22, LIFT UP
BATH COVER**



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



<u>Specs-At-A-Glance</u>	
Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.3 @ 115 V, 2 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V – 115 V / 60 Hz	JB-9550530.22	1,660.00
230 V / 50 - 60 Hz	JB-9550530.33	1,660.00



**JULABO
PURA 30**



Lift-up, transparent bath cover for PURA 30 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

<u>CODE</u>	<u>Price</u>
JB-9550584	476.00

**JULABO
PURA 30, LIFT UP
BATH COVER**



**JULABO
SW22**

JULABO SW shaking water baths for unsupervised sample incubation. Stainless steel construction with an operating range from +20 to +99.9 °C. User-friendly operation via keypad with bright LED display. Electronic timer from 1 min to 9h 59min. Integrated RS232 interface for integration to PC software for control and data logging. Early low water level warning system. Early warning system with high and low temperature limits ensures that samples maintain the proper temperature. A removable shaking carriage for easy sample removal. A wide range of accessories, including bath covers, are available. Shaking frequency adjustable from 20 to 200 rpm. Shaking stroke = 15 mm.

SW22 unit with ± 0.2 °C stability. SW23 incorporates a water circulation pump for a stability of ± 0.02 °C.

- MICROPROCESSOR technology with PID temperature control
- Bright MULTI-DISPLAY (LED)
- Seamless, splash-proof keypad
- Splash-proof mains switch
- Electronic timer for setting the running time (0:01 to 9:59 h:min)
- On-line communication via built-in RS232 interface
- Early warning system with high and low temperature limits
- Drain screw for conveniently emptying the bath
- Dry-running protection / safety temperature fixed at 105 °C
- Wide range of accessories including lift-up Makrolon bath cover available
- EasyTemp control software is available free of charge
- Removable shaking carriage
- Shaking frequency adjustable from 20 to 200 rpm
- Shaking frequency indicated on MULTI-DISPLAY (LED)
- Shaking stroke 15 mm

Specs-At-A-Glance

Working Temp Range (°C)	+20 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
External Devices	Remote Control
Dimensions W x L x H (in)	27.6 x 13.8 x 10.2
Weight (lbs)	49
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
115 V / 60 Hz	JB-9550322.2	4,170.00
230 V / 50 - 60 Hz	JB-9550322.3	4,170.00



**JULABO
SW23**

JULABO SW shaking water baths for unsupervised sample incubation. Stainless steel construction with an operating range from +20 to +99.9 °C. User-friendly operation via keypad with bright LED display. Electronic timer from 1 min to 9h 59min. Integrated RS232 interface for integration to PC software for control and data logging. Early low water level warning system. Early warning system with high and low temperature limits ensures that samples maintain the proper temperature. A removable shaking carriage for easy sample removal. A wide range of accessories, including bath covers, are available. Shaking frequency adjustable from 20 to 200 rpm. Shaking stroke = 15 mm.

SW22 unit with ± 0.2 °C stability. SW23 incorporates a water circulation pump for a stability of ± 0.02 °C.

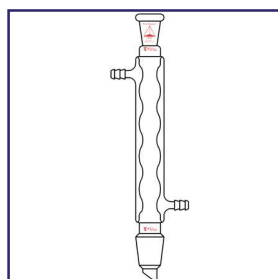
Included with each unit: integrated circulating pump for best temperature stability and homogeneity

- MICROPROCESSOR technology with PID temperature control
- Bright MULTI-DISPLAY (LED)
- Seamless, splash-proof keypad
- Splash-proof mains switch
- Electronic timer for setting the running time (0:01 to 9:59 h:min)
- On-line communication via built-in RS232 interface
- Early warning system with high and low temperature limits
- Drain screw for conveniently emptying the bath
- Dry-running protection / safety temperature fixed at 105 °C
- Wide range of accessories including lift-up Makrolon bath cover available
- EasyTemp control software is available free of charge
- Removable shaking carriage
- Shaking frequency adjustable from 20 to 200 rpm
- Shaking frequency indicated on MULTI-DISPLAY (LED)
- Shaking stroke 15 mm
- With integrated circulation pump

Specs-At-A-Glance

Working Temp Range (°C)	+20 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
External Devices	Remote Control
Dimensions W x L x H (in)	27.6 x 13.8 x 10.2
Weight (lbs)	51
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz

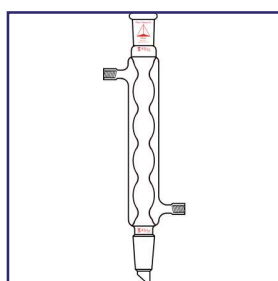
<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9550323.2	5,139.00
230 V / 50 - 60 Hz	JB-9550323.3	5,193.00



PRG-1900
ALLIHN

Allihn condensers have outer top joint and lower tapered joint drip tip. Joints are the same size.

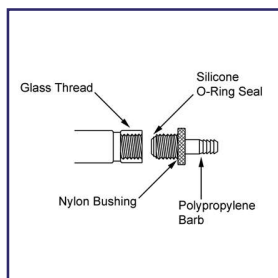
Jacket Length mm	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
200	-01	107.65	-02	111.82	—	—
250	-03	112.45	-04	116.85	—	—
300	-05	119.57	-06	124.01	-23	367.12
400	-07	124.01	-08	128.41	-24	427.27
500	-09	138.72	-10	140.55	-25	487.42
600	-11	147.91	-12	149.82	-26	549.13



PRG-1901
**ALLIHN, DETACH-
ABLE HOSE BARBS**

Allihn condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser using an internal thread. It not only makes connecting and disconnecting easier but safer as well. Condensers with 24/40 and 29/42 joints have a #11 thread for 3/8" I.D. tubing. The 45/50 condensers have a #15 thread and fit a 1/2" I.D. hose.

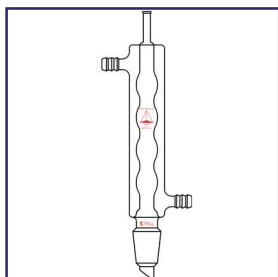
Jacket Length mm	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
200	-01	127.64	-02	131.70	—	—
250	-03	132.32	-04	136.59	—	—
300	-05	140.03	-06	143.55	-23	390.25
400	-07	143.55	-08	147.81	-24	450.40
500	-09	157.82	-10	159.57	-25	510.57
600	-11	166.73	-12	168.60	-26	572.27



PRG-220
**DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD**

Flow rate @10lbs. H₂O

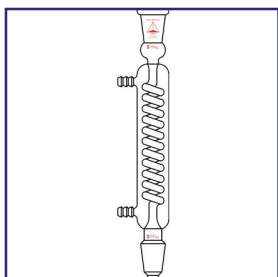
Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72



Reflux condenser has tubulation on top and lower drip tip joint. Hose barbs fit 3/8" I.D. tube.

<u>Jacket Length mm</u>	<u>§ 24/40 Joint</u>		<u>§ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	100.48	-02	106.18
300	-03	104.50	-04	109.73
400	-05	108.06	-06	113.55

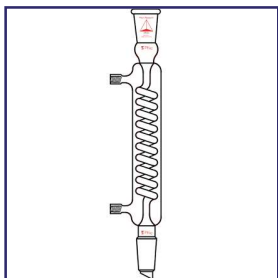
PRG-1905
ALLIHN, CHIMNEY
TOP



Both top outer and lower inner drip joints are the same size. The serrated barbs fit a 3/8" I.D. tube.

<u>Jacket Length mm</u>	<u>§ 24/40 Joint</u>		<u>§ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	137.85	-02	143.92
300	-03	150.41	-04	156.20
400	-05	162.48	-06	157.55
500	-07	192.00	-08	201.43
600	-09	201.19	-10	211.31

PRG-1940
GRAHAM

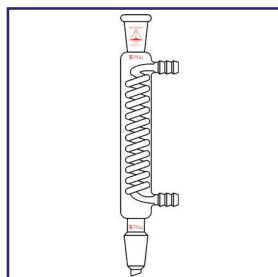


Graham condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser using a #11 internal thread. It is a safer and easier means for connecting and disconnecting hosing. Hose barbs fit 3/8" I.D. hose.

<u>Jacket Length mm</u>	<u>§ 24/40 Joint</u>		<u>§ 29/42 Joint</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
200	-01	156.98	-02	162.87
300	-03	169.16	-04	174.79
400	-05	180.80	-06	201.64
500	-07	209.55	-08	218.67
600	-09	228.30	-10	228.30

PRG-1941
GRAHAM, DETACH-
ABLE HOSE BARBS

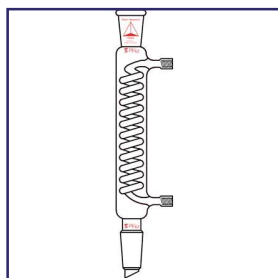




**PRG-1945
COIL**

Both top outer and lower inner drip joint are the same size. Inner coil provides the reflux effect in this condenser. Hose barbs fit 3/8" I.D. hose.

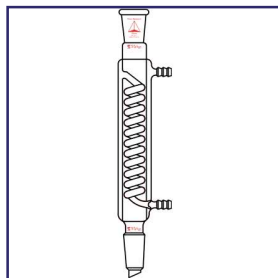
Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	184.65	-02	191.14
300	-03	208.12	-04	214.39
400	-05	219.80	-06	226.24
500	-07	231.43	-08	237.89



**PRG-1946
COIL, DETACHABLE
HOSE BARBS**

Coil condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser by use of a #11 internal thread. It is a safer and easier means of connecting and disconnecting hosing. Hose barbs fit 3/8" I.D. hose.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	202.41	-02	208.69
300	-03	225.20	-04	215.86
400	-05	234.99	-06	244.33
500	-07	247.81	-08	254.12

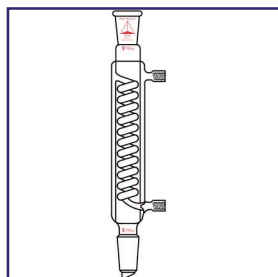


**PRG-1947
COIL, JACKETED**

The jacketed coil condenser is used for extra cooling capacity. As vapor rises, condensing occurs on the inner wall of the jacket and on the exterior surface of the coil. The condensers with the 24/40 and 29/42 joints have a 10mm hose barb. The 45/50 and 55/50 jointed condensers have a 14mm hose barb. Barbs are measured at the middle serration.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint		₹ 45/50 Joint		₹ 55/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
250	-01	320.82	-02	327.00	—	—	—	—
300	-03	331.65	-04	345.51	-21	447.31	-22	515.18
400	-05	353.23	-06	362.48	-23	502.85	-24	578.44
500	-07	370.19	-08	391.79	-25	558.37	-26	641.69
600	-09	393.35	-10	404.12	-27	613.92	-28	706.46

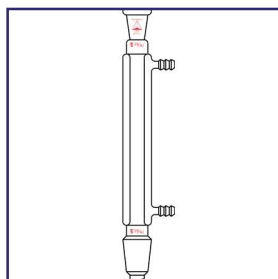




Jacketed coil condenser is fitted with detachable hose barbs. The polypropylene hose barbs couple to the condenser with internal threads. The 24/40 and 29/42 condenser have a #11 thread and fit 3/8" I.D. hose. The 45/50 and 55/50 have a #15 thread for 1/2" I.D. hose.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint		₹ 45/50 Joint		₹ 55/50 Joint	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
200	-01	343.96	-02	350.16				
300	-03	354.77	-04	368.66	-21	470.46	-22	538.34
400	-05	376.39	-06	385.63	-23	526.01	-24	601.55
500	-07	393.35	-08	414.93	-25	581.52	-26	664.81
600	-09	416.47	-10	427.27	-27	637.05	-28	729.60

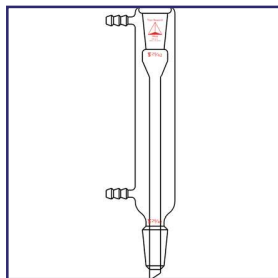
PRG-1948
COIL, JACKETED, DE-
TACHABLE HOSE
BARB



Both top outer and lower drip joint are the same size. Serrated barbs fit 3/8" I.D. hose.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	100.91	-02	106.43
250	-03	108.08	-04	114.99
300	-05	107.22	-06	112.91
400	-07	117.11	-08	122.57
500	-09	122.57	-10	128.41
600	-11	129.06	-12	134.71

PRG-1950
LIEBIG

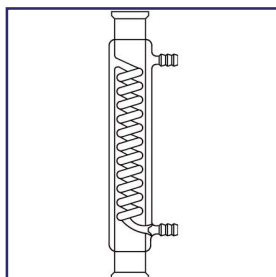


Both top outer and lower drip joint are the same size. The circulatory jacket is full length of condenser. Serrated barbs fit 3/8" I.D. tube.

Jacket Length mm	₹ 24/40 Joint		₹ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	134.92	-02	140.58
300	-03	142.85	-04	148.52
400	-05	154.85	-06	171.60

PRG-1955
LIEBIG, FULL JACKET

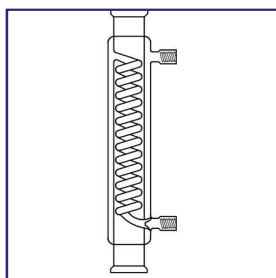




The double jacketed coil condenser has beaded pressure pipe connections. Beaded ends are compatible with beaded process pipe fittings. The water ports are 14mm hose barb measured at the middle serration.

Jacket Length mm	1.5" B. P.		2.0" B. P.		3.0" B. P.	
	CODE	Price	CODE	Price	CODE	Price
300	-01	428.01	-05	554.96	---	---
400	-02	447.54	-06	616.78	-09	779.53
500	-03	481.71	-07	678.64	-10	856.02
600	-04	517.52	-08	742.10	-11	901.60

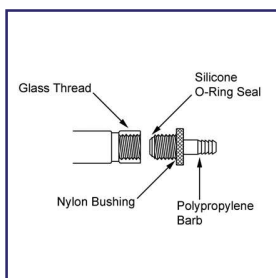
PRG-7400
JACKETED COIL,
BEADED PIPE



Double jacketed coil condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser with a #15 internal thread. It not only makes connection and disconnection easier, but safer as well. The barb has a 14mm O.D. measured at the middle serration.

Jacket Length mm	1.5" B. P.		2.0" B. P.		3.0" B. P.	
	CODE	Price	CODE	Price	CODE	Price
300	-01	454.04	-05	554.96	---	---
400	-02	473.59	-06	642.82	-09	805.56
500	-03	507.76	-07	704.67	-10	882.07
600	-04	543.56	-08	786.04	-11	927.63

PRG-7405
JACKETED COIL,
BEADED PIPE, DE-
TACHABLE HOSE
BARBS

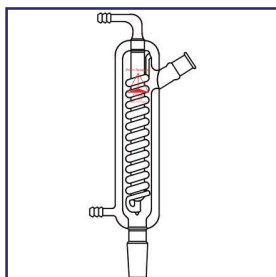


Flow rate @10lbs. H₂O

Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72

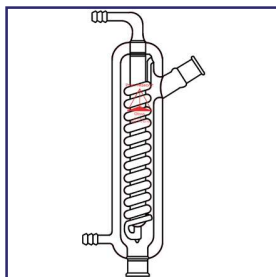
PRG-220
DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD





The high speed condenser provides the maximum amount of surface cooling for the space provided. The vapor is condensed on the inner wall of the water jacket and on the interior vapor tube. The vapor tube has a cooling coil wrapped around it for additional cooling and mixing. This multi-cooling surface yields a high efficiency per unit length. Hose barbs measure 14mm at middle serration.

<u>Jacket Length mm</u>	<u>Lower Joint</u>	<u>Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	24/40	24/40	-01	985.45
600	24/40	24/40	-02	1,001.07
700	24/40	24/40	-03	1,014.92



500	29/42	24/40	-11	1,002.78
600	29/42	24/40	-12	1,025.34
700	29/42	24/40	-13	1,049.64

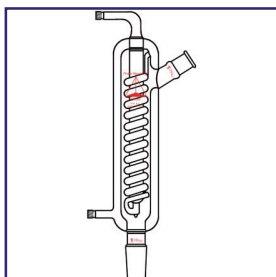
500	45/50	29/42	-21	1,066.98
600	45/50	29/42	-22	1,127.69
700	45/50	29/42	-23	1,183.20

<u>Jacket Length mm</u>	<u>Lower Joint</u>	<u>Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	29/42	-31	1,073.94
600	65/40	29/42	-32	1,134.64
700	65/40	29/42	-33	1,210.96

**PRG-7410
HIGH SPEED**

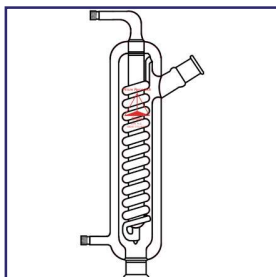
<u>Jacket Length mm</u>	<u>B.P. Lower Joint</u>	<u>B.P. Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	1.0"	-41	1,119.04
600	1.5"	1.0"	-42	1,184.96
700	1.5"	1.0"	-43	1,250.88
500	2.0"	1.5"	-51	1,231.81
600	2.0"	1.5"	-52	1,299.47
700	2.0"	1.5"	-53	1,370.59





High speed condenser is fitted with detachable hose barbs measuring 14mm at middle serration. The polypropylene hose barb couples to the condenser with a #15 internal thread. It not only makes connecting and disconnecting easier, but safer as well. Sold complete with hose barb assembly.

Jacket Length mm	Lower Joint	Upper Joint	CODE	Price
500	24/40	24/40	-01	1,011.48
600	24/40	24/40	-02	1,027.08
700	24/40	24/40	-03	1,040.94
500	29/42	24/40	-11	1,027.08
600	29/42	24/40	-12	1,051.37
700	29/42	24/40	-13	1,075.66
500	45/50	29/42	-21	1,092.99
600	45/50	29/42	-22	1,153.74
700	45/50	29/42	-23	1,200.58

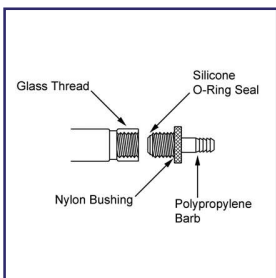


PRG-7415

HIGH SPEED, DETACHABLE HOSE BARBS

Jacket Length mm	Lower Joint	Upper Joint	CODE	Price
500	65/40	29/42	-31	1,099.96
600	65/40	29/42	-32	1,160.67
700	65/40	29/42	-33	1,236.99

Jacket Length mm	B.P. Lower Joint	B.P. Upper Joint	CODE	Price
500	1.5"	1.0"	-41	1,145.06
600	1.5"	1.0"	-42	1,210.96
700	1.5"	1.0"	-43	1,276.91
500	2.0"	1.5"	-51	1,207.51
600	2.0"	1.5"	-52	1,268.24
700	2.0"	1.5"	-53	1,344.56



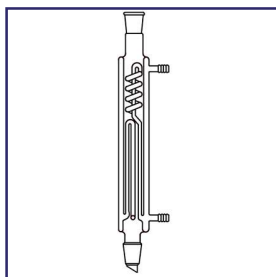
Flow rate @10lbs. H₂O

Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72

PRG-220

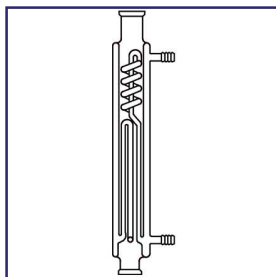
DETACHABLE HOSE CONNECTOR, INTERNAL THREAD





This large capacity, highly efficient condenser is suitable for pre-pilot and pilot scale operations. Upper and lower joints are the same size. Hose barbs are 14mm at middle serration.

<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
500	29/42	-01	749.49
600	29/42	-02	777.24
500	45/50	-11	1,101.68
600	45/50	-12	1,176.29
750	45/50	-13	1,269.98
1,000	45/50	-14	1,518.06



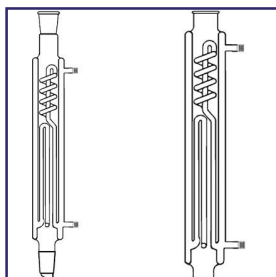
<u>Jacket Length mm</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	-21	1,110.33
600	65/40	-22	1,184.96
750	65/40	-23	1,278.64
1,000	65/40	-24	1,557.96

<u>Jacket Length mm</u>	<u>B.P. Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	-31	1,110.33
600	1.5"	-32	1,184.96
750	1.5"	-33	1,278.64
1,000	1.5"	-34	1,535.40

500	2.0"	-41	1,131.15
600	2.0"	-42	1,193.61
750	2.0"	-43	1,287.31
1,000	2.0"	-44	1,578.79

PRG-7420
PILOT PLANT, LARGE
CAPACITY



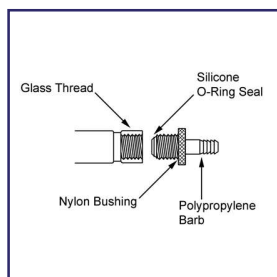

PRG-7425
**PILOT PLANT, LARGE
CAPACITY, DETACH-
ABLE HOSE BARBS**

High efficiency condensers are suitable for pre-pilot and pilot plant scale capacities. Both upper and lower connections are the same size. #15 threaded ports are used to connect polypropylene hose barbs to condenser. Barbs fit .500" I.D. supply lines.

<u>Jacket Length mm</u>	<u>J. Joint</u>	<u>CODE</u>	<u>Price</u>
500	29/42	-01	774.65
600	29/42	-02	802.32
500	45/50	-11	1,126.19
600	45/50	-12	1,201.05
750	45/50	-13	1,295.44
1,000	45/50	-14	1,542.81

<u>Jacket Length mm</u>	<u>J. Joint</u>	<u>CODE</u>	<u>Price</u>
500	65/40	-21	1,135.95
600	65/40	-22	1,210.82
750	65/40	-23	1,303.57
1,000	65/40	-24	1,578.61

<u>Jacket Length mm</u>	<u>B.P. Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	-31	1,135.95
600	1.5"	-32	1,210.82
750	1.5"	-33	1,303.57
1,000	1.5"	-34	1,560.70
500	2.0"	-41	1,157.12
600	2.0"	-42	1,218.94
750	2.0"	-43	1,313.32
1,000	2.0"	-44	1,586.74


PRG-220
**DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD**

Flow rate @10lbs. H₂O

<u>Thread Size</u>	<u>Fits Tube I.D.</u>	<u>Barb I.D.</u>	<u>Nominal Flow Rate Gal./Min.</u>	<u>CODE</u>	<u>Price</u>
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72

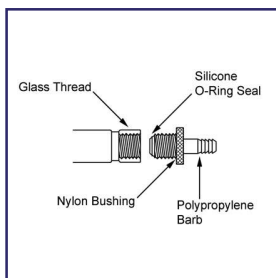


PRG-7448

"SQUAT" CONDENSER, HIGH EFFICIENCY, QUAD-COIL, DETACHABLE HOSE BARBS

"Squat" Condenser is a low profile design with maximum cooling capacity through four interior coils. Condenser diameter is 165mm with detachable hose barbs. Fits 1.0" I.D. supply lines. See PRG-220 for other sized barb options.

Overall Height	Coil Length	Cooling Surface	Pipe Connection	CODE	Price
18"	12"	760	1.5"	-01	1,844.42
18"	12"	760	2.0"	-02	1,875.42
18"	12"	766	3.0"	-03	1,906.41
24"	18"	1,150	2.0"	-11	2,286.14
24"	18"	1,150	3.0"	-12	2,309.41
24"	18"	1,150	4.0"	-13	2,340.41



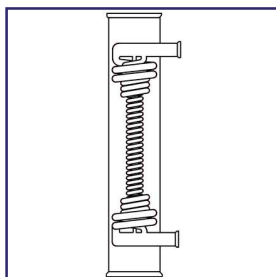
PRG-220

DETACHABLE HOSE CONNECTOR, INTERNAL THREAD

Flow rate @10lbs. H₂O

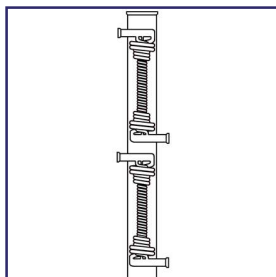
Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72





These coil condensers are constructed of borosilicate glass pipe housing with coaxial wound coils. The coils are wound concentrically around a common axis and have ample space between each loop. This spacing allows vapor to move freely through the coils creating turbulence and more vapor contact with cooling surface. The coaxial design gives the condenser a very robust structural quality and has only a small pressure drop between coils.

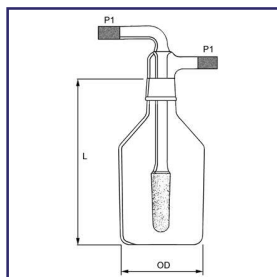
The condenser has beaded pressure pipe fitting tooled on glass piping. The fitting are compatible with pipe fittings on the market today. Conical ends are available upon request.



Sets of Coils	Pipe Fitting I.D.	Overall Length	Cooling Surface	Coil Port I.D.	CODE	Price
Single	1.5"	12"	1.8 sq. ft.	1/2"	-01	909.75
Double	1.5"	24"	3.9 sq. ft.	1/2"	-11	1,716.93
Single	2.0"	18"	2.5 sq. ft.	1/2"	-02	1,526.53
Double	2.0"	24"	3.9 sq. ft.	1/2"	-12	2,011.49
Single	3.0"	18"	2.6 sq. ft.	1/2"	-03	1,941.53
Double	3.0"	24"	3.9 sq. ft.	1/2"	-13	2,149.84
Single	4.0"	18"	3.9 sq. ft.	1.0"	-04	3,191.38
Single	4.0"	24"	5.4 sq. ft.	1.0"	-05	3,816.33
Double	4.0"	36"	8.4 sq. ft.	1.0"	-14	4,215.06
Single	6.0"	18"	6.4 sq. ft.	1.0"	-06	4,058.80
Single	6.0"	24"	9.3 sq. ft.	1.0"	-07	5,689.48
Double	6.0"	36"	13.7 sq. ft.	1.0"	-15	7,216.02

PRG-7450
**COIL, HIGH EFFI-
CIENCY, INDUSTRIAL
EQUIPMENT**



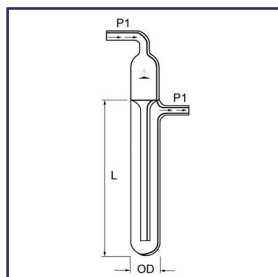


PRG-5980
GAS WASHING BOT-
TLE, LARGE VOLUME

Gas Scrubbing / Washing Bottles have large volumes for gas dispersion, from 1 liter to 45 liters. The cylindrical fit is 25mm O.D. x 75mm long, coarse porosity, 40/60 micron. Bottle is equipped with a 45/50 inner O-Ring joint and supplied with a Viton O-Ring (128 Size) the inlet / outlet arms are a heavy wall tubing with sandblasted ends for use with a compression fitting or tube slip fit. Medium (10/15 micron) and extra-coarse (170/200 micron) frits are available upon request. A "Set" is fritted insert and bottle sold together. Bottles and inserts are also offered individually.

<u>Description</u>	<u>P1 - 1/2"</u>		<u>P1 - 5/8"</u>		<u>P1 - 3/4"</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
1 Liter Complete	-51	265.29	-61	269.74	-41	275.72
Top Only, Fritted	-52	175.85	-62	180.32	-42	187.79
2 Liter Complete	-53	281.67	-63	281.67	-43	289.12
Top Only, Fritted	-54	175.85	-64	175.85	-44	183.30
4 Liter Complete	-01	536.13	-11	635.79	-21	767.51
Top Only, Fritted	-02	189.26	-12	191.66	-22	198.21
9 Liter Complete	-03	633.38	-13	634.88	-23	642.33
13 Liter Complete	-04	722.81	-14	760.07	-24	767.51
Top Only, Fritted	-05	189.26	-15	190.75	-25	198.21
19 Liter Complete	-06	847.99	-16	850.98	-26	856.93
Top Only, Fritted	-07	199.70	-17	202.69	-27	208.64
45 Liter Complete	-08	1,408.35	-18	1,414.30	-28	1,418.79
Top Only, Fritted	-09	232.48	-19	238.45	-29	242.91

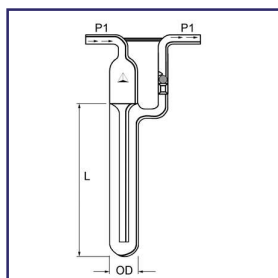
<u>Description</u>	<u>O.D. mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
1 Liter Bottle	107	225	-75	89.43
2 Liter Bottle	133	270	-76	97.99
4 Liter Bottle	140	300	-70	346.87
9 Liter Bottle	203	440	-71	444.12
13 Liter Bottle	233	440	-72	569.30
19 Liter Bottle	292	500	-73	648.29
45 Liter Bottle	408	590	-74	1,175.86



Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere.

<u>Volume ml</u>	<u>P1 mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
30	8	100	28	-01	46.21
60	12.7	125	35	-02	64.08

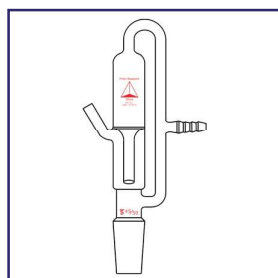
PRG-1365
BUBBLER, MINERAL
OIL



Reservoir head prevents oil from being drawn back into system while providing a vent to the atmosphere. This bubbler has a ball check valve to prevent the possibility of back flow.

<u>Volume ml</u>	<u>P1 mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
30	8	100	28	-01	96.88
60	12.7	125	35	-02	116.26
150	12.7	150	40	-03	230.98
300	15.8	200	50	-04	281.67

PRG-1366
BUBBLER, MINERAL
OIL, WITH CHECK
VALVE

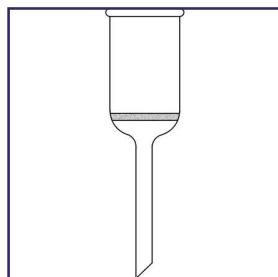


Used to nitrogen purge the system. This bubbler is easily installed or removed from distillation apparatus.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	203.20
29/42	-02	199.70
45/50	-03	213.11

PRG-1370
NITROGEN BUBBLER,
IMPROVED





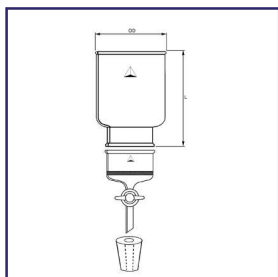
**PRG-3760
BUCHNER FUNNEL**

Funnel has sealed glass frit for filter paper support. Do not exceed 15 psi.

<u>Porosity</u>	<u>Designation</u>	<u>Pore Size Microns</u>	<u>Principal Uses</u>
Fine	F	4.0 - 5.5	Filtration and extraction.
Medium	M	10 - 26	Filtration and extraction.
Coarse	C	40 - 60	Gas Dispersion, washing absorption. Coarse filtration.
Extra Coarse	XC	170 - 220	Gas Dispersion, washing absorption. Coarse filtration.

<u>Capacity</u>	<u>Porosity</u>	<u>Approx. Diam. of Disc</u>	<u>Stem O.D. x Length</u>	<u>Height Above Disc</u>	<u>CODE</u>	<u>Price</u>
2 ml	XC	10 mm	6 x 30 mm	30 mm	-01	36.30
2 ml	C	10 mm	6 x 30 mm	30 mm	-02	36.30
2 ml	M	10 mm	6 x 30 mm	30 mm	-03	36.30
2 ml	F	10 mm	6 x 30 mm	30 mm	-41	36.30
15 ml	XC	20 mm	8 x 75 mm	45 mm	-04	41.08
15 ml	C	20 mm	8 x 75 mm	45 mm	-05	41.08
15 ml	M	20 mm	8 x 75 mm	45 mm	-06	41.08
15 ml	F	20 mm	6 x 75 mm	45 mm	-42	41.08
30 ml	XC	30 mm	8 x 75 mm	45 mm	-07	46.32
30 ml	C	30 mm	8 x 75 mm	45 mm	-08	46.32
30 ml	M	30 mm	8 x 75 mm	45 mm	-09	46.32
30 ml	F	30 mm	6 x 75 mm	45 mm	-43	46.32
60 ml	XC	40 mm	10 x 75 mm	50 mm	-10	51.17
60 ml	C	40 mm	10 x 75 mm	50 mm	-11	51.17
60 ml	M	40 mm	10 x 75 mm	50 mm	-12	51.17
60 ml	F	40 mm	10 x 75 mm	50 mm	-44	51.17
150 ml	XC	60 mm	16 x 75 mm	60 mm	-13	94.22
150 ml	C	60 mm	16 x 75 mm	60 mm	-14	94.22
150 ml	M	60 mm	16 x 75 mm	60 mm	-15	94.22
150 ml	F	60 mm	16 x 75 mm	60 mm	-45	94.22
350 ml	XC	80 mm	19 x 75 mm	75 mm	-16	121.55
350 ml	C	80 mm	19 x 75 mm	75 mm	-17	121.55
350 ml	M	80 mm	19 x 75 mm	75 mm	-18	121.55
350 ml	F	80 mm	19 x 75 mm	75 mm	-46	121.55
600 ml	XC	90 mm	19 x 100 mm	100 mm	-19	139.50
600 ml	C	90 mm	19 x 100 mm	100 mm	-20	139.50
600 ml	M	90 mm	19 x 100 mm	100 mm	-21	139.50
600 ml	F	90 mm	19 x 100 mm	100 mm	-47	139.50
1,000 ml	XC	110 mm	19 x 100 mm	125 mm	-51	282.94
1,000 ml	C	110 mm	19 x 100 mm	125 mm	-52	282.94
1,000 ml	M	110 mm	19 x 100 mm	125 mm	-53	282.94
1,000 ml	F	110 mm	19 x 100 mm	125 mm	-54	282.94
2,000 ml	XC	125 mm	19 x 110 mm	145 mm	-22	325.54
2,000 ml	C	125 mm	19 x 110 mm	145 mm	-23	325.54
2,000 ml	M	125 mm	19 x 110 mm	145 mm	-24	325.54
2,000 ml	F	125 mm	19 x 110 mm	145 mm	-48	325.54
3,000 ml	XC	150 mm	25 x 110 mm	175 mm	-25	452.17
3,000 ml	C	150 mm	25 x 110 mm	175 mm	-26	452.17
3,000 ml	M	150 mm	25 x 110 mm	175 mm	-27	452.17
3,000 ml	F	150 mm	25 x 110 mm	175 mm	-49	452.17
6,000 ml	XC	150 mm	32 x 130 mm	250 mm	-61	960.10
6,000 ml	C	150 mm	32 x 130 mm	250 mm	-62	960.10
6,000 ml	M	150 mm	32 x 130 mm	250 mm	-63	960.10
6,000 ml	F	150 mm	32 x 130 mm	250 mm	-64	960.10





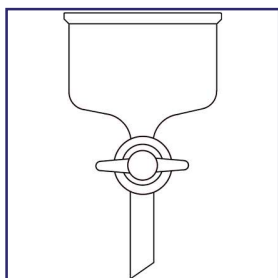
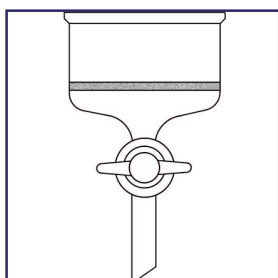
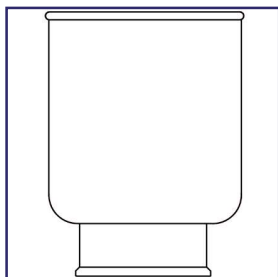
Filtration apparatus is used for large batch volumes. The lower base has a large bore 10mm Teflon® stopcock and connects to the reservoir with a beaded pipe coupling. The base is offered with or without a sealed in fritted disc. An extra coarse frit comes standard with fritted bases. The beaded pipe connection and frit diameter are the same size. Medium and coarse porosity frits are available upon request. Complete units consist of reservoir, fritted base, 10mm TFE plug, silicone pluro-stopper, and beaded pipe coupling. For collection bottles see PRG-1510 and PRG-1515.

Complete Unit

Capacity L	Beaded Pipe	Fritted Base	OD mm	L1 mm	CODE	Price
12	3.0"		233	380	-01	984.58
19	3.0"		292	420	-02	1,204.29
19	6.0"		292	420	-03	1,902.44
36	3.0"		408	430	-04	1,658.35
36	6.0"		408	430	-06	2,341.87

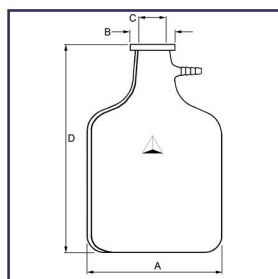
Individual Components

Description	Beaded Pipe Size	CODE	Price
12 Liter Reservoir	3.0"	-21	375.94
19 Liter Reservoir	3.0"	-22	595.63
19 Liter Reservoir	6.0"	-23	673.75
36 Liter Reservoir	3.0"	-24	1,049.70
36 Liter Reservoir	6.0"	-25	1,114.81
Fritted Base	3.0"	-31	322.24
Fritted Base	6.0"	-32	533.79
Non-Fritted Base	3.0"	-41	208.30
Non-Fritted Base	6.0"	-42	374.32
Beaded Pipe Coupling	3.0"	PRG-8022-06	92.99
Beaded Pipe Coupling	6.0"	PRG-8022-08	97.52



PRG-3735
PILOT PLANT, LARGE
VOLUME

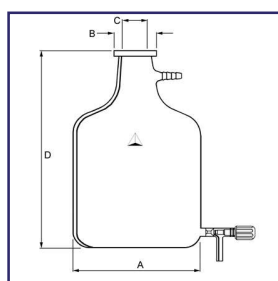




Large capacity bottles have a heavy duty tooled rim top and 1/2" O.D. serrated hose barb side port.

<u>Capacity (Gal.)</u>	<u>Capacity (L)</u>	<u>A mm</u>	<u>B mm</u>	<u>C mm</u>	<u>D mm</u>	<u>CODE</u>	<u>Price</u>
2.5	9.5	128	76	50	485	-01	241.51
3.5	13.3	233	76	50	436	-02	302.40
5.0	19	292	89	50	501	-03	412.49
12.0	45.6	408	91	76	585	-04	940.57

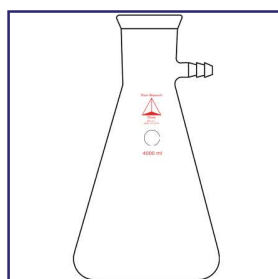
PRG-1510
BOTTLE, CARBOY



Large capacity bottles have a heavy duty tooled rim top and 1/2" O.D. serrated hose barb side port. Lower Teflon® valve makes drainage easy.

<u>Capacity (Gal.)</u>	<u>Capacity (L)</u>	<u>A mm</u>	<u>B mm</u>	<u>C mm</u>	<u>D mm</u>	<u>Valve Size</u>	<u>CODE</u>	<u>Price</u>
2.5	9.5	128	76	50	485	0-6	-01	401.24
3.5	13.3	233	76	50	436	0-6	-02	482.31
5.0	19	292	89	50	501	0-12	-03	649.99
12.0	45.6	408	91	76	585	0-12	-04	1,291.22

PRG-1515
BOTTLE, CARBOY



Serrated hose barb side port for vacuum connection.

<u>Capacity ml</u>	<u>Stopper Size</u>	<u>CODE</u>	<u>Price</u>
250	#6	-01	18.43
500	#7	-02	25.29
1,000	#8	-03	52.14
2,000	#9	-04	100.11
4,000	#12	-05	148.54

PRG-5155
FLASK, HEAVY WALL



Filter paper discs are sized to fit table top Buchner funnels. Filter paper discs are E-D 615 type for fast filtering. They have a rough crepe surface with a thickness of 0.0105mm, basic weight 20 lb. G/Sq meter, flow rate 235ml/min., retention of 25 microns. 100 discs per box. Used with Buchner Funnels, PRG-3793.

<u>Funnel I.D. mm</u>	<u>CODE</u>	<u>Price</u>
260	-01	82.30
457	-02	CALL
610	-03	CALL
914	-04	CALL

PRG-3791 FILTER PAPER DISCS, 260mm



Buchner Funnels are economical, lightweight and durable. Easy to clean two-piece, polypropylene Buchner funnels with perforated HDPE filter plate. Lightweight, but not top-heavy. Steam autoclavable at 121°C (250°F). Per each.

<u>Funnel I.D. mm</u>	<u>Plate Type</u>	<u>Rim to Plate mm</u>	<u>CODE</u>	<u>Price</u>
260	Coarse Porosity Fixed	127	-01	CALL
260	Coarse Porosity Removable	127	-02	CALL
260	Medium Porosity Fixed	127	-03	CALL
260	Medium Porosity Removable	127	-04	CALL
260	Perforated Fixed	127	-05	CALL
260	Perforated Removable	127	-06	CALL
457	Coarse Porosity Fixed	203	-11	CALL
457	Coarse Porosity Removable	203	-12	774.98
457	Medium Porosity Fixed	203	-13	CALL
457	Medium Porosity Removable	203	-14	774.98
457	Perforated Fixed	203	-15	CALL
457	Perforated Removable	203	-16	CALL
610	Coarse Porosity Fixed	267	-21	CALL
610	Coarse Porosity Removable	267	-22	CALL
610	Medium Porosity Fixed	267	-23	CALL
610	Medium Porosity Removable	267	-24	CALL
610	Perforated Fixed	267	-25	CALL
610	Perforated Removable	267	-26	CALL
914	Coarse Porosity Fixed	305	-31	CALL
914	Coarse Porosity Removable	305	-32	CALL
914	Medium Porosity Fixed	305	-33	CALL
914	Medium Porosity Removable	305	-34	CALL
914	Perforated Fixed	305	-35	CALL
914	Perforated Removable	305	-36	CALL

<u>Replacement Discs</u>				
<u>Funnel I.D. mm</u>	<u>Plate Type</u>	<u>CODE</u>	<u>Price</u>	
260	Coarse Porosity	-41	CALL	
260	Medium Porosity	-42	CALL	
260	Perforated	-43	CALL	
457	Coarse Porosity	-51	CALL	
457	Medium Porosity	-52	CALL	
457	Perforated	-53	CALL	
610	Coarse Porosity	-61	CALL	
610	Medium Porosity	-62	CALL	
610	Perforated	-63	CALL	
914	Coarse Porosity	-71	CALL	
914	Medium Porosity	-72	CALL	
914	Perforated	-73	CALL	

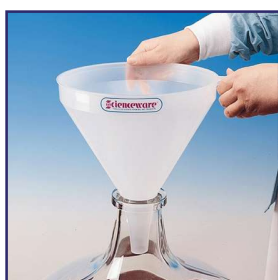




Single piece Buchner Funnels are fast flowing with Fritware porous plates. One piece HDPE funnels with sealed in, polyethylene filter plate of coarse porosity (90-130 microns) offer good retention and fast flow under vacuum. Usable with or without filter paper. Use below 52°C (125°F).

<u>Funnel Capacity ml</u>	<u>Diam. of Plate mm</u>	<u>Rim to Plate mm</u>	<u>CODE</u>	<u>Price</u>
50	36	35	-01	CALL
150	70	51	-02	CALL
250	104	50	-03	CALL
1,000	122	104	-04	CALL

PRG-3795
BUCHNER FUNNELS,
SINGLE PIECE



Drum and Carboy funnels provide optimum flow. Large funnels with handles are ideal for filling drums, barrels, tanks and carboys providing ample volume and fast flow. The two smaller sizes have a handle at the rim. Molded of natural polypropylene, funnels are autoclavable at 121°C.

<u>Funnel Capacity L</u>	<u>Top of O.D. mm</u>	<u>Height mm</u>	<u>Bottom Stem ID</u>	<u>CODE</u>	<u>Price</u>
2.1	207	250	21	-01	CALL
4.3	260	309	23	-02	CALL
14.1	353	454	26	-03	CALL

PRG-3797
DRUM AND CARBOY
FUNNELS

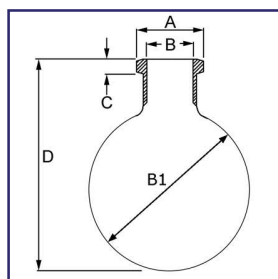


Heavy duty funnels are durable, versatile and available in assorted sizes. Sturdy, polypropylene funnels with ridges to prevent vapor lock. Highly recommended for continuous laboratory work. Steam autoclavable at 121°C.

<u>Funnel Cap. ml</u>	<u>Stem ID</u>	<u>Stem OD</u>	<u>Stem Length</u>	<u>Total Length</u>	<u>Diameter</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
30	7.9	14.3	38.1	66.7	54	6	-01	CALL
90	6.4	11.1	69.9	127.0	76.2	6	-02	CALL
180	12.7	19.1	44.5	104.8	101.6	6	-03	CALL
480	11.1	19.1	79.7	177.8	152.4	3	-04	CALL
720	19.1	25.4	69.9	187.3	184.2	3	-05	CALL
3,845	22.2	34.9	139.7	342.9	266.7	1	-06	CALL

PRG-3799
HEAVY DUTY FUN-
NELS





**PRG-2060
FLASK, EVAPORA-
TION, LARGE SCALE,
FLANGED**

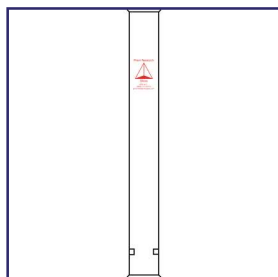
Flasks to fit large scale rotary evaporators. Flasks have a heavy wall for vacuum applications and are balanced to prevent run-out during rotation. Available plain or plastic coated to prevent injury from broken glass while preventing spillage of hazardous materials.

Capacity L	Flange Size mm	Overall Height mm	CODE	Price
10	90	350	-01	348.26
10	100	335	-02	359.66
10	100	413	-03	359.66
10	110	410	-04	359.66
10	150	415	-05	501.26
10	210	375	-15	530.09
20	100	385	-06	572.86
20	100	435	-07	572.86
20	110	435	-08	572.86
20	150	440	-09	703.06
20	210	450	-19	725.36
50	150	570	-10	1,822.71
50	210	570	-20	1,921.90
100	150	760	-11	4,081.58
100	210	760	-21	4,156.90

To select the proper flask for your evaporator, determine the flange size required from the chart below. Match the overall height with the capacity required.

Flange Size	"A" Flange O.D.	"B" Flange I.D.	"C" Flange Thickness	Flask Size	B1
90 mm	90 mm	68 mm	18 mm	10	295 mm
100 mm	100 mm	72 mm	19 mm	20	350 mm
110 mm	110 mm	83 mm	23 mm	50	457 mm
150 mm	150 mm	119 mm	21 mm	100	610 mm
210 mm	210 mm	TBD	TBD		



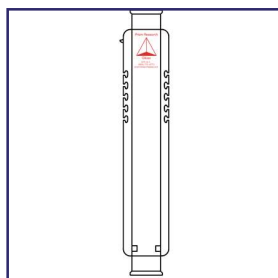


PRG-7310

**COLUMN, NON-JACK-
ETED WITH BEADED
PIPE CONNECTION
AND INTERNAL RING
FOR SUPPORT PLATE**

Columns have beaded pipe connection ends with an interior shelf 1.5" off the bottom to support a PRG-7314 perforated platform. Columns are listed as internal diameter (I.D.) x overall lengths (OVL). Other sizes and end connections are available upon request.

Column Length Inches	1.5"		2.0"		3.0"		4.0"		6.0"	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
12	-01	115.58	-11	159.51	-21	218.07	-31	354.77	-41	554.96
18	-02	136.72	-12	169.26	-22	226.21	-32	367.79	-42	581.00
24	-03	144.83	-13	177.39	-23	234.35	-33	395.47	-43	667.27
36	-04	154.61	-14	190.42	-24	253.87	-34	405.23	-44	860.91
48	-05	161.12	-15	203.44	-25	279.92	-35	416.62	-45	896.71
60	-06	167.63	-16	213.20	-26	315.72	-36	429.66	-46	1,074.10



PRG-7312

**COLUMN, VACUUM
JACKETED AND SIL-
VERED, BEADED PIPE
CONNECTION AND IN-
TERNAL RING FOR
SUPPORT PLATE**

Columns are vacuum jacketed with expansion bellow. Strip silvered for viewing. End connections are beaded pipe connections. Measured by internal diameter (I.D.) x overall length (OVL). Jacket length is approximately 3-4 inches shorter than overall length. Other sizes and connections are available upon request.

Column Length Inches	1.5"		2.0"		3.0"		4.0"		6.0"	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
12	-01	956.93	-11	1,111.52	-21	1,318.21	-31	1,845.49	---	---
18	-02	992.75	-12	1,142.44	-22	1,388.20	-32	1,943.15	-42	3,157.21
24	-03	1,023.65	-13	1,176.62	-23	1,541.16	-33	2,156.36	-43	3,922.11
36	-04	1,145.73	-14	1,314.96	-24	1,943.15	-34	2,719.43	-44	5,777.38
48	-05	1,337.73	-15	1,516.77	-25	2,050.56	-35	3,212.54	-45	6,851.49
60	-06	1,542.81	-16	1,954.54	-26	2,210.05	-36	4,052.31	-46	8,446.37



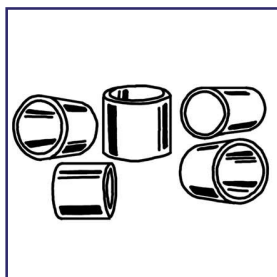
PRG-7314

SUPPORT PLATFORM

Perforated platforms are designed to work with columns PRG-7310 and PRG-7312. Offered in 25% glass filled Teflon® or 316 stainless steel.

Column I.D.	Hole Size	Disc Thickness	Material	CODE	Price
1.5"	1/8"	1/4"	25% Glass Filled TFE	-01	187.16
2.0"	1/4"	1/4"	25% Glass Filled TFE	-02	200.16
3.0"	1/4"	3/8"	25% Glass Filled TFE	-03	240.85
4.0"	3/8"	1/2"	25% Glass Filled TFE	-04	307.59
6.0"	3/8"	3/4"	25% Glass Filled TFE	-05	470.33
1.5"	1/8"	1/8"	316 Stainless Steel	-11	159.51
2.0"	1/4"	1/8"	316 Stainless Steel	-12	209.94
3.0"	1/4"	1/4"	316 Stainless Steel	-13	289.69
4.0"	3/8"	1/4"	316 Stainless Steel	-14	318.97
6.0"	3/8"	1/4"	316 Stainless Steel	-15	398.73

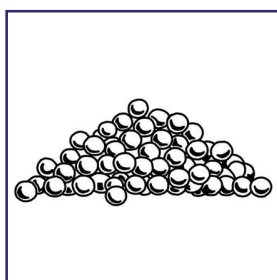




PRG-7315
PACKING RINGS,
RASCHIG

Borosilicate rings sold in 1 pound packages. Measured: outside diameter (O.D.) x overall length (OVL) in millimeters

<u>O.D. x Length</u>	<u>Approx. pcs per lbs</u>	<u>Pieces per Cubic Foot</u>	<u>CODE</u>	<u>Price</u>
6 x 6	1,900	114,000	-01	182.27
7 x 7	1,480	63,500	-02	182.27
8 x 8	1,070	39,000	-03	182.27
12 x 12	430	11,200	-04	182.27

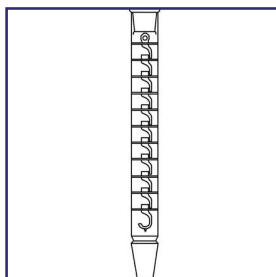


PRG-7316
PACKING BEADS

Solid borosilicate glass beads, sold in 1 pound packages.

<u>O.D. mm</u>	<u>Approx. Beads per lbs</u>	<u>CODE</u>	<u>Price</u>
3	11,000	-01	289.69
4	5,500	-02	278.31
5	2,500	-03	258.76
6	1,600	-04	214.81
7	TBD	-05	CALL



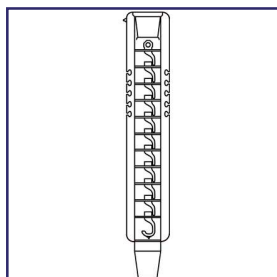


PRG-7318
COLUMN, OLDER-
SHAW, PERFORATED
PLATE, NON-JACK-
ETED

Columns are non-jacketed with uniform perforated plates. Offered with standard tapered joints. Columns are fabricated per order and can be customized to suit your applications.

Column I.D. mm	No. of Plates	Joint	CODE	Price
28	5	29/42	-01	667.27
28	10	29/42	-02	1,235.22
28	15	29/42	-03	1,969.19
28	20	29/42	-04	2,558.33
28	30	29/42	-05	3,402.96
40	5	45/50	-11	1,155.48
40	10	45/50	-12	2,205.17
40	15	45/50	-13	3,043.29
40	20	45/50	-14	4,036.02
40	30	45/50	-15	5,761.09
50	5	55/50	-21	1,357.27
50	10	55/50	-22	2,350.00
50	15	55/50	-23	3,435.50
50	20	55/50	-24	4,551.93
50	30	55/50	-25	6,602.49
75	5	71/60	-31	2,799.18
75	10	71/60	-32	5,451.90
75	15	71/60	-33	6,838.44
75	20	71/60	-34	8,530.98
100	5	103/60	-41	5,131.29
100	10	103/60	-42	8,098.08
100	15	103/60	-43	10,882.62
100	20	103/60	-44	13,117.08



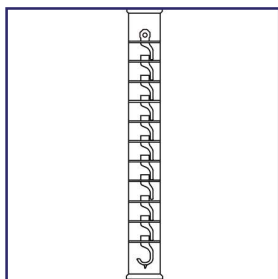


**PRG-7320
COLUMN, OLDER-
SHAW, VACUUM
JACKETED AND SIL-
VERED**

Vacuum jackets are strip silvered for side profile viewing. Uniform perforated plates allow even dispersment of distillate and condensate during operation. Connecting ends are standard tapered joints. Columns are fabricated per order and can be customized to suit your applications.

<u>Column I.D. mm</u>	<u>No. of Plates</u>	<u>Joint</u>	<u>CODE</u>	<u>Price</u>
28	5	29/42	-01	1,311.71
28	10	29/42	-02	2,091.24
28	15	29/42	-03	2,831.72
28	20	29/42	-04	3,415.98
28	30	29/42	-05	4,573.07
40	5	45/50	-11	1,928.51
40	10	45/50	-12	2,979.82
40	15	45/50	-13	3,824.47
40	20	45/50	-14	4,914.84
40	30	45/50	-15	5,513.72
50	5	55/50	-21	2,184.02
50	10	55/50	-22	3,775.63
50	15	55/50	-23	5,375.40
50	20	55/50	-24	6,851.49
50	30	55/50	-25	9,338.21
75	5	71/60	-31	3,472.93
75	10	71/60	-32	4,434.76
75	15	71/60	-33	7,925.58
75	20	71/60	-34	9,959.84
100	5	103/60	-41	5,713.91
100	10	103/60	-42	9,019.21
100	15	103/60	-43	12,116.21
100	20	103/60	-44	14,601.30

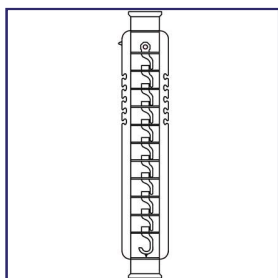




PRG-7322
COLUMN, OLDER-
SHAW, PERFORATED
PLATE, NON-JACK-
ETED WITH BEADED
PIPE CONNECTION

Columns are non-jacketed and have beaded pipe connections. Uniform perforated plates allow even dispersement of distillate and condensate during operation. Connecting ends are standard tapered joints. Columns are fabricated per order and can be customized to suit your applications. For pipe couplings see PRG-8022.

Column I.D. mm	No. of Plates	Pipe Fitting	CODE	Price
28	5	1.0"	-01	683.53
28	10	1.0"	-02	1,251.49
28	15	1.0"	-03	1,985.46
28	20	1.0"	-04	2,574.60
28	30	1.0"	-05	3,419.23
50	5	2.0"	-11	1,406.10
50	10	2.0"	-12	2,415.11
50	15	2.0"	-13	3,484.32
50	20	2.0"	-14	4,600.74
50	30	2.0"	-15	6,667.58
75	5	3.0"	-21	2,382.57
75	10	3.0"	-22	2,831.72
75	15	3.0"	-23	3,468.07
75	20	3.0"	-24	8,726.28
100	5	4.0"	-31	5,180.11
100	10	4.0"	-32	8,146.92
100	15	4.0"	-33	10,931.44
100	20	4.0"	-34	13,165.90

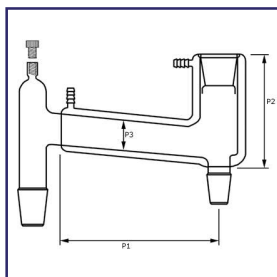


PRG-7324
COLUMN, OLDER-
SHAW, VACUUM
JACKETED AND SIL-
VERED WITH BEADED
PIPE CONNECTION

Vacuum jackets are strip silvered for side profile viewing. Uniform perforated plates allow even dispersement of distillate and condensate during operation. Columns are offered with beaded pipe connections. For pipe couplings see PRG-8022. Columns are fabricated per order and can be customized to suit your applications.

Column I.D. mm	No. of Plates	Pipe Fitting	CODE	Price
28	5	1.0"	-01	1,360.52
28	10	1.0"	-02	2,140.06
28	15	1.0"	-03	2,880.56
28	20	1.0"	-04	3,464.80
28	30	1.0"	-05	4,621.91
50	5	2.0"	-11	2,232.85
50	10	2.0"	-12	3,824.47
50	15	2.0"	-13	5,425.85
50	20	2.0"	-14	6,900.30
50	30	2.0"	-15	9,387.01
75	5	3.0"	-21	3,521.76
75	10	3.0"	-22	4,483.55
75	15	3.0"	-23	7,974.39
75	20	3.0"	-24	10,008.70
100	5	4.0"	-31	5,713.91
100	10	4.0"	-32	9,084.30
100	15	4.0"	-33	12,181.31
100	20	4.0"	-34	14,641.99

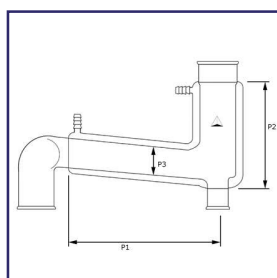




**PRG-7326
HEAD**

Head offers maximum condensing power and zero distillate return. The three tapered joints are the same size. Jacket ports are offered with fixed glass barbs or detachable poly barbs. Both options fit a 1/2" I.D. hose. Thermometer port has a #7 thread for 6-7mm compression.

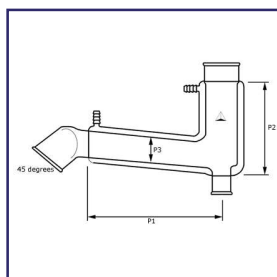
Joint Size	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
24/40	300	150	19	-01	664.00	-11	685.15
29/42	300	150	24	-02	696.53	-12	717.70
45/50	400	200	35	-03	774.65	-13	795.80



**PRG-7328
HEAD, PILOT PLANT**

Head offers maximum condensing power and zero distillate return. Offered with beaded pipe connections for greater durability and performance. The collection port (lower right) is a 1.0" pipe fitting for each model. Jacket ports are a fixed glass barb or a detachable poly barb with threaded bushing. Both options fit a 1/2" I.D. hose.

Beaded Pipe	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
1.0"	300	150	20	-01	686.76	-11	709.56
1.5"	300	150	35	-02	727.46	-12	747.00
2.0"	400	200	45	-03	797.45	-13	821.86
3.0"	400	200	65	-04	992.75	-14	1,022.02

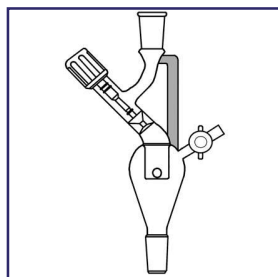


**PRG-7330
HEAD, MODIFIED
PILOT PLANT**

Head offers maximum condensing power and zero distillate return. The inlet beaded pipe connection is at 45° to fit with lids PRG-7050 and PRG-7055 minimizing head space and additional sweep elbow adapters. The collection port (lower right) is a 1.0" pipe fitting for each model. Jacket ports are a fixed glass barb or a detachable poly barb with threaded bushing. Both options fit a 1/2" I.D. hose.

Beaded Pipe	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
1.0"	300	150	20	-01	686.76	-11	709.56
1.5"	300	150	35	-02	727.46	-12	747.00
2.0"	400	200	45	-03	797.45	-13	821.86
3.0"	400	200	65	-04	992.75	-14	1,022.02

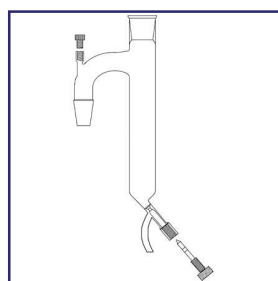




PRG-7332
ADAPTER, ISOLATION

Adapter is used with distillation heads PRG-7326, PRG-7328 & PRG-7330. It is positioned between the discharge port and the collection vessel. Operator can isolate the collection vessel and break vacuum without interrupting the distillation process. A 1/2" support rod is installed for added durability.

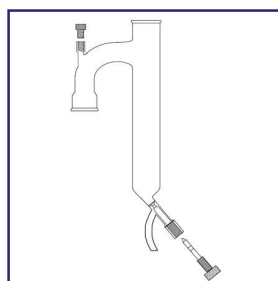
<u>Top Connection</u>	<u>Lower Joint Size</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
24/40	24/40	0-12	-01	318.79
29/42	29/42	0-12	-02	326.54
45/50	45/50	0-20	-03	520.11
1.0" b.p.	24/40	0-12	-11	330.11
1.0" b.p.	29/42	0-12	-12	339.05
1.0" b.p.	45/50	0-20	-13	529.07



Receivers are available with tapered joints or beaded pipe options. The lower drain valve has all Teflon® exposed components. Calibrations are for reference only. The #7 thread accepts 6-7mm O.D. thermometers.

Tapered Joint Connection

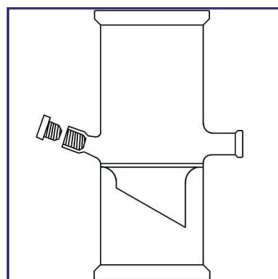
<u>Joint Size</u>	<u>Volume ml</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
24/40	250	0-6	-01	249.48
24/40	500	0-6	-02	265.63
29/42	250	0-6	-03	263.47
29/42	500	0-6	-04	274.97
45/50	500	0-12	-05	404.17
45/50	1,000	0-12	-06	428.32



Beaded Pipe Connection

<u>Beaded Pipe</u>	<u>Volume ml</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	250	0-6	-11	257.08
1.0"	500	0-6	-12	273.27
1.5"	250	0-6	-13	297.91
1.5"	500	0-6	-14	309.99
2.0"	500	0-6	-15	369.59
2.0"	1,000	0-12	-16	487.34
3.0"	1,000	0-12	-17	670.51
3.0"	2,000	0-12	-18	726.67

PRG-7334
**RECEIVER, MOIS-
TURE TEST**

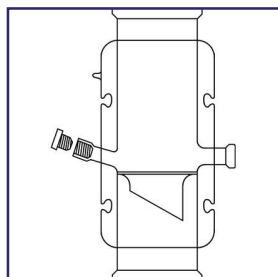


PRG-7340
**FEED COLUMN IN-
SERT**

Column is inserted between distillation columns to provide incremental or continuous center feed of materials. Beaded pipe fittings are offered as connecting ends. Other fittings are available upon request. The feed port is a 1.0" beaded pipe. #7 thread provides a 6-7mm compression fit.

<u>Beaded Pipe</u>	<u>Approx. Height mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	100	-01	611.90
1.5"	100	-02	624.95
2.0"	150	-03	637.97
3.0"	200	-04	685.15
4.0"	275	-05	760.01

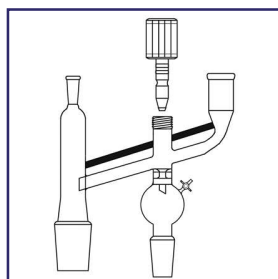




PRG-7342
FEED COLUMN IN-
SERT, VACUUM JACK-
ETED AND SILVERED

Column is inserted between distillation columns to provide incremental or continuous center feed of materials. Beaded pipe fittings are offered as connecting ends. Other fittings are available upon request. The feed port is a 1.0" beaded pipe. #7 thread provides a 6-7mm compression fit column jacket is strip silvered with side viewing and evacuated.

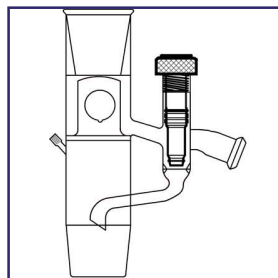
<u>Beaded Pipe</u>	<u>Approx. Height mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	150	-01	1,082.23
1.5"	150	-02	1,135.95
2.0"	200	-03	1,240.10
3.0"	300	-04	1,451.67
4.0"	300	-05	1,521.64



PRG-1091
REFLUX / DIVIDER
HEAD

Claisen style divider head has a manually controlled Teflon® piston valve. Equipped with a 10/30 thermometer joint.

<u>Joint Size</u>	<u>Valve Bore mm</u>	<u>CODE</u>	<u>Price</u>
24/40	0-12	-01	607.22
29/42	0-12	-02	637.04
45/50	0-20	-03	681.74



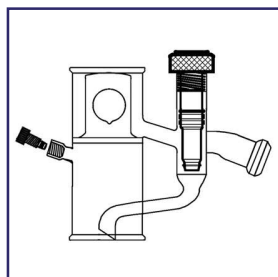
The head is positioned to allow the distillate to flow through the center chimney but the return condensate is diverted to the side valve. With the valve in an open position, condensate is refluxed back to the system. In a closed position, the condensate flows around the valve stem and out of the process. Offered with standard tapered joints or beaded pipe fittings. Other fittings are available upon request. #7 thread has a 6-7mm compression fit.

Tapered Joint Connection

<u>Joint Size</u>	<u>Valve ml</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
24/40	0-12	18/9 Ball	-01	424.75
29/42	0-12	18/9 Ball	-02	444.30
45/50	0-12	18/9 Ball	-03	567.95

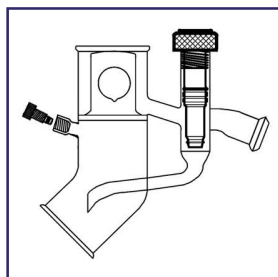
Beaded Pipe Connection

<u>Beaded Pipe</u>	<u>Valve ml</u>	<u>Discharge Port</u>	<u>CODE</u>	<u>Price</u>
1.0"	0-12	KF-15 Ball	-11	613.54
1.5"	0-12	KF-15 Ball	-12	628.19
2.0"	0-12	KF-15 Ball	-13	670.50
3.0"	0-20	KF-25 Ball	-14	917.88
4.0"	0-20	KF-25 Ball	-15	1,111.52



PRG-7348
REFLUX / DIVIDER
HEAD

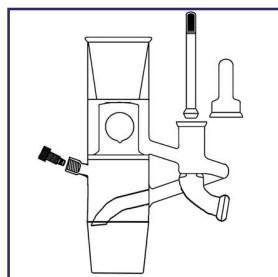




PRG-7352
REFLUX / DIVIDER
HEAD, 45° ANGLE

Head is angled at 45° to fit directly onto the reactor lid without the use of a sweep elbow. Distillate flows through the center chimney but the return condensate is diverted to a valve. The valve in an open position allows the fluid to return back to the system. With the valve in a closed position, the fluid flows around the valve stem and exits the system. #7 thread has a 6-7mm compression fit.

Beaded Pipe	Valve Bore mm	Discharge Port	CODE	Price
1.0"	0-12	KF-15 Ball	-01	725.83
1.5"	0-12	KF-15 Ball	-02	751.88
2.0"	0-12	KF-15 Ball	-03	867.41
3.0"	0-20	KF-25 Ball	-04	961.81
4.0"	0-20	KF-25 Ball	-05	1,262.89



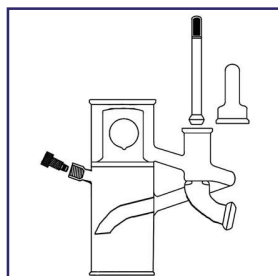
The distillation head uses a magnetic plunger valve and is activated by an electro-magnetic solenoid coil. With a reflux timer the plunger is activated automatically and with consistent repeatability. The apparatus is offered with standard tapered joints or beaded pipe connections. The #7 internal thread accepts a 6-7 mm diameter thermometer.

Tapered Joint Connection

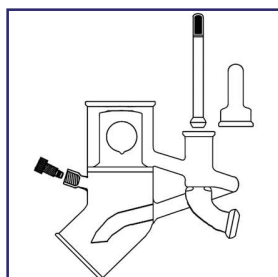
Joint Size	Discharge Port	CODE	Price
24/40	18/9 Ball	-01	CALL
29/42	18/9 Ball	-02	CALL
45/50	18/9 Ball	-03	CALL

Beaded Pipe Connection

Beaded Pipe	Discharge Port	CODE	Price
1.0"	KF-15 Ball	-11	CALL
1.5"	KF-15 Ball	-12	CALL
2.0"	KF-15 Ball	-13	1,351.87
3.0"	KF-25 Ball	-14	1,642.49
4.0"	KF-25 Ball	-15	CALL



PRG-7354
REFLUX / DIVIDER
HEAD



PRG-7358
REFLUX / DIVIDER
HEAD, AUTOMATIC

Distillation head uses a magnetic plunger valve and is activated with an electro-magnetic coil (solenoid) and reflux timer. With a reflux timer the plunger valve is activated automatically with consistent repeatability. The lower beaded pipe connection is angle at 45° to couple directly to PRG-7050 and PRG-7055 lids. This eliminates the need for a sweep elbow adapter coupling and reduces overall height. The #7 internal thread accepts a 6-7 mm diameter thermometer.

Beaded Pipe	Discharge Port	CODE	Price
1.0"	KF-15 Ball	-01	CALL
1.5"	KF-15 Ball	-02	CALL
2.0"	KF-15 Ball	-03	CALL
3.0"	KF-25 Ball	-14	CALL
4.0"	KF-25 Ball	-15	CALL





Coil has a .500" I.D. through hole and 115 volt. Used with PRG-7362 timer.

<u>CODE</u>	<u>Price</u>
-01	CALL
-02	222.55

PRG-7360
ELECTRO-MAGNET
COIL

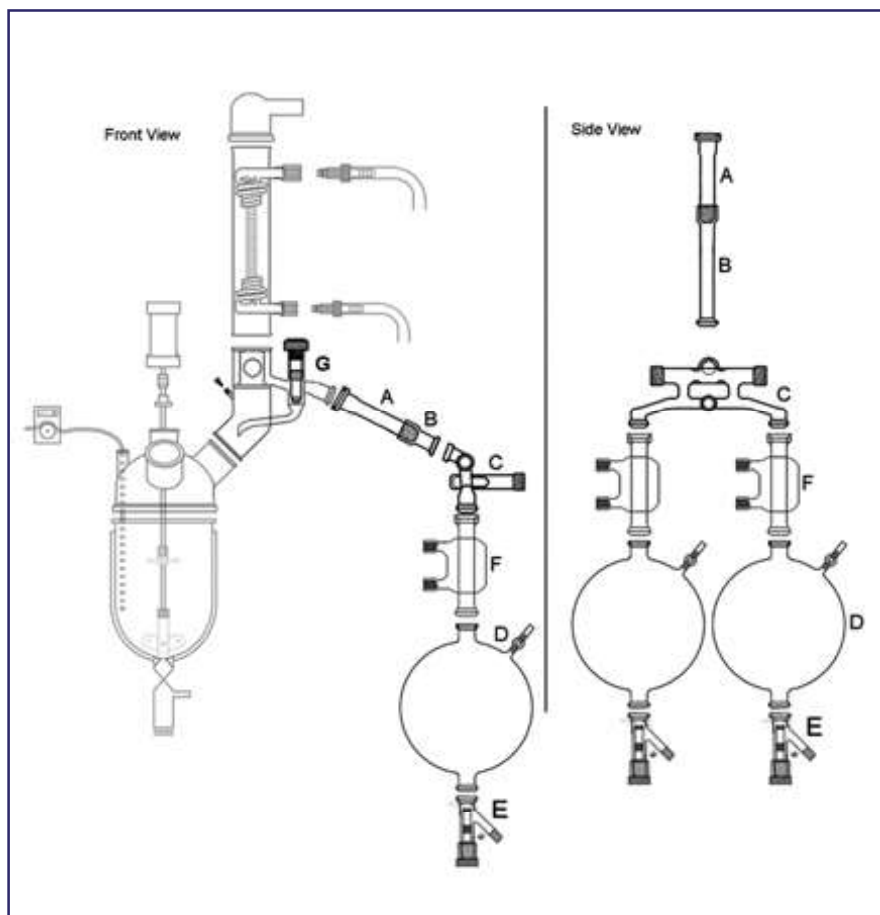


This dual-function timer has two independent memories. Program one to control "On Time", the other to control "Off Time". Use one memory alone for a single cycle switching timer, or use both in tandem for a recycle intervalometer. Time settings entered in memory will remain until another time is substituted. Set time cycle or interval pattern to repeat automatically. LED display has a floating decimal point and two brightness settings. Accuracy is 0.015%. Timer can switch resistive loads up to 120W as well as most inductive loads. Maximum motor loads is 1/3hp. Parallel AC and logic-level outputs let you integrate the timer into your application system. Timer switches AC power through an output jack. The On/Off status of the output parallels that of the AC outlet.

PRG-7362
TIMER, INTERVALOM-
ETER

<u>CODE</u>	<u>Price</u>
-01	842.40



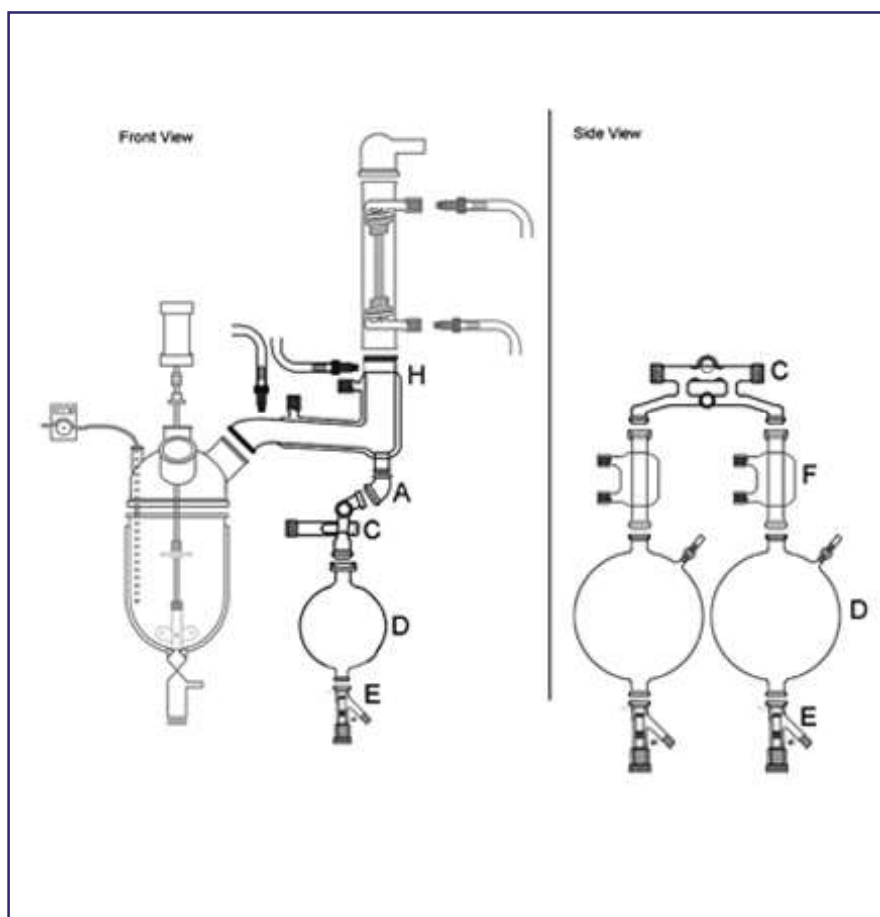


**PRG-2438
DISTILLATION SYSTEM**

Distillation / Reflux System easily mounts onto the PRG-7500 Reaction Platform Stand. The splitter head can isolate the condensate and divert it into dual reservoir flask or it can reflux it back to the reaction vessel.

Item	Part #	Description	Price	Complete Price
A	PRG-2438-11	Part "A" Socket to 1.0" O.D. Tube	219.08	CALL
B	PRG-2438-11	Part "B" KF-25 Ball to #25 Thread	219.08	
C	PRG-2438-13	Diverting Manifold 3-0-20 Valves	1,332.86	
D	PRG-2438-16	12 Liter Reservoir Flasks KF-25 Socket Top, 6mm TFE Vent KF-25 Ball Drain	507.76	
E	PRG-2438-16B	Drain Valve - KF-25 Socket 0-12 Valve GL Thread	192.03	
F	PRG-2438-14	Condenser, Liebig - 150mm OVL #15 Water Ports - KF-25 B/S	224.59	
	PRG-2438-18	KF-25 Couplings with TFE Seal Gasket	47.70	
	PRG-2438-25	Side Mount Support Structure (Not Shown)	1,982.13	
G	PRG-2438-10	Liquid Divider Head	812.24	
	PRG-366-11	0-12 TFE Valve Stems (Replacement)	54.50	
	PRG-366-13	0-20 TFE Valve Stems (Replacement)	230.37	
	PRG-310-13	6mm TFE Stopcock Plug	26.39	



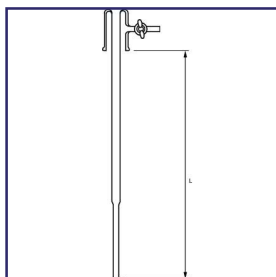


**PRG-2440
DISTILLATION SYSTEM**

Liquid Divider System easily mounts to the side of the PRG-7500 Reactor Support Platform. It has a zero return back to the reactor and collects the condensate in dual reservoirs. Each reservoir can be isolated and drain without interruption to the process.

Item	Part #	Description	Price	Complete Price
A	PRG-2440-21	1.0" Beaded Pipe to KF-Ball #25	104.02	CALL
B	PRG-2438-11	Part "B" KF-25 Ball to #25 Thread	219.08	
C	PRG-2438-13	Diverting Manifold 3-0-20 Valves	1,332.86	
D	PRG-2438-16	12 Liter Reservoir Flasks KF-25 Socket Top, 6mm TFE Vent KF-25 Ball Drain	507.76	
E	PRG-2438-16B	Drain Valve - KF-25 Socket 0-12 Valve GL Thread	192.03	
F	PRG-2438-14	Condenser, Liebig - 150mm OVL #15 Water Ports - KF-25 B/S	224.59	
	PRG-2438-18	KF-25 Couplings with TFE Seal Gasket	47.70	
	PRG-2438-25	Side Mount Support Structure (Not Shown)	1,982.13	
G	PRG-2438-10	Liquid Divider Head	812.24	
	PRG-366-11	0-12 TFE Valve Stems (Replacement)	54.50	
	PRG-366-13	0-20 TFE Valve Stems (Replacement)	230.37	
	PRG-310-13	6mm TFE Stopcock Plug	15.74	
H	PRG-7330-03	Distillation Head, 0-return	797.45	

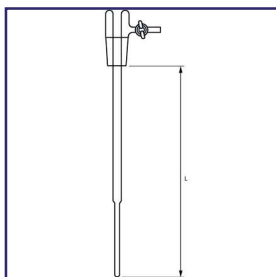




PRG-7100
THERMOMETER IM-
MERSION WELL

Immersion well attaches to the vessel lid by use of a 1.5" or 2.0" beaded pipe connection. It will accept up to a 3/8" (9.5mm) diameter probe. Probe is fully encapsulated and isolated from contamination. 4mm Teflon® stopcock can be used for exhaust or gas introduction. Please specify "L" as the immersion length desired. Other types of connections (conical flanges) are available upon request.

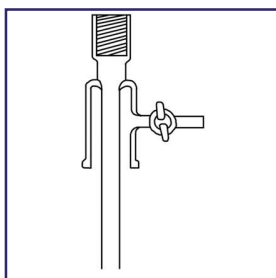
<u>CODE + "L"</u>	<u>Price</u>
PRG-7100-L	240.85



PRG-7102
THERMOMETER IM-
MERSION WELL

Immersion well is offered with 29/42 or 45/50 standard taper joint. Probe is fully encapsulated and isolated from contamination. 4mm Teflon® stopcock can be used for exhaust or gas introduction. Please specify "L" as the immersion length desired when ordering.

<u>Joint Size</u>	<u>CODE + "L"</u>	<u>Price</u>
29/42	PRG-7102-01-L	226.21
45/50	PRG-7102-02-L	235.99

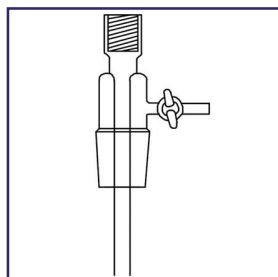


PRG-7105
ADAPTER, THERMO-
COUPLE

Internal thread compression fits to thermometers, probes and various tube diameters. Offered with a 1.5" or 2.0" beaded pipe connection. Conical connections are offered upon request. 4mm Teflon® stopcock can be used for exhaust or gas introduction. Supplied with Nylon bushing and Viton® O-Ring.

<u>Accepts Tube O.D. mm</u>	<u>Thread Size</u>	<u>CODE</u>	<u>Price</u>
6-7	#7	-01	214.81
9-10.5	#11	-02	219.70
12.5-14	#15	-03	226.21
16-17	#18	-04	231.10

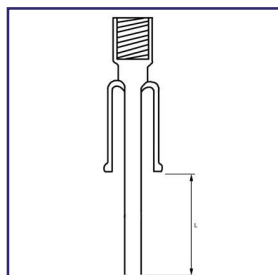




PRG-7107
**ADAPTER, THERMO-
COUPLE, TAPERED
JOINT**

Internal thread compression fits to thermometers, probes and various tube diameters. Offered with a 29/42 or 45/50 tapered joint. 4mm Teflon® stopcock can be used for exhaust or gas introduction. Supplied with Nylon bushing and Viton® O-Ring.

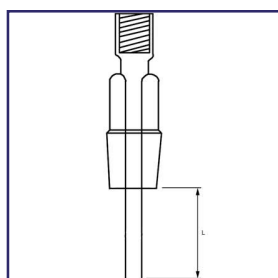
<u>Accepts Tube O.D. mm</u>	<u>Thread Size</u>	<u>CODE</u>	<u>Price</u>
6-7	#7	-01	208.30
9-10.5	#11	-02	214.81
12.5-14	#15	-03	219.70
16-17	#18	-04	226.21
6-7	#7	-11	221.35
9-10.5	#11	-12	232.72
12.5-14	#15	-13	242.48
16-17	#18	-14	248.99



PRG-7110
DIP TUBE

Internal thread compression fits to thermometers, probes, and various tube diameters. Adapter couples to reactor lid by way of a 1.5" or 2.0" beaded pipe connection. Conical fittings are available upon request. Please specify "L" in inches as the immersion length desired. Supplied with a Nylon bushing and Viton® O-Ring.

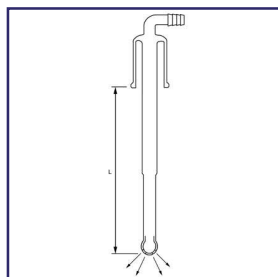
<u>Accepts Tube O.D. mm</u>	<u>Thread Size</u>	<u>CODE + "L"</u>	<u>Price</u>
6-7	#7	-01-L	174.14
9-10.5	#11	-02-L	183.90
12.5-14	#15	-03-L	198.55
16-17	#18	-04-L	208.30



PRG-7115
DIP TUBE

Internal thread compression fits to various tube diameters. Offered with a 29/42 or 45/50 tapered joint. Please specify "L" in inches as the immersion length desired. Supplied with a Nylon bushing and Viton® O-Ring.

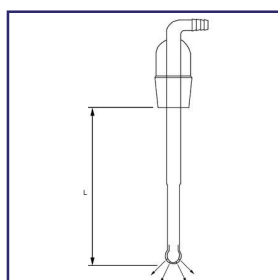
<u>Accepts Tube O.D. mm</u>	<u>Thread Size</u>	<u>Joint Size</u>	<u>CODE + "L"</u>	<u>Price</u>
6-7	#7	29/42	-01-L	164.38
9-10.5	#11	29/42	-02-L	172.50
12.5-14	#15	29/42	-03-L	177.39
16-17	#18	29/42	-04-L	185.53
6-7	#7	45/50	-11-L	175.77
9-10.5	#11	45/50	-12-L	183.90
12.5-14	#15	45/50	-13-L	188.78
16-17	#18	45/50	-14-L	198.55



PRG-7120
SPARGE TUBE, BULB

Sparger is designed to introduce gases or liquids beneath the reaction surface. 1mm holes on the bottom half of the bulb give even disperement through the mixing cycle. Immersion stem is a heavy wall pipe to ensure stability. A 1.5" or 2.0" beaded pipe is used to couple to reaction vessel. Conical fittings are available upon request. Please specify "L" in inches as to the desired length. Hose barb measures 14mm at middle serration.

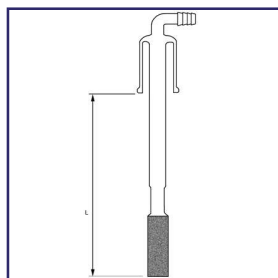
<u>CODE + "L"</u>	<u>Price</u>
-01-L	284.79



PRG-7125
SPARGE TUBE, BULB,
TAPER JOINT

Sparger is designed to introduce gases or liquids beneath the reaction surface. 1mm holes on the bottom half of the bulb give even disperement through the mixing cycle. Immersion stem is a heavy wall pipe to ensure stability. Please specify "L" in inches as to the desired length. Hose barb measures 14mm at middle serration.

<u>Joint Size</u>	<u>CODE + "L"</u>	<u>Price</u>
29/42	-01-L	262.01
45/50	-02-L	291.31

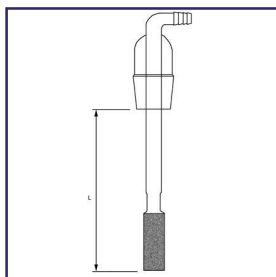


PRG-7130
SPARGE TUBE,
FRITTED, BEADED
PIPE

Sparger is designed to introduce gases or liquids beneath the reaction surface. A coarse frit (40-60 micron) gives even dispersion during the mixing cycle. Frit measures 1.0" diameter and 3.0" long. Immersion stem is a heavy wall pipe to ensure stability. A 1.5" or 2.0" beaded pipe is used to couple to reaction vessel. Conical fittings are available upon request. Please specify "L" in Inches as to the desired length. Hose barb measures 14mm at middle serration.

Frit Size 1.0" diameter x 3.0" long
Porosity Coarse, 40/60 micron

<u>CODE + "L"</u>	<u>Price</u>
-L	286.41

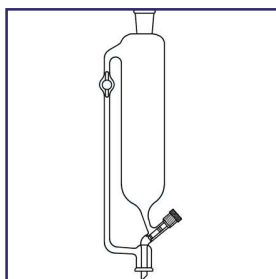


PRG-7135
SPARGE TUBE,
FRICTED, TAPER
JOINT

Immersion stem is a heavy wall pipe to ensure stability. A 1.5" or 2.0" beaded pipe is used to couple to reaction vessel. Conical fittings are available upon request. Please specify "L" in inches as to the desired length. Hose barb measures 14mm at middle serration. Please specify "L" in inches as to the desired length.

Frit Size 1.0" diameter x 3.0" long
Porosity Coarse, 40/60 micron

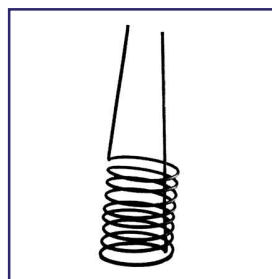
<u>Joint Size</u>	<u>CODE + "L"</u>	<u>Price</u>
29/42	-01-L	271.77
45/50	-02-L	284.79



PRG-7140
FUNNEL, ADDITION,
THREADED TEFLON®
VALVE

Funnel has large 0-12mm metering valve and 6mm Teflon® stopcock equalizing arm. Lower connection is 1.5" beaded pipe and 45/50 upper joint. Calibration marks are for reference only.

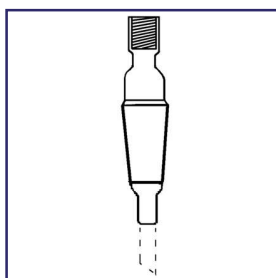
<u>Capacity ml</u>	<u>CODE</u>	<u>Price</u>
1,000	-01	345.02
2,000	-02	416.62
3,000	-03	501.26
5,000	-04	690.04



PRG-7150
COIL, COOLING /
HEATING

Coils are fabricated from 1/2" diameter copper and encapsulated in a heavy wall PTFE material. Coils will pass through a 200mm flanged vessel.

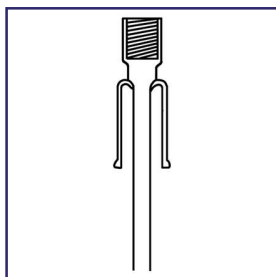
<u>Reactor Capacity L</u>	<u>CODE</u>	<u>Price</u>
20	-01	1,422.38
30	-02	1,672.42
50	-03	1,682.77
75	-04	1,871.55
100	-05	2,180.76



PRG-7155
ADAPTER, FOR
COOLING / HEATING,
COIL

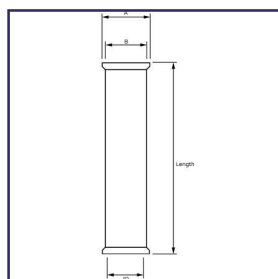
The coil adapter has a internal #15 thread with a compression O-Ring to connect to the 1/2" diameter coil. A variety of joint sizes and beaded pipe fittings are offered to suit your needs. Other sizes are available upon request.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	54.36
29/42	-02	61.45
34/45	-03	65.01
45/50	-04	68.56



<u>Beaded Pipe</u>	<u>CODE</u>	<u>Price</u>
3/4"	-11	57.79
1.0"	-12	64.94
1.5"	-13	68.57
2.0"	-14	77.12





**PRG-8000
BEADED PIPE**

Custom lengths not shown can be made upon request. Call for a quote.

<u>1/2" I.D.</u>	<u>A=3/4"</u>	<u>B=57/64"</u>	<u>3/4" I.D.</u>	<u>A=1"</u>	<u>B=1 5/32"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
3"	-01	31.24	3"	-14	44.02
4"	-02	31.24	4"	-15	44.02
6"	-03	33.34	6"	-16	44.02
12"	-04	36.91	12"	-17	45.29
18"	-05	39.57	18"	-18	49.82
24"	-06	42.12	24"	-19	53.29
30"	-07	44.02	30"	-20	56.19
36"	-08	46.99	36"	-21	59.10
48"	-09	52.21	48"	-22	65.61
60"	-10	57.41	60"	-23	70.95
72"	-11	61.75	72"	-24	77.04
84"	-12	66.55	84"	-25	83.30
96"	-13	72.11	96"	-26	89.25

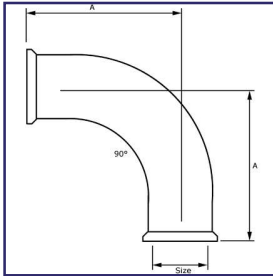
<u>1" I.D.</u>	<u>A=1 5/16"</u>	<u>B=1 17/32"</u>	<u>1 1/2" I.D.</u>	<u>A=1 27/32"</u>	<u>B=2 1/16"</u>	<u>2" I.D.</u>	<u>A=2 5/16"</u>	<u>B=2 9/16"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
3"	-27	58.45	4"	-43	80.05	4"	-57	105.18
4"	-28	58.45	6"	-44	80.05	6"	-58	105.18
6"	-29	58.45	12"	-45	85.38	12"	-59	114.86
12"	-30	61.86	18"	-46	90.99	18"	-60	123.93
18"	-31	66.33	24"	-47	97.10	24"	-61	132.68
24"	-32	72.11	30"	-48	108.67	30"	-62	142.14
30"	-33	77.66	36"	-49	109.29	36"	-63	145.98
36"	-34	83.16	48"	-50	115.14	48"	-64	159.93
48"	-35	92.39	60"	-51	123.41	60"	-65	167.36
60"	-36	104.11	72"	-52	148.35	72"	-66	202.11
72"	-37	115.27	84"	-53	171.94	84"	-67	235.94
84"	-39	126.12	96"	-54	196.45	96"	-68	270.57
96"	-40	134.65	108"	-55	222.16	108"	-69	302.98
108"	-41	143.00	120"	-56	246.43	120"	-70	166.41
120"	-42	158.82						

<u>3" I.D.</u>	<u>A=3 7/16"</u>	<u>B=3 11/16"</u>	<u>4" I.D.</u>	<u>A=4 9/16"</u>	<u>B=4 7/8"</u>	<u>6" I.D.</u>	<u>A=6 5/8"</u>	<u>B=7 1/8"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
4"	-71	166.41	6"	-85	301.75	6"	-98	492.52
6"	-72	174.99	12"	-86	313.97	12"	-99	519.71
12"	-73	182.98	18"	-87	327.34	18"	-100	546.74
18"	-74	182.98	24"	-88	341.33	24"	-101	634.60
24"	-75	190.66	30"	-89	353.38	30"	-102	664.95
30"	-76	199.02	36"	-90	366.40	36"	-103	833.50
36"	-77	206.89	48"	-91	378.54	48"	-104	869.51
48"	-78	210.52	60"	-92	390.45	60"	-105	1,011.57
60"	-79	224.57	72"	-93	468.97	72"	-106	1,163.12
72"	-80	269.40	84"	-94	546.89	84"	-107	1,267.32
84"	-81	314.72	96"	-95	625.04	96"	-108	1,452.97
96"	-82	358.76	108"	-96	703.22	108"	-109	1,636.72
108"	-83	402.92	120"	-97	755.53	120"	-110	1,740.93
120"	-84	448.46						

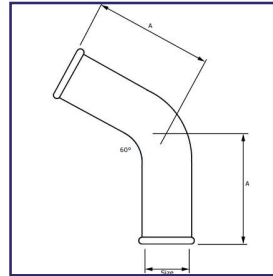


PRG-8002 SWEEP ELBOW

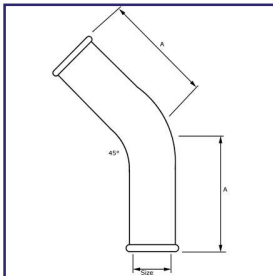
Beaded Pipe, Sweep Elbow



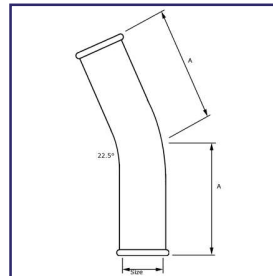
90°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-01	51.03
3/4"	2 1/2"	-02	60.12
1"	2 3/4"	-03	79.55
1 1/2"	5"	-04	83.78
2"	6"	-05	95.78
3"	7"	-06	177.26
4"	10"	-07	299.83
6"	12"	-08	780.16



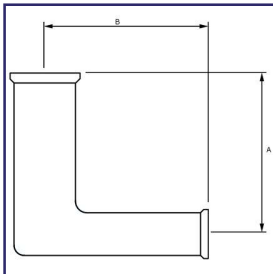
60°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-10	51.03
3/4"	2 1/2"	-11	60.12
1"	2 3/4"	-12	81.48
1 1/2"	5"	-13	83.78
2"	6"	-14	112.46
3"	7"	-15	177.26
4"	10"	-16	299.83
6"	12"	-17	780.16



45°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-20	51.03
3/4"	2 1/2"	-21	60.12
1"	2 3/4"	-22	79.55
1 1/2"	5"	-23	83.78
2"	6"	-24	112.46
3"	7"	-25	177.26
4"	10"	-26	299.83
6"	12"	-27	780.16



22.5°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-30	51.03
3/4"	2 1/2"	-31	60.12
1"	2 3/4"	-32	81.48
1 1/2"	5"	-33	83.78
2"	6"	-34	112.46
3"	7"	-35	177.26
4"	10"	-36	299.83
6"	12"	-37	780.16

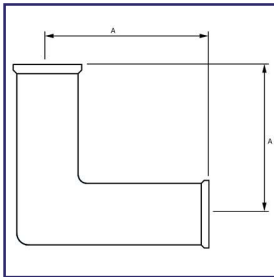


Beaded Pipe, Reducer Elbow

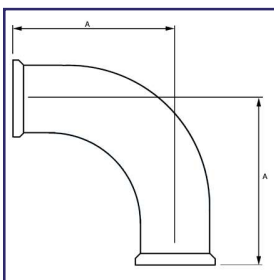
Dimensions	A=Length	B=Distance	CODE	Price
3/4" x 1/2"	2 1/2"	2 1/2"	-01	93.36
1" x 1/2"	2 3/4"	2 3/4"	-02	111.70
1" x 3/4"	2 3/4"	2 3/4"	-03	119.89
1 1/2" x 1/2"	3 1/2"	3"	-04	119.89
1 1/2" x 3/4"	3 1/2"	3"	-05	119.89
1 1/2" x 1"	3 1/2"	3"	-06	119.89
2" x 1/2"	4"	3"	-07	152.14
2" x 3/4"	4"	3"	-08	152.14
2" x 1"	4"	3"	-09	152.14
2" x 1 1/2"	4"	3 1/2"	-10	152.14
3" x 1"	4"	3 1/2"	-11	246.00
3" x 1 1/2"	5"	4"	-12	246.00
3" x 2"	5"	4 1/2"	-13	246.00
4" x 1"	7"	4"	-14	445.79
4" x 1 1/2"	7"	4 1/2"	-15	445.79
4" x 2"	7"	5"	-16	445.79
4" x 3"	7"	5 1/2"	-17	445.79
6" x 1 1/2"	9"	5 1/2"	-18	879.85
6" x 2"	9"	6"	-19	879.85
6" x 3"	9"	6 1/2"	-20	879.85
6" x 4"	9"	8"	-21	879.85

PRG-8004 REDUCER ELBOW

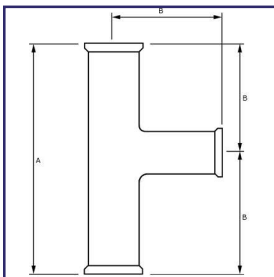



Beaded Pipe, 90° Mitered Elbow

<u>Dimensions</u>	<u>A=Length</u>	<u>CODE</u>	<u>Price</u>
1 1/2 = 90°	3 1/2"	-01	116.16
2 = 90°	4"	-02	141.26
3 = 90°	5"	-03	213.70
4 = 90°	7"	-04	407.22
6 = 90°	9"	-05	768.77

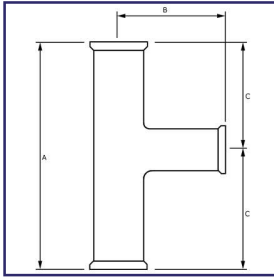
PRG-8006
90° MITERED ELBOW

Beaded Pipe, 90° Short Radius Elbow

<u>Dimensions</u>	<u>A=Length</u>	<u>CODE</u>	<u>Price</u>
1 1/2 = 90°	3 1/2"	-01	85.63
2 = 90°	4"	-02	110.66
3 = 90°	5"	-03	191.00
4 = 90°	7"	-04	341.33

PRG-8008
90° SHORT RADIUS
ELBOW

Beaded Pipe, Straight "T"

<u>Dimensions</u>	<u>A=Length</u>	<u>B=Distance</u>	<u>CODE</u>	<u>Price</u>
1/2"	4 1/2"	2 1/4"	-01	86.85
3/4"	5"	2 1/2"	-02	86.85
1"	5 1/2"	2 3/4"	-03	96.68
1 1/2"	7"	3 1/2"	-04	142.14
2"	8"	4"	-05	168.65
3"	10"	5"	-06	205.55
4"	14"	7"	-07	416.31
6"	18"	9"	-08	726.98

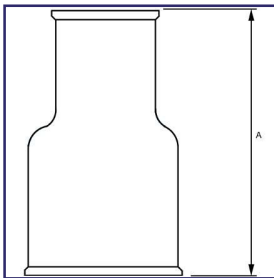
PRG-8010
STRAIGHT "T"



Beaded Pipe, Reducing "T" (Branch)

**PRG-8012
REDUCING "T"
(BRANCH)**

Run x Branch	A	B	C	CODE	Price
3/4 x 1/2	5"	2 1/2"	2 1/2"	-01	86.85
1 x 1/2	5 1/2"	2 3/4"	2 3/4"	-02	106.77
1 x 3/4	5 1/2"	2 3/4"	2 3/4"	-03	106.77
1 1/2 x 1/2	7"	3"	3 1/2"	-04	142.14
1 1/2 x 3/4	7"	3"	3 1/2"	-05	142.14
1 1/2 x 1	7"	3"	3 1/2"	-06	142.14
2 x 1/2	8"	3"	4"	-07	171.89
2 x 3/4	8"	3"	4"	-08	171.89
2 x 1	8"	3"	4"	-09	171.89
2 x 1 1/2	8"	3 1/2"	4"	-10	171.89
3 x 1	10"	3 1/2"	5"	-11	213.31
3 x 1 1/2	10"	4"	5"	-12	213.31
3 x 2	10"	4 1/2"	5"	-13	213.31
4 x 1	14"	4"	7"	-14	441.69
4 x 1 1/2	14"	4 1/2"	7"	-15	441.69
4 x 2	14"	5"	7"	-16	441.69
4 x 3	14"	5 1/2"	7"	-17	441.69
6 x 1 1/2	18"	5 1/2"	9"	-18	854.38
6 x 2	18"	6"	9"	-19	854.38
6 x 3	18"	6 1/2"	9"	-20	854.38
6 x 4	18"	8"	9"	-21	854.38

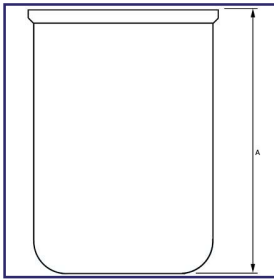


Beaded Pipe, Reducer, Straight

**PRG-8014
REDUCER, STRAIGHT**

Size	A	CODE	Price
3/4 x 1/2	4"	-01	51.12
1 x 1/2	4"	-02	53.54
1 x 3/4	4"	-03	53.54
1 1/2 x 1/2	4"	-04	64.50
1 1/2 x 3/4	4"	-05	64.50
1 1/2 x 1	4"	-06	64.50
2 x 1/2	4"	-07	79.79
2 x 3/4	4"	-08	79.79
2 x 1	4"	-09	79.79
2 x 1 1/2	4"	-10	79.79
3 x 1	5"	-11	115.12
3 x 1 1/2	5"	-12	115.12
3 x 2	5"	-13	115.12
4 x 1	7"	-14	165.47
4 x 1 1/2	7"	-15	176.08
4 x 2	7"	-16	208.23
4 x 3	7"	-17	250.68
6 x 1	9"	-18	457.84
6 x 1 1/2	9"	-19	486.44
6 x 2	9"	-20	457.84
6 x 3	9"	-21	520.10
6 x 4	9"	-22	536.10

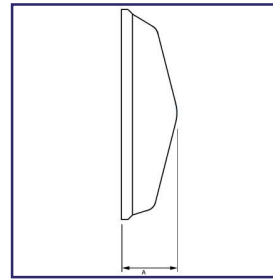




PRG-8016
END CAP

Beaded Pipe, End Cap

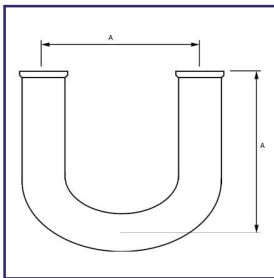
Size	A	CODE	Price
1/2"	2"	-01	28.29
3/4"	2"	-02	30.02
1"	2"	-03	50.28
1 1/2"	3"	-04	62.42
2"	4"	-05	73.93
3"	4 3/4"	-06	114.52
4"	6"	-07	212.89
6"	7"	-08	248.69



PRG-8018
END PLUG

Beaded Pipe, End Plug

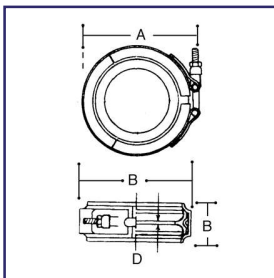
Size	A	CODE	Price
1 1/2"	7/8"	-01	30.53
2"	1"	-02	34.93
3"	1 1/8"	-03	46.86
4"	1 1/4"	-04	95.39
6"	1 1/2"	-05	130.75



PRG-8020
"U" BEND, AN-
NEALED

Beaded Pipe, "U" Bend, Annealed

Size	A	CODE	Price
1/2"	2 1/4"	-01	76.64
3/4"	2 1/2"	-02	90.71
1"	5 1/2"	-03	140.72
1 1/2"	7"	-04	201.87
2"	7"	-05	270.40
3"	9"	-06	422.93
4"	12"	-07	785.01

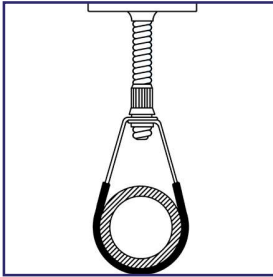


PRG-8022
COUPLINGS, BEAD
TO BEAD

Coupling assemblies consist of a .300 series stainless steel outer band with T-Bolt and hex nut; Viton liner and TFE seal ring. Designed for temperature service up to 450°F.

Size	A	B	C	D	Max Torque	CODE	Price
1/2"	1 5/8"	1 3/8"	7/8"	3/16"	20	-01	CALL
3/4"	1 3/4"	1 1/2"	7/8"	3/16"	25	-02	92.99
1"	2 5/8"	1 7/8"	1"	3/16"	35	-03	97.52
1 1/2"	3"	2 5/8"	1 5/16"	3/16"	50	-04	125.65
2"	3 1/2"	3 1/8"	1 5/16"	3/16"	60	-05	150.03
3"	4 3/4"	4 1/4"	1 7/16"	3/16"	75	-06	285.05
4"	6"	5 1/2"	1 1/2"	3/16"	80	-07	330.06
6"	8 3/4"	8"	1 3/4"	1/4"	90	-08	483.84

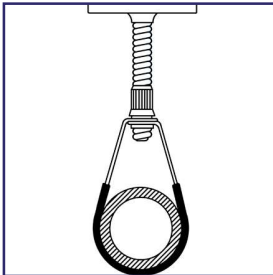




PRG-8024
PADDED PIPE
HANGER, WITH
MOUNTING FOOT

To prevent glass to metal contact, all hangers are zinc coated with a factory applied sleeve.
Use one hanger every 8 to 10 feet.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
1" (25 mm)	-01	17.61
2" (50 mm)	-02	19.22
3" (76 mm)	-03	38.64

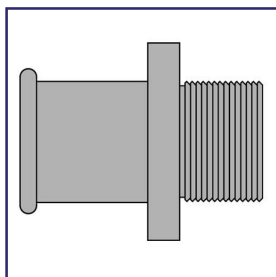


PRG-8026
PADDED PIPE
HANGER, WITHOUT
MOUNTING FOOT

To prevent glass to metal contact, all hangers are zinc coated with a factory applied sleeve.
Use one hanger every 8 to 10 feet.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
1/2"	-01	4.98
3/4"	-02	4.98
1"	-03	5.50
1 1/2"	-04	6.61
2"	-05	7.89
3"	-06	12.77
4"	-07	21.89
6"	-08	43.94

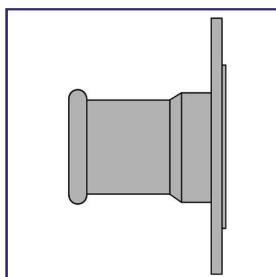




Both beaded pipe and thread are the same nominal size. Other sizes are available upon request.

<u>Beaded Pipe x M-NPT</u>	<u>CODE</u>	<u>Price</u>
1.0"	-01	194.82
1.5"	-02	205.00
2.0"	-03	215.95
3.0"	-04	250.38
4.0"	-05	355.23

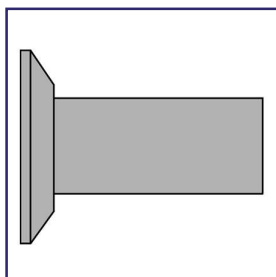
PRG-8027
BEADED PIPE TO
MALE NPT THREAD
(316 S.S.)



Beaded Pipe to ANSI Flange (316 Stainless Steel)

<u>Size</u>	<u>Bolt Circle</u>	<u>Hole Diameter</u>	<u>CODE</u>	<u>Price</u>
1.0"	3 1/8"	5/8"	-01	247.25
1.5"	3 7/8"	5/8"	-02	253.49
2.0"	4 3/4"	3/4"	-03	320.80
3.0"	6.0"	3/4"	-04	388.08
4.0"	7 1/2"	3/4"	-05	514.84
6.0"	9 1/2"	7/8"	-06	594.64

PRG-8028
BEADED PIPE TO
ANSI FLANGE (316
S.S.)

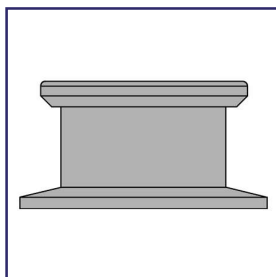


Adapters are ideal for transitioning from glass pipe fitting to compression fittings. Most commonly used to connect circulator ports to transfer lines. Tube stud end can easily be shortened with a common pipe cutter.

<u>B.P.</u>	<u>1/2" O.D.</u>		<u>3/4" O.D.</u>		<u>1.0" O.D.</u>	
<u>Size</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
1.0"	-01	112.67	-11	120.50	-21	126.75
1.5"	-02	126.75	-12	137.70	-22	145.53
2.0"	-03	147.10	-13	162.74	-23	172.14
3.0"	-04	231.59	-14	247.25	-24	264.45

PRG-8030
BEADED PIPE TO
TUBE STUD (316 S.S.)

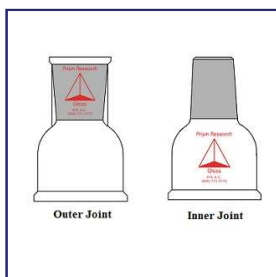




This adapter mates glass pipe fittings to either NW fitting for vacuum use or a Sanitary fitting for fluid transfer. Both beaded pipe and NW / Sanitary fittings are the same nominal size.

B.P. Size	NW-Fitting CODE	Price	Sanitary Fitting CODE	Price
1.0"	-01	205.00	-11	205.00
1.5"	-02	240.99	-12	240.99
2.0"	-03	295.76	-13	295.76
3.0"	-04	320.80	-14	320.80

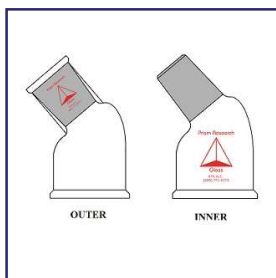
PRG-8032
BEADED PIPE TO NW
OR SANITARY FIT-
TING (316 S.S.)



Adapter, Tapered Joint To Beaded Pipe, Straight

B.P. Size	Joint Type	₹ 24/40		₹ 29/42		₹ 45/50	
		CODE	Price	CODE	Price	CODE	Price
1.0"	Outer	-01	65.58	-02	68.92	-03	71.52
1.5"	Outer	-04	70.81	-05	73.18	-06	77.50
2.0"	Outer	-07	76.01	-08	80.34	-09	83.81
3.0"	Outer	-10	104.02	-11	104.93	-12	111.11
1.0"	Inner	-21	61.86	-22	68.55	-23	69.93
1.5"	Inner	-24	66.92	-25	70.33	-26	74.23
2.0"	Inner	-27	71.77	-28	76.37	-29	97.10
3.0"	Inner	-30	97.10	-31	99.78	-32	109.02

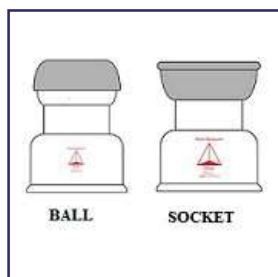
PRG-8042
TAPERED JOINT TO
BEADED PIPE,
STRAIGHT



Adapter, Tapered Joint To Beaded Pipe, 45° Angle

B.P. Size	Joint Type	₹ 24/40		₹ 29/42		₹ 45/50	
		CODE	Price	CODE	Price	CODE	Price
1.0"	Outer	-01	92.39	-02	97.01	-03	110.87
1.5"	Outer	-04	99.19	-05	105.82	-06	117.89
2.0"	Outer	-07	105.89	-08	111.18	-09	125.65
3.0"	Outer	-10	112.33	-11	118.91	-12	92.99
1.0"	Inner	-21	89.12	-22	93.59	-23	107.23
1.5"	Inner	-24	95.54	-25	101.50	-26	114.45
2.0"	Inner	-27	100.08	-28	106.63	-29	118.49
3.0"	Inner	-30	107.16	-31	116.11	-32	130.93

PRG-8044
TAPERED JOINT TO
BEADED PIPE, 45°
ANGLE



PRG-8046
SPHERICAL JOINT TO
BEADED PIPE,
STRAIGHT

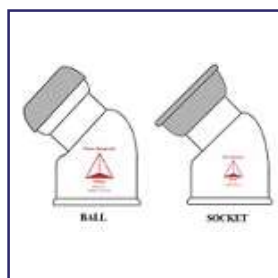
Adapter, Tapered Joint To Beaded Pipe, Straight

Socket Joint

B.P. Size	ø 28/15		ø 35/25		ø 50/30		ø 65/40		ø 75/50		ø 102/75	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-01	48.42	-02	53.51	-05	92.26	-12	124.29	-13	144.27	-14	152.00
1.5"	-03	52.33	-04	58.64	-08	97.54	-15	130.26	-16	146.72	-17	161.55
2.0"	-06	62.53	-07	61.25	-11	113.12	-18	134.05	-19	155.89	-20	186.23
3.0"	-09	86.43	-10	89.20			-21	145.61	-22	190.75	-23	214.01
4.0"												

Ball Joint

B.P. Size	ø 28/15		ø 35/25		ø 50/30		ø 65/40		ø 75/50		ø 102/75	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-41	53.42	-42	57.37	-43	95.54						
1.5"	-44	58.80	-45	61.25	-46	103.19	-53	127.73	-54	147.69	-55	166.18
2.0"	-47	67.29	-48	65.22	-49	110.28	-56	134.29	-57	155.21	-58	173.68
3.0"	-50	92.39	-51	91.06	-52	117.44	-59	141.21	-60	162.96	-61	196.71
4.0"							-62	155.00	-63	195.24	-64	224.61



PRG-8048
SPHERICAL JOINT TO
BEADED PIPE, 45°
ANGLE

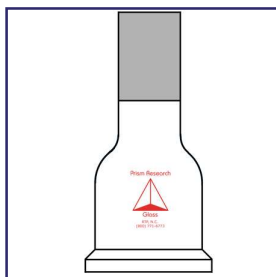
Adapter, Tapered Joint To Beaded Pipe, 45° Angle

Socket Joint

B.P. Size	ø 28/15		ø 35/25		ø 50/30		ø 65/40		ø 75/50		ø 102/75	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-01	48.42	-02	53.51	-05	92.26	-12	124.29	-13	144.27	-14	152.00
1.5"	-03	52.33	-04	58.64	-08	97.54	-15	130.26	-16	146.72	-17	161.55
2.0"	-06	62.53	-07	61.25	-11	113.12	-18	134.05	-19	155.89	-20	186.23
3.0"	-09	86.43	-10	89.20			-21	145.61	-22	190.75	-23	214.01
4.0"												

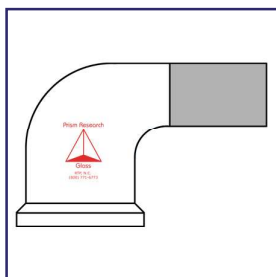
Ball Joint

B.P. Size	ø 28/15		ø 35/25		ø 50/30		ø 65/40		ø 75/50		ø 102/75	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-41	53.42	-42	57.37	-43	95.54						
1.5"	-44	58.80	-45	61.25	-46	103.19	-53	127.73	-54	147.69	-55	166.18
2.0"	-47	67.29	-48	65.22	-49	110.28	-56	134.29	-57	155.21	-58	173.68
3.0"	-50	92.39	-51	91.06	-52	117.44	-59	141.21	-60	162.96	-61	196.71
4.0"							-62	155.00	-63	195.24	-64	224.61

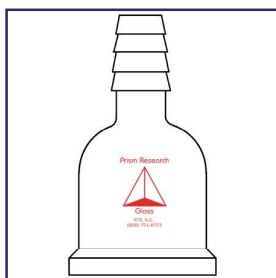


Transitions from a beaded pipe fitting to a heavy wall tube stud. Tube stud ends are nominal standard O.D. sizes to mate with compression fittings. Ends are etched for increased frictional grip. Offered straight or at 90°.

Pipe Fitting I.D.	Tube Size O.D.	Straight		90° Bend	
		CODE	Price	CODE	Price
1/2"	1/2"	-01	CALL	-11	CALL
1/2"	5/8"	-02	CALL	-12	CALL
1/2"	3/4"	-03	CALL	-13	CALL
1.0"	3/4"	-04	60.27	-14	66.76
1.0"	1.0"	-05	60.27	-15	66.76
1.5"	3/4"	-06	88.21	-16	93.15
1.5"	1.0"	-07	88.21	-17	93.15
1.5"	1.25"	-08	91.93	-18	93.77
2.0"	3/4"	-09	102.48	-19	107.16
2.0"	1.0"	-10	102.48	-20	107.16
2.0"	1.25"	-31	102.48	-21	111.70
3.0"	3/4"	-32	114.96	-22	120.29
3.0"	1.0"	-33	114.96	-23	120.29
3.0"	1.25"	-34	114.96	-24	126.32

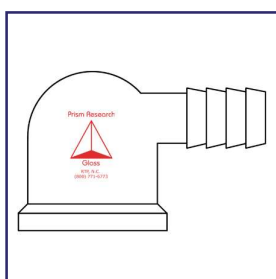


PRG-7451
ADAPTER, BEADED
PIPE TO TUBE STUD



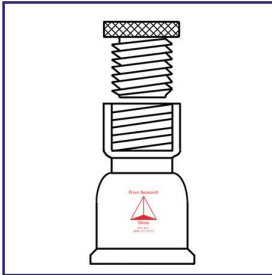
Transition from a beaded pipe connection to a serrated hose barb. The barb diameter measured are the middle serration is either 14mm (5 – serrations) or 24mm (7 – serrations).

Pipe Fitting I.D.	Barb Diameter	Number of Serrations	Straight		90° Bend	
			CODE	Price	CODE	Price
1/2"	14 mm	5	-01	CALL	-11	CALL
1/2"	24 mm	7	-02	CALL	-12	CALL
1.0"	14 mm	5	-03	60.27	-13	66.76
1.0"	24 mm	7	-04	60.27	-14	66.76
1.5"	14 mm	5	-05	88.21	-15	93.15
1.5"	24 mm	7	-06	88.21	-16	93.15
2.0"	14 mm	5	-07	102.48	-17	107.16
2.0"	24 mm	7	-08	102.48	-18	107.16
3.0"	14 mm	5	-09	114.96	-19	120.29
3.0"	24 mm	7	-10	114.96	-20	131.36



PRG-7453
ADAPTER, BEADED
PIPE TO HOSE BARB

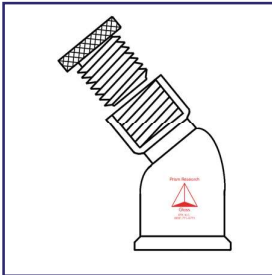




Adapter, Internal Thread To Beaded Pipe

Straight

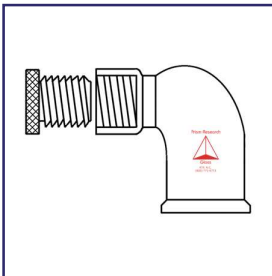
B.P.	#7		#11		#15		#18	
Size	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-01	CALL	-02	53.51	-03	61.10	-04	92.26
1.5"	-05	52.33	-06	58.64	-07	65.28	-08	92.56
2.0"	-09	62.53	-10	61.25	-11	72.67	-12	97.54
3.0"	-13	86.43	-14	89.20	-15	96.71	-16	113.21



B.P.	#25		#36		#50		#80	
Size	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-17	94.05	-18	98.96	-19	116.85		
1.5"	-20	97.24	-21	105.96	-22	121.68	-23	229.51
2.0"	-24	103.42	-25	110.87	-26	130.32	-27	247.26
3.0"	-28	108.65	-29	115.65	-30	142.77	-31	255.44
4.0"	-32	133.39	-33	141.29	-34	162.30	-35	306.11
6.0"	-36	142.34	-37	163.79	-38	201.80	-39	351.57

45°

B.P.	#7		#11		#15		#18	
Size	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-40	52.02	-41	56.77	-42	68.43	-43	92.56
1.5"	-44	56.77	-45	63.36	-46	71.90	-47	98.13
2.0"	-48	65.94	-49	68.26	-50	79.64	-51	101.94
3.0"	-52	91.50	-53	92.56	-54	104.50	-55	120.71



B.P.	#25		#36		#50	
Size	CODE	Price	CODE	Price	CODE	Price
1.5"	-56	102.76	-57	105.96	-58	140.09
2.0"	-59	105.67	-60	111.54	-61	151.20
3.0"	-62	111.70	-63	117.89	-64	171.54
4.0"	-65	137.12	-66	146.72	-67	221.91

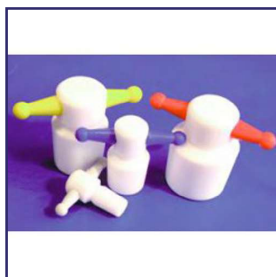
90°

PRG-8044-I INTERNAL THREAD TO BEADED PIPE

B.P.	#7		#11		#15		#18	
Size	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-68	52.02	-69	56.77	-70	68.43	-71	92.56
1.5"	-72	56.77	-73	63.36	-74	71.90	-75	98.13
2.0"	-76	65.94	-77	68.26	-78	79.64	-79	101.94
3.0"	-80	91.50	-81	92.56	-82	104.50	-83	120.71

B.P.	#25		#36		#50	
Size	CODE	Price	CODE	Price	CODE	Price
1.0"	-84	110.28				
1.5"	-85	113.41	-86	119.09		
2.0"	-87	122.59	-88	125.42	-89	151.20
3.0"	-90	126.53	-91	132.20	-92	171.54
4.0"	-93	137.12	-94	146.72	-95	221.91





CW-010.4
COWIE®, PTFE JOINT-
WARE, FLASK
STOPPERS

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Size</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
8	Grey	CW-010.4.08	7.36
9	Black	CW-010.4.09	7.36
13	Orange	CW-010.4.13	8.95
16	White	CW-010.4.16	10.56
19	Blue	CW-010.4.19	12.48
22	Green	CW-010.4.22	19.05
27	Yellow	CW-010.4.27	21.28
32	Red	CW-010.4.32	39.42
38	Black	CW-010.4.38	49.82



CW-010.11
COWIE®, PTFE JOINT-
WARE, SELF RELEAS-
ING STOPPERS

Self Releasing Stoppers fit standard taper ground glass joints, with sealing rings and self releasing ring for ease of removal.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum

<u>Joint Size</u>	<u>Height mm</u>	<u>CODE</u>	<u>Price</u>
19/38	62	CW-010.1119	29.88
24/40	65	CW-010.1124	38.89
34/45	70	CW-010.1134	49.29
45/50	75	CW-010.1145	86.87


CW-PC704
**COWIE®, PTFE JOINT-
WARE, STANDARD
TAPER COMPRES-
SION FITTINGS**

Compression Fittings fit standard taper ground glass joints to hold items such as temperature probes and sampling tubes securely in place.

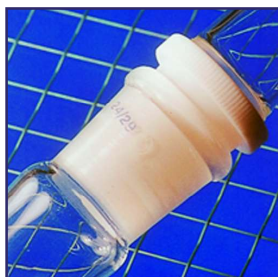
Compression fittings are manufactured from pure PTFE with a PEEK olive to give a secure grip.

PTFE Plugs are available to seal compression fittings without removing the fitting.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

Joint Size	Bore	CODE	Price	Joint Size	Bore	CODE	Price
19/38	1/8"	CW-PC704.1938.125	55.32	34/45	1/2"	CW-PC704.3445.500	89.85
19/38	1/4"	CW-PC704.1938.250	56.65	34/45	9/16"	CW-PC704.3445.560	90.17
19/38	5/16"	CW-PC704.1938.312	56.65	34/45	5/8"	CW-PC704.3445.625	95.63
19/38	1/2"	CW-PC704.1938.500	59.46	34/45	3/4"	CW-PC704.3445.750	92.63
				34/45	1"	CW-PC704.3445.1000	108.05
19/38	3 mm	CW-PC704.1938.03	55.32	34/45	12 mm	CW-PC704.3445.12	89.85
19/38	6 mm	CW-PC704.1938.06	56.65	34/45	14 mm	CW-PC704.3445.14	90.17
19/38	8 mm	CW-PC704.1938.08	56.65	34/45	16 mm	CW-PC704.3445.16	95.63
19/38	12 mm	CW-PC704.1938.12	59.46	34/45	19 mm	CW-PC704.3445.19	92.63
				34/45	25 mm	CW-PC704.3445.25	108.05
24/40	1/4"	CW-PC704.2440.250	64.00				
24/40	5/16"	CW-PC704.2440.312	64.00				
24/40	1/2"	CW-PC704.2440.500	66.81	45/50	1/2"	CW-PC704.4550.500	128.08
24/40	9/16"	CW-PC704.2440.560	67.11	45/50	9/16"	CW-PC704.4550.560	128.42
24/40	5/8"	CW-PC704.2440.625	72.53	45/50	5/8"	CW-PC704.4550.625	133.83
				45/50	3/4"	CW-PC704.4550.750	130.86
24/40	6 mm	CW-PC704.2440.06	64.00	45/50	1"	CW-PC704.4550.1000	141.25
24/40	8 mm	CW-PC704.2440.08	64.00				
24/40	12 mm	CW-PC704.2440.12	66.81	45/50	12 mm	CW-PC704.4550.12	128.08
24/40	14 mm	CW-PC704.2440.14	67.11	45/50	14 mm	CW-PC704.4550.14	128.42
24/40	16 mm	CW-PC704.2440.16	72.53	45/50	16 mm	CW-PC704.4550.16	133.83
				45/50	19 mm	CW-PC704.4550.19	130.86
29/42	1/2"	CW-PC704.2942.500	81.81	45/50	25 mm	CW-PC704.4550.25	141.25
29/42	9/16"	CW-PC704.2942.560	82.13				
29/42	5/8"	CW-PC704.2942.625	87.60				
29/42	3/4"	CW-PC704.2942.750	84.60				
29/42	12 mm	CW-PC704.2942.12	81.81				
29/42	14 mm	CW-PC704.2942.14	82.13				
29/42	16 mm	CW-PC704.2942.16	87.60				
29/42	19 mm	CW-PC704.2942.19	84.60				



CW-020
**COWIE®, PTFE JOINT-
WARE, RIGID JOINT
SLEEVES**

Rigid Sleeves are grease-free, high vacuum seals for standard taper ground glass joints, with substantial shoulder for ease of handling and repeated use. High vacuum performance (leakage rate is less than 1×10^{-4} torr, litre, sec.⁻¹) is attained using transverse sealing rings. Wall thickness of rigid sleeves is 0.5mm.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	CW-020.110	9.44
14/20	CW-020.114.1	10.00
19/22	CW-020.119.1	12.06
24/40	CW-020.124	15.51
29/42	CW-020.129	21.02
34/45	CW-020.134	23.45
45/50	CW-020.145	40.05
55/50	CW-020.155	47.65



CW-030
**COWIE®, PTFE JOINT-
WARE, JOINT
CLAMPS**

Safe • Reliable • Long Life • Exceptional Value

Joint Clamps are unaffected by all chemical reagents. Totally encapsulated steel spring maintains strength to 280°C. Adjust simply by compression-extension by hand.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Joint Size</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
10/-	No Color	CW-030.010.1	5.81
10/-	Green	CW-030.010.1.SG	7.25
12/-	No Color	CW-030.012.1	6.09
12/-	Purple	CW-030.012.1.SP	7.60
14/-	No Color	CW-030.014.1	6.63
14/-	Yellow	CW-030.014.1.SY	8.26
19/-	No Color	CW-030.019.1	6.89
19/-	Blue	CW-030.019.1.SB	8.58
24/-	No Color	CW-030.024.1	7.14
24/-	Green	CW-030.024.1.SG	8.91
29/-	No Color	CW-030.029.1	7.58
29/-	Red	CW-030.029.1.SR	9.44
34/-	No Color	CW-030.034.1	8.10
34/-	Orange	CW-030.034.1.SO	10.08
40/-	No Color	CW-030.040.1	8.54
40/-	Yellow	CW-030.040.1.SY	10.64
45/-	No Color	CW-030.045.1	9.32
45/-	Brown	CW-030.045.1.SB	11.61



PRG-5400
HEMISPHERICAL, "O"
SERIES

The "O" Series hemispherical mantles cover and heat only the bottom half of flask. Supplied with a separable 4 foot 2-wire cord with locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Capacity	Wattage	CODE	Price
50 ml	60	-01	164.43
100 ml	80	-02	182.57
250 ml	180	-03	201.85
500 ml	270	-04	225.67
1,000 ml	380	-05	252.88
2,000 ml	500	-06	276.70
3,000 ml	500	-07	307.31
5,000 ml	600	-08	374.22
12,000 ml	2-650	-09	759.78



PRG-5401
HEATING / INSULAT-
ING TOPS

These tops either insulate or heat and are designed for use with Series M, TM, or STM mantles. They prevent vapor condensation in the upper half of a flask during distillation of high-boiling materials. All 115-volt tops are CSA certified. Electrical connection consists of separable 4 ft., 2-wire cord and locking connector. Accommodates up to a 3-neck flask.

Description	Flask Capacity	Flask Diameter	Heating Top Wattage	CODE	Price
Insulating	250 ml	83 mm	140	-01	197.32
Insulating	300 ml	86 mm	140	-02	197.32
Insulating	500 ml	101 mm	140	-03	213.19
Insulating	1,000 ml	137 mm	140	-04	238.14
Insulating	2,000 ml	170 mm	200	-05	254.02
Insulating	3,000 ml	183 mm	200	-06	228.78
Insulating	5,000 ml	220 mm	300	-07	349.27
Insulating	12,000 ml	293 mm	590	-08	535.25
Insulating	22,000 ml	347 mm	650	-09	607.82
Insulating	50,000 ml	456 mm	1,000	-10	983.18
Insulating	72,000 ml	522 mm	1,000	-11	1,149.88
Heating-115v	250 ml	83 mm	140	-21	224.53
Heating-115v	300 ml	86 mm	140	-22	263.09
Heating-115v	500 ml	101 mm	140	-23	277.83
Heating-115v	1,000 ml	137 mm	140	-24	309.58
Heating-115v	2,000 ml	170 mm	200	-25	320.92
Heating-115v	3,000 ml	183 mm	200	-26	353.81
Heating-115v	5,000 ml	220 mm	300	-27	447.93
Heating-115v	12,000 ml	293 mm	590	-28	747.31
Heating-115v	22,000 ml	347 mm	650	-29	806.27
Heating-115v	50,000 ml	456 mm	1,000	-30	1,251.94
Heating-230v	250 ml	83 mm	140	-40	277.83
Heating-230v	300 ml	86 mm	140	-41	277.83
Heating-230v	500 ml	101 mm	140	-42	285.77
Heating-230v	1,000 ml	137 mm	140	-43	342.47
Heating-230v	2,000 ml	170 mm	200	-44	343.60
Heating-230v	3,000 ml	183 mm	200	-45	369.68
Heating-230v	5,000 ml	220 mm	300	-46	460.40
Heating-230v	12,000 ml	293 mm	590	-47	763.18
Heating-230v	22,000 ml	347 mm	650	-48	823.28
Heating-230v	50,000 ml	456 mm	1,000	-49	1,270.08
Heating-230v	72,000 ml	522 mm	1,000	-50	1,443.58





PRG-5402
SPHERICAL, "O"
SERIES

The "O" Series mantles cover 1, 2, and 3-neck flasks completely with a 2 zone power supply to prevent heat loss. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Flask Capacity</u>	<u>Top Wattage</u>	<u>Bottom Wattage</u>	<u>CODE</u>	<u>Price</u>
50 ml	None	60	-01	344.74
100 ml	None	80	-02	348.14
250 ml	None	180	-03	358.34
500 ml	None	270	-04	410.51
1,000 ml	140	380	-05	687.20
2,000 ml	200	500	-06	718.96
3,000 ml	200	500	-07	755.24
5,000 ml	300	600	-08	896.99
12,000 ml	590	2-650	-09	1,620.49



PRG-5404
TRIPOD SUPPORT,
"O" SERIES

Floor model tripod support. For "O" Series heating mantle. Aluminum basket straps and mounting holes for leg support included.

<u>Flask Capacity</u>	<u>Height</u>	<u>CODE</u>	<u>Price</u>
5,000 ml	12"	-01	235.87
12,000 ml	14"	-02	242.68



PRG-5406
EXTENSION SUP-
PORT, "O" SERIES

Support series for "O" Series mantle 50 ml - 500 ml. Attaches to lab rack or table top stands. Extension rod is 3/8".

<u>Flask Capacity</u>	<u>I.D.</u>	<u>CODE</u>	<u>Price</u>
50 ml	3 3/4"	-01	78.75
100-200 ml	4 7/8"	-02	80.85
250-300 ml	5 1/2"	-03	80.85
500 ml	5 7/8"	-04	82.95
1,000 ml	7 1/4"	-05	90.30
2,000 ml	8 3/4"	-06	95.55
3,000 ml	9 3/8"	-07	98.70
5,000 ml	11 7/8"	-08	102.90





PRG-5408
SPHERICAL, "TM"
SERIES

"TM" Series mantles with bottom half of flask providing heat source. Mantles are supplied with detachable 4 foot, 3-wire cord and locking connectorm except for 50 and 72 liter flask size, which have terminal boxes. All 115 volt items are CSA certified, except CODES 01-04. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Wattage	Voltage	CODE	Price
50 ml	60	115	-01	249.48
100 ml	80	115	-02	249.48
125 ml	80	115	-03	249.48
200 ml	100	115	-04	249.48
250 ml	180	115	-05	255.15
300 ml	180	115	-06	273.29
500 ml	270	115	-07	293.71
1,000 ml	380	115	-08	312.98
2,000 ml	500	115	-09	326.59
3,000 ml	500	115	-10	388.96
5,000 ml	600	115	-11	481.95
12,000 ml	2-650	115	-12	901.53
22,000 ml	2-770	115	-13	1,038.74
50,000 ml	3-1,000	115	-14	1,646.57
50,000 ml	3-1,000	230	-15	1,661.31
72,000 ml	2-2,000	230	-16	1,876.77



PRG-5410
STIR COMBO, WITH
CONTROLLER

Similar to heating mantle PRG-5408, with the addition of an electromagnetic stirring system capable of 50-750 RPM. Please note heating and stirring require separate controllers as a complete system. Complete set supplied with mantle, stir controller, connection wire and Teflon® stir bar. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Complete		Mantle Only	
	CODE	Price	CODE	Price
250 ml	-01	616.68	-11	CALL
500 ml	-02	635.04	-12	CALL
1,000 ml	-03	664.2	-13	CALL
2,000 ml	-04	1,397.52	-14	CALL
3,000 ml	-05	1,409.40	-15	CALL
5,000 ml	-06	1,508.76	-16	CALL



PRG-5412
SPHERICAL, "M"
SERIES

"M" Series mantles are similar to the "TM" Series except the outer aluminum housing is spherical, making it more compact. See PRG-5414 and PRG-5416 for mantle supports. Supplied with 4 foot, 3-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Wattage	Voltage	CODE	Price
50 ml	60	115	-01	284.63
100 ml	80	115	-02	284.63
125 ml	80	115	-03	284.63
250 ml	180	115	-04	268.65
500 ml	270	115	-05	296.70
1,000 ml	380	115	-06	321.79
2,000 ml	500	115	-07	343.95
3,000 ml	500	115	-08	416.27
5,000 ml	600	115	-09	501.89
12,000 ml	2-650	115	-10	922.59
22,000 ml	2-770	115	-11	1,048.05
50,000 ml	3-1,000	115	-12	1,653.26
72,000 ml	2-2,000	230	-13	1,845.16



PRG-5414
SERIES "M" TRIPOD
SUPPORT

Tripod supports for "M" Series mantles. Available in both bench or floor models.

<u>Flask Size</u>	<u>Bench Height</u>	<u>CODE</u>	<u>Price</u>	<u>Floor Height</u>	<u>CODE</u>	<u>Price</u>
3,000 ml	14"	-01	110.71	—	—	—
5,000 ml	14"	-02	115.15	—	—	—
12,000 ml	14"	-03	146.13	24-36"	-13	410.37
22,000 ml	14"	-04	191.91	24-36"	-14	432.49
50,000 ml	16"	-05	191.91	24-36"	-15	516.65
72,000 ml	18"	-06	243.56	24-36"	-16	531.40



PRG-5416
SERIES "M" EXTEN-
SION SUPPORT

Support for "M" Series mantles 50-5,000 ml. Attaches to lab racks or table top stands.

<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
50-200 ml	-01	78.23
250-500 ml	-02	84.15
1,000 ml	-03	87.10
2,000-3,000 ml	-04	92.99
5,000 ml	-05	95.95



PRG-5418
BEAKER, GRIFFIN,
"O" SERIES

The flexible "O" Series mantle for Griffin beakers will heat even small volumes of liquid because heat is evenly concentrated at the bottom of the mantle. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Beaker Capacity</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
50 ml	40	-01	221.42
100 ml	100	-02	236.18
150 ml	100	-03	240.60
250 ml	140	-04	245.04
400 ml	240	-05	255.38
600 ml	325	-06	289.32
800 ml	350	-07	296.70
1,000 ml	430	-08	333.61
2,000 ml	550	-09	352.79
3,000 ml	630	-10	364.60
4,000 ml	710	-11	392.66





PRG-5420
BEAKER, GRIFFIN,
"TM" SERIES

"TM" Series mantles are similar to PRG-5418, except with an aluminum housing. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Beaker Capacity</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
600 ml	325	-01	274.56
800 ml	350	-02	278.99
1,000 ml	430	-03	289.32
2,000 ml	550	-04	326.22
3,000 ml	630	-05	349.85
4,000 ml	710	-06	367.56



PRG-5422
REACTION KETTLE,
"O" SERIES

The "O" Series mantle for resin reaction flasks. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Kettle Capacity</u>	<u>I.D.</u>	<u>Depth</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
500 ml	3 3/4"	4 1/2"	270	-01	354.27
1,000 ml	4 1/4"	5 1/4"	335	-02	367.56
2,000 ml	5 1/2"	6"	470	-03	382.32
3,000 ml	5 1/2"	9"	550	-04	407.41
4,000 ml	5 1/2"	11"	750	-05	417.73



PRG-5424
REACTION KETTLE,
"TM" SERIES

The "TM" Series mantle is similar to PRG-5422 "O" Series, except "TM" has an aluminum housing and 4 foot, 3-wire cord for a ground. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Kettle Capacity</u>	<u>I.D.</u>	<u>Depth</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
500 ml	3 3/4"	4 1/2"	270	-01	330.66
1,000 ml	4 1/4"	5 1/4"	335	-02	345.40
2,000 ml	5 1/2"	6"	470	-03	354.27
3,000 ml	5 1/2"	9"	550	-04	398.56
4,000 ml	5 1/2"	11"	750	-05	433.98





**PRG-5449
THERMOCOUPLES
"J"**

Thermocouples "J" type for use with PRG-5430 digital thermometers. All supplied with plugs.

For Liquid Immersion

24 gauge iron-constantan, 1/8" O.D. 6" long stainless steel probe. 48" long fiberglass insulated duplex lead with stainless steel over-braid.

Temperature Range	CODE	Price
0-370° C	-01	95.95

24 gauge iron-constantan, 1/8" O.D. 6" Teflon® coated stainless steel probe. 48" long Teflon® insulated duplex lead.

0-260° C	-02	154.99
----------	-----	--------

Not For Liquid Immersion

20 gauge iron-constantan, 72" long, fiberglass-insulated duplex lead wire with welded tip.

Temperature Range	CODE	Price
0-480° C	-03	51.66

24 gauge iron-constantan, 36" long, fiberglass-insulated duplex lead wire with welded tip.

0-480° C	-04	39.85
----------	-----	-------



**PRG-5430
DIGITAL THERMO-
METER**

Handheld microprocessor thermometer is battery operated with a 4-digit, 1/2" LCD display. Reads temperature in Celsius with display changes to Fahrenheit. Range is -190 to 1000° C (-310 to 1832° F). Power source is a 9 volt battery (included) with a life of 200 hours. "J" thermocouple is PRG-5449.

Description	CODE	Price
PR-1000	-01	376.40



**PRG-5432
TEMPERATURE CON-
TROL, POWRTROL**

Solid state Powrtrol provides precision manual control of heating tapes and mantles. Output range is adjustable from 0-100% of rated voltage with controller linear from 2-100%. ON/OFF switch is lighted and is supplied with 10 amp circuit breaker and 3-wire cord.

Number	Volts	Amps	Case Dimensions	CODE	Price
PL-120	120	10	4 x 4 x 3 3/8" H	-01	206.66
PL-124	240	10	4 x 4 x 3 3/8" H	-02	324.75





PRG-5434
TEMPERATURE CON-
TROLLER,
POWRTWIN

Similar to PRG-5432, except handles two separate circuits at one time. Often convenient for 2 circuit heating mantles. Not available with 240 volt.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>Case Dimensions</u>	<u>CODE</u>	<u>Price</u>
PL-1202	120	7	8 x 6 x 3 3/8" H	-01	324.75



PRG-5436
TEMPERATURE CON-
TROL,
MINITROL

Controller is manually adjusted for heating operation. Minitrol has only a percentage timer design without a sensing element. Operating voltage load is from 5.5%-100%. For use with heating mantles and tapes. Electrical 3-wire cord supplied.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>CODE</u>	<u>Price</u>
PL-312	120	12	-01	215.46
PL-324	240	10	-02	243.56



PRG-5438
TEMPERATURE CON-
TROL,
MINITWIN

Similar to PRG-5436, except with a separate dual control. Convenient for mantles with two circuits. Not available in 240 volt. Electrical 3-wire cord supplied.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>CODE</u>	<u>Price</u>
PL-312	120	12	-01	309.99





PRG-5440
TEMPERATURE CON-
TROL, AUTOMATIC,
DIGITROL II

Digitrol uses a 1/16 DIN microprocessor base control. May be used with mantles, heating tapes, small ovens and other load resistive elements. Digitrol accuracy is 0.1% with a range of 32-999° F (0-750° C). Control is furnished with an immersion iron - constantan J thermocouple and a lighted ON/OFF switch. Electrical 3-wire cord supplied.

Number	Volts	Amps	CODE	Price
PL-612	120	15	-01	937.33
PL-624	240	10	-02	1,070.20



PRG-5444
TEMPERATURE CON-
TROL, MANTLE
MINDER II

An automatic time positioning control for heating mantles, cords and tapes. Control dial calibrated in °F/°C. Furnished with a immersion-iron constant and thermocouple for accuracy of 1.5% of full scale. Range is 0-1000° F. Electrical 3-wire cord supplied.

Number	Volts	Amps	CODE	Price
PL-512	120	10	-01	627.35
PL-524	240	5	-02	686.39



PRG-5950
LOW PROFILE CON-
TROLS

The low profile temperature controls feature a format with 1, 2, or 3 load receptacles. Control uses one thermocouple to operate all load receptacles simultaneously. easy set-up and simple input commands make this control very "user friendly". These controls are single-loop, auto-tuning temperature controllers that automatically set PID control parameters for optimum system performance. For use with heating mantles, tapes, ovens, water baths or other processes requiring accurate control.

Electrical Rating	Number	Temperature Range	Load Receptacles	Thermocouple	CODE	Price
15@120V, 1800W	PLSM112	0-750° C	1	Type J	-01	866.46
15@120V, 1800W	PLSM112K	-200-1250° C	1	Type K	-02	866.46
15@120V, 1800W	PLSM112T	-200-350° C	1	Type T	-03	866.46
15@120V, 1800W	PLSM212	0-750° C	2	Type J	-04	889.07
15@120V, 1800W	PLSM212K	-200-1250° C	2	Type K	-05	889.07
15@120V, 1800W	PLSM212T	-200-750° C	2	Type T	-06	889.07
15@120V, 1800W	PLSM312	0-750° C	3	Type J	-07	934.27
15@120V, 1800W	PLSM312K	-200-1250° C	3	Type K	-08	934.27
15@120V, 1800W	PLSM312T	-200-350° C	3	Type T	-09	934.27
10@240V, 2400W	PLSM124	0-750° C	1	Type J	-10	889.07
10@240V, 2400W	PLSM124K	-200-1250° C	1	Type K	-11	889.07
10@240V, 2400W	PLSM124T	-200-350° C	1	Type T	-12	889.07
10@240V, 2400W	PLSM224	0-750° C	2	Type J	-13	1,017.12
10@240V, 2400W	PLSM224K	-200-1250° C	2	Type K	-14	1,017.12
10@240V, 2400W	PLSM224T	-200-750° C	2	Type T	-15	1,017.12



JK-210

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE**

The Model 210 has 1200 Watts of power which is sufficient for heating mantles up to 5L in size along with most laboratory ovens and hot plates. Controller has the ability to display temperature without heating. The Model 210 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 5L.

Specifications

Dimensions 3.25" H x 5.25" W x 7.25" D
Power 10 Amps @ 120VAC, 1200 Watts

Description	Controller Type	CODE	Price
Controller Only	Type J	JK-210-J	860.00
Complete	Type J	JK-210-J-S	955.00
Controller Only	Type K	JK-210-K	860.00
Complete	Type K	JK-210-K-S	955.00
Controller Only	Type RTD	JK-210-PT	870.00
Complete	Type RTD	JK-210-PT-S	1,025.00
Controller Only	Type T	JK-210-T	860.00
Complete	Type T	JK-210-T-S	955.00



JK-210-TIMER

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE,
WITH 100 HOUR DIGI-
TAL TIMER**

The Model 210 has 1200 Watts of power which is sufficient for heating mantles up to 5L in size along with most laboratory ovens and hot plates. Controller has the ability to display temperature without heating. The Model 210 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 5L. With the addition of a 100 hour digital timer to turn heating ON or OFF when time has expired.

Specifications

Dimensions 3.4" H x 6.75" W x 6" D
Power 10 Amps @ 120VAC, 840 Watts

Description	Controller Type	CODE	Price
Controller Only	Type J	JK-210-TIMER-J	955.00
Complete	Type J	JK-210-TIMER-J-S	1,050.00
Controller Only	Type K	JK-210-TIMER-K	955.00
Complete	Type K	JK-210-TIMER-K-S	1,050.00
Controller Only	Type RTD	JK-210-TIMER-PT	965.00
Complete	Type RTD	JK-210-TIMER-PT-S	1,120.00
Controller Only	Type T	JK-210-TIMER-T	955.00
Complete	Type T	JK-210-TIMER-T-S	1,050.00



JK-250

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, WITH
BOTH HEATING AND
COOLING OUTLETS**

The Model 250 has 3 power outlets for maximum versatility in research. Two of the outlets are used for heating up to 1800 watts (mantles up to 22L).

The third outlet (360 watts), used normally for cooling, is programmable to provide power below, above, or at the entered temperature. This third outlet can also be used to turn on an alarm for an over or under temperature condition. Controller has the ability to display temperature without heating. The Model 250 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 22L. Available with a choice of Type "T", "J" or "K" thermocouple.

Specifications

Dimensions 3.25" H x 7.5" W x 9" D
Power Heating Outlets #1 & #2: 15
Amps @ 120VAC, 1800 Watts
Cooling/Alarm Outlet #3: 3 Amps
@ 12VAC, 360 Watts

Description	Controller Type	CODE	Price
Controller Only	Type J	JK-250-J	985.00
Complete	Type J	JK-250-J-S	1,080.00
Controller Only	Type K	JK-250-K	985.00
Complete	Type K	JK-250-S	1,080.00
Controller Only	Type RTD	JK-250-PT	985.00
Complete	Type RTD	JK-250-S	1,140.00
Controller Only	Type T	JK-250-T	985.00
Complete	Type T	JK-250-T-S	1,080.00



JK-260-TIMER
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE,
WITH BOTH HEATING
AND COOLING OUT-
LETS, WITH 100
HOUR DIGITAL TIMER

The J-Kem® Scientific microprocessor based temperature controller is for use with pilot plant reactors. The Model 260 disconnects all output power if the process temperature exceeds the entered temperature by a user-specified amount, or following recovery from a power failure. The outputs remain disconnected until manually reset. Over temperature condition is signaled by an indicator lamp and audible alarm. Controller has two outlets on the front for connection to heaters. The Model 260 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquid.

Specifications

Dimensions 3.25" H x 7.5" W x 9" D
 Power 15 amps @ 120 VAC, 1800 Watts

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type RTD
 Type RTD
 Type T
 Type T

CODE

JK-260-TIMER-J
 JK-260-TIMER-J-S
 JK-260-TIMER-K
 JK-260-TIMER-K-S
 JK-260-TIMER-PT
 JK-260-TIMER-PT-S
 JK-260-TIMER-T
 JK-260-TIMER-T-S

Price

1,175.00
 1,270.00
 1,175.00
 1,270.00
 1,175.00
 1,330.00
 1,175.00
 1,270.00



JK-270
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, HIGH
SAFETY, BUILT IN
BACK UP CON-
TROLLER

J-Kem® Scientific microprocessor temperature controller. The only temperature controller available with a completely INDEPENDENT BACK UP controller to guard against accidents from equipment failure.

The desired temperature is entered into the digital display of the setpoint controller which regulates heating. A high temperature limit is then entered into the second digital back-up. If the reaction reaches the setpoint of the second controller, power is shut off from the output circuit until the unit is manually reset. Both controllers independently monitor the reaction temperature and in the event that one controller fails, the other takes over to prevent an accident. Available with a choice of Type "T", "J", or "K" thermocouple.

Specifications

Dimensions 3.25" H x 7.55" W x 9" D
 Power 15 amps @ 120 VAC, 1800 Watts

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type T
 Type T

CODE

JK-270-J
 JK-270-J-S
 JK-270-K
 JK-270-K-S
 JK-270-T
 JK-270-T-S

Price

1,570.00
 1,720.00
 1,570.00
 1,720.00
 1,570.00
 1,720.00



JK-APOLLO
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, MULTI
CHANNEL, DUAL
TIMER

Apollo controls TWO independent reactions.

Features two independent temperature controllers in a single cabinet to regulate two independent reactions at the same time. Each temperature controller channel has a high power outlet and a 100 hour digital timer to turn heating OFF (or ON) at a user entered time. Features include: over-temperature protection circuits, dual temperature displays, selectable operating modes, double fused, and 100% solid state design. Contains J-KEM's patented power control computer which provides 0.1o C regulation of anything.

<u>Specifications</u>	<u>Description</u>	<u>Controller Type</u>	<u>CODE</u>	<u>Price</u>
Dimensions 4" H x 8.2" W x 9" D	Controller Only	Type J	JK-APOLLO-J	1,595.00
Power 15 Amps @ 120VAC, 1800 Watts, 1500 Watts per Channel	Complete	Type J	JK-APOLLO-J-S	1,795.00
	Controller Only	Type K	JK-APOLLO-K	1,595.00
	Complete	Type K	JK-APOLLO-K-S	1,795.00
	Controller Only	Type RTD	JK-APOLLO-PT	1,595.00
	Complete	Type RTD	JK-APOLLO-PT-S	1,920.00
	Controller Only	Type T	JK-APOLLO-T	1,595.00
	Complete	Type T	JK-APOLLO-T-S	1,795.00



JK-GEMINI
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, MULTI
CHANNEL, DUAL
TIMER, WITH DIGITAL
TIMER ON ONE
CHANNEL

J-Kem® Scientific Gemini-2 dual temperature controller permits control of two independent reactions with digital displays for both channels. Each channel is 1200 Watts MAX (1800 Watts total), 15 Amps @ 120VAC, and features advanced microprocessor PID control algorithm. Channel one also has a 100 hour digital timer. Safety features include 100% solid state, double fused, audible error alarm, and over temperature circuitry that disconnects power if an over temperature condition occurs.

<u>Specifications</u>	<u>Description</u>	<u>Controller Type</u>	<u>CODE</u>	<u>Price</u>
Dimensions 3.5" H x 7.75" W x 8.75" D	Controller Only	Type J	JK-GEMINI-J	1,425.00
Power 15 Amps @ 120VAC, 1200 Watts MAX/Channel, 1800 Watts (Total)	Complete	Type J	JK-GEMINI-J-S	1,625.00
	Controller Only, CE Approved	Type J	JK-GEMINI-CE-J	1,495.00
	Complete, CE Approved	Type J	JK-GEMINI-CE-J-S	1,685.00
	Controller Only	Type K	JK-GEMINI-K	1,425.00
	Complete	Type K	JK-GEMINI-K-S	1,625.00
	Controller Only, CE Approved	Type K	JK-GEMINI-CE-K	1,495.00
	Complete, CE Approved	Type K	JK-GEMINI-CE-K-S	1,685.00
	Controller Only	Type T	JK-GEMINI-T	1,425.00
	Complete	Type T	JK-GEMINI-T-S	1,625.00
	Controller Only, CE Approved	Type T	JK-GEMINI-CE-T	1,495.00
	Complete, CE Approved	Type T	JK-GEMINI-CE-T-S	1,685.00
	Controller Only	Type RTD	JK-GEMINI-PT	1,425.00
	Complete	Type RTD	JK-GEMINI-PT-S	1,745.00



JK-HCC
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, HIGH CUR-
RRENT, CONTROLLER
ONLY

The J-KEM® Scientific HCC controller is designed to power large scale equipment such as 50L to 100L heating mantles. Designed with the same safety features as the Model 270, the HCC incorporates a 100 hour digital timer to turn heating on or off.

Specifications

Dimensions 5.5" H x 12" W x 12" D
 Power 120VAC, 3600 Watts, 30 Amps

Description	Controller Type	CODE	Price
VAC: 130, AMP: 30, WATTS: 3600	Type J	JK-HCC-130-J	1,915.00
VAC: 130, AMP: 30, WATTS: 3600	Type K	JK-HCC-130-K	1,915.00
VAC: 130, AMP: 30, WATTS: 3600	Type T	JK-HCC-130-T	1,915.00
VAC: 240, AMP: 15, WATTS: 3600	Type J	JK-HCC-130-J	1,940.00
VAC: 240, AMP: 15, WATTS: 3600	Type K	JK-HCC-130-K	1,940.00
VAC: 240, AMP: 15, WATTS: 3600	Type T	JK-HCC-130-T	1,940.00
VAC: 240, AMP: 15, WATTS: 7200	Type J	JK-HCC-130-J	2,045.00
VAC: 240, AMP: 15, WATTS: 7200	Type K	JK-HCC-130-K	2,045.00
VAC: 240, AMP: 15, WATTS: 7200	Type T	JK-HCC-130-T	2,045.00



JK-LS-120
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, LAB
SAFETY

Combines the features of J-KEM's temperature monitor with our Water Flow Monitor and adds a temperature limit controller creating a single versatile instrument. Plug any piece of equipment into the monitor and if the water flow rate falls below the user set level, or the reaction temperature goes above or below the set limits, outlet power is turned off until the controller is manually reset. Also disconnects power following recovery from a power failure. USB communications and free KEM-Net software provide GLP/GMP data and alarm logging.

Input type K: -50 to 1200° C

Requires selection of a flow sensor

Specifications

Dimensions 3.5" H x 5.25" W x 7.25" D
 Power 120VAC, 1800 Watts

Controller Type	CODE	Price
Type J	JK-LS-120-J	840.00
Type K	JK-LS-120-K	840.00
Type T	JK-LS-120-T	840.00



JK-WATER
FLOW
MONITOR
J-KEM® SCIENTIFIC,
WATER FLOW
MONITOR

Precisely monitors the flow rate of water through a condenser, water bath, or other piece of equipment. If the flow rate falls below the minimum rate set by the user (i.e. loss of pressure, broken hose), power is turned off to the monitor's output receptacle and any equipment plugged into it. Power remains off until being manually reset. Requires selection of a flow sensor. The optional water shut off valve stops water flow during an alarm condition preventing a flooded lab. Digital sensor measures actual coolant flow rate. Optional audible and digital alarms.

Description	CODE	Price
Water Shut Off Valve	JK-250WV	182.50
120V, 1800W	JK-WFM-120	385.00
230V, 2300W	JK-WFM-230	385.00
0.1 to 2.5 L/minute	JK-WFM-01	240.00
1 to 10 L/minute	JK-WFM-02	240.00
2 to 30 L/minute	JK-WFM-03	240.00
Audible Alarm	JK-WFM-AA	65.00
Digital Alarm Outlet	JK-WFM-OC	35.00



JK-THERMOCOUPLE-PROBES J-KEM® SCIENTIFIC, THERMOCOUPLE PROBES

All sensors are housed in 304 stainless steel sheaths.

Teflon overcoating is PFA coating over stainless steel probe.

Note: To read temperatures accurately, the type of the thermocouple must match the controller's type. On a new controller, the type is the letter immediately following the model number: 210-K-S.

Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Controller	Coated	Length	1/16"		1/8"		1/4"	
			CODE	Price	CODE	Price	CODE	Price
Type T	Teflon	2"	—	—	JK-T-1/8-T-2	64.00	—	—
Type T	Teflon	4"	—	—	JK-T-1/8-T-4	64.00	—	—
Type T	Teflon	6"	JK-T-1/16-T-6	69.97	JK-T-1/8-T-6	71.04	JK-T-1/4-T-6	75.35
Type T	Teflon	8"	JK-T-1/16-T-8	69.97	JK-T-1/8-T-8	71.04	JK-T-1/4-T-8	75.35
Type T	Teflon	10"	—	—	JK-T-1/8-T-10	71.04	JK-T-1/4-T-10	75.35
Type T	Teflon	12"	JK-T-1/16-T-12	69.97	JK-T-1/8-T-12	71.04	JK-T-1/4-T-12	75.35
Type T	Teflon	16"	—	—	JK-T-1/8-T-16	75.00	—	—
Type T	Teflon	18"	JK-T-1/16-T-18	83.96	JK-T-1/8-T-18	85.04	JK-T-1/4-T-18	93.65
Type T	Teflon	24"	JK-T-1/16-T-24	95.80	JK-T-1/8-T-24	96.08	JK-T-1/4-T-24	105.49
Type T	Teflon	26"	—	—	—	—	JK-T-1/4-T-26	96.00
Type T	Teflon	27"	—	—	—	—	JK-T-1/4-T-27	96.00
Type T	Teflon	31"	—	—	—	—	JK-T-1/4-T-31	96.00
Type T	Teflon	36"	JK-T-1/16-T-36	107.64	JK-T-1/8-T-36	108.72	JK-T-1/4-T-36	117.33
Type T	Teflon	45"	—	—	JK-T-1/8-T-45	104.00	JK-T-1/4-T-45	108.00
Type T	Teflon	48"	—	—	JK-T-1/8-T-48	104.00	JK-T-1/4-T-48	108.00
Type T	Uncoated	3"	—	—	JK-T-1/8-U-3	34.00	—	—
Type T	Uncoated	4"	—	—	JK-T-1/8-U-4	34.00	JK-T-1/4-U-4	38.00
Type T	Uncoated	6"	JK-T-1/16-U-6	37.67	JK-T-1/8-U-6	38.75	JK-T-1/4-U-6	43.06
Type T	Uncoated	8"	JK-T-1/16-U-8	37.67	JK-T-1/8-U-8	38.75	JK-T-1/4-U-8	43.06
Type T	Uncoated	10"	—	—	—	—	JK-T-1/4-U-10	43.06
Type T	Uncoated	12"	JK-T-1/16-U-12	37.67	JK-T-1/8-U-12	38.75	JK-T-1/4-U-12	43.06
Type T	Uncoated	18"	JK-T-1/16-U-18	51.67	JK-T-1/8-U-18	52.74	JK-T-1/4-U-18	61.35
Type T	Uncoated	20"	—	—	—	—	JK-T-1/4-U-20	49.00
Type T	Uncoated	24"	JK-T-1/16-U-24	63.51	JK-T-1/8-U-24	64.58	JK-T-1/4-U-24	73.20
Type T	Uncoated	36"	JK-T-1/16-U-36	77.64	JK-T-1/8-U-36	76.42	JK-T-1/4-U-36	85.04
Type K	Teflon	6"	JK-K-1/16-T-6	69.97	JK-K-1/8-T-6	71.04	JK-K-1/4-T-6	75.35
Type K	Teflon	8"	JK-K-1/16-T-8	69.97	JK-K-1/8-T-8	71.04	JK-K-1/4-T-8	75.35
Type K	Teflon	10"	JK-K-1/16-T-10	69.97	JK-K-1/8-T-10	71.04	JK-K-1/4-T-10	75.35
Type K	Teflon	12"	JK-K-1/16-T-12	69.97	JK-K-1/8-T-12	71.04	JK-K-1/4-T-12	75.35
Type K	Teflon	16"	—	—	JK-K-1/8-T-16	75.00	—	—
Type K	Teflon	18"	JK-K-1/16-T-18	83.96	JK-K-1/8-T-18	85.04	JK-K-1/4-T-18	93.65
Type K	Teflon	24"	JK-K-1/16-T-24	95.80	JK-K-1/8-T-24	96.88	JK-K-1/4-T-24	105.49
Type K	Teflon	36"	JK-K-1/16-T-36	107.64	JK-K-1/8-T-36	108.72	JK-K-1/4-T-36	117.33
Type K	Teflon	48"	—	—	JK-K-1/8-T-48	104.00	JK-K-1/4-T-48	108.00
Type K	Uncoated	3"	—	—	JK-K-1/8-U-3	34.00	—	—
Type K	Uncoated	6"	JK-K-1/16-U-6	37.67	JK-K-1/8-U-6	38.75	JK-K-1/4-U-6	43.06
Type K	Uncoated	8"	JK-K-1/16-U-8	37.67	JK-K-1/8-U-8	38.75	—	—
Type K	Uncoated	10"	JK-K-1/16-U-10	37.67	JK-K-1/8-U-10	38.75	—	—
Type K	Uncoated	12"	JK-K-1/16-U-12	37.67	JK-K-1/8-U-12	38.75	JK-K-1/4-U-12	43.06
Type K	Uncoated	18"	JK-K-1/16-U-18	51.67	JK-K-1/8-U-18	52.74	JK-K-1/4-U-18	61.35
Type K	Uncoated	24"	JK-K-1/16-U-24	63.51	JK-K-1/8-U-24	64.58	JK-K-1/4-U-24	73.20
Type K	Uncoated	32"	—	—	—	—	JK-K-1/4-U-32	66.00
Type K	Uncoated	36"	—	—	JK-K-1/8-U-36	76.42	JK-K-1/4-U-36	85.04
Type J	Teflon	6"	JK-J-1/16-T-6	69.97	JK-J-1/8-T-6	71.04	JK-J-1/4-T-6	75.35
Type J	Teflon	8"	JK-J-1/16-T-8	69.97	JK-J-1/8-T-8	71.04	JK-J-1/4-T-8	75.35
Type J	Teflon	10"	—	—	JK-J-1/8-T-10	71.04	JK-J-1/4-T-10	75.35
Type J	Teflon	12"	JK-J-1/16-T-12	69.97	JK-J-1/8-T-12	71.04	JK-J-1/4-T-12	75.35
Type J	Teflon	18"	JK-J-1/16-T-18	83.96	JK-J-1/8-T-18	85.04	JK-J-1/4-T-18	93.65
Type J	Teflon	24"	JK-J-1/16-T-24	95.80	JK-J-1/8-T-24	96.88	JK-J-1/4-T-24	105.49
Type J	Teflon	36"	JK-J-1/16-T-36	107.64	JK-J-1/8-T-36	108.72	JK-J-1/4-T-36	117.33
Type J	Teflon	42"	—	—	—	—	JK-J-1/4-T-42	111.95
Type J	Teflon	48"	—	—	—	—	JK-J-1/4-T-48	127.02
Type J	Teflon	72"	—	—	—	—	JK-J-1/4-T-72	132.00
Type J	Uncoated	6"	JK-J-1/16-U-6	37.67	JK-J-1/8-U-6	38.75	JK-J-1/4-U-6	43.06
Type J	Uncoated	8"	JK-J-1/16-U-8	37.67	JK-J-1/8-U-8	38.75	—	—
Type J	Uncoated	10"	JK-J-1/16-U-10	37.67	JK-J-1/8-U-10	38.75	JK-J-1/4-U-10	43.06
Type J	Uncoated	12"	JK-J-1/16-U-12	37.67	JK-J-1/8-U-12	38.75	JK-J-1/4-U-12	43.06
Type J	Uncoated	14"	—	—	JK-J-1/8-U-14	45.00	—	—
Type J	Uncoated	18"	JK-J-1/16-U-18	51.67	JK-J-1/8-U-18	52.74	JK-J-1/4-U-18	61.35
Type J	Uncoated	24"	JK-J-1/16-U-24	63.51	JK-J-1/8-U-24	64.58	JK-J-1/4-U-24	73.20
Type J	Uncoated	30"	—	—	—	—	JK-J-1/4-U-30	59.00
Type J	Uncoated	36"	—	—	JK-J-1/8-U-36	76.42	JK-J-1/4-U-36	85.04



JK-TC270
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES, DUAL ELE-
MENTS

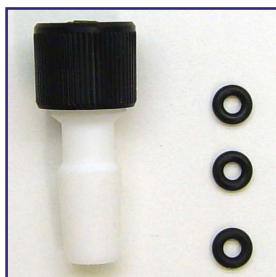
Dual element thermocouples contain two independent thermocouples in a single probe. All sensors are housed in 304 stainless steel sheaths.

Teflon overcoating is PFA coating over stainless steel probe.

Note: To read temperatures accurately, the type of the thermocouple must match the controller's type. On a new controller, the type is the letter immediately following the model number: 210-K-S.

Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Controller	Coated	Length	1/8"		1/4"	
			CODE	Price	CODE	Price
Type T	Teflon	6"	—	—	JK-TC270-T14T6	115.00
Type T	Teflon	12"	JK-TC270-T18T12	113.02	JK-TC270-T14T12	125.94
Type T	Teflon	18"	JK-TC270-T18T18	124.86	JK-TC270-T14T18	137.78
Type T	Teflon	24"	JK-TC270-T18T24	136.70	JK-TC270-T14T24	149.62
Type T	Teflon	36"	—	—	JK-TC270-T14T36	164.69
Type T	Teflon	40"	—	—	JK-TC270-T14T40	170.00
Type T	Teflon	45"	—	—	JK-TC270-T14T45	170.00
Type T	Uncoated	6"	JK-TC270-T18U6	103.00	—	—
Type T	Uncoated	12"	JK-TC270-T18U12	104.41	JK-TC270-T14U12	117.33
Type T	Uncoated	18"	JK-TC270-T18U18	118.40	JK-TC270-T14U18	131.32
Type T	Uncoated	24"	JK-TC270-T18U24	134.55	JK-TC270-T14U24	1134.55
Type T	Glass	12"	—	—	JK-TC270-T14G12	160.38
Type T	Glass	18"	—	—	JK-TC270-T14G18	174.38
Type K	Teflon	6"	JK-TC270-K18T6	113.02	JK-TC270-K14T6	115.00
Type K	Teflon	8"	—	—	JK-TC270-K14T8	115.00
Type K	Teflon	12"	JK-TC270-K18T12	113.02	JK-TC270-K14T12	125.94
Type K	Teflon	18"	JK-TC270-K18T18	124.86	JK-TC270-K14T18	137.78
Type K	Teflon	24"	JK-TC270-K18T24	136.70	JK-TC270-K14T24	149.62
Type K	Teflon	30"	JK-TC270-K18T30	136.00	—	—
Type K	Teflon	36"	—	—	JK-TC270-K14T36	164.69
Type K	Teflon	45"	—	—	JK-TC270-K14T45	170.00
Type K	Teflon	48"	—	—	JK-TC270-K14T48	170.00
Type K	Uncoated	6"	JK-TC270-K18U6	104.41	—	—
Type K	Uncoated	12"	JK-TC270-K18U12	104.41	JK-TC270-K14U12	112.82
Type K	Uncoated	18"	JK-TC270-K18U18	118.40	JK-TC270-K14U18	131.32
Type K	Uncoated	24"	JK-TC270-K18U24	134.55	JK-TC270-K14U24	134.55
Type K	Glass	12"	—	—	JK-TC270-K14G12	160.38
Type K	Glass	18"	—	—	JK-TC270-K14G18	174.38
Type K	Glass	24"	—	—	JK-TC270-K14G24	179.76
Type J	Teflon	6"	JK-TC270-J18T6	103.00	—	—
Type J	Teflon	12"	JK-TC270-J18T12	113.02	JK-TC270-J14T12	125.94
Type J	Teflon	18"	JK-TC270-J18T18	124.86	JK-TC270-J14T18	137.78
Type J	Teflon	24"	JK-TC270-J18T24	136.70	JK-TC270-J14T24	149.62
Type J	Teflon	36"	—	—	JK-TC270-J14T36	164.69
Type J	Uncoated	12"	JK-TC270-J18U12	104.41	JK-TC270-J14U12	117.33
Type J	Uncoated	18"	JK-TC270-J18U18	118.40	JK-TC270-J14U18	131.32
Type J	Uncoated	24"	JK-TC270-J18U24	134.55	—	—
Type J	Glass	12"	—	—	JK-TC270-J14G12	160.38
Type J	Glass	18"	—	—	JK-TC270-J14G18	174.38
Type J	Glass	24"	—	—	JK-TC270-J14G24	179.76



JK-Thermocouple Probe Adapter
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES ADAPTER

Forms an air tight seal between temperature probes and standard taper joints. Not suitable for high vacuums. Includes replacement internal o-ring. Sold individually.

Probe Diameter	Standard Taper Joint	CODE	Price
1/16"	10/18	JK-1016	42.75
1/16"	14/20	JK-1416	49.20
1/16"	19/22	JK-1916	64.50
1/16"	24/40	JK-2416	58.70
1/16"	29/42	JK-2916	66.30
1/8"	10/18	JK-1018	38.75
1/8"	14/20	JK-1418	24.95
1/8"	19/22	JK-1918	68.80
1/8"	24/40	JK-2418	26.95
1/4"	14/20	JK-1414	24.45
1/4"	24/40	JK-2414	39.95
1/4"	29/42	JK-2914	52.85



JK-Thermocouple Adapter
J-KEM® SCIENTIFIC,
THERMOCOUPLE
ADAPTER

Adapts between large (OST) and small (SMP) thermocouple plugs. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Adapter Type	Controller Type	CODE	Price
SMP Male to OST Female	J	JK-ADA-J	12.95
SMP Male to OST Female	K	JK-ADA-K	12.95
SMP Male to OST Female	T	JK-ADA-T	12.95
OST Male to SMP Female	J	JK-ADA-J	12.95
OST Male to SMP Female	K	JK-ADA-K	12.95
OST Male to SMP Female	T	JK-ADA-T	12.95



JK-Thermocouple Probe Adapter O-rings
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES ADAPTER,
REPLACEMENT
O-RINGS

Package of 12.

Size	Material	Options	CODE	Price
1/16" Probe	Viton™	Internal	JK-161OR	12.00
1/8" Probe	Viton®	Internal	JK-181OR	12.00
1/8" Probe	Kalrez®	Internal	JK-181ORK	44.80
1/4" Probe	Viton™	Internal	JK-141OR	12.00
1/4" Probe	Kalrez®	Internal	JK-141ORK	80.00
1/4" Probe	Teflon®	Internal	JK-141ORT	27.00
14/20	Viton™	External	JK-1420E	9.00
14/20	Kalrez®	External	JK-1420EK	61.50
14/20	Teflon®	External	JK-1420ET	21.00
24/40	Viton™	External	JK-2440E	12.00
24/40	Kalrez®	External	JK-2440EK	66.90
24/40	Teflon®	External	JK-2440ET	13.15
29/42	Viton™	External	JK-2942E	12.00
29/42	Kalrez®	External	JK-2942EK	94.20
29/42	Teflon®	External	JK-2942ET	15.20





JK-StraightCord
J-KEM® SCIENTIFIC,
THERMOCOUPLE
CORD, STRAIGHT

Teflon insulated wire for superior chemical resistance. Made from 24 gauge single stranded wire. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Length	Style	Plug	Controller Type	Options	CODE	Price
10'	OST	Large	RTD	Straight	JK-EXT-10-Pt/100-OST	26.25
10'	OST	Large	J	Straight	JK-EXT-10-J-OST	26.25
10'	OST	Large	K	Straight	JK-EXT-10-K-OST	26.25
10'	OST	Large	T	Straight	JK-EXT-10-T-OST	26.25
10'	OST	Large	J	Straight, Dual	JK-EXT-270-J	59.50
10'	OST	Large	K	Straight, Dual	JK-EXT-270-K	59.50
10'	OST	Large	T	Straight, Dual	JK-EXT-270-T	59.50
10'	SMP	Mini	J	Straight	JK-EXT-10-J-SMP	26.25
10'	SMP	Mini	K	Straight	JK-EXT-10-K-SMP	26.25
10'	SMP	Mini	T	Straight	JK-EXT-10-T-SMP	26.25
10'	SMP	Mini	RTD	Straight, Two Wire	JK-EXT-10-Pt/100-2-SMP	26.25
20'	OST	Large	J	Straight	JK-EXT-20-J-OST	36.30
20'	OST	Large	K	Straight	JK-EXT-20-K-OST	36.30
20'	OST	Large	T	Straight	JK-EXT-20-T-OST	36.30
20'	SMP	Mini	J	Straight	JK-EXT-20-J-SMP	36.30
20'	SMP	Mini	K	Straight	JK-EXT-20-K-SMP	36.30
20'	SMP	Mini	T	Straight	JK-EXT-20-T-SMP	36.30
25'	OST	Large	J	Straight, Dual	JK-EXT-25-270-J	94.25
25'	OST	Large	K	Straight, Dual	JK-EXT-25-270-K	94.25
25'	OST	Large	T	Straight, Dual	JK-EXT-25-270-T	94.25



JK-CoiledCord
J-KEM® SCIENTIFIC,
THERMOCOUPLE
CORD, COILED

Retractable coiled cord saves space in crowded hoods. 26 gauge multi-strand wire with PVC insulation. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Length	Style	Plug	Controller Type	CODE	Price
10'	OST	Large	J	JK-CC-10-J-OST	39.80
10'	OST	Large	K	JK-CC-10-K-OST	39.80
10'	OST	Large	T	JK-CC-10-T-OST	39.80
10'	OST	Large	RTD	JK-CC-10-Pt/100-OST	56.20
10'	SMP	Mini	J	JK-CC-10-J-SMP	33.80
10'	SMP	Mini	K	JK-CC-10-K-SMP	33.80
10'	SMP	Mini	T	JK-CC-10-T-SMP	33.80
10'	SMP	Mini	RTD	JK-CC-10-Pt/100-SMP	60.00
20'	OST	Large	J	JK-CC-20-J-OST	67.00
20'	OST	Large	K	JK-CC-20-K-OST	67.00
20'	OST	Large	T	JK-CC-20-T-OST	67.00
20'	SMP	Mini	J	JK-CC-20-J-SMP	67.00
20'	SMP	Mini	K	JK-CC-20-K-SMP	67.00
20'	SMP	Mini	T	JK-CC-20-T-SMP	67.00





PRG-5952
"TM" SERIES HEAT
MANTLE, SPHERICAL,
BOTTOM HOLE

"TM" Series mantles are aluminum housed and equipped with a 3.0" center hole to accept a drain valve. The 115 volt mantles have a 4 foot long, 3-wire, twist-lock electrical cord (supplied) and the 230 volt are equipped with a terminal box.

<u>Flask Size in Liters</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
12	115	2@650	-01	1,342.64
12	230	2@650	-21	1,375.18
22	115	2@770	-02	1,533.02
22	230	2@770	-22	1,570.49
50	115	3@1000	-03	2,309.32
50	230	3@1000	-23	2,345.11
72	230	2@2000	-24	2,677.11
100	230	3@1800	-25	4,916.46
200	230	4@2000	-26	4,841.60

<u>Cylindrical Column O.D.</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
315 mm	115	2@650	-31	2,734.06
315 mm	230	2@650	-41	2,734.06
415 mm	115	2@770	-32	3,246.71
415 mm	230	2@770	-42	3,246.71
486 mm	230	2@2000	-43	5,565.81



PRG-5954
INSULATING/HEATING
JACKET

These columns are available for insulating or with heating capabilities. The heated units are designed to withstand an internal operating temperature of 450° C. These mantles wrap around the column and have a single lace up fastener which allows visibility into the vessel.

<u>Cylindrical Column O.D.</u>	<u>Length</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
315 mm	15"	—	Insulating	-01	1,490.73
315 mm	15"	115	2@900	-21	1,985.46
315 mm	30"	—	Insulating	-02	1,985.46
315 mm	30"	115	3@1200	-22	2,644.59
315 mm	40"	—	Insulating	-03	2,454.15
315 mm	40"	115	4@1200	-23	3,279.27
415/457 mm	30"	—	Insulating	-04	2,538.79
415/457 mm	30"	115	5@1050	-24	3,385.06
415/457 mm	40"	—	Insulating	-05	3,014.01
415/457 mm	40"	115	6@1150	-25	4,019.76



HEI-STANDARD HEIDOLPH, MAG- NETIC STIRRER, MR HEI-STANDARD

According to the motto “just stir and heat”, our entry model of the Hei-Standard was manufactured with two rotary knobs to enable direct access to the two main functions. The speed and temperature are set using a scale. The maximum values are 1.400 rpm and 300 °C.

This magnetic stirrer is very easy to use and is equipped with the most important safety features. The heating function can be activated separately.

The patented Kera-Disk® footprint made of anodized aluminum, is chemical-resistant, scratch-proof, and has a diameter of 135 or 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The material used also enables the fastest heating times.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±5 °C	±5 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	—	—
Timer	—	—
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110521	HEI-036110519

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
135 mm	HEI-036110521	CALL
145 mm	HEI-036110519	1,224.09





**HEI-TEC
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-TEC**

Hei-Tec is the classic model among magnetic stirrers. It enables users to gently stir up to 1,400 rpm and to heat up to a temperature of 300°C with a high degree of precision. These features, along with its robust construction and sophisticated functionalities such as key illumination, encompass our mantra of "Research made easy!"

The patented Kera-Disk® footprint made of anodized aluminum, is chemically resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The material used also enables the fastest heating times.

The Hei-Tec magnetic stirrer provides a digital display for setting your desired temperature exactly to the degree. This precise temperature without overshooting is controlled by two selectable heating modes (FAST/PRECISE) and the optional external temperature sensor Pt1000.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±1 °C	±1 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	—	—
Timer	—	—
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110620 & HEI-036110583	HEI-036110550 & HEI-036110582

<u>Plate Diameter</u>	<u>With Pt1000</u>	<u>CODE</u>	<u>Price</u>
135 mm	No	HEI-036110620	CALL
135 mm	Yes	HEI-036110583	1,347.59
145 mm	No	HEI-036110550	1,223.18
145 mm	Yes	HEI-036110582	1,347.10



**HEI-PLATE-
SILVER-1
HEIDOLPH, MAG-
NETIC STIRRER, HEI-
PLATE, SILVER 1
PACKAGE**

This package includes:

- Magnetic Stirrer Hei-Tec
- Temperature sensor Pt1000 (AISI 316Ti)
- Pt1000 clamping system (includes support rod and attachment with cable inlet)

<u>CODE</u>	<u>Price</u>
HEI-036110573	1,467.81



**HEI-CONNECT
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-CONNECT**

In our proven Hei-PLATE magnetic stirrer line, the Hei-Connect combines gentle stirring (up to 1,400 rpm) with a precise heating function (up to 300 °C). Unique in its robust design and secure functionality, this model stands out with additional features giving you complete control and an easy, accurate documentation of your process parameters.

The unique Kera-Disk® footprint is chemically resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The anodized aluminum from which it is made enables the fastest possible heating times.

The Hei-Connect magnetic stirrer provides a digital display for setting your desired temperature exactly to the degree. This precise temperature without overshooting is controlled by two selectable heating modes (FAST/PRECISE) and the optional external temperature sensor Pt1000.

To facilitate process control and documentation, the Hei-Connect is equipped with a timer and an RS 232 interface. The free Hei-Control Software is included in the scope of delivery.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±1 °C	±1 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	yes (RS 232)	yes (RS 232)
Timer	yes	yes
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110602 & HEI-036110604	HEI-036110601 & HEI-036110603

<u>Plate Diameter</u>	<u>With Pt1000</u>	<u>CODE</u>	<u>Price</u>
135 mm	No	HEI-036110602	1,780.15
135 mm	Yes	HEI-036110604	1,724.99
145 mm	No	HEI-036110601	1,720.81
145 mm	Yes	HEI-036110603	1,724.99



**HEI-PLATE-
SILVER-2
HEIDOLPH, MAG-
NETIC STIRRER, HEI-
PLATE, SILVER 2
PACKAGE**

This package includes:

- Magnetic Stirrer Hei-Connect
- Temperature sensor Pt1000 (AISI 316Ti)
- Pt1000 clamping system (includes support rod and attachment with cable inlet)
- Interface cable RS 232

<u>CODE</u>	<u>Price</u>
HEI-036110605	2,133.76



HEI-MIX-S
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-MIX S

The Hei-Mix S is the first choice for titrations and biochemical applications such as those associated with operating a small fermenter. The PVDF (thermoplastic fluoropolymer) footprint is of white color: In this way, color changes during the application can be precisely tracked.

The Hei-Mix S also has a robust housing made of polyamide and is suitable for continuous operation with stirring volumes of up to 5 liters. Thanks to a wide speed range of up to 2,200 rpm, you can mix your sample quickly but gently. Efficient work is therefore guaranteed.

In addition, you save space in your laboratory because the Hei-Mix S requires only 126 x 80 x 140 mm of space with a footprint of 104 mm in diameter.

Specifications

Rotation speed range	100 – 2,200 rpm
Speed accuracy	±5 %
Max. stirring capacity (H ₂ O)	5 l
Hotplate temperature	—
Heating power	—
Accuracy temperature setting	—
Temperature accuracy with external temp. sensor	—
Safety circuit hotplate	—
Plate diameter ø	104 mm
Plate material	PVDF
Sensor breakage protection	—
Residual heat indicator	—
Smooth start	yes
Analog / digital interface	—
Timer	—
Protection class DIN EN 60529	IP 21
Product Number	HEI-036110460

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
104 mm	HEI-036110460	439.09



HEI-MIX-L
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-MIX L

Based on our proven magnetic stirrer series with heating function, the Hei-Mix L was especially developed for applications with thermolabile substances. This is because this model has no heating, and the heat from the motor is also not transferred to the footprint.

The Hei-Mix L magnetic stirrer without heating function is ideal for applications up to 20 liters and can gently stir your solution in a speed range of 100-1.400 rpm. In addition, the rotation speed ramps up slowly until it has reached the desired value. This prevents splashes, uneven starts, or jumps of the stirring rod.

The patented Kera-Disk® footprint made of aluminum with a ceramic coating, is chemical-resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint.

Specifications

Rotation speed range	100 – 1,400 rpm
Speed accuracy	±2 %
Max. stirring capacity (H ₂ O)	20 l
Hotplate temperature	—
Heating power	—
Accuracy temperature setting	—
Temperature accuracy with external temp. sensor	—
Safety circuit hotplate	—
Plate diameter ø	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	—
Residual heat indicator	—
Smooth start	yes
Analog / digital interface	—
Timer	—
Protection class DIN EN 60529	IP 32
Product Number	HEI-036110465

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
145 mm	HEI-036110465	812.00



**HEI-TOR-C
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE CORE**

Heidolph's lightest overhead stirrer is here – with a torque of 40 Ncm!

Thanks to its weight of 2.3 kg, the Hei-TORQUE Core is easier to carry than the other models and can be mounted on a stand and/or in various closed systems. However, this does not mean that this stirrer will be less powerful.

The additional name "Core" emphasizes that it is a model of selected functions and important safety features that provide tangible help with any stirring task. Above all, the Hei-TORQUE Core scores with its simple operation: The quick-action chuck (Quick Chuck) can be opened and closed very easily without a key. The "Max" button allows you to reach the maximum speed of 2,000 rpm in no time. Thanks to the display, you can keep an overview of all application parameters.

The Hei-TORQUE Core has a quick-action chuck with a diameter of 10.5 mm and can therefore be combined with a variety of stirring tools. To achieve the best possible homogeneity, it is suitable for viscosities up to 10,000 mPa s or volumes up to 25 liters (H₂O).

Specifications

Number of speed gears	1
Rotation speed range	2 – 2,000 rpm
Rotation speed indicator	digital monochrom 2"
Speed control	electronic
Max. torque	40 Ncm
Torque indicator	symbol
Overheat protection	automatic cut-out
Viscosity max.	10,000 mPa s
Stirring cap. (H ₂ O), max.	25 l
Through-shaft design	✓
Shaft diameter, max.	10.5 mm
Counter/ Timer	✓
Analog / digital interface	—
Power rating motor input	105 W
Protection class DIN EN 60529	IP 42
Product number	HEI-036090005

<u>CODE</u>	<u>Price</u>
HEI-036090005	1,868.62



**HEI-TOR-P
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE PRECISION**

The devices of the Hei-TORQUE Precision line are Heidolph high performance overhead stirrers.

The Hei-TORQUE Value 100 is a overhead stirrer with a wide speed range (10 – 2,000 rpm) and a maximum torque of 100 Ncm. It can powerfully stir viscosities up to 60,000 mPas or volumes up to 50 liters (H₂O).

The Hei-TORQUE Precision 200 laboratory stirrer is ideal for the powerful stirring of viscosities up to 100,000 mPas or volumes up to 50 liters (H₂O). It has a wide speed range (10 – 2,000 rpm) and a maximum torque of 200 Ncm.

The Hei-TORQUE Precision 400 laboratory stirrer is ideal for the powerful stirring of viscosities up to 250,000 mPas or volumes up to 100 liters (H₂O). Thanks to its 2-gear stage design, it stirs particularly powerfully in the speed range up to 400 rpm and is therefore particularly suitable for applications with highly viscous media that require mixing in the lower speed range. However, operation at speeds of up to 2,000 rpm is also possible in the second speed.

In addition, the Hei-TORQUE Precision offers, above all, the possibility of ramp programming, process monitoring (including timer function, torque trend display as a value), as well as the necessary equipment for documenting your application parameters. For this it is equipped with two interfaces – USB and RS232 – which give you the greatest flexibility to connect the device to a PC, a programmable logic controller (PLC) or an automation system such as e.g. LabManager. The scope of delivery includes the free Hei-Control software for remote control of up to 4 devices via PC.

The overhead stirrer Hei-TORQUE Precision performs every stirring task with minimal noise thanks to the latest engine technology. The safety-related start/stop touch-function serves to minimize the risk of unintentional switching on.

Suitable for use in fume hoods or as a drive for reactor superstructures, the Hei-TORQUE Precision 100 has a quick-action chuck (quick chuck with safety ring) with a diameter of 10.5 mm, which can be combined with a large number of stirring tools.

Specifications

	1	1	2
Number of speed gears	1	1	2
Rotation speed range	10 – 2,000 rpm	10 – 2,000 rpm	10 – 400 rpm / 20 – 2,000 rpm
Rotation speed indicator	digital color 3.2"	digital color 3.2"	digital color 3.2"
Speed control	electronic	electronic	electronic
Max. torque	100 Ncm	200 Ncm	400 Ncm
Torque indicator	precise value	precise value	precise value
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity max.	60,000 mPa s	100,000 mPa s	250,000 mPa s
Stirring cap. (H ₂ O), max.	50 l	50 l	100 l
Through-shaft design	✓	✓	✓
Shaft diameter, max.	10.5 mm	10.5 mm	10.5 mm
Counter/ Timer	✓	✓	✓
Analog / digital interface	USB and RS 232	USB and RS 232	USB and RS 232
Power rating motor input	90 W	120 W	150 W
Protection class DIN EN 60529	IP 54	IP 54	IP 54
Product number	HEI-036093090	HEI-036093110	HEI-036093150

<u>Max. Torque</u>	<u>CODE</u>	<u>Price</u>
100 Ncm	HEI-036093090	2,746.20
200 Ncm	HEI-036093110	3,667.00
400 Ncm	HEI-036093150	5,076.00



**HEI-TOR-V
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE VALUE**

The Hei-TORQUE Value 100 is an overhead stirrer with a wide speed range (10 – 2,000 rpm) and a maximum torque of 100 Ncm. With it you can optimally stir viscosities up to 60,000 mPa s or volumes up to 50 liters (H₂O).

With Hei-TORQUE Value 200 you can optimally stir viscosities up to 100,000 mPa s or volumes up to 50 liters (H₂O). Thanks to a wide speed range from 10 to 2,000 rpm and a maximum torque of 200 Ncm, it works particularly powerful.

With Hei-TORQUE Value 400 you can optimally stir viscosities up to 250,000 mPa s or volumes up to 100 liters (H₂O). Thanks to its 2-gear stage design, it stirs particularly powerfully in the speed range up to 400 rpm and is therefore particularly suitable for applications with highly viscous media that require mixing in the lower speed range. However, operation at speeds of up to 2,000 rpm is also possible in the second speed.

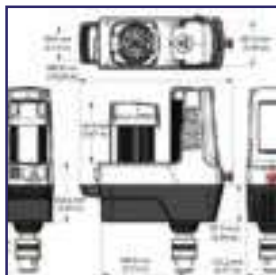
The Hei-TORQUE Value performs every stirring task with minimal noise thanks to the latest engine technology. This overhead stirrer is also very user-friendly in terms of operation and safety. The 2.4 inch display makes it very easy to set the application parameters and control the process (e.g. using the torque trend display). The safety-related start/stop touch-function serves to minimize the risk of unintentional switching on.

Suitable for use in fume hoods or as a drive for reactor superstructures, the Hei-TORQUE Value has a quick-action chuck (quick chuck with safety ring) with a diameter of 10.5 mm, which can be combined with a large number of stirring tools.

Specifications

Number of speed gears	1	1	2
Rotation speed range	10 – 2,000 rpm	10 – 2,000 rpm	10 – 400 rpm / 20 – 2,000 rpm
Rotation speed indicator	digital color 2.4"	digital color 2.4"	digital color 2.4"
Speed control	electronic	electronic	electronic
Max. torque	100 Ncm	200 Ncm	400 Ncm
Torque indicator	symbol	symbol	symbol
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity max.	60,000 mPa s	100,000 mPa s	250,000 mPa s
Stirring cap. (H ₂ O), max.	50 l	50 l	100 l
Through-shaft design	✓	✓	✓
Shaft diameter, max.	10.5 mm	10.5 mm	10.5 mm
Counter/ Timer	—	—	—
Analog / digital interface	—	—	—
Power rating motor input	90 W	120 W	150 W
Protection class DIN EN 60529	IP 54	IP 54	IP 54
Product number	HEI-036093030	HEI-036093050	HEI-036093070

<u>Max. Torque</u>	<u>CODE</u>	<u>Price</u>
100 Ncm	HEI-036093030	2,300.00
200 Ncm	HEI-036093050	3,220.00
400 Ncm	HEI-036093070	4,140.00



CLS-1540
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
CROSSOVER 1540,
115V

A powerful combination of torque and electronic sophistication. The robust ½ horsepower motor, PC/PLC communications and extensive features make the Caframo Crossover unparalleled in the market. Mixing up to 200 litres (55 gallons) of basic pre-mix, industrial pilot plant volumes, or full production batches, this portable mixer weighs only 12 kg (26.5 lb). The resistive touch screen enables simple feature operation (timers, alarms, rotation direction, resume on power up, start, stop) without removing your gloves! Control the mixer with a PC or PLC via USB, RS232 or 4-20 mA or data log speed and torque directly to a memory stick. Install immediately with standard 120 V cord set, and four bolt mounting. Optional plate or C-clamp set attaches the Crossover to a stand, drum or customer mount and allows optimal shaft angle in vessel. Includes chuck, chuck key, chuck shaft guard, installed screen protector, USB memory stick, mounting bolts, power cord, manual, calibration certificate and three year warranty.

Speed	50-1500 rpm		
Volume Maximum	200 L (55 US Gallons)		
Viscosity Maximum	180 000 mPa·s (180 000 cps)	CODE	Price
Torque Maximum	3000 N·cm (264 in-lbs = 4248 in-oz)	CLS-1540	4,113.50
Output Power	300 Watts (½ hp)		
Speed Display	Yes		
Speed – Low Range	50-299 rpm		
Speed – High Range	300-1500 rpm		
Speed Accuracy	Rolling average of 10 second period		
Torque Display	Yes		
Zero Torque	Yes		
Timer	Yes		
Alarm	Yes		
Connectivity Ports	Standard USB A, Mini USB B, DB9, 4-20 mA		
Through Shaft	Yes		
Chuck Maximum Shaft Diameter	16 mm (¾")		
Chuck and Shaft Guard	Yes		
Rotation Direction	Clockwise and counterclockwise		
Housing	Flame Retardant Nylon 6		
Weight	12 kg (26.5 lb)		
Voltage	120 volt		
Frequency	60 Hz		
Ambient Temperature Operation	5-40°C (41-104°F)		
Relative Humidity Operation	80%		
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.		
Warranty	3 years		

Mixer 120 volts, 60 Hz. Includes chuck, chuck key, chuck shaft guard, installed screen protector, USB memory stick, four mounting bolts, grounded North American cord set, and manual (digital and printed).

Features

- Resistive Touch Screen Display
- Intuitive Speed Adjustment
- Portable
- 120 V cord set
- Counter-clockwise rotation selection
- Name Customization
- Resume on Power up
- Torque Zero feature
- Cycle Timer
- Run Time Display
- Torque Min/Max Setting
- Audible Alarm
- PC/PLC connectivity
- Multiple com ports
- Data Logging
- Sealed Housing
- Quick Stop
- Installed Screen Protector
- Chuck Shaft Guard
- Adjustable Keyed Chuck
- Automatic Transmission
- Brushless DC motor – fan cooled
- Maintenance Free

Benefits

- Operate while wearing PPE or sterility gloves
- Precisely set desired speed or adjust on screen
- Meet the changing needs of multiple facilities
- Easy installation to North American grounded outlet
- Improve mixing and impeller functionality
- Assign an identifier name or number to each mixer
- Optional auto-start operation upon power restoration
- Monitor viscosity changes as they relate to torque
- Set total mixing time; stop mixing or sound alarm
- Track total mixing time from power up
- Stop mixing or sound alarm at desired torque reading
- Notification of desired time or torque level
- Integrate into existing monitoring and control systems
- Capability for RS232 RS485 PLC and Ethernet or PC
- Document results: speed / torque / time / date
- Protection in aggressive environments; wash down
- Easily access button to immediately stop mixing
- Protects display; replaceable if covered by splashes or dust
- Guard spinning chuck and upper shaft for safety
- Holds shaft securely; diameters up to 16 mm (¾ in)
- Shift gears without manually stopping mixer
- High efficiency no maintenance motor
- Always available – no required maintenance schedule





Caframo's Ultra Torque 1850 lives up to its name, delivering high torque mixing action within the footprint of a bench top overhead stirrer. This model is a proven performer for cream and gel formulations, paint grinds, premixes, and small scale production batches. The TENV housing and quality construction are a match in industrial, food, and pharma manufacturing environments. You are guaranteed to get more power out of your Caframo stirrer.

"These are strong running machines that get abused almost daily." Director of Operations, coatings toll manufacturer.



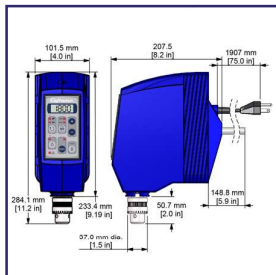
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



Speed	12-1800 rpm
Volume Maximum	80 L (21 US Gallons)
Viscosity Maximum	90 000 mPa·s (90 000 cps)
Torque Maximum	568 N·cm (50 in-lbs = 800 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	12-360 rpm
Speed – High Range	360-1800 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	568 N·cm (50 in-lbs = 800 in-oz)
Torque Maximum – High Speed	114 N·cm (10 in-lbs = 160 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC1850
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
ULTRA TORQUE, 115
VOLT

CODE Price
 CLS-BDC1850 1,540.20



The perfect combination of higher torque and higher speed, Caframo's Universal 3030 offers versatility to conquer the widest range of applications by a bench top stirrer. From larger batches of buffers and media to lotions and slurries, this stirrer will exceed your expectations. Ideal for workplaces with changing mixing needs as the business evolves, the 3030 will provide the most value for your overhead stirrer investment.

"I have purchased several of these over the years. They work great, never seem to break. I do not have any improvements to suggest." Energy technologies innovator.



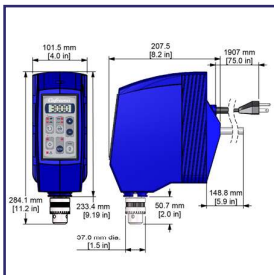
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



Speed	20-3000 rpm
Volume Maximum	60 L (15.5 US Gallons)
Viscosity Maximum	50 000 mPa·s (50 000 cps)
Torque Maximum	341 N·cm (30 in-lbs = 480 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	20-600 rpm
Speed – High Range	600-3000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	341 N·cm (30 in-lbs = 480 in-oz)
Torque Maximum – High Speed	68 N·cm (6 in-lbs = 96 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC3030
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
UNIVERSAL, 115
VOLT

CODE Price
 CLS-BDC3030 1,540.20



Caframo's Ultra Speed 6015 produces results in high speed applications, including emulsions, microencapsulations, low viscosity slurries and high shear dispersions of powders. Digital display and precision control of speed settings make repeatability of process easy. Safety features shut down the stirrer if there is overheating or torque overload, ensuring a long stirrer life. Operate with speeds up to 6000 rpm with peace of mind.

"If it doesn't say Caframo it is not a mixer." Scientific Director, cosmetics manufacturer.

Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.

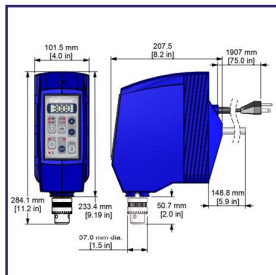


Speed	40-6000 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	170 N·cm (15 in-lbs = 240 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	40-1200 rpm
Speed – High Range	1200-6000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	170 N·cm (15 in-lbs = 240 in-oz)
Torque Maximum – High Speed	34 N·cm (3 in-lbs = 48 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.

Remember to order a stand, clamp and impeller for a complete system to start mixing.



Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC6015
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
ULTRA SPEED, 115
VOLT

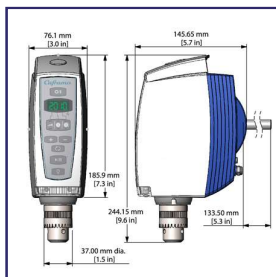
CODE Price
 CLS-BDC6015 1,540.20



Caframo has a history of great innovation in overhead stirrers. The BDC2010 stirrer is no exception and delivers 25% more power than the BDC2002 while keeping the same compact footprint, Stirlight™ and through shaft. The BDC2010 works smarter and allows the user complete mixing control. The stirring direction can be changed with the touch of the reversing button. The countdown timer times a stirring activity and beeps when completed. In xRxmode the stirrer is set up to continuously reverse from one direction to the other for a set length of time. (Picture the agitation mode of a top loading washing machine!)



Speed	40-2010 rpm (clockwise and/or counterclockwise)
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	90 N·cm (7.9 in-lbs = 127 in-oz)
Output Power	50 Watts (1/15 hp)
Speed Display	Yes
Speed Accuracy	± 1 rpm
Torque Display	No
Zero Torque	No
Timer	Countdown 1-2000 minutes (33.3 hours)
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Available
Rotation Direction	Clockwise and counterclockwise
xRx Mode	1-2000 minutes (33.3 hours)
Housing	Epoxy-coated zinc
Weight	Power Supply: 0.6 kg (1.2 lb), Stirrer: 3.0 kg (7 lb)
IP Rating	IP42
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA-22.2 Std No. 61010-1 & 61010-2-051 3rd Ed., UL/ANSI Std No. 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2 3rd Ed.
Warranty	3 years



Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes support rod, chuck, chuck key, external power supply, grounded North American power cord, and printed manual.

Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Clockwise and counterclockwise stirring
- Timer
- Stirlight™
- Sealed housing
- Brushless DC motor
- Digital display
- Through shaft
- Auto Start
- Electronic digital control

Benefits

- Stirring versatility
- Repeatability to process
- Allows monitoring of mixing properties of batches
- Keeps liquids and moisture out in aggressive environments
- High efficiency (less heat)
- Precise speed adjustment
- Easy impeller adjustment saves time
- Resumes stirring at last set speed automatically when power is restored
- Set speed is maintained as viscosity changes
- Automatic overload protection

CLS-BDC2010
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
REVERSING DIGITAL
WITH COUNTDOWN
TIMER

CODE	Price
CLS-BDC2010	1,240.30





Caframo's BDC2002 offers ultimate versatility and maximizes productivity. With the push of a button, the unique Stirlight™ lights up so that solutions can be seen clearly. Included in each purchase: Overhead stirrer motor, chuck, chuck key, support rod, external power supply, grounded power cord, manual in four languages (English, French, Spanish and German) and three year warranty.



Speed	40-2002 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	15 000 mPa·s (15 000 cps)
Torque Maximum	70 N·cm (6 in-lbs = 100 in-oz)
Output Power	40 Watts (1/18 hp)
Speed Display	Yes
Speed Accuracy	± 1 rpm
Torque Display	No
Zero Torque	No
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Available
Rotation Direction	Clockwise only
Housing	Epoxy-coated zinc
Weight	Power Supply: 0.5 kg (1 lb), Stirrer: 3.0 kg (7 lb)
IP Rating	IP42
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA-22.2 Std No. 61010-1 & 61010-2-051 3rd Ed., UL/ANSI Std No. 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2 3rd Ed.
Warranty	3 years



Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes support rod, chuck, chuck key, external power supply, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Stirlight™
- Sealed housing
- Brushless DC motor
- Digital display
- Through shaft
- Auto Start
- Electronic digital control

Benefits

- Allows monitoring of mixing properties of batches
- Keeps liquids and moisture out in aggressive environments
- High efficiency (less heat)
- Precise speed adjustment
- Easy impeller adjustment saves time
- Resumes stirring at last set speed automatically when power is re-stored
- Set speed is maintained as viscosity changes
- Automatic overload protection

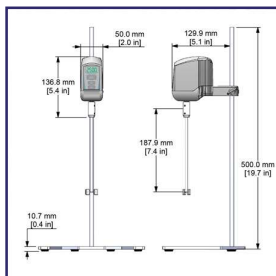
CLS-BDC2002
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
COMPACT DIGITAL,
100-240 VOLT

CODE	Price
CLS-BDC2002	988.30





The ultimate in compact design measuring only two by four inches. The BDC250 offers great capabilities in a small package; used in formulation, R&D, clinical research, education labs, anywhere a magnetic stirrer is used. It fits into small spaces and can be easily transported to other labs or classrooms. Everything you need assembled into a complete stirring package. Included in each purchase: overhead stirrer motor, integral clamp, stainless steel collet, external power supply, grounded power cord, stand, axial and radial mixing blades, mixing shaft, manual in four languages (English, French, Spanish and German) and three year warranty.



Speed	50-2500 rpm
Volume Maximum	2 L (0.5 US Gallon)
Viscosity Maximum	Water-like
Torque Maximum	10 N·cm (0.9 in-lbs = 14 in-oz)
Output Power	7 Watts (1/100 hp)
Speed Display	Yes
Speed Accuracy	± 10 rpm
Torque Display	No
Zero Torque	No
Timer	No
Through Shaft	No
Collet Shaft Diameter	6 mm (0.24")
Chuck Guard	No
Rotation Direction	Clockwise only
Housing	Chemical-resistant nylon
Weight	Power Supply: 0.105 kg (0.23 lb), Stirrer: 0.367 kg (0.81 lb)
IP Rating	IP42
Voltage	120 volt/230 volt must use Caframo power supply
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Stand Rod	500 mm (19 11/16")
Impeller Shaft Length	187 mm x 6.0 mm (7 3/8" x 0.24")
Radial and Axial Blades	12 mm x 30 mm (1/2" x 1 3/16")
Approvals – North America	Certified to applicable CSA and UL standards
Approvals – Europe	Certified to CE EMC Immunity standards
Warranty	3 years

CLS-BDC250 CAFRAMO LAB SOLUTIONS®, OVER- HEAD STIRRER, PETITE DIGITAL, 100- 240 VOLT

Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes integral clamp, collet, mixing shaft, axial and radial mixing blades, stand, power supply, grounded North American power cord, and printed manual.

Features

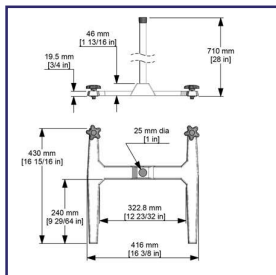
- Brushless DC motor
- Digital display
- Electronic digital control
- Auto Start
- Purchased as a complete package

Benefits

- High efficiency/less heat
- Easy to use and repeatable settings
- Precise speed adjustment
- Resumes stirring at last set speed automatically when power is restored
- Everything you need for the classroom or lab bench

CODE	Price
CLS-BDC250	387.30





CLS-A110 CAFRAMO LAB SO- LUTIONS®, SAFETY STAND WITH BASE

This durable stand provides excellent stability for bench stop stirrers even when agitating viscous materials. The wide base and H configuration allow for a wide range of vessel sizes, while the 711 mm (28 in) stand rod enables strong engagement with stand clamp. Portable and adaptable to address changing work spaces, equipment, and priorities. Additional rods of 965 mm (38 in) and 1219 mm (48 in) lengths are available, all interchangeable with the common base. The cast zinc-aluminum alloy base is coated for protection from corrosion and chemical spills.

Rod Diameter	25 mm (1 in)
Rod Length	711 mm (28 in)
Rod Material	304 stainless steel tube
Weight	5 kg (11 lb)
Base Material	Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
Base Footprint	416 W x 430 L mm (16 3/8 x 16 15/16 in)

A110	Safety stand with 711 mm (28 in) rod, stand base and allen key.
A110BASE	Safety stand base and allen key. Order rod separately (Parts ROD28, ROD38, ROD48)
ROD28	Stand rod only, 711 mm (28 in) length.
ROD38	Stand rod only, 965 mm (38 in) length.
ROD48	Stand rod only, 1219 mm (48 in) length.

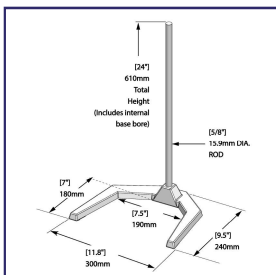
Features

- Wide base and H configuration
- Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- Compatible with three lengths of stand rods
- Rods interchangeable using same allen key

Benefits

- Excellent stability
- Chemical and corrosion resistant – durable and easy to clean
- Flexibility to mount stirrer higher for taller vessels and reaction systems
- Easy to adapt to process needs

Description	CODE	Price
Stand Only	CLS-A110	233.00
Base Only	CLS-A110BASE	182.90
Complete with 28" Rod	CLS-A110-28	292.20
Complete with 38" Rod	CLS-A110-38	318.80
Complete with 48" Rod	CLS-A110-48	344.40



CLS-A210 CAFRAMO LAB SO- LUTIONS®, COMPACT STAND WITH BASE

Sturdy stand in a smaller bench footprint, for Caframo compact stirrer models CLS-BDC2002 and CLS-BDC2010. The unique offset design accommodates Caframo clamp so stirrer locates impeller in centre of vessel. The cast zinc-aluminum alloy base is coated for protection from corrosion and chemical spills.

Compact stand with 610 mm (24 in) rod, stand base, and allen key

Rod Diameter	16 mm (5/8 in)
Rod Material	304 stainless steel
Weight	2.6 kg (5.7 lb)
Base Material	Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
Base Footprint	240 mm x 300 mm (9 1/2 in x 11 7/8 in)

Features

- Unique offset design centers impeller in vessel
- Base is cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- Small footprint

Benefits

- Base provides excellent stability for smaller sized stirrers
- Chemical and corrosion resistant – durable and easy to clean
- Able to use within limited bench space

CODE	Price
CLS-A210	206.40



**CLS-A215****CAFRAMO LAB SOLUTIONS®, COMPACT STAND WITH BASE**

Support stand for Caframo's CLS-BDC250 Petite Stirrer. Conveniently portable and easy to assemble for changing work stations or field work. The cast mild steel base is coated for protection from corrosion and chemical spills. Included as part of CLS-BDC250 stirrer package.

Petite stand with 500 mm (19 3/4 in) rod, stand base, and lock nut.

Rod Diameter	10 mm (3/8")
Rod Length	500 mm (19 3/4")
Rod Material	304 stainless steel
Weight	900 g (2 lb)
Base Material	Cast mild steel coated with chemical resistant epoxy paint
Base Footprint	190 mm x 240 mm (7 1/2" x 9 5/8")

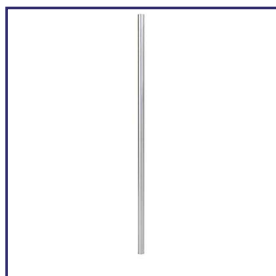
Features

- Base is mild steel coated with chemical resistant epoxy paint
- Small footprint
- Stand weighs less than 1 kg (2.2 lb)

Benefits

- Chemical and corrosion resistant – durable and easy to clean
- Excellent stability within limited bench space
- Easily portable

<u>CODE</u>	<u>Price</u>
CLS-A215	134.90

**CLS-ROD****CAFRAMO LAB SOLUTIONS®, STANDS & CLAMPS, STAND ROD**

Stand rod only, compatible with A110 stand base. Customize your A112 or A114 stand to fit your apparatus. Stand rod composed of 304 stainless steel, 965 mm (38 in) long and 25 mm (1 in) diameter.

Also available in additional lengths: ROD28 is 711 mm (28 in) and ROD48 is 1219 mm (48 in).

Rod Diameter	25 mm (1 in)
Rod Material	304 stainless steel tube

Features

- 304 stainless steel
- Compatible in A110 stand base
- Installed using base allen key

Benefits

- Chemically inert and corrosion resistant
- Flexibility to customize stand for taller vessels and chemical reaction systems
- Easy to adapt to apparatus needs

<u>Length</u>	<u>CODE</u>	<u>Price</u>
28"	CLS-ROD28	82.70
38"	CLS-ROD38	93.00
48"	CLS-ROD48	103.20

**CLS-A300****CAFRAMO LAB SOLUTIONS®, STANDS & CLAMPS, ACCESSORY ROD**

Accessory rod to be paired with A112, A113, and A114 stands. One or two rods can thread into the front legs of the stand base, determined by application. Useful for mounting accessories or reaction apparatus. Rod is 711 mm (28 in) long and 16 mm (5/8 in) diameter, with one threaded end and a stainless steel jam nut. Made of 303 stainless steel.

Accessory rod 711 x 16 mm (28 x 5/8 in), threaded with nut.

Rod Diameter	16 mm (5/8 in)
Rod Length	711 mm (28 in)
Rod Material	303 stainless steel

Features

- 303 stainless steel
- Threads into the front legs of the A112 A113 or A114 stand base

Benefits

- Chemically inert and corrosion resistant
- Able to mount additional reaction apparatus

<u>CODE</u>	<u>Price</u>
CLS-A300	130.20





A popular clamp for its durability, strength, and ease of use. Includes a convenient place to hold chuck key. The cast zinc-aluminum alloy is coated for protection from corrosion and chemical spills.

Features

- Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- No tool required
- Place to hold chuck key

Benefits

- Chemical and corrosion resistant – durable and easy to clean
- Easy and quick one-handed tightening
- Convenient and accessible location when key is needed

Accommodates Stirrer Rod

12.5 mm (½ in)
16 mm (⅝ in)

CODE
CLS-A120
CLS-A122

Price
94.00
104.20



CLS-A120
CAFRAMO LAB SO-
LUTIONS®, FASTEN-
ING CLAMP



CLS-A600SET
CAFRAMO LAB SO-
LUTIONS®, HIGH
SPEED COLLET SET

Achieve greater stability stirring at speeds 1800-6000 rpm. Set includes collet, 16 mm (⅝ in) 440 stainless steel shaft with an end turned down to 8 mm (⅝ in), and three impeller 316 stainless steel blades with 8 mm (⅝ in) bores. Shaft and blades have polished finish. Set includes straight blade A163, dispersion blade A164, and pitched blade propeller A165. Tools and hardware are included for installation to a 13 mm (½ in) motor output shaft of overhead stirrer. To be used with BDC3030 or BDC6015 overhead stirrers.

Collet, 16 mm (⅝ in) diameter shaft, straight blade A163, dispersion blade A164, pitched blade propeller A165, and allen key.

Speed Range	1800-6000 rpm
Fits Motor Shaft	13 mm (½ in)
Collet Material	316 stainless steel
Shaft Material	Polished 440 stainless steel
Shaft Length	260 mm (10 ¼ in)
Shaft Diameter	16 mm (⅝ in)
Impeller Bores	8 mm (⅝ in)
A163 Diameter	40 mm (1 ⅝ in)
A164 Diameter	48 mm (1 ⅞ in)
A165 Diameter	64 mm (2 ½ in)
Blade Rotation	Left hand
Weight	660 g (1.5 lb)
Weight	46 g (1.6 oz)

Features

- For high speed mixing (1800-6000 rpm)
- Chuck key or allen key attaches collet to output shaft
- Shaft has turned down end to 8 mm (⅝ in)

Benefits

- Greater stability for extended stirring at higher speeds
- No additional tools required
- Customize to any impeller with 8 mm (⅝ in) bore

<u>CODE</u>	<u>Price</u>
CLS-A600SET	556.90





CLS-S100
CAFRAMO LAB SO-
LUTIONS®, IMPELLER
SET

Shaft and impeller blades to fit collet of BDC250 stirrer, all electropolished 316L stainless steel. Includes one radial blade and one axial blade and interchangeable set screw. Is included in BDC250 stirrer package.

Mixing shaft, axial and radial mixing blades, and set screw.

Impeller Shaft Dimensions	188 x 6.0 mm (7 3/8 x 0.24 in)
Radial and Axial Blades Dimensions	13 x 30 mm (1/2 x 1 3/16 in)
Blade Rotation	Left hand
Material	Electropolished 316L stainless steel
Weight	40 g (1.4 oz)

Features

- Electropolished 316 L stainless steel
- Axial and radial blades included
- Set screw compatible with standard tool

Benefits

- Chemical and corrosion resistant
- Choice of two types of flow
- Blades easily interchangeable

<u>CODE</u>	<u>Price</u>
CLS-S100	89.70



CLS-CG1
CAFRAMO LAB SO-
LUTIONS®, CHUCK
GUARD

Implement safety with a quick snap of this clear polyurethane chuck guard to the stirrer housing. Creates barrier around moving chuck, as well as protects chuck from chemical splashes. Use with overhead stirrers BDC1850, BDC3030, and BDC6015. Easy to attach and remove.

Chuck guard, clear polyurethane

Material	Chemical-resistant polyurethane
Weight	14 g (0.5 oz), magnets

Features

- Magnets securely snap guard into place on stirrer housing over the chuck
- Creates a barrier around the spinning chuck
- Chemical-resistant polyurethane

Benefits

- Easy to install and remove
- Protects users from the moving chuck
- Protects the chuck from splashes

<u>CODE</u>	<u>Price</u>
CLS-CG1	65.20



CLS-CG5
CAFRAMO LAB SO-
LUTIONS®, CHUCK
GUARD

Implement safety by sliding this guard over the chuck. Creates barrier around moving chuck, with the snug fit protecting from splashing and corrosive fumes. Use with overhead stirrers BDC2002, BDC2010, BDC1850, BDC3030, BDC6015.

BDC1850, BDC3030, and BDC6015 have chuck guard CG1 included with stirrer

Material	Chemical-resistant vinyl
Fasteners	Slides onto chuck
Weight	18 g (0.65 oz)

Features

- Black chemical resistant vinyl
- Slides into place over the chuck

Benefits

- Protects the chuck from splashes
- Simple to install and remove

<u>CODE</u>	<u>Price</u>
CLS-CG5	16.30



CLS-13CSET CAFRAMO LAB SO- LUTIONS®, CHUCK SET

Chuck is used with Caframo High Torque and Compact overhead stirrers, accepting impeller shafts up to 10 mm ($\frac{3}{8}$ in) diameter. Chuck key includes hex tool for removal from stirrer's output shaft for cleaning or replacement. Through shaft capability allows for easy adjustment of impeller height. Compatible with Caframo chuck guards CG1 and CG5.

Chuck and chuck key for Caframo High Torque and Compact stirrers, includes set screw and hex tool for installation.

Material	420 stainless steel
Through Shaft	Yes
Impeller Shaft Diameters	Adjustable to 10 mm ($\frac{3}{8}$ in)
Fits Motor Shaft	13 mm ($\frac{1}{2}$ in)
Multipurpose Tool	Chuck key and 2.5 mm hex tool in one
Weight	280 g (0.6 lb)

Features

- Accepts shafts up to 10 mm ($\frac{3}{8}$ in) diameter
- Through shaft
- 420 stainless steel
- Keyed chuck
- Chuck key includes 2.5 mm hex installation tool
- Available chuck guards CG1 and CG5

Benefits

- Adjustable for a wide range of shaft diameters
- Easy adjustment of impeller height
- High strength and high wear resistance
- Secure attachment for high torque mixing
- Tool provided for chuck installation and removal for cleaning
- Chuck guard option for safety and chuck protection from splashes

<u>CODE</u>	<u>Price</u>
CLS-13CSET	132.60



CLS-13CKEY CAFRAMO LAB SO- LUTIONS®, CHUCK KEY

Chuck key from 13CSET. Firmly tightens the chuck to secure the mixing shaft in place, and loosens chuck for quick removal or adjustment of impeller. Includes 2.5 mm hex tool for installation and removal of chuck from stirrer's output shaft for cleaning or replacement.

Chuck key only for 13CSET chuck, includes hex tool for chuck installation.

Material	420 stainless steel
Multipurpose Tool	Chuck key and 2.5 mm hex tool in one
Dimensions	81 x 40 mm ($3 \frac{3}{16}$ x $1 \frac{9}{16}$ in)
Weight	40 g (1.4 oz)

Features

- 420 stainless steel
- Multipurpose tool

Benefits

- High strength and high wear resistance
- Chuck key and 2.5 mm hex tool provided for installation and removal of chuck

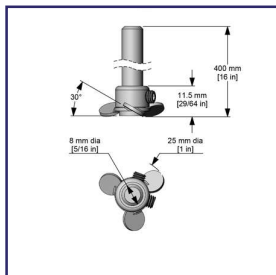
<u>CODE</u>	<u>Price</u>
CLS-13CKEY	25.50





Blade and shaft are conveniently bundled together, able to address a variety of stirring applications. This axial flow impeller is effective for low shear mixing. The 25 mm (1 in) diameter blade fixes to an 8 mm ($\frac{5}{16}$ in) diameter shaft with included set screws. Blade and shaft are both 316L stainless steel, with the propeller blade electropolished finish and the shaft with passivated finish.

Pitched blade propeller, 25 mm (1 in) diameter blade paired with 400 mm (16 in) shaft, includes set screws.



Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ in)
Blade Diameter	25 mm (1 in)
Blade Rotation	Left hand
Blade Material	Electropolished 316L stainless steel
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Shaft Material	Passivated 316L stainless steel
Weight	168 g (0.37 lb)

Features

- 316L stainless steel
- Secured to shaft with set screws
- Pitched blade propeller
- High speed low shear axial flow

Benefits

- Chemically inert and corrosion resistant
- Able to adjust position of impeller blade along shaft
- Scale up advantage if propeller used in production
- Serves a wide range of applications – a popular choice of impeller

CLS-A190
CAFRAMO LAB SO-
LUTIONS®, IMPELLER
& SHAFT

<u>CODE</u>	<u>Price</u>
CLS-A190	98.90



This popular impeller serves a wide range of stirring applications, pairing the blade and shaft in a convenient package. This axial flow impeller is effective for high speed, low to medium viscosity mixing. The 64 mm (2 $\frac{1}{2}$ in) diameter blade fixes to an 8 mm ($\frac{5}{16}$ in) diameter shaft with included set screws. Blade and shaft are electropolished 316L stainless steel. For low shear, high top to bottom pumping capacity with high gas injection, able to vortex 19 L (5 gal) of water at 3600 rpm. This product replaces the Pitched Blade Propeller Model CLS-A160.

Cast pitched blade propeller, 64 mm (2 $\frac{1}{2}$ in) diameter blade paired with 400 mm (16 in) shaft, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Blade Diameter	64 mm (2 $\frac{1}{2}$ in)
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Material	Electropolished 316L stainless steel
Weight	181 g (0.4 lb)

Features

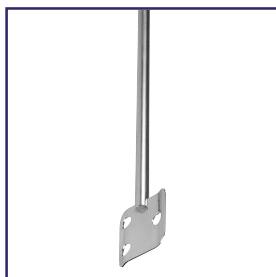
- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A166	115.20





CLS-A250
CAFRAMO LAB SO-
LUTIONS®, COMPACT
SQUARE BLADE

This tangential flow impeller is effective for low speed, high viscosity mixing. The 38 mm (1 ½") square blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. For stirring small volumes of viscous product.

Square blade impeller, 38 mm (1 ½ in) square blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	38 mm (1 ½") square blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	159 g (0.3 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A250	97.90



CLS-A150
CAFRAMO LAB SO-
LUTIONS®, SQUARE
BLADE IMPELLER

This tangential flow impeller is effective for low speed, high viscosity mixing. The 70 mm (2 ¾") square blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. For stirring small volumes of viscous product.

Square blade impeller, 70 mm (2 ¾ in) square blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	70 mm (2 ¾") square blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	180 g (0.4 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A150	98.90



CLS-A141
CAFRAMO LAB SO-
LUTIONS®, COLLAP-
SIBLE BLADE
IMPELLER

This radial flow impeller is a popular choice for high speed, low viscosity mixing in carboys or narrow neck flasks. The blades are pinned to an 8 mm (5/16") diameter shaft, fanning out with agitation to a maximum diameter of 90 mm (3 ½"). Blades and shaft are electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 1000 rpm.

Straight blade impeller, 10 – 90 mm (¾ – 3 ½ in) diameter blade, pinned to shaft

Flow Pattern	Radial
Blade Diameter	10 mm – 90 mm (¾" – 3 ½")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	127 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Collapsible blades enter any opening over 10 mm (¾ in) diameter
- Pinned to shaft

Benefits

- Chemically inert and corrosion resistant
- Fits in narrow neck vessels and carboys
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A141	91.80



CLS-A140
CAFRAMO LAB SO-
LUTIONS®, PIVOTING
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 60 mm (2 3/8") diameter straight blade is pinned to an 8 mm (5/16") diameter shaft, allowing blade to pivot with agitation. Blade and shaft are electropolished 316L stainless steel. A moderate shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 800 rpm.

Straight blade impeller, 60 mm (2 3/8 in) diameter blade, pinned to shaft

Flow Pattern	Radial
Blade Diameter	60 mm (2 3/8")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	126 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Pinned to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A140	96.90



CLS-A130
CAFRAMO LAB SO-
LUTIONS®, CROSSED
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 50 mm (2") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with high vortexing properties, creating a vortex in 19 L (5 gal) of water at 900 rpm.

Crossed blade impeller, welded to shaft

Flow Pattern	Radial
Blade Diameter	50 mm (2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	128 g (0.3 lb)

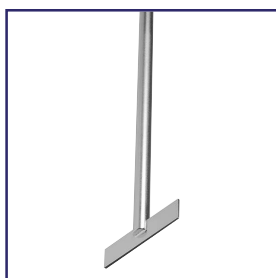
Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A130	91.80



CLS-A131
CAFRAMO LAB SO-
LUTIONS®, STRAIGHT
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 50 mm (2") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 1200 rpm.

Straight blade impeller, 50 mm (2 in) diameter blade, welded to shaft

Flow Pattern	Radial
Blade Diameter	50 mm (2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	128 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A131	91.80





CLS-A231

CAFRAMO LAB SOLUTIONS®, COMPACT STRAIGHT BLADE

This radial flow impeller is effective for high speed, low viscosity mixing. The 30 mm (1 ¼") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties.

Straight blade impeller, 32 mm (1 ¼ in) diameter blade, welded to shaft

Flow Pattern	Radial
Blade Diameter	30 mm (1 ¼")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	120 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A231	91.80



CLS-A163

CAFRAMO LAB SOLUTIONS®, STRAIGHT BLADE ONLY

Straight blade of 40 mm (1 ½") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear, low viscosity mixing with moderate vortexing, this blade will vortex 19 L (5 gal) of water at 1200 rpm.

Straight 40 mm (1 ⅝ in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in the A600SET high speed collet set.

Flow Pattern	Radial
Bore Diameter	8 mm (5/16")
Blade Diameter	40 mm (1 ½")
Blade Height	13 mm (½")
Material	Electropolished 316L stainless steel
Weight	20 g (0.71 oz)

Features

- Electropolished 316L stainless steel
- Straight blade

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A163	77.50





CLS-A164
CAFRAMO LAB SO-
LUTIONS®, DISPER-
SION BLADE ONLY

Dispersion blade of 48 mm (1 7/8") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear mixing at medium to high speeds.

Precision dispersion 48 mm (1 7/8 in) blade only, with 8 mm (5/16 in) bore, includes set screws

This blade is included in the A600SET high speed collet set.

Flow Pattern	Laminar
Bore Diameter	8 mm (5/16")
Blade Diameter	48 mm (1 7/8")
Material	Electropolished 316L stainless steel
Weight	38.4 g (1.35 oz)

Features

- Electropolished 316L stainless steel
- High shear

Benefits

- Chemically inert and corrosion resistant
- Broken particles are dispersed by the laminar flow set up by the blade

<u>CODE</u>	<u>Price</u>
CLS-A164	189.70



CLS-A165
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE ONLY

Pitched blade propeller of 65 mm (2 1/2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection, this blade will vortex 19 L (5 gal) of water at 3600 rpm.

Cast pitched blade propeller 64 mm (2 1/2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	65 mm (2 1/2")
Material	Electropolished 316L stainless steel
Weight	23 g (0.8 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A165	92.80





CLS-A551
CAFRAMO LAB SO-
LUTIONS®, TURBINE
3 BLADE PROPELLER
ONLY

Turbine blade of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear mixing with moderate vortexing.

Turbine 3 blade propeller 50 mm (2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

Flow Pattern	Radial
Bore Diameter	8 mm (5/16")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	16.2 g (0.6 oz)

Features

- Electropolished 316L stainless steel
- Turbine 3 blade propeller

Benefits

- Chemically inert and corrosion resistant
- High shear with moderate vortexing characteristics

<u>CODE</u>	<u>Price</u>
CLS-A551	39.00



CLS-A553
CAFRAMO LAB SO-
LUTIONS®, TURBINE
3 BLADE PROPELLER
ONLY

Turbine blade of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 9.5 mm (3/8") bore is compatible with Caframo shafts P-A713, P-A723, P-A733, P-A743, and P-A753. Set screws included. For high shear mixing with moderate vortexing.

Turbine 3 blade propeller 50 mm (2 in) blade only, with 9.5 mm (3/8 in) bore, includes set screws.

Flow Pattern	Radial
Bore Diameter	9.5 mm (3/8")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	15.9 g (0.6 oz)

Features

- Electropolished 316L stainless steel
- Turbine 3 blade propeller

Benefits

- Chemically inert and corrosion resistant
- High shear with moderate vortexing characteristics

<u>CODE</u>	<u>Price</u>
CLS-A553	39.00



CLS-A511
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 25 mm (1") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 25 mm (1 in) blade only, with 8 mm (5/16 in) bore, includes set screws

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	25 mm (1")
Material	Electropolished 316L stainless steel
Weight	7.0 g (0.25 oz)

Features

- 316L stainless steel
- Secured to shaft with set screws
- Pitched blade propeller
- High speed low shear axial flow

Benefits

- Chemically inert and corrosion resistant
- Able to adjust position of impeller blade along shaft
- Scale up advantage if propeller used in production
- Serves a wide range of applications – a popular choice of impeller

<u>CODE</u>	<u>Price</u>
CLS-A511	37.00





CLS-A521
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 38 mm (1 ½") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 38 mm (1 ½ in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	38 mm (1 ½")
Material	Electropolished 316L stainless steel
Weight	9.4 g (0.33 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A521	37.00



CLS-A531
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 50 mm (2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	12.9 g (0.46 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A531	37.00





CLS-A533
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 9.5 mm ($\frac{3}{8}$ ") bore is compatible with Caframo shafts P-A713, P-A723, P-A733, P-A743, and P-A753. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 50 mm (2 in) blade only, with 9.5 mm ($\frac{3}{8}$ in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	9.5 mm ($\frac{3}{8}$ ")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	12.9 g (0.46 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A533	37.00



CLS-A541
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 75 mm (3") diameter, composed of electropolished 316L stainless steel. The 8 mm ($\frac{5}{16}$ ") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 78 mm (3 in) blade only, with 8 mm ($\frac{5}{16}$ in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ ")
Blade Diameter	75 mm (3")
Material	Electropolished 316L stainless steel
Weight	29.7 g (1.0 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A541	41.00





Pitched blade turbine of 100 mm (4 in) diameter, composed of electropolished 316L stainless steel. The 8 mm ($\frac{5}{16}$ in) bore is compatible with all Caframo shafts. Set screws included. Axial flow with moderate shear for moderate viscosity mixing.

Pitched 4 blade turbine 100 mm (4 in) blade only, with 8 mm ($\frac{5}{16}$ in) bore, includes set screws.

Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ in)
Blade Diameter	100 mm (4 in)
Blade Rotation	Left hand
Pitch	45°
Material	Electropolished 316L stainless steel
Weight	46 g (1.6 oz)

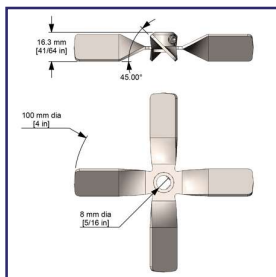
Features

- Electropolished 316L stainless steel
- Four-blade pitched turbine
- Moderate shear axial flow
- Secured to shaft with set screws

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if turbine used in production
- Serves a wide range of applications
- Able to add multiple blades along shaft and easy to clean

<u>CODE</u>	<u>Price</u>
CLS-A561	77.00



CLS-A561
CAFRAMO LAB SO-
LUTIONS®, 4 BLADE
PITCHED ONLY



A radial flow PTFE impeller for high speed, low viscosity mixing in narrow neck flasks. The blades are attached to an 8 mm ($\frac{5}{16}$ in) diameter PTFE-coated shaft, fanning out with agitation to a maximum diameter of 40 mm ($1\frac{1}{2}$ in). The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE Collapsible Impeller, up to 40 mm ($1\frac{1}{2}$ in) diameter blade

Flow Pattern	Radial
Blade Diameter	40 mm ($1\frac{1}{2}$ in)
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	91 g (0.2 lb)

Features

- PTFE blades
- Collapsible blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece

Benefits

- Excellent chemical (including acidic and caustic) resistance
- Fits in narrow neck vessels and Erlenmeyer flasks
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A180	205.80

CLS-A180
CAFRAMO LAB SO-
LUTIONS®, PTFE
COLLAPSIBLE IM-
PELLER





CLS-A183
CAFRAMO LAB SO-
LUTIONS®, PTFE AN-
CHOR PADDLE

A tangential flow PTFE impeller for low speed, higher viscosity mixing. The 80 mm (3 1/8") blade is attached to an 8 mm (5/16") diameter PTFE-coated shaft, designed for use in round bottom vessels and reaction flasks. The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE Anchor Paddle, 80 mm (3 1/8 in) blade

Flow Pattern	Tangential
Blade Diameter	80 mm (3 1/8")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	113 g (0.2 lb)

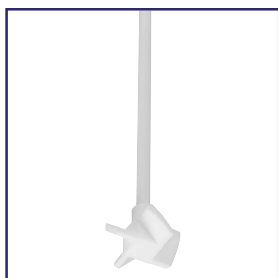
Features

- Tangential flow
- PTFE blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece

Benefits

- Effective for low speed medium to high viscosity mixing
- Excellent chemical (including acidic and caustic) resistance
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A183	294.00



CLS-A185
CAFRAMO LAB SO-
LUTIONS®, PTFE 4
BLADE PITCHED
PROPELLER

An axial flow PTFE impeller for high speed, low viscosity mixing. With 45° pitched blades, the 40 mm (1 1/2") diameter impeller is attached to an 8 mm (5/16") diameter PTFE-coated shaft. The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE 4 blade propeller, 40 mm (1 1/2 in) blade

Flow Pattern	Axial
Blade Diameter	40 mm (1 1/2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	113 g (0.2 lb)

Features

- PTFE blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece
- 45° blade pitch

Benefits

- Excellent chemical (including acidic and caustic) resistance
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing
- Right hand rotation (solution pushed downwards when propeller spins clockwise)

<u>CODE</u>	<u>Price</u>
CLS-A185	268.80





A712	Shaft – 305 mm (12 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 110 g (0.2 lb)
A162	Shaft – 406 mm (16 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 150 g (0.3 lb)
A722	Shaft – 457 mm (18 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 180 g (0.4 lb)
A742	Shaft – 610 mm (24 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 240 g (0.5 lb)

Use with: Any blade with an 8 mm ($\frac{5}{16}$ in) diameter bore

Features

- Passivated 316L stainless steel
- 8 mm ($\frac{5}{16}$ in) diameter

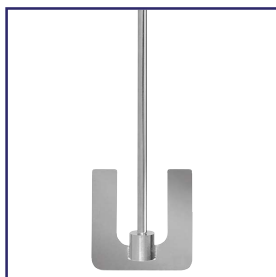
Benefits

- Chemically inert and corrosion resistant
- Fits blades having 8 mm ($\frac{5}{16}$ in) bore and majority of bench top overhead stirrer chucks

CLS-A162 CAFRAMO LAB SO- LUTIONS®, IM- PELLERS & SHAFTS, SHAFTS

	Material	Length	CODE	Price
	316 SS Electropolished	16 x 5/16"	CLS-A162	56.10
	316 SS Passivated	12 x 5/16"	CLS-A712	40.80
316 SS Passivated with 1/2 x 5/16" end		12 x 3/8"	CLS-A713	47.40
316 SS Passivated		18 x 5/16"	CLS-A722	62.20
316 SS Passivated with 1/2 x 5/16" end		18 x 3/8"	CLS-A723	62.20
316 SS Passivated with 1/2 x 5/16" end		20 x 3/8"	CLS-A733	79.50
316 SS Passivated		24 x 5/16"	CLS-A742	83.60
316 SS Passivated with 1/2 x 5/16" end		24 x 3/8"	CLS-A743	86.70
316 SS Passivated with 1/2 x 5/16" end		30 x 3/8"	CLS-A753	111.10





CLS-U044
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 4x4"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 102 mm x 102 mm (4" x 4") anchor blade is welded to an 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Fits the Sweep accessory covers SW4. The high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 102 x 102 mm (4 x 4 in) blade, welded to shaft.

Flow Pattern	Tangential
Blade Diameter	102 mm x 102 mm (4" x 4") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	280 g (0.6 lb)

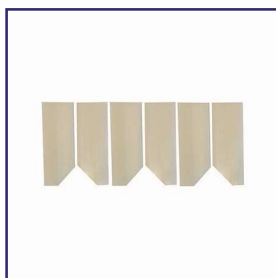
Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft
- Fits Sweep accessory SW4

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing
- Sweeps product from wall of standard 4 L beaker

<u>CODE</u>	<u>Price</u>
CLS-U044	201.90



CLS-SW4
CAFRAMO LAB SO-
LUTIONS®, SWEEP
BLADE

Maximize the stirring results of Caframo's U044 anchor impeller with the sweep blade accessory. Effectively move viscous product from vessel walls back to the centre for thorough mixing. The Silicone SCX 0570 is compliant with FDA 21 CFR 177.2600 and resilient to stir batches with viscosities up to 38,000 mPas. Compatible with a standard 4 L beaker for continuous sweeping while stirring. Ideal for formulating creams and lotions. Comes as a package of 6 (3 pairs). Please note a vessel clamp is required.

Sweep blades only, package of 6 (3 pairs)

Note: Vessel clamp is required, optimal performance using 4 L beaker

Material	Silicone SCX 0570 – Compliant with FDA 21 CFR 177.2600
Compatible Impeller	U044 anchor paddle
Blade Dimensions	152 x 55 mm (6 x 2 $\frac{3}{16}$ in)
Vessel	Standard 4 L beaker
Viscosity Range	0-38,000 mPas (0-38,000 cP)
Temperature Maximum	100 °C (210 °F)
Weight (U044SW)	1.5 kg (3.4 lb)
Weight (SW4)	0.5 kg (1.2 lb)

Features

- Viscosity range 0-38 000 mPas
- Sweeps product from vessel wall
- Heat tolerant up to 100 °C (210 °F)
- Silicone compliant for processes regulated by FDA 21 CFR 177.2600
- Molded silicone

Benefits

- Viscous product mixing
- No longer requires a spatula to scrape down
- Can be used in heated processes
- Material approved for repeated use in food processes
- Easily modified or customized by trimming with scissors

<u>CODE</u>	<u>Price</u>
CLS-SW4	76.50





CLS-U044SW
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE AND SWEEP
BLADE, 4x4"

Achieve enhanced process results with the addition of silicone sweep blades to our popular CLS-U044 anchor impeller. The impeller with sweep is effective for low speed, high viscosity mixing up to 38 000 mPa·s. The tangential flow 100 mm x 100 mm (4" x 4") anchor blade is welded to an 9.5 mm (3/8") diameter shaft, all electropolished 316L stainless steel. Sweep accessory blades slide over the anchor arms, enabling the combination to scrape sides of a standard 4 L beaker as it stirs. Sweep material silicone SCX 0570 is compliant with FDA 21 CFR 177.2600. A vessel clamp is required when using this impeller. Due to the torque required for effective stirring, we recommend using only with the Caframo overhead stirrer models CLS-BDC1850 and CLS-BDC3030.

U044 anchor paddle, sized 102 x 102 mm (4 x 4 in), with two sweep blades included

Vessel clamp is required, optimal performance using 4 L beaker

Flow Pattern	Tangential
Blade Diameter	102 mm x 102 mm (4" x 4") anchor blade
Blade and Sweep Diameter	145 mm (5 3/4 in)
Blade and Sweep Dimensions	150 x 145 mm (6 x 5 3/4 in)
Shaft Length	914 mm (36 in)
Shaft Diameter	9.5 mm (3/8 in)
Material – Impeller	Electropolished 316L stainless steel
Material – Sweep accessory	Silicone SCX 0570
Weight (U044SW)	1.5 kg (3.4 lb)
Weight (SW4)	0.5 kg (1.2 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Blade welded to shaft
- Viscosity range 0-38 000 mPa·s
- Sweeps product from vessel wall
- Heat tolerant up to 100 °C (210 °F)
- Silicone compliant for processes regulated by FDA 21 CFR 177.2600
- Molded silicone

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing
- Viscous product mixing
- No longer requires a spatula to scrape down
- Can be used in heated processes
- Material approved for repeated use in food processes
- Easily modified or customized by trimming with scissors

<u>CODE</u>	<u>Price</u>
CLS-U044SW	223.30



CLS-U022
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 2x2"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 50 mm x 50 mm (2" x 2") anchor blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 51 x 51 mm (2 x 2 in) blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	50 mm x 50 mm (2" x 2") anchor blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	180 g (0.4 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U022	176.40





CLS-U055
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 5×5"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 125 mm x 125 mm (5" x 5") anchor blade is welded to a 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 127 x 127 mm (5 x 5 in), welded to shaft

Flow Pattern	Tangential
Blade Diameter	125 mm x 125 mm (5" x 5") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	300 g (0.7 lb)

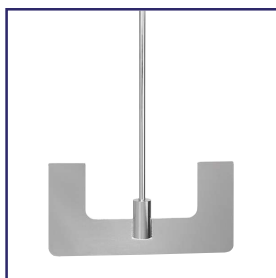
Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U055	217.20



CLS-U510
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 5×10"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 125 mm x 250 mm (5" x 10") anchor blade is welded to a 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall. Due to the torque required for effective stirring, we recommend the Caframo overhead stirrer CLS-BDC1850.

Anchor impeller, 127 x 254 mm (5 x 10 in) blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	125 mm x 250 mm (5" x 10") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	720 g (1.6 lb)

Features

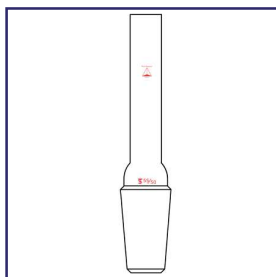
- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U510	257.00

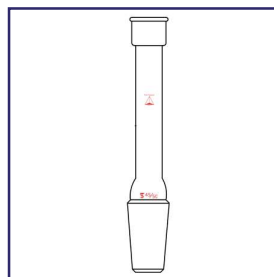




PRG-6150
BEARING, GLASS,
10 mm

All borosilicate glass bearing has a 10mm I.D. precision ground and polished finish. Used with shaft PRG-6205 with ground finish only (not polished). Lubrication is required for hours of operation.

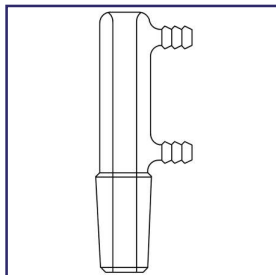
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
19/38	-01	82.62
24/40	-02	88.97
29/42	-03	91.37
34/45	-04	92.64
45/50	-05	94.36
55/50	-06	88.17



PRG-6155
BEARING, GLASS,
WITH CUP

All borosilicate glass bearing has a 10mm I.D. precision ground and polished finish. Used with shaft PRG-6205 with ground finish only (not polished). Lubrication reservoir allows extended hours of operation.

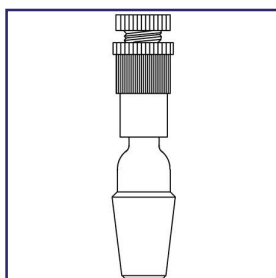
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
19/38	-01	84.23
24/40	-02	90.56
29/42	-03	92.94
34/45	-04	94.22
45/50	-05	96.14
55/50	-06	109.32



PRG-6160
BEARING, GLASS,
JACKETED

All borosilicate glass bearing has a 10mm I.D. precision ground and polished finish. Used with shaft PRG-6205 with ground finish only (not polished). Circulatory jacket decreases frictional wear in extended stir operations. Lubrication is required between shaft and inner bearing.

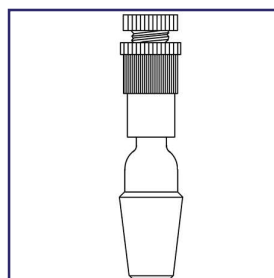
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	107.07
29/42	-02	110.02
45/50	-03	121.12



PRG-6165
BEARING, TEFLON®,
10 mm

Teflon® bearing operates grease-free and is designed for vacuum or pressures to 10⁻⁶. Glass to Teflon® connections are threaded with a compression and locking nut. Bearing has replacement seal for extended life. Use only with glass or stainless steel shaft with polished finishes.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	-01	231.94
29/42	-02	238.33
34/45	-04	258.98
45/50	-03	173.22
55/50	-06	189.11
Replacement Saddle	-07	9.92
Teflon® Inner Bearing	-08	31.17

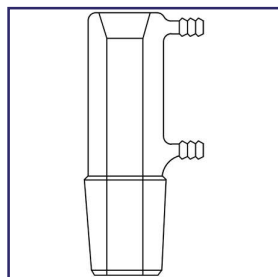


PRG-6170
BEARING, TEFLON®,
HEAVY DUTY, 19 mm

Teflon® bearing operates grease-free and is designed for vacuum or pressures to 10⁻⁶. Glass to Teflon® connections are threaded with a compression and locking nut. Bearing has replacement seal for extended life. Use only with glass shafts with polished finishes.

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
34/45	-01	362.23
45/50	-02	373.38
55/50	-03	394.03
71/60	-04	516.34
Replacement Saddle O-Ring Only	-07	16.78
Teflon® Inner Bearing O-Ring Only	-08	108.95

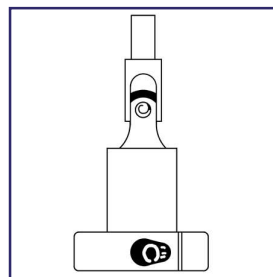




PRG-6175
BEARING, HEAVY
DUTY, GLASS, 19 mm

All borosilicate glass bearing has 19 mm I.D. precision ground and polished finish. Used only with PRG-6210 shafts with ground finish (not polished). Circulatory jacket reduces frictional wear in extended operations. Lubrication is still required between the shaft and bearing I.D.

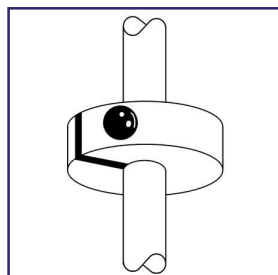
Joint Size	CODE	Price
45/50	-01	240.48
55/50	-02	247.04
71/60	-03	265.70



PRG-6180
UNIVERSAL SHAFT
ADAPTER

For connecting the stir shaft to the motor chuck. A split collar consists on the stirrer rod with the tightening of a set screw. A universal joint compensates for vibration and slight misalignment of assembly.

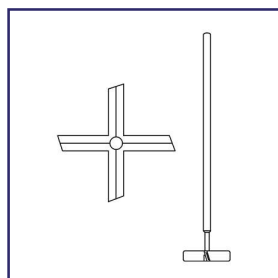
Size	CODE	Price
10 mm	-01	112.80
19 mm	-02	142.27



PRG-6185
SHAFT, SAFETY RE-
TAINER

Nylon collar prevents stirrer rod from slipping down and damaging the vessel especially in vacuum application.

Size	CODE	Price
10 mm	-01	20.82
19 mm	-02	39.05

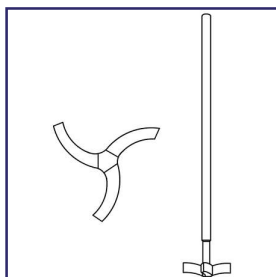


PRG-6187
SHAFT, 4-BLADE,
10 mm, GROUND AND
POLISHED

All borosilicate glass 10mm shafts are precision ground and polished. Four blades are fused on at 90° apart and angled at 15°. Blades push down in a clock-wise rotation. Other designs are available upon request.

Overall Length	Flask Capacity	Agitator O.D.	CODE	Price
445 mm	1 - 3 Lt	40 mm	-01	154.00
515 mm	3 - 5 Lt	65 mm	-02	166.06
590 mm	12 - 22 Lt	65 mm	-03	170.03

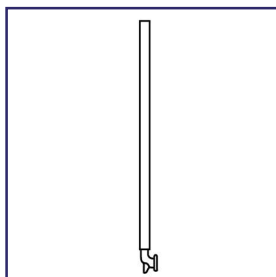




PRG-6188
SHAFT, 3-BLADE,
10 mm, GROUND AND
POLISHED

All borosilicate glass 10 mm shafts are precision ground and polished. Three curved blades are fused on at 120° apart. Blades are in a retreat sweep position in a clock-wise rotation. Other designs are available upon request.

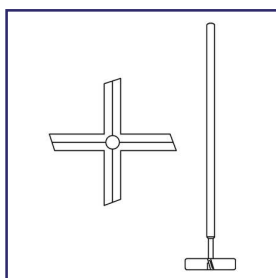
<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	40 mm	-01	154.00
515 mm	3 - 5 Lt	65 mm	-02	166.06
590 mm	12 - 22 Lt	65 mm	-03	170.03



PRG-6190
SHAFT, 10 mm O.D.,
GROUND AND POL-
ISHED

10 mm shafts are precision ground and polished. Lower bottom is designed to work with PRG-6215 banana blades. Used with bearing PRG-6165.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	-01	73.73
515 mm	3 - 5 Lt	-02	76.17
590 mm	12 - 22 Lt	-03	81.74

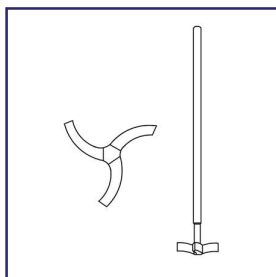


PRG-6192
SHAFT, 19 mm, 4-
BLADE, GROUND
AND POLISHED

19 mm shafts are precision ground and polished. Four 1/4" thick are fused on at 90° and angled at 15°. Blades push down in a clock-wise rotation. Other designs are available upon request.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	90 mm	-01	313.20
725 mm	12 - 22 Lt	90 mm	-02	316.33
950 mm	50 - 72 Lt	125 mm	-03	317.52



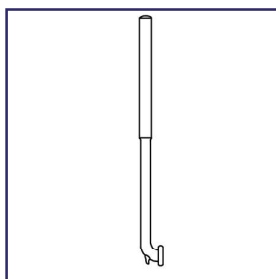


19 mm shafts are precision ground and polished. Three curved blades are fused on at 120° they have a retreat sweep curvature in a clock-wise rotation. Other designs are available upon request.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	90 mm	-01	313.20
725 mm	12 - 22 Lt	90 mm	-02	315.36
950 mm	50 - 72 Lt	125 mm	-03	317.52

PRG-6193

SHAFT, 19 mm, 3-BLADE, GROUND AND POLISHED

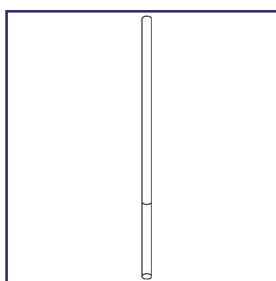


19 mm precision ground and polished. Low bottom is designed to work with banana blades PRG-6220, PRG-6225, and PRG-6230.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	-01	228.96
725 mm	12 - 22 Lt	-02	241.92
950 mm	50 - 72 Lt	-03	254.88

PRG-6195

SHAFT, 19 mm O.D., GROUND AND POLISHED



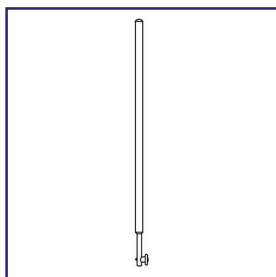
19 mm precision ground and polished. The straight lower portion is rough ground to secure on adjustable height compression fit impellers PRG-6212, PRG-6213, and PRG-6214.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
585 mm	11 - 51 Lt	-01	135.63
725 mm	12 - 22 Lt	-02	144.56
950 mm	50 - 72 Lt	-03	162.45

PRG-6197

SHAFT, 19 mm O.D., GROUND AND POLISHED

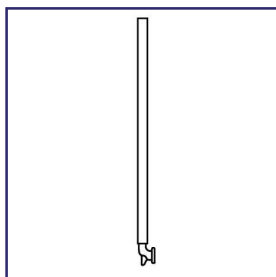




10 mm precision ground and polished finish 316 Stainless Steel. Lower button screws off and on to accommodate PRG-6215 banana blade.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 5 Lt	-01	142.48
515 mm	12 Lt	-02	167.63
590 mm	22 Lt	-03	192.76

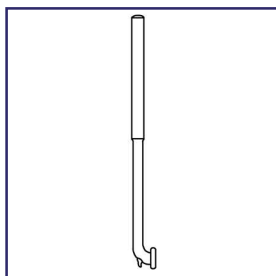
PRG-6200
SHAFT, 10 mm O.D.,
STAINLESS STEEL
ROD



10 mm shaft is precision ground (not polished) and designed to work with PRG-6150 and PRG-6155 glass bearings. See PRG-6215 for banana blades.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	-01	66.72
515 mm	3 - 5 Lt	-02	76.25
590 mm	12 - 22 Lt	-03	71.50

PRG-6205
SHAFT, 10 mm O.D.,
GROUND GLASS



19 mm precision ground (not polished) and designed to work with PRG-6175 glass bearing. For banana blade options see PRG-6220, PRG-6225 and PRG-6230.

<u>Overall Length</u>	<u>Flask Capacity</u>	<u>CODE</u>	<u>Price</u>
585 mm	1 - 5 Lt	-01	177.13
725 mm	12 - 22 Lt	-02	183.35
950 mm	50 - 72 Lt	-03	204.78

PRG-6210
SHAFT, 19 mm O.D.,
GROUND GLASS





CW-005.5
COWIE®, PTFE
SHAFT STIRRING,
SHAFTS FOR BLADES

Shafts for Blades are for use with PTFE Stirrer Blades series CW-002.xxx.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

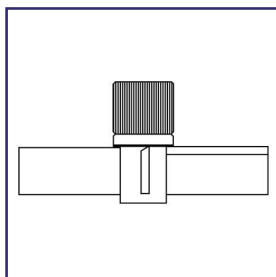
A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø	Length	CODE	Price
6 mm	300 mm	CW-005.530.1	50.90
6 mm	400 mm	CW-005.540.1	51.87
6 mm	500 mm	CW-005.550.1	52.84
8 mm	300 mm	CW-005.530.8.1	66.09
8 mm	400 mm	CW-005.540.8.1	66.94
8 mm	500 mm	CW-005.550.8.1	68.23
9.5 mm	550 mm	CW-005.555.1	66.56
9.5 mm	650 mm	CW-005.565.1	67.92
9.5 mm	650EX mm	CW-005.0565.1	75.33
9.5 mm	750EX mm	CW-005.0575.1	76.71
10 mm	650EX mm	CW-005.0565.10.1	84.04
10 mm	750EX mm	CW-005.0575.10.1	86.78
10 mm	1000EX mm	CW-005.05100.10.1	120.67
12 mm	650EX mm	CW-005.0565.12.1	137.69
12 mm	750EX mm	CW-005.0575.12.1	140.10
12 mm	1000EX mm	CW-005.05100.12.1	150.36
16 mm	750EX mm	CW-005.0575.16.1	188.12
16 mm	1000EX mm	CW-005.05100.16.1	201.71

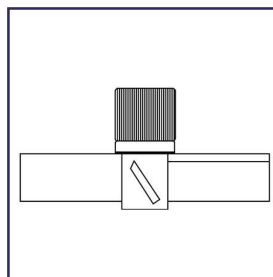




Heavy duty Teflon® stirrer has four vertical blades at 90° apart and is height adjustable along the 19 mm shaft. Used with the PRG-6197 shafts.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
4"	-01	288.06
6"	-02	299.46

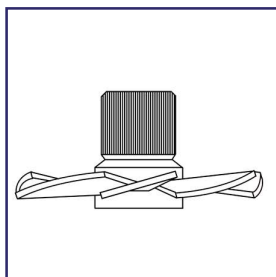
PRG-6212
PADDLE, ADJUSTABLE, 19 mm



Heavy duty Teflon® stirrer has four 45° angled blades at 90° apart and is height adjustable along the 19 mm shaft. Used with the PRG-6197 shafts.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
4"	-01	327.11
6"	-02	351.52

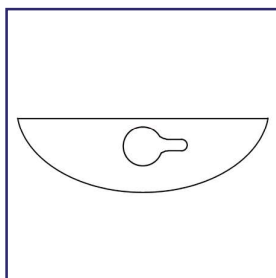
PRG-6213
PADDLE, ADJUSTABLE, 19 mm



Heavy duty Teflon® turbine has eight blades pitched at 15°. Pushes up in a clock-wise rotation. Height adjustable along the 19 mm shaft. Used with the PRG-6197 shafts.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
4"	-01	359.66
6"	-02	382.44

PRG-6214
TURBINE, ADJUSTABLE, 19 mm

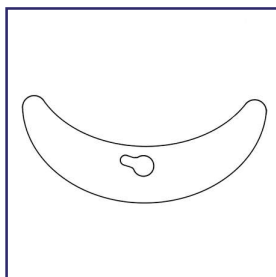


Made of 1/8" thick Teflon® material. Fits all 10 mm button style stirring shafts.

<u>Width x Length mm</u>	<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
19 x 48	100 ml	24/40	-01	14.75
19 x 60	250 - 300 ml	24/40	-02	15.46
19 x 75	500 - 1,000 ml	24/40	-03	16.49
24 x 110	2 - 3 Lt	29/42	-04	17.34
24 x 130	5 Lt	29/42	-05	19.26
35 x 180	12 Lt	45/50	-06	27.33
39 x 160	22 Lt	45/50	-07	38.17

PRG-6215
BLADE, TEFLON®, 10 mm

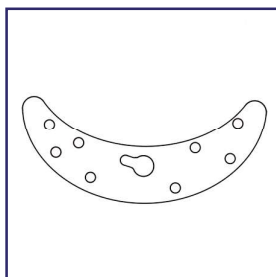




Banana style blade is 1/8" thick Teflon®. Shape follows the inside contour of the flask.

<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
500 ml	34/45	-01	28.96
1,000 ml	34/45	-02	36.46
2,000 ml	34/45	-03	38.43
3,000 ml	34/45	-04	45.97
5,000 ml	45/50	-05	55.78
12 Lt	45/50	-06	57.58
22 Lt	45/50	-07	78.08

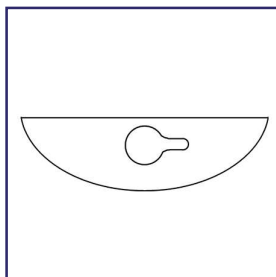
PRG-6220
BLADE, TEFLON®,
BANANA SHAPED,
19 mm



Perforated banana blades are 1/8" thick Teflon®. Shape follows the inside contour of the flask.

<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
500 ml	34/45	-01	28.96
1,000 ml	34/45	-02	36.46
2,000 ml	34/45	-03	38.43
3,000 ml	34/45	-04	45.97
5,000 ml	45/50	-05	55.78
12 Lt	45/50	-06	57.58
22 Lt	45/50	-07	78.08

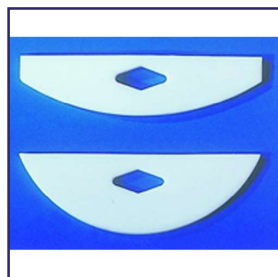
PRG-6225
BLADE, TEFLON®,
BANANA SHAPED,
19 mm, WITH PER-
FORATIONS



3/16" thick Teflon® blades are used with PRG-6190 and PRG-6195 19 mm stir shafts.

<u>Width x Length mm</u>	<u>Flask Capacity</u>	<u>Minimum Clearance</u>	<u>CODE</u>	<u>Price</u>
35 x 74	1,000 ml	45/50	-01	41.91
35 x 93	3,000 ml	45/50	-02	50.29
35 x 130	5,000 ml	45/50	-03	62.03
35 x 150	12 Lt	45/50	-04	70.39
39 x 160	22 Lt	45/50	-05	83.81
44 x 175	50 Lt	55/50	-06	92.19
54 x 200	72 Lt	71/60	-07	100.59

PRG-6230
BLADE, HEAVY DUTY,
TEFLON®, 19 mm



CW-002
COWIE®, PTFE
SHAFT STIRRING,
STIRRER BLADES

Stirrer Blades fit all standard shafts for blades, totally inert and non-scratch. Hole diam 6.5mm, 3.2mm thick, PTFE Shafts for these blades are CW-005.5XX Series.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Blade Type	Dimensions W x Ht	CODE	Price
Plain End	65 mm x 25 mm	CW-002.1065.1	5.84
Plain End	75 mm x 25 mm	CW-002.1075.1	6.25
Plain End	105 mm x 25 mm	CW-002.1105.1	7.05
Plain End	125 mm x 25 mm	CW-002.1125.1	7.36
Plain End	150 mm x 25 mm	CW-002.1150.1	8.17
Square End	52 mm x 14 mm	CW-002.052.1	4.28
Square End	76 mm x 19 mm	CW-002.076.1	5.55
Square End	90 mm x 28 mm	CW-002.090.1	7.58



PRG-7240
STIR MOTOR, 1/3 HP
ELECTRIC

Powerful and reliable stir motor.

- Baldor Motor, 1/3 HP, 345 RPM, 3-phase
- Rated Applications: Conveyors, packaging machines, machine tools and laboratory equipment requiring constant speed.
- 5:1 Gear Reducer, smooth torque transmission, 55 lbs. TEFC
- Output Shaft is 3/4" diameter
- NEMA 12 Junction box, 14 gauge welded steel, oil resistant gaskets, wash down rated.
- Two temperature read outs, Type K large LED displays with splash guards by "Omega"
- Digital AC Motor Drive, 115V, soft start, fully programmable with pass codes, ramp delays, and run sequence, USB interface
- 3 Prong, 14/4 gauge cord by 12 foot

<u>CODE</u>	<u>Price</u>
-01	2,810.34

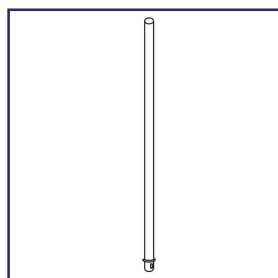


PRG-7200
STIR BEARING, PILOT
PLANT, "BIG BEAR"

Heavy duty bearing is constructed from a 25% glass filled Teflon®, having a very low frictional drag. Ideal for rotatory applications. The removable interior lip seal is a polyimide-imide (Torlon) material, which has a lower frictional drag. Bearing is rated for full vacuum and pressures to 5 psi. Temperature range of -350° to 500° F. Offered with a 45/50 inner O-Ring tapered joint connection or beaded pipe. See PRG-8022 for beaded pipe couplings. Bearings fit shafts with a 3/4" (19mm) and 1.14" (31.8mm) diameters.

<u>Shaft Size</u>	<u>Connection</u>	<u>CODE</u>	<u>Price</u>
19 mm	45/50 O-Ring	-12	1,297.11
19 mm	1.5" B.P.	-02	1,344.60
31.8 mm	2.0" B.P.	-01	1,297.11

<u>Replacement Components</u>			
19 mm Rotary Seal	-31	214.81	
31.8 mm Rotary Seal	-21	246.37	

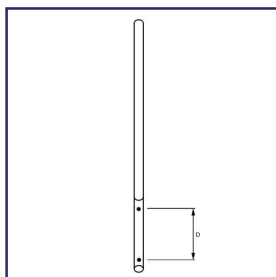


PRG-7204
STIR SHAFT, 1 1/4"

Heavy duty shafts are precision ground and polished to work with PRG-7200 stir bearing. The lower portion is designed to inter-lock with stir paddle PRG-7209. Functions in viscous environments.

<u>Vessel Size</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
20 Lt	32"	-01	501.26
30 Lt	36"	-02	514.26
50 Lt	50"	-03	556.57
75 Lt	58"	-04	554.96
100 Lt	62"	-05	569.61

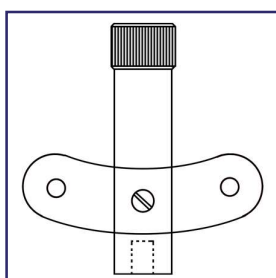
<u>Flask Size</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
12 Lt	26"	-11	441.05
22 Lt	30"	-12	481.71
50 Lt	36"	-13	499.62
72 Lt	48"	-14	537.06
100 Lt	54"	-15	569.61
200 Lt	60"	-16	582.62



PRG-7206
STIR SHAFT, 1 1/4"

Heavy duty shafts are precision ground and polished to work with PRG-7200 stir bearing. Shafts accept the fully adjustable paddles and impellers. Dimples are placed on shafts to accept agitator set pins.

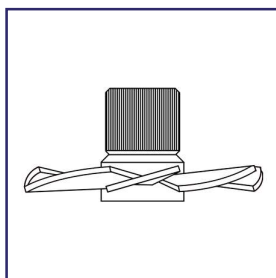
<u>Length</u>	<u>"D"</u>	<u>CODE</u>	<u>Price</u>
30"	8"	-01	494.73
36"	8"	-02	496.36
42"	10"	-03	520.78
48"	10"	-04	533.79
54"	12"	-05	550.08
60"	12"	-06	563.09



PRG-7209
PADDLE, 1 1/4"
SHAFT, USED WITH
STABILIZER PIN

Fabricated from 25% glass filled Teflon® and used with PRG-7204 shafts. Inter-locking design functions in viscous environments. The bottom portion accepts the 1/2" pin from the PRG-7027 flush mount drain valve. Creating better stability during mixing operations. Offered to fit 3/4" and 1.25" shafts.

<u>CODE</u>	<u>Price</u>
-01	867.41

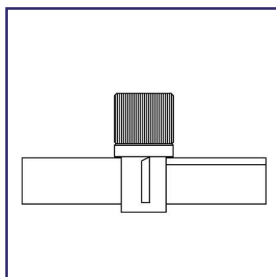


PRG-7212
TURBINE, ADJUSTABLE,
1 1/4" SHAFT,
8-BLADES

All Teflon® impeller has eight blades positioned at 15°. 1.25" compression fit to shafts and fully adjustable along shaft.

<u>Material</u>	<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
PTFE	5.0"	-01	673.75
PTFE	7.0"	-02	691.66
Glass Filled/TFE	5.0"	-11	1,025.28
Glass Filled/TFE	7.0"	-12	1,134.33

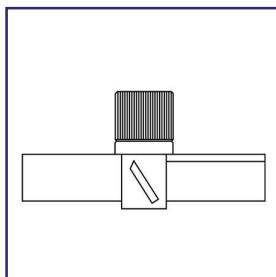




All Teflon® paddle has four blades vertically positioned. 1.25" compression fit to shaft and is fully adjustable along shaft.

<u>Material</u>	<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
PTFE	5.0"	-01	605.40
PTFE	7.0"	-02	664.00
Glass Filled/TFE	5.0"	-11	968.31
Glass Filled/TFE	7.0"	-12	1,057.06

PRG-7214
PADDLE, ADJUSTABLE, 1 1/4" SHAFT, 4-BLADES



All Teflon® turbine has four blades positioned at 45°. 1.25" compression fit to shaft and is fully adjustable along shaft.

<u>Material</u>	<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
PTFE	5.0"	-01	605.40
PTFE	7.0"	-02	664.00
Glass Filled/TFE	5.0"	-11	968.31
Glass Filled/TFE	7.0"	-12	1,085.49

PRG-7216
TURBINE, ADJUSTABLE, 1 1/4" SHAFT, 4-BLADES



CW-005.6
COWIE®, ADJUSTABLE ROTORS, 4
BLADE ANGLED TYPE
45°

Adjustable Rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut. Rotor diameters are nominal.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Measurement	Shaft Ø	Rotor Ø	CODE	Price
Imperial	1/4"	1 1/2"	CW-005.6.250.15	81.59
Imperial	5/16"	1 1/2"	CW-005.6.313.15	84.85
Imperial	3/8"	2 1/2"	CW-005.6.375.25	91.38
Imperial	1/2"	3 1/2"	CW-005.6.500.35	137.07
Imperial	5/8"	4"	CW-005.6.625.40	159.89
Metric	6 mm	40 mm	CW-005.606040	81.59
Metric	8 mm	40 mm	CW-005.608040	84.85
Metric	10 mm	60 mm	CW-005.610060	91.38
Metric	10 mm	90 mm	CW-005.610090	137.07
Metric	12 mm	70 mm	CW-005.612070	104.42
Metric	12 mm	90 mm	CW-005.612090	137.07
Metric	16 mm	100 mm	CW-005.616100	159.89





CW-005.7
COWIE®, ADJUSTABLE ROTORS, FLAT

Adjustable Rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut. Rotor diameters are nominal.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

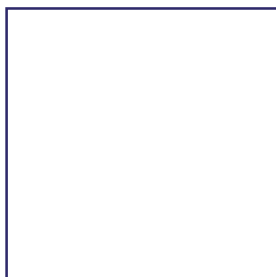
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Measurement	Shaft Ø	Rotor Ø	CODE	Price
Imperial	1/4"	3"	CW-005.7.250.3	71.78
Imperial	5/16"	3"	CW-005.7.313.3	71.78
Imperial	3/8"	3"	CW-005.7.375.3	71.78
Imperial	1/2"	4"	CW-005.7.500.4	86.47
Imperial	5/8"	6"	CW-005.7.625.6	111.59
Metric	6 mm	70 mm	CW-005.706070	71.78
Metric	8 mm	70 mm	CW-005.708070	71.78
Metric	10 mm	70 mm	CW-005.710070	71.78
Metric	10 mm	100 mm	CW-005.710100	86.47
Metric	12 mm	100 mm	CW-005.712100	86.47
Metric	12 mm	150 mm	CW-005.712150	111.59
Metric	16 mm	100 mm	CW-005.716100	88.12
Metric	16 mm	150 mm	CW-005.716150	111.59



CW-005.9
COWIE®, ADJUSTABLE TURBINE

Adjustable Turbine Shaft Stirrers are for use with plain glass, metal or PTFE shafts.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
8	50	CW-005.90850	84.16
8	75	CW-005.90875	106.75
10	75	CW-005.91075	110.19
10	100	CW-005.910100	141.58
12	75	CW-005.91275	117.97
12	100	CW-005.912100	149.25
16	100	CW-005.916100	165.34
16	150	CW-005.916150	248.47



CW-005.3
COWIE®, ANCHOR

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

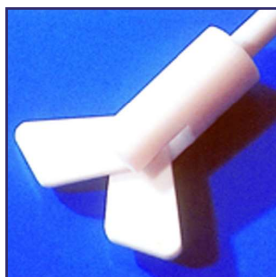
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø mm	Length mm	Rotor Ø mm	CODE	Price
6	300	80	CW-005.330.2	74.85
6	400	80	CW-005.340.2	75.75
6	500	80	CW-005.350.2	76.71
8	300	80	CW-005.330.8.2	93.86
8	400	80	CW-005.340.8.2	94.70
8	500	80	CW-005.350.8.2	95.91
9.5	550	100	CW-005.355.2	98.98
9.5	550	140	CW-005.355.1.2	109.12
9.5	650	100	CW-005.365.2	100.25
9.5	650	140	CW-005.365.1.2	110.42
9.5	650EX	140	CW-005.0365.1.2	110.42
9.5	750EX	140	CW-005.0375.1.2	118.86
10	550	100	CW-005.355.10.2	124.17
10	650EX	140	CW-005.0365.10.2	125.51
10	750EX	140	CW-005.0375.10.2	126.88
12	650EX	140	CW-005.0365.12.2	172.41
12	750EX	140	CW-005.0375.12.2	174.73
12	1000EX	140	CW-005.03100.12.2	191.14
16	750EX	140	CW-005.0375.16.2	271.14
16	750EX	180	CW-005.0375.16.1.2	271.14
16	1000EX	140	CW-005.03100.16.2	248.35
16	1000EX	180	CW-005.03100.16.1.2	248.35



CW-005.4
COWIE®,
CENTRIFUGAL

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

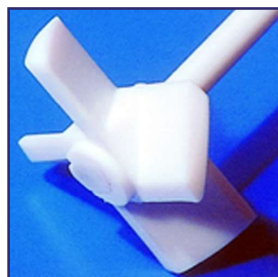
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
6	300	40	CW-005.430.2	83.35
6	400	40	CW-005.440.2	84.18
6	500	50	CW-005.450.2	85.18
8	300	40	CW-005.430.8.2	96.43
8	400	40	CW-005.440.8.2	97.18
8	500	50	CW-005.450.8.2	98.47
9.5	550	70	CW-005.455.2	101.97
9.5	650	70	CW-005.465.2	103.09
9.5	650EX	70	CW-005.0465.2	103.09
9.5	750EX	70	CW-005.0475.2	110.72
10	550	70	CW-005.455.10.2	116.20
10	650EX	70	CW-005.0465.10.2	117.34
10	750EX	70	CW-005.0475.10.2	118.57
12	650EX	80	CW-005.0465.12.2	151.43
12	750EX	80	CW-005.0475.12.2	153.54
12	1000EX	80	CW-005.04100.12.2	193.78
16	750EX	80	CW-005.0475.16.2	198.07
16	1000EX	80	CW-005.04100.16.2	208.46



CW-005.2
COWIE®, SCREW
PROPELLER

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

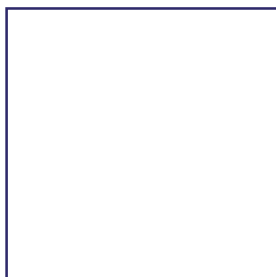
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
6	300	40	CW-005.230.2	91.10
6	400	40	CW-005.240.2	92.49
6	500	50	CW-005.250.2	98.46
8	300	40	CW-005.230.8.2	110.05
8	400	40	CW-005.240.8.2	110.91
8	500	50	CW-005.250.8.2	121.81
9.5	550	60	CW-005.255.2	139.92
9.5	650	60	CW-005.265.2	144.29
9.5	650EX	60	CW-005.0265.2	150.01
9.5	750EX	60	CW-005.0275.2	162.40
10	550	70	CW-005.255.10.2	162.84
10	650EX	70	CW-005.0265.10.2	165.51
10	750EX	70	CW-005.0275.10.2	167.51
12	650EX	80	CW-005.0265.12.2	207.17
12	750EX	80	CW-005.0275.12.2	209.61
12	1000EX	80	CW-005.02100.12.2	272.17
16	750EX	80	CW-005.0275.16.2	269.93
16	750EX	100	CW-005.0275.16.1.2	278.39
16	1000EX	100	CW-005.02100.16.2	328.17
16	1000EX	120	CW-005.02100.16.1.2	344.14



CW-005.8
COWIE®, RETREAT
CURVE

Retreat Curve Shaft Stirrers are a fully moulded product with a retreat angle of 30°.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

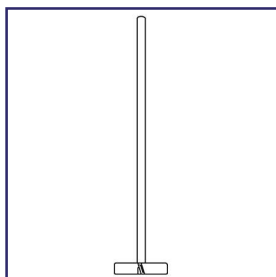
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

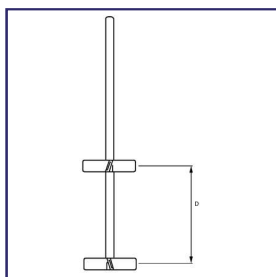
<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>Blade Height mm</u>	<u>CODE</u>	<u>Price</u>
8	300	50	10	CW-005.80850.300	112.70
8	300	75	15	CW-005.80875.300	128.29
8	400	50	10	CW-005.80850.400	116.13
8	400	75	15	CW-005.80875.400	131.68
10	400	50	10	CW-005.81050.400	127.91
10	400	75	10	CW-005.81075.400	138.75
10	500	50	10	CW-005.81050.500	131.52
10	500	75	10	CW-005.81075.500	147.03



PRG-7220
SHAFT AGITATOR,
ALL GLASS, HEAVY
DUTY, 1 1/4"

Heavy duty shaft is precision ground and polished to work with PRG-7200 bearing. 5/16" (8mm) thick glass blades are fused on at 15°. Other angles and configurations are available upon request.

Overall Length	Agitator O.D.	Number of Blades	CODE	Price
32"	110 mm	3	-01	846.26
36"	110 mm	3	-02	869.06
50"	175 mm	3	-03	939.04
58"	175 mm	3	-04	973.21
62"	175 mm	3	-05	995.99
32"	110 mm	5	-11	912.99
36"	110 mm	5	-12	935.78
50"	175 mm	5	-13	1,007.38
58"	175 mm	5	-14	1,039.93
62"	175 mm	5	-15	1,064.33

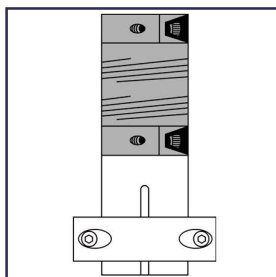


PRG-7228
SHAFT AGITATOR,
ALL GLASS, 1 1/4",
GROUND AND POL-
ISHED

Heavy duty shaft is precision ground and polished to work with PRG-7200 bearing. Upper blades are fused on at 15° pushing downward and 110 mm diameter. Lower set of blades are fused on at 45° and push upward. Blades are 5/16" thick (8mm). Other configurations are available upon request.

Overall Length	Agitator O.D.	"D"	Number of Blades	CODE	Price
32"	110 mm	9"	3	-01	955.30
36"	110 mm	13"	3	-02	978.09
50"	175 mm	20"	3	-03	1,048.05
58"	175 mm	21"	3	-04	1,082.23
62"	175 mm	25"	3	-05	1,105.01
32"	110 mm	9"	5	-11	1,013.88
36"	110 mm	13"	5	-12	1,036.68
50"	175 mm	20"	5	-13	1,106.66
58"	175 mm	21"	5	-14	1,140.84
62"	175 mm	25"	5	-15	1,163.62

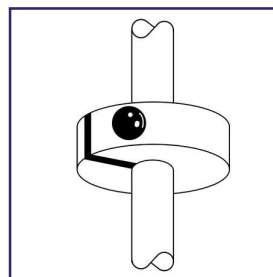




PRG-7230
SHAFT, UNIVERSAL
ADAPTER, 1 1/4"

Adapter fits the 1.25" diameter stir shaft and couple to the motor shaft. Helical couplings give flexibility from axial and angular mis-alignments. They dampen motor vibration and have zero backlash in start-up and stops. No lubrication is needed.

CODE Price
-01 372.67



PRG-7235
SHAFT, SAFETY RE-
TAINER, 1 1/4"

Nylon collar prevents shaft from slipping through the bearing and damaging the vessel.

CODE Price
-01 46.86



CW-PC710
COWIE®, HIGH PER-
FORMANCE SHAFT
GUIDE WITH NPT
THREAD

COWIE® HP Shaft Guides provide an effective guide for use with GLASS and METAL Shaft Stirrers over a wide range of temperature without shedding particles from the seal whilst maintaining vacuum. The seal is made from a specially formulated PTFE-PEEK composite and this material is also used to provide a moulded-in guide ring to aid alignment of the shaft. The maximum recommended speeds are 500rpm continuous or 800rpm intermittent. HP Shaft Guides have an NPT thread for direct assembly into COWIE® Reactor Lids. PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>Shaft Ø mm</u>	<u>NPT Thread</u>	<u>Height mm</u>	<u>AF Hex mm</u>	<u>CODE</u>	<u>Price</u>
19	1"	80	40	CW-PC710.1925.PK	279.95
16	1"	80	40	CW-PC710.1625.PK	221.33
12	1"	67	40	CW-PC710.1225.PK	156.24
10	1"	67	40	CW-PC710.1025.PK	162.75
8	1"	67	40	CW-PC710.0825.PK	171.92
10	3/4"	63	28	CW-PC710.1019.PK	156.24
8	3/4"	63	28	CW-PC710.0819.PK	156.24

**CW-PC709****COWIE®, UNIVERSAL
STIRRER GUIDE WITH
NPT THREAD**

COWIE® Universal Stirrer Guides have an NPT Screw Thread Fitting for direct assembly into COWIE® Reactor Lids or NPT Extension Adapters and can be used with PTFE Shaft Stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi) performance
- No shedding
- Maximum recommended speeds are continuous 500rpm, intermittent 800rpm

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

Shaft Ø mm	NPT Thread	Height mm	Guide Ø mm	CODE	Price
8	3/4"	63	44	CW-PC709.0819.PK	CALL
8	3/4"	106	44	CW-PC709.0819	380.58
8	1"	67	44	CW-PC709.0825.PK	CALL
8	1"	110	44	CW-PC709.0825	380.58
10	3/4"	63	44	CW-PC709.1019.PK	CALL
10	3/4"	106	44	CW-PC709.1019	380.58
10	1"	67	44	CW-PC709.1025.PK	CALL
10	1"	110	44	CW-PC709.1025	380.58
12	3/4"	106	44	CW-PC709.1219.PK	CALL
12	3/4"	106	44	CW-PC709.1219	445.33
12	1"	67	54	CW-PC709.1225.PK	CALL
12	1"	112	54	CW-PC709.1225	445.33
16	1"	80	54	CW-PC709.1625.PK	CALL
16	1"	112	54	CW-PC709.1625	445.33
19	1"	80	54	CW-PC709.1925.PK	CALL




CW-005.0
COWIE®, HIGH PERFORMANCE SHAFT GUIDE

COWIE® HP Shaft Guides provide an effective guide for use with GLASS and METAL Shaft Stirrers over a wide range of temperature without shedding particles from a specially formulated PTFE-PEEK seal whilst maintaining vacuum. In the version designated .PK a moulded-in PTFE-PEEK guide ring located at the end of the taper provides a guide to assist alignment of the shaft. For the PEEK version use the suffix .PK – eg, 005.0.0619.PK The maximum recommended speeds are 500rpm continuous or 800rpm intermittent. Replacement parts available.

Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Cone Type	Shaft Ø mm	Joint Size	Height mm	Ring Ø mm	CODE	Price
A - Full Length	6	19/22	60	42	CW-005.0.0619	182.91
A - Full Length	6	24/40	60	42	CW-005.0.0624	199.53
A - Full Length	8	19/38	60	42	CW-005.0.0819	182.91
A - Full Length	8	24/40	60	42	CW-005.0.0824	199.53
A - Full Length	10	24/40	60	42	CW-005.0.1024	199.53
A - Full Length	10	29/42	60	50	CW-005.0.1029	207.83
A - Full Length	10	34/45	60	50	CW-005.0.1034	216.13
A - Full Length	10	45/50	60	58	CW-005.0.1045	232.84
A - Full Length	12	29/42	70	50	CW-005.0.1229	199.53
A - Full Length	16	34/45	70	50	CW-005.0.1634	282.69
A - Full Length	19	45/50	70	58	CW-005.0.1945	357.50
A - Full Length, PEEK Seal	6	19/22	60	42	CW-005.0.0619.PK	CALL
A - Full Length, PEEK Seal	6	24/40	60	42	CW-005.0.0624.PK	CALL
A - Full Length, PEEK Seal	8	19/38	60	42	CW-005.0.0819.PK	201.21
A - Full Length, PEEK Seal	8	24/40	60	42	CW-005.0.0824.PK	219.57
A - Full Length, PEEK Seal	10	24/40	60	42	CW-005.0.1024.PK	219.57
A - Full Length, PEEK Seal	10	29/42	60	50	CW-005.0.1029.PK	228.70
A - Full Length, PEEK Seal	10	34/45	60	50	CW-005.0.1034.PK	237.85
A - Full Length, PEEK Seal	10	45/50	60	58	CW-005.0.1045.PK	256.17
A - Full Length, PEEK Seal	12	29/42	70	50	CW-005.0.1229.PK	219.57
A - Full Length, PEEK Seal	16	34/45	70	50	CW-005.0.1634.PK	310.98
A - Full Length, PEEK Seal	19	45/40	70	58	CW-005.0.1945.PK	424.04
B - Medium Length, PEEK Seal	6	19/26	60	42	CW-005.00.0619.PK	CALL
B - Medium Length, PEEK Seal	6	24/29	60	42	CW-005.00.0624.PK	CALL
B - Medium Length, PEEK Seal	8	19/26	60	42	CW-005.00.0819.PK	174.13
B - Medium Length, PEEK Seal	8	24/29	60	42	CW-005.00.0824.PK	174.13
B - Medium Length, PEEK Seal	10	24/29	60	42	CW-005.00.1024.PK	174.13
B - Medium Length, PEEK Seal	10	29/32	60	58	CW-005.00.1029.PK	184.37
B - Medium Length, PEEK Seal	10	45/50	60	50	CW-005.00.1045.PK	240.71
B - Medium Length, PEEK Seal	12	29/32	60	50	CW-005.00.1229.PK	209.99
B - Medium Length, PEEK Seal	16	34/35	70	50	CW-005.00.1634.PK	292.01
B - Medium Length, PEEK Seal	16	45/40	70	58	CW-005.00.1645.PK	307.30
B - Medium Length, PEEK Seal	19	45/40	70	58	CW-005.00.1945.PK	332.89


CW-005.1
**COWIE®, UNIVERSAL
STIRRER GUIDE**

COWIE® Universal Stirrer Guides for use with standard taper ground glass joints can be used with PTFE Shaft Stirrers and glass and metal shaft stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi)
- No shedding
- Maximum recommended speeds; continuous 500rpm, intermittent 800rpm

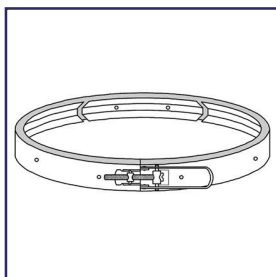
Replacement parts available.

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture. PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

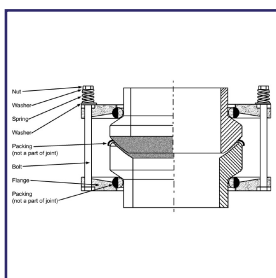
<u>Cone Type</u>	<u>Shaft Ø mm</u>	<u>Joint Size</u>	<u>Height mm</u>	<u>Guide Ø mm</u>	<u>CODE</u>	<u>Price</u>
A - Full Length	6	19/22	96	45	CW-005.101.1.7	465.16
A - Full Length	6	24/40	96	45	CW-005.102.7	465.16
A - Full Length	8	24/40	96	45	CW-005.104.7	465.16
A - Full Length	10	24/40	96	45	CW-005.105.7	465.16
A - Full Length	10	29/42	96	45	CW-005.106.7	465.16
A - Full Length	12	29/42	110	55	CW-005.108.7	544.27
A - Full Length	16	34/45	110	55	CW-005.111.7	544.27
A - Full Length	16	45/50	110	55	CW-005.112.7	544.27
B - Medium Length	6	19/26	96	45	CW-005.201.7	422.86
B - Medium Length	6	24/29	96	45	CW-005.202.7	422.86
B - Medium Length	8	19/26	96	45	CW-005.203.7	422.86
B - Medium Length	8	24/29	96	45	CW-005.204.7	422.86
B - Medium Length	10	24/29	96	45	CW-005.205.7	422.86
B - Medium Length	10	29/32	96	45	CW-005.206.7	422.86
B - Medium Length	10	34/35	96	45	CW-005.207.7	422.86
B - Medium Length	12	29/32	110	55	CW-005.208.7	494.80
B - Medium Length	12	34/35	110	55	CW-005.209.7	494.80
B - Medium Length	16	34/35	110	55	CW-005.211.7	494.80
B - Medium Length	16	45/40	110	55	CW-005.212.7	494.80



Duron® flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
60 mm	-01	88.27
100 mm	-02	115.23
120 mm	-03	126.21
150 mm	-04	135.50
200 mm	-05	156.11

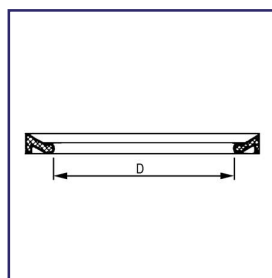
PRG-188
FLANGE CLAMP FOR
REACTION VESSELS



Constructed from a heavy gauge aluminum and can be used to secure vessel to a fixed point. Packing material is a 70 durometer silicone. Comes complete with stainless steel bolts, washers and compression springs.

<u>KF</u>	<u>CODE</u>	<u>Price</u>
KF-25	-25	50.46
KF-40	-40	69.04
KF-50	-50	94.38
KF-80	-80	137.94
KF-100	-100	215.44

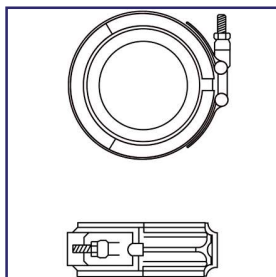
PRG-7070
KF COUPLINGS



PTFE collar gasket is used in conjunction with the 200 and 300 mm flat ground flange for pilot plant. Vessels have an operating temperature up to +200°C. The shape is suitable for high specific surface pressure, which is achieved with relatively low bolting loads.

PRG-7075
KF PTFE GASKET

<u>KF</u>	<u>CODE</u>	<u>Price</u>
KF-15	-15	CALL
KF-25	-25	29.29
KF-40	-40	32.55
KF-50	-50	39.07
KF-80	-80	106.94
KF-100	-100	170.49
KF-150	-150	CALL



Coupling assemblies consist of a .300 series stainless steel outer band with T-Bolt and hex nut; Viton™ liner and TFE seal ring. Designed for temperature service up to 450°F.

<u>Size</u>	<u>Max Torque</u>	<u>CODE</u>	<u>Price</u>
0.5"	TBD	-01	CALL
0.75"	TBD	-02	92.99
1.0"	35 lbs	-03	97.52
1.5"	50 lbs	-04	125.65
2.0"	60 lbs	-05	150.03
3.0"	75 lbs	-06	285.05
4.0"	80 lbs	-07	330.06
6.0"	90 lbs	-08	483.84

PRG-8022
BEADED PIPE COU-
PLING





PRG-1700
JOINT CLIPS, KECK

Made of Delrin Plastic. Non corrosive, Safe to 140°C. Sold in Packs of 10

Size	Fits Joint Sizes	CODE	Price
10	10/18, 10/30	-01	66.23
12	12/18, 12/30	-02	76.43
14	14/20, 14/35	-03	29.71
19	19/22, 19/38	-04	39.69
24	24/25, 24/40	-05	39.69
29	29/26, 29/42	-06	42.64
34	34/28, 34/45	-07	81.87
40	40/25, 40/50	-08	95.71
45	45/50	-09	82.78



PRG-1702
PINCH CLAMP, STANDARD TAPER JOINTS

Stainless steel clamps are spring loaded for a secure hold with tapered joints. Clamps are supplied with a lock screw. Sold individually.

Size	Fits Joint Sizes	CODE	Price
14	14/20, 14/35	-03	54.05
19	19/22, 19/38	-04	60.85
24	24/25, 24/40	-05	66.52
29	29/26, 29/42	-06	72.58
45	45/50	-09	82.96



PRG-1705
PINCH CLAMP, BALL AND SOCKET JOINTS

Stainless steel clamps are spring loaded for a secure hold with ball/socket joints. Please note -01 and -03 do not have locking nuts. Sold individually.

Size	CODE	Price
12	-01	7.42
12-L	-02	10.77
18	-03	7.77
18-L	-04	11.22
28	-05	12.02
35	-06	15.96
40	-07	33.74
50	-08	36.22
65	-09	47.87
75	-10	61.84
102	-11	295.41



PRG-1710
SPRINGS, STAINLESS STEEL

Springs are a 316 stainless steel and closed looped ends. Sold in packs of 10.

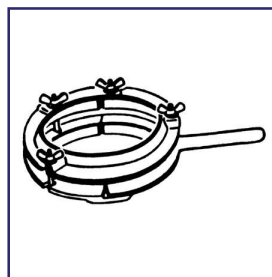
Length of Coil		CODE	Price
mm	In.		
12	1/2"	-01	25.08
19	3/4"	-02	25.08
25	1"	-03	25.08
32	1 1/2"	-04	25.08



PRG-189
REACTION VESSEL
SUPPORT

Constructed of a heavy gauge stainless steel. Fits most re-action vessels. The dual support rods ensure a rigid fit while in use. It also allows the reactor head to be removed without disturbing the vessel.

<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
100 mm	-01	278.81
150 mm	-02	306.30
200 mm	-03	372.58



PRG-197
REACTION FLASK

Manufactured of aluminum, used to connect tops to flasks. The wing nuts are positioned to guarantee good compression.

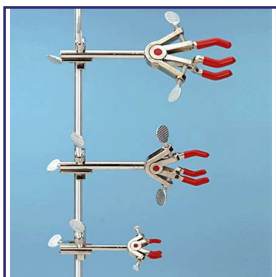
<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
2"	-01	107.57
4"	-02	178.45



PRG-1720
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

<u>Single Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	1.8 cm	16.6 cm	1.5 cm	-01	68.04
Medium	4.3 cm	23.0 cm	3.5 cm	-02	60.48
Large	5.9 cm	26.6 cm	4.7 cm	-03	59.40



PRG-1722
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, DUAL AD-
JUSTMENT

UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

<u>Dual Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	2.8 cm	15.6 cm	1.4 cm	-01	59.40
Medium	6.5 cm	22.2 cm	3.4 cm	-02	60.48
Large	10.0 cm	26.1 cm	4.7 cm	-03	68.04

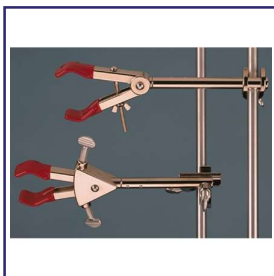




PRG-1725
LABJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE OR
DUAL ADJUSTMENT

LabJaws™ are available in three sizes. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

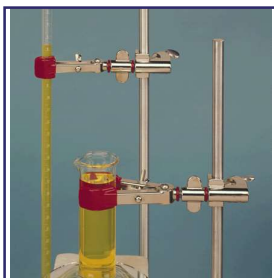
<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	2.8 cm	14.8 cm	2.1 cm	-01	52.92
Single / Medium	6.2 cm	21.9 cm	3.4 cm	-02	56.16
Single / Large	8.4 cm	26.5 cm	4.9 cm	-03	58.32
Dual / Small	3.6 cm	16.7 cm	2.1 cm	-11	52.92
Dual / Medium	5.8 cm	22.9 cm	3.5 cm	-12	56.16
Dual / Large	9.3 cm	27.0 cm	4.8 cm	-13	58.32



PRG-1730
LABJAWS™ By
TROEMNER, 2-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	6.5 cm	21.5 cm	2.4 cm	-01	43.20
Single / Large	8.0 cm	23.3 cm	2.4 cm	-02	46.44
Dual / Small	6.5 cm	22.5 cm	2.4 cm	-11	43.20
Dual / Large	8.6 cm	25.0 cm	2.4 cm	-12	46.44



PRG-1735
LABJAWS™ By
TROEMNER, SWIVEL
CLAMPS

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary. Swivel clamps are used to hold apparatus near the frame. The swivel clamps have an integral holder for attaching to a lattice frame or other apparatus. The holding angle of swivel clamps is fully adjustable through 360° of rotation and can be locked in place once desired position is achieved.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	12.6 cm	2.4 cm	-01	43.20
2-Prong Large	8.0 cm	13.8 cm	2.5 cm	-02	45.36
3-Prong Medium	6.5 cm	14.3 cm	3.5 cm	-03	59.40



Fixed position clamps are used to hold apparatus near the frame where no adjustment is required after set up. Fixed position clamps have an integral holder but can not be rotated after attachment to a lab frame or other apparatus.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	9.5 cm	2.4 cm	-01	41.04
3-Prong Medium	5.8 cm	10.7 cm	3.5 cm	-02	50.76

PRG-1738
LABJAWS™ By
TROEMNER, FIXED
POSITION CLAMPS



6.3 cm diameter knob with 3.1 cm slot in the center that will accept thumbscrews supplied with the UltraJaws™ and LabJaws™ multi-purpose clamps. Makes tightening of clamps easier on the hands and wrists.

<u>CODE</u>	<u>Price</u>
-01	42.64

PRG-1740
ULTRAJAWS™ By
TROEMNER, THUMB-
SCREW KNOB



Quick and secure slip-on chain connection with large easy-to-turn adjusting knob. Holds apparatus firmly but gently in place at any angle. Accommodates large round or irregular shaped objects. 14.2 cm extension arm.

<u>Size</u>	<u>Holding Ability</u>	<u>CODE</u>	<u>Price</u>
Small	up to 17 cm diameter	-01	72.36
Large	up to 28 cm diameter	-02	104.76

PRG-1742
LABJAWS™ By
TROEMNER, CHAIN
CLAMP



PRG-1750
LABJAWS™ By
TROEMNER, COLUMN
CLAMP

Ideal for large cylindrical glassware and similar objects. Stainless steel construction, available in four sizes. Holds 64 mm to 165 mm apparatus, with 18 cm extension arm.

Range	CODE	Price
64 - 89 mm	-01	84.24
95 - 114 mm	-02	86.40
121 - 140 mm	-03	87.48
140 - 165 mm	-04	87.48



PRG-1752
LABJAWS™ By
TROEMNER, WALL
CLAMP

5.8cm long. Self-tapping screw allows mounting directly to wall. Holds 5mm to 10 mm diameter thermometer or other glass apparatus.

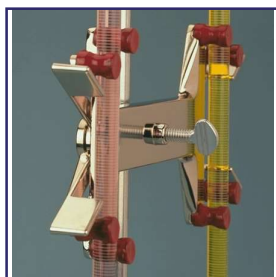
CODE	Price
-01	38.88



PRG-1755
LABJAWS™ By
TROEMNER, HEAVY
DUTY TAPERED
CLAMP

Heavy Duty 4-prong double adjustment clamps are designed to hold large vessels with ground glass joint necks. The small clamp can hold up to a size 24/40 joint. The large clamp can hold up to a size 34/45 joint. Extension length on both clamps is 22.8 cm.

Size	Max Joint Size	Overall Length	CODE	Price
Small	24/40	35.2 cm	-01	CALL
Large	34/45	38.0 cm	-02	CALL



PRG-1757
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP

Hold one or two burets from micro size to 100 ml. Scissor-like mechanism adjusts simply with a squeeze, yet grips firmly. Attached to standard support rod or frame with built-in hook connector.

Max Grip Size	Jaw Type	CODE	Price
100 ml	Spring	-01	75.60





PRG-1760
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP &
STAND

Buret clamp stand is a white porcelain base, 34 cm x 18 cm, support is 60 cm high aluminum rod.

Description	CODE	Price
Stand	-01	211.68
Clamp & Stand	-02	294.84



PRG-1765
LABJAWS™ By
TROEMNER, NESTER
EXTENSION CLAMP

Securely holds distillation columns and odd-shaped glassware. Holds 3.8 cm to 10.2 cm apparatus.

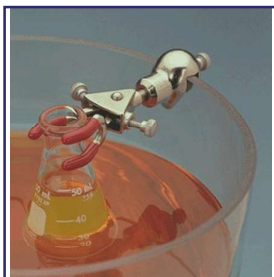
CODE	Price
-01	91.29



PRG-1767
LABJAWS™ By
TROEMNER, KETTLE
COVER CLAMP

Holds flask and cover together firmly. Three insulated spring-activated clamping arms. Stainless steel springs.

Flask Size	CODE	Price
1000 ml	-01	166.02
4000 ml	-02	168.40

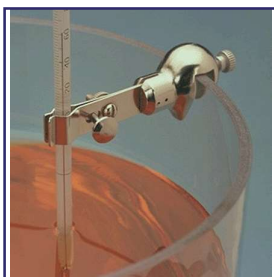


PRG-1770
LABJAWS™ By
TROEMNER, LARGE
WATER BATH CLAMP

Holds a variety of apparatus, including glass tubes and thermometers, on glass water bath walls of varying thickness. For 5 mm to 9 mm bath walls. Holds irregular-shaped objects.

Maximum Grip Size	Overall Length	CODE	Price
3.3 cm	9.3 cm	-01	56.16

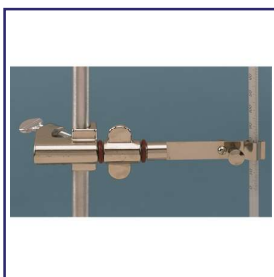




PRG-1771
LABJAWS™ By
TROEMNER, SMALL
WATER BATH CLAMP

For up to 9 mm glass water bath walls. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
6.4 cm	-01	37.80



PRG-1772
LABJAWS™ By
TROEMNER, THER-
MOMETER SWIVEL
CLAMP

Adjust to any angle. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

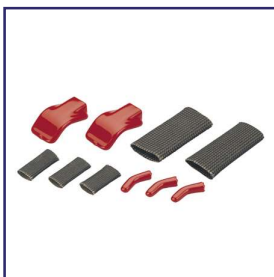
<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
12.2 cm	-01	50.76



PRG-1775
LABJAWS™ By
TROEMNER, THER-
MOMETER EXTEN-
SION CLAMP

Extension length is 12.5 cm. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
21 cm	-01	34.36



PRG-1777
LABJAWS™ By
TROEMNER, RE-
PLACEMENT
SLEEVES FOR
CLAMP

Available in Vinyl or in Fiberglass.

<u>Clamp Size / Style</u>	<u>Sleeve Material</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
Medium 2-Prong	Vinyl	2 / Pack	-01	14.04
Large 2-Prong	Vinyl	2 / Pack	-02	14.04
Medium 2-Prong	Fiberglass	2 / Pack	-03	14.04
Large 2-Prong	Fiberglass	2 / Pack	-04	14.04
Small 3-Prong	Vinyl	3 / Pack	-05	14.04
Medium 3-Prong	Vinyl	3 / Pack	-06	14.04
Large 3-Prong	Vinyl	3 / Pack	-07	14.04
Small 3-Prong	Fiberglass	3 / Pack	-08	14.04
Medium 3-Prong	Fiberglass	3 / Pack	-09	14.04
Large 3-Prong	Fiberglass	2 / Pack	-10	14.04





Permits suspension of electrodes at any angle. Designed with an integral holder which accepts up to 2.1 cm diameter.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
14.7 cm	-01	79.92

PRG-1780
LABJAWS™ By
TROEMNER, ELECTRODE SUPPORT CLAMP



Holds thermometers, potash bulbs, drying tubes and other apparatus. Designed with an integral holder which accepts up to 2.1 cm diameter rod.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	38.88

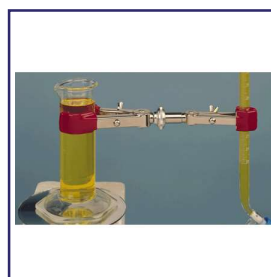
PRG-1782
LABJAWS™ By
TROEMNER, SUSPENSION CLAMP



Supports tubing and other apparatus. Designed with an integral holder which accepts up to 21.1 cm diameter rod.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	102.60

PRG-1785
LABJAWS™ By
TROEMNER, SUPPORT CLAMP



Locks securely in desired position. Holds two different sized objects: 6.5 cm maximum grip on small two prong and 8.0 cm maximum grip on large two prong. 360° swivel.

<u>Swivels</u>	<u>CODE</u>	<u>Price</u>
360°	-01	54.00

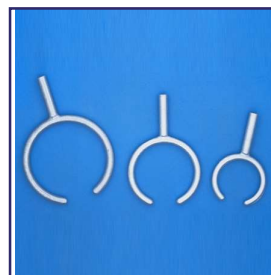
PRG-1787
LABJAWS™ By
TROEMNER, DOUBLE JAW UTILITY CLAMP



For supporting beakers, mantles and petri dishes. 15.5 cm diameter. Aluminum support plate.

<u>CODE</u>	<u>Price</u>
-01	90.72

PRG-1790
LABJAWS™ By
TROEMNER, SUPPORT PLATE



For supporting funnels and boiling flask, open rings allow items easily to pass in and out of support. Arm length is 5.7 cm. Holds 7.6 cm to 12.7 cm apparatus. Rod arm is 1.27 cm diameter.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
7.6 cm	-01	37.80
10.2 cm	-02	48.60
12.7 cm	-03	66.96

PRG-1792
LABJAWS™ By
TROEMNER, OPEN RINGS



Corrosion-resistant frames and rods. Individual rods are available in standard lengths from 4 cm to 244 cm. May be mounted vertically or horizontally. Combined with LabJaws™ accessories, these frames and rods can be adjusted to fit any need. 1.3 cm diameter rods with chamfered ends for easy location and smooth fit. Available in aluminum, fiberglass, or stainless steel.



**PRG-1800
LABJAWS™ By
TROEMNER, LAB
FRAME RODS, ALUMI-
NUM, FIBERGLASS,
OR STAINLESS
STEEL**

Aluminum		
Length	CODE	Price
4 cm - 1 5/8"	-01	8.64
5 cm - 2"	-02	11.88
15 cm - 6"	-03	14.04
31 cm - 12"	-04	20.52
46 cm - 18"	-05	21.60

61 cm - 24"	-06	27.00
91 cm - 36"	-07	29.16
122 cm - 48"	-08	45.36
153 cm - 60"	-09	51.84
183 cm - 72"	-10	57.24
244 cm - 96"	-11	72.36

Fiberglass		
Length	CODE	Price
4 cm - 1 5/8"	-21	CALL
5 cm - 2"	-22	CALL
15 cm - 6"	-23	CALL
31 cm - 12"	-24	CALL
46 cm - 18"	-25	CALL

61 cm - 24"	-26	CALL
91 cm - 36"	-27	CALL
122 cm - 48"	-28	CALL
153 cm - 60"	-29	CALL
183 cm - 72"	-30	CALL
244 cm - 96"	-31	CALL

Stainless Steel		
Length	CODE	Price
4 cm - 1 5/8"	-41	12.96
5 cm - 2"	-42	12.96
15 cm - 6"	-43	16.20
31 cm - 12"	-44	27.00
46 cm - 18"	-45	35.64
61 cm - 24"	-46	44.28
91 cm - 36"	-47	60.48
122 cm - 48"	-48	76.68
153 cm - 60"	-49	89.64
183 cm - 72"	-50	106.92
244 cm - 96"	-51	139.32





PRG-1810
LABJAWS™ By
TROEMNER, CHAN-
NEL CONNECTOR

Special connector fastens lab frame rod to steel connector. Loosen the connector or slide up or down for easy adjustment of rod position.

CODE	Price
-01	28.08



PRG-1812
LABJAWS™ By
TROEMNER, LAB
FRAME FOOT

For mounting rods to counter-tops, floors, walls. Low profile design. Supplied with 3 screws.

CODE	Price
-01	30.24



PRG-1815
LABJAWS™ By
TROEMNER, HORI-
ZONTAL MOUNTING
BARS - WITH COU-
PLER

Threaded end for direct installation into channels. Comes with spring couple for use in steel 41 mm (1.61") channel. Locking nut included. Use with steel channel frames.

Length	CODE	Price
5.1 cm - 2"	-01	34.56
10.2 cm - 4"	-02	37.80
15.2 cm - 6"	-03	41.04
20.3 cm - 8"	-04	44.28



PRG-1817
LABJAWS™ By
TROEMNER, SMALL
LAB FRAME, 24 x 24

Ideal for small setups where space is limited. Frame measures 61 cm x 61 cm (24" x 24"). Frame consists of eight 5 cm rods, two 46 cm rods, eight 61 cm rods, eighteen "S" connectors, four rod end connectors, and four lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	545.40
Fiberglass	-02	CALL
Stainless Steel	-03	928.80



PRG-1820
LABJAWS™ By
TROEMNER, MEDIUM
LAB FRAME, 24 x 48

Convenient for distillation and general setups. Frame measures 61 cm x 122 cm (24" x 48"). Frame consists of eight 5 cm rods, two 46 cm rods, five 61 cm rods, two 91 cm rods, four 122 cm rods, twenty-four "S" connectors, four rod end connectors, and four lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	685.80
Fiberglass	-02	CALL
Stainless Steel	-03	1,317.60



PRG-1822
LABJAWS™ By
TROEMNER, LARGE
LAB FRAME, 48 x 48

Complex glassware setups easily accommodated. Can be mounted on the floor. Frame measures 122 cm x 122 cm (48" x 48"). Frame consists of ten 5 cm rods, three 46 cm rods, two 91 cm rods, ten 122 cm rods, thirty-eight "S" connectors, four rod end connectors, and six lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	1,058.40
Fiberglass	-02	CALL
Stainless Steel	-03	1,852.20





PRG-1825
LABJAWS™ By
TROEMNER, EXTRA
LARGE LAB FRAME,
48 x 72

For greatest versatility in most demanding setups. Frame measures 122 cm x 183 cm (48" x 72"). Frame consists of six 5 cm rods, six 3 cm rods, two 61 cm rods, seven 122 cm rods, five 183 cm rods, forty-five "S" connectors, four rod end connectors, and eight lab frame feet. Available in aluminum, fiberglass, or stainless steel.

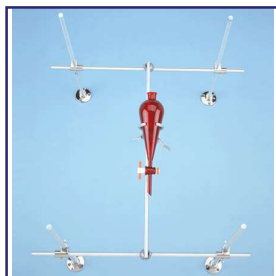
<u>Material</u>	<u>CODE</u>	<u>Price</u>
Aluminum	-01	1,463.40
Fiberglass	-02	CALL
Stainless Steel	-03	2,035.80



PRG-1827
LABJAWS™ By
TROEMNER, HEAVY
DUTY LAB FRAME, 72
x 78

Strong, but lightweight frame for stable floor mounted applications. Free standing unit is specifically designed for heavy duty work such as pilot plant set-ups or temporary lab space. Frame measures 183 cm x 198 cm (72" x 78"). Frame consists of an outside frame assembly made of lightweight but strong channel steel. Also contains fifteen "S" connectors, sixteen channel connectors, five 122 cm rods, and three 183 cm rods for constructing internal lab frame lattice. Available in aluminum, fiberglass, or stainless steel.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
Aluminum	-01	2,116.80
Fiberglass	-02	CALL
Stainless Steel	-03	3,952.80



PRG-1830
LABJAWS™ By
TROEMNER, CHRO-
MATOGRAPHY LAB
FRAME, 24 x 24 x 48

Specifically for chromatography applications. Designed for use with chromatography cabinets frame measures 61 cm wide x 61 cm long, 122 cm height (24" x 24" x 48"). Frame consists of eight 61 cm rods, one end to end connector, two "S" connectors, four rod end connectors, and four lab frame feet.

<u>CODE</u>	<u>Price</u>
-01	257.04



Corrosion resistant, ensures precise fit and powerful holding ability. Used wherever clamping at 90° is required. Holds clamps, lab frames and rods up to 1.6 cm diameter.

<u>CODE</u>	<u>Price</u>
-01	28.08

PRG-1832
LABJAWS™ By
TROEMNER, REGU-
LAR HOLDER



Corrosion resistant, ensures precise fit and powerful holding ability. For heavy duty applications. Quality aluminum construction for maximum grip strength. Holds up to 2.2 cm rods.

<u>CODE</u>	<u>Price</u>
-01	41.04

PRG-1835
LABJAWS™ By
TROEMNER, JUMBO
HOLDER



Corrosion resistant, ensures precise fit and powerful holding ability. Maximum adjustment capability with one connector for rods and clamps up to 1.27 cm diameter. Holds rods at 90° in both horizontal and/or vertical configurations.

<u>CODE</u>	<u>Price</u>
-01	44.28

PRG-1837
LABJAWS™ By
TROEMNER, MULTI-
ROD CONNECTOR



Corrosion resistant, ensures precise fit and powerful holding ability. Allows tilting of clamp at any angle in parallel planes. May be reversed for inner or outer adjustment screw orientation. Holds clamps and rods up to 2.1 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	37.80

PRG-1840
LABJAWS™ By
TROEMNER, SWIVEL
HOLDER



Corrosion resistant, ensures precise fit and powerful holding ability. Permits adjustment at any angle, in any plane. Surpasses standard holder capabilities. Holds rods up to 2.1 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	73.44

PRG-1842
LABJAWS™ By
TROEMNER, ALL PO-
SITION HOLDER



Corrosion resistant, ensures precise fit and powerful holding ability. Allows length extension of clamps and rods. Sturdy construction. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	29.16

PRG-1845
LABJAWS™ By
TROEMNER, END-TO-
END CONNECTOR





PRG-1847
LABJAWS™ By
TROEMNER, HOOK
CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Easy to use. Allows one handed adjustment of rods.

<u>CODE</u>	<u>Price</u>
-01	16.20



PRG-1850
LABJAWS™ By
TROEMNER, LATTICE
CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Low profile. Sturdy aluminum construction. Allows rods to be held in cross-connection or perpendicular fashion. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	249.48



PRG-1852
LABJAWS™ By
TROEMNER, END
ROD CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Holds rods or clamps firmly at 90°. Used for semi-permanent installations. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	19.44



PRG-1855
LABJAWS™ By
TROEMNER, "S" CON-
NECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Ergonomic contouring for easy adjustment. Allows maximum gripping of lab frames. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	27.00



PRG-1857
LABJAWS™ By
TROEMNER, UNIVER-
SAL STIRRER
MOUNTING BRACKET

Corrosion resistant, ensures precise fit and powerful holding ability. Supports 2 kg or less. Mounts apparatus to lab frames.

<u>CODE</u>	<u>Price</u>
-01	12.96



PRG-1860
LABJAWS™ By
TROEMNER, WRENCH

Corrosion resistant. Adjusts all rod connectors. Sturdy construction.

<u>CODE</u>	<u>Price</u>
-01	63.72





Every flow control device resists corrosion and rust. Easy one-hand operation. Convex bearing surfaces and rounded edges protect tubing. Two sizes available; regular and heavy duty. Adjustment screw with over sized head for accurate regulation. Built in side lugs for foot mounting. Tubing retainer screw. Heavy duty hosecock has large handwheel for ease of flow adjustment. Unique design offers unparalleled control. Works well with heavy duty Nylon braided tubing.

Description	CODE	Price
Regular up to 1.7 cm Tubing	-01	30.24
Heavy Duty up to 2.8 cm Tubing	-02	CALL

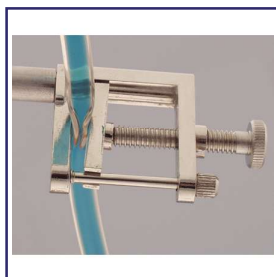
PRG-1862
LABJAWS™ By
TROEMNER, HOSE-
COCK, REGULAR OR
HEAVY DUTY



Add this option to PRG-1862 for bench or table mounting.

CODE	Price
-01	10.80

PRG-1867
LABJAWS™ By
TROEMNER, HOSE-
COCK FOOT



Similar to a regular hosecock but with a 14.5 cm bottom mounted extension rod for attachment to rods.

CODE	Price
-01	49.78

PRG-1870
LABJAWS™ By
TROEMNER, HOSE-
COCK EXTENSION
CLAMP





Designed to quickly start and stop flow. Provides for complete closure without damaging tubing and operated with a simple squeeze. Accommodates up to 1.2 cm tubing.

Description

Regular: For routing stop/start flow operation

Variable: For precise flow adjustment and duplication of flow rates

Heavy Duty: Equipped with heavy duty spring for tough jobs, ensures complete closure

CODE Price

-01 CALL

-02 CALL

-03 31.32



PRG-1872
LABJAWS™ By
TROEMNER, PINCH-
COCKS



Heavy duty support, 43 cm by 33 cm. Supplied with one stainless steel mast, 19 mm diameter.

CODE Price

-01 355.32

PRG-1880
HEAVY DUTY SUP-
PORT



Aluminum bracket has 4.3 cm clamp opening, accepts 1.3 cm rods.

<u>CODE</u>	<u>Price</u>
-01	268.92

PRG-1882
**SHELF GRIP SUP-
PORT**



Convenient high load capacity with safety locks. Stainless steel top and bottom platform. Over-sized knobs for smooth adjustment. Level lifting action.

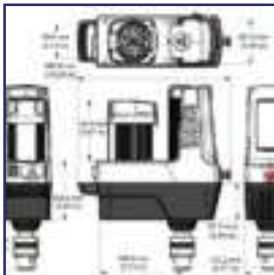
<u>Platform Size</u>	<u>Vertical Lift</u>	<u>Maximum Load</u>	<u>CODE</u>	<u>Price</u>
Mini: 8 x 8 cm	5 - 12 cm	8 kg	-01	221.70
Standard: 15 x 15 cm	7 - 25 cm	15 kg	-02	228.84
Large: 20 x 20 cm	7 - 31 cm	20 kg	-03	308.22
Jumbo: 31 x 31 cm	13 - 50 cm	65 kg	-04	334.30

PRG-1885
LAB LIFTS





A powerful combination of torque and electronic sophistication. The robust ½ horsepower motor, PC/PLC communications and extensive features make the Caframo Crossover unparalleled in the market. Mixing up to 200 litres (55 gallons) of basic pre-mix, industrial pilot plant volumes, or full production batches, this portable mixer weighs only 12 kg (26.5 lb). The resistive touch screen enables simple feature operation (timers, alarms, rotation direction, resume on power up, start, stop) without removing your gloves! Control the mixer with a PC or PLC via USB, RS232 or 4-20 mA or data log speed and torque directly to a memory stick. Install immediately with standard 120 V cord set, and four bolt mounting. Optional plate or C-clamp set attaches the Crossover to a stand, drum or customer mount and allows optimal shaft angle in vessel. Includes chuck, chuck key, chuck shaft guard, installed screen protector, USB memory stick, mounting bolts, power cord, manual, calibration certificate and three year warranty.



Speed	50-1500 rpm
Volume Maximum	200 L (55 US Gallons)
Viscosity Maximum	180 000 mPa·s (180 000 cps)
Torque Maximum	3000 N·cm (264 in-lbs = 4248 in-oz)
Output Power	300 Watts (½ hp)
Speed Display	Yes
Speed – Low Range	50-299 rpm
Speed – High Range	300-1500 rpm
Speed Accuracy	Rolling average of 10 second period
Torque Display	Yes
Zero Torque	Yes
Timer	Yes
Alarm	Yes
Connectivity Ports	Standard USB A, Mini USB B, DB9, 4-20 mA
Through Shaft	Yes
Chuck Maximum Shaft Diameter	16 mm (½")
Chuck and Shaft Guard	Yes
Rotation Direction	Clockwise and counterclockwise
Housing	Flame Retardant Nylon 6
Weight	12 kg (26.5 lb)
Voltage	120 volt
Frequency	60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Warranty	3 years

CODE	Price
CLS-1540	4,113.50



Speed	50-1500 rpm
Volume Maximum	200 L (55 US Gallons)
Viscosity Maximum	180 000 mPa·s (180 000 cps)
Torque Maximum	3000 N·cm (264 in-lbs = 4248 in-oz)
Output Power	300 Watts (½ hp)
Speed Display	Yes
Speed – Low Range	50-299 rpm
Speed – High Range	300-1500 rpm
Speed Accuracy	Rolling average of 10 second period
Torque Display	Yes
Zero Torque	Yes
Timer	Yes
Alarm	Yes
Connectivity Ports	Standard USB A, Mini USB B, DB9, 4-20 mA
Through Shaft	Yes
Chuck Maximum Shaft Diameter	16 mm (½")
Chuck and Shaft Guard	Yes
Rotation Direction	Clockwise and counterclockwise
Housing	Flame Retardant Nylon 6
Weight	12 kg (26.5 lb)
Voltage	120 volt
Frequency	60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Warranty	3 years

Mixer 120 volts, 60 Hz. Includes chuck, chuck key, chuck shaft guard, installed screen protector, USB memory stick, four mounting bolts, grounded North American cord set, and manual (digital and printed).



Features

- Resistive Touch Screen Display
- Intuitive Speed Adjustment
- Portable
- 120 V cord set
- Counter-clockwise rotation selection
- Name Customization
- Resume on Power up
- Torque Zero feature
- Cycle Timer
- Run Time Display
- Torque Min/Max Setting
- Audible Alarm
- PC/PLC connectivity
- Multiple com ports
- Data Logging
- Sealed Housing
- Quick Stop
- Installed Screen Protector
- Chuck Shaft Guard
- Adjustable Keyed Chuck
- Automatic Transmission
- Brushless DC motor – fan cooled
- Maintenance Free

Benefits

- Operate while wearing PPE or sterility gloves
- Precisely set desired speed or adjust on screen
- Meet the changing needs of multiple facilities
- Easy installation to North American grounded outlet
- Improve mixing and impeller functionality
- Assign an identifier name or number to each mixer
- Optional auto-start operation upon power restoration
- Monitor viscosity changes as they relate to torque
- Set total mixing time; stop mixing or sound alarm
- Track total mixing time from power up
- Stop mixing or sound alarm at desired torque reading
- Notification of desired time or torque level
- Integrate into existing monitoring and control systems
- Capability for RS232 RS485 PLC and Ethernet or PC
- Document results: speed / torque / time / date
- Protection in aggressive environments; wash down
- Easily access button to immediately stop mixing
- Protects display; replaceable if covered by splashes or dust
- Guard spinning chuck and upper shaft for safety
- Holds shaft securely; diameters up to 16 mm (½ in)
- Shift gears without manually stopping mixer
- High efficiency no maintenance motor
- Always available – no required maintenance schedule



CLS-1540

CAFRAMO LAB SOLUTIONS®, OVER-HEAD STIRRER, CROSSOVER 1540, 115V





Caframo's Ultra Torque 1850 lives up to its name, delivering high torque mixing action within the footprint of a bench top overhead stirrer. This model is a proven performer for cream and gel formulations, paint grinds, premixes, and small scale production batches. The TENV housing and quality construction are a match in industrial, food, and pharma manufacturing environments. You are guaranteed to get more power out of your Caframo stirrer.

"These are strong running machines that get abused almost daily." Director of Operations, coatings toll manufacturer.



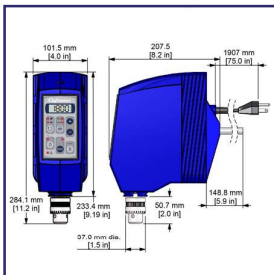
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



Speed	12-1800 rpm
Volume Maximum	80 L (21 US Gallons)
Viscosity Maximum	90 000 mPa·s (90 000 cps)
Torque Maximum	568 N·cm (50 in-lbs = 800 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	12-360 rpm
Speed – High Range	360-1800 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	568 N·cm (50 in-lbs = 800 in-oz)
Torque Maximum – High Speed	114 N·cm (10 in-lbs = 160 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC1850
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
ULTRA TORQUE, 115
VOLT

CODE Price
 CLS-BDC1850 1,540.20





The perfect combination of higher torque and higher speed, Caframo's Universal 3030 offers versatility to conquer the widest range of applications by a bench top stirrer. From larger batches of buffers and media to lotions and slurries, this stirrer will exceed your expectations. Ideal for workplaces with changing mixing needs as the business evolves, the 3030 will provide the most value for your overhead stirrer investment.

"I have purchased several of these over the years. They work great, never seem to break. I do not have any improvements to suggest." Energy technologies innovator.



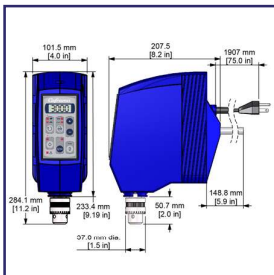
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



Speed	20-3000 rpm
Volume Maximum	60 L (15.5 US Gallons)
Viscosity Maximum	50 000 mPa·s (50 000 cps)
Torque Maximum	341 N·cm (30 in-lbs = 480 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	20-600 rpm
Speed – High Range	600-3000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	341 N·cm (30 in-lbs = 480 in-oz)
Torque Maximum – High Speed	68 N·cm (6 in-lbs = 96 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC3030
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
UNIVERSAL, 115
VOLT

CODE Price
 CLS-BDC3030 1,540.20





Caframo's Ultra Speed 6015 produces results in high speed applications, including emulsions, microencapsulations, low viscosity slurries and high shear dispersions of powders. Digital display and precision control of speed settings make repeatability of process easy. Safety features shut down the stirrer if there is overheating or torque overload, ensuring a long stirrer life. Operate with speeds up to 6000 rpm with peace of mind.

"If it doesn't say Caframo it is not a mixer." Scientific Director, cosmetics manufacturer.

Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.

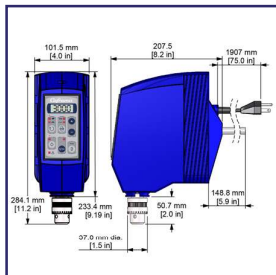


Speed	40-6000 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	170 N·cm (15 in-lbs = 240 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	40-1200 rpm
Speed – High Range	1200-6000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
Torque Maximum – Low Speed	170 N·cm (15 in-lbs = 240 in-oz)
Torque Maximum – High Speed	34 N·cm (3 in-lbs = 48 in-oz)
Torque Accuracy	± 12 N·cm (± 1 in-lb)
Zero Torque	Yes
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Yes
Rotation Direction	Clockwise only
Housing	Cast aluminum
Weight	5 kg (11 lb)
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA 61010-1 & 61010-2-51 3rd Ed., UL 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2-51 3rd Ed., RoHS, WEEE
Warranty	3 years



Overhead stirrer motor 120 volts, 60 Hz. Includes support rod, chuck, chuck key, chuck guard, grounded North American power cord, and printed manual.

Remember to order a stand, clamp and impeller for a complete system to start mixing.



Features

- Brushless DC motor
- Totally enclosed metal housing
- Electronic control
- Smart two-speed transmission
- Through shaft
- Chuck guard included

Benefits

- High efficiency (less heat)
- Protection from dust and product splashing
- Precise speed adjustment and speed maintenance as viscosity changes
- Transmission selects high-torque or high-speed range
- Easy impeller adjustment saves time
- Safely encloses spinning chuck to protect user
- Protects chuck from splashes

CLS-BDC6015
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
ULTRA SPEED, 115
VOLT

CODE Price
 CLS-BDC6015 1,540.20

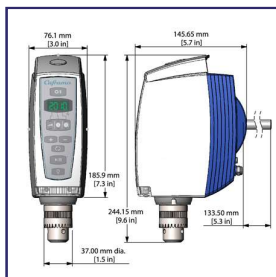




Caframo has a history of great innovation in overhead stirrers. The BDC2010 stirrer is no exception and delivers 25% more power than the BDC2002 while keeping the same compact footprint, Stirlight™ and through shaft. The BDC2010 works smarter and allows the user complete mixing control. The stirring direction can be changed with the touch of the reversing button. The countdown timer times a stirring activity and beeps when completed. In xRxmode the stirrer is set up to continuously reverse from one direction to the other for a set length of time. (Picture the agitation mode of a top loading washing machine!)



Speed	40-2010 rpm (clockwise and/or counterclockwise)
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	90 N·cm (7.9 in-lbs = 127 in-oz)
Output Power	50 Watts (1/15 hp)
Speed Display	Yes
Speed Accuracy	± 1 rpm
Torque Display	No
Zero Torque	No
Timer	Countdown 1-2000 minutes (33.3 hours)
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Available
Rotation Direction	Clockwise and counterclockwise
xRx Mode	1-2000 minutes (33.3 hours)
Housing	Epoxy-coated zinc
Weight	Power Supply: 0.6 kg (1.2 lb), Stirrer: 3.0 kg (7 lb)
IP Rating	IP42
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA-22.2 Std No. 61010-1 & 61010-2-051 3rd Ed., UL/ANSI Std No. 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2 3rd Ed.
Warranty	3 years



Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes support rod, chuck, chuck key, external power supply, grounded North American power cord, and printed manual.

Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Clockwise and counterclockwise stirring
- Timer
- Stirlight™
- Sealed housing
- Brushless DC motor
- Digital display
- Through shaft
- Auto Start
- Electronic digital control

Benefits

- Stirring versatility
- Repeatability to process
- Allows monitoring of mixing properties of batches
- Keeps liquids and moisture out in aggressive environments
- High efficiency (less heat)
- Precise speed adjustment
- Easy impeller adjustment saves time
- Resumes stirring at last set speed automatically when power is restored
- Set speed is maintained as viscosity changes
- Automatic overload protection

CLS-BDC2010
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
REVERSING DIGITAL
WITH COUNTDOWN
TIMER

CODE Price
 CLS-BDC2010 1,240.30





Caframo's BDC2002 offers ultimate versatility and maximizes productivity. With the push of a button, the unique Stirlight™ lights up so that solutions can be seen clearly. Included in each purchase: Overhead stirrer motor, chuck, chuck key, support rod, external power supply, grounded power cord, manual in four languages (English, French, Spanish and German) and three year warranty.



Speed	40-2002 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	15 000 mPa·s (15 000 cps)
Torque Maximum	70 N·cm (6 in-lbs = 100 in-oz)
Output Power	40 Watts (1/18 hp)
Speed Display	Yes
Speed Accuracy	± 1 rpm
Torque Display	No
Zero Torque	No
Timer	No
Through Shaft	Yes
Chuck Maximum Shaft Diameter	9.5 mm (3/8")
Chuck Guard	Available
Rotation Direction	Clockwise only
Housing	Epoxy-coated zinc
Weight	Power Supply: 0.5 kg (1 lb), Stirrer: 3.0 kg (7 lb)
IP Rating	IP42
Voltage	120 volt/230 volt
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Approvals – North America	CAN/CSA-22.2 Std No. 61010-1 & 61010-2-051 3rd Ed., UL/ANSI Std No. 61010-1 3rd Ed.
Approvals – Europe	EN 61326-1: 2013, Europe CE, IEC 61010-1 & 61010-2 3rd Ed.
Warranty	3 years



Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes support rod, chuck, chuck key, external power supply, grounded North American power cord, and printed manual.



Remember to order a stand, clamp and impeller for a complete system to start mixing.

Features

- Stirlight™
- Sealed housing
- Brushless DC motor
- Digital display
- Through shaft
- Auto Start
- Electronic digital control

Benefits

- Allows monitoring of mixing properties of batches
- Keeps liquids and moisture out in aggressive environments
- High efficiency (less heat)
- Precise speed adjustment
- Easy impeller adjustment saves time
- Resumes stirring at last set speed automatically when power is re-stored
- Set speed is maintained as viscosity changes
- Automatic overload protection

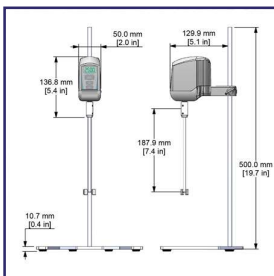
CLS-BDC2002
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
COMPACT DIGITAL,
100-240 VOLT

CODE	Price
CLS-BDC2002	988.30





The ultimate in compact design measuring only two by four inches. The BDC250 offers great capabilities in a small package; used in formulation, R&D, clinical research, education labs, anywhere a magnetic stirrer is used. It fits into small spaces and can be easily transported to other labs or classrooms. Everything you need assembled into a complete stirring package. Included in each purchase: overhead stirrer motor, integral clamp, stainless steel collet, external power supply, grounded power cord, stand, axial and radial mixing blades, mixing shaft, manual in four languages (English, French, Spanish and German) and three year warranty.



Speed	50-2500 rpm
Volume Maximum	2 L (0.5 US Gallon)
Viscosity Maximum	Water-like
Torque Maximum	10 N·cm (0.9 in-lbs = 14 in-oz)
Output Power	7 Watts (1/100 hp)
Speed Display	Yes
Speed Accuracy	± 10 rpm
Torque Display	No
Zero Torque	No
Timer	No
Through Shaft	No
Collet Shaft Diameter	6 mm (0.24")
Chuck Guard	No
Rotation Direction	Clockwise only
Housing	Chemical-resistant nylon
Weight	Power Supply: 0.105 kg (0.23 lb), Stirrer: 0.367 kg (0.81 lb)
IP Rating	IP42
Voltage	120 volt/230 volt must use Caframo power supply
Frequency	50/60 Hz
Ambient Temperature Operation	5-40°C (41-104°F)
Relative Humidity Operation	80%
Stand Rod	500 mm (19 11/16")
Impeller Shaft Length	187 mm x 6.0 mm (7 3/8" x 0.24")
Radial and Axial Blades	12 mm x 30 mm (1/2" x 1 3/16")
Approvals – North America	Certified to applicable CSA and UL standards
Approvals – Europe	Certified to CE EMC Immunity standards
Warranty	3 years

CLS-BDC250 CAFRAMO LAB SOLUTIONS®, OVER- HEAD STIRRER, PETITE DIGITAL, 100- 240 VOLT

Overhead stirrer motor 100-240 volts, 50/60 Hz. Includes integral clamp, collet, mixing shaft, axial and radial mixing blades, stand, power supply, grounded North American power cord, and printed manual.

Features

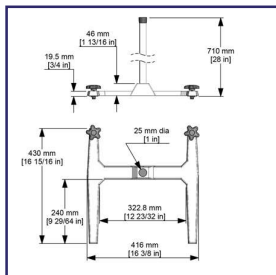
- Brushless DC motor
- Digital display
- Electronic digital control
- Auto Start
- Purchased as a complete package

Benefits

- High efficiency/less heat
- Easy to use and repeatable settings
- Precise speed adjustment
- Resumes stirring at last set speed automatically when power is restored
- Everything you need for the classroom or lab bench

<u>CODE</u>	<u>Price</u>
CLS-BDC250	387.30





CLS-A110
CAFRAMO LAB SO-
LUTIONS®, SAFETY
STAND WITH BASE

This durable stand provides excellent stability for bench stop stirrers even when agitating viscous materials. The wide base and H configuration allow for a wide range of vessel sizes, while the 711 mm (28 in) stand rod enables strong engagement with stand clamp. Portable and adaptable to address changing work spaces, equipment, and priorities. Additional rods of 965 mm (38 in) and 1219 mm (48 in) lengths are available, all interchangeable with the common base. The cast zinc-aluminum alloy base is coated for protection from corrosion and chemical spills.

Rod Diameter	25 mm (1 in)
Rod Length	711 mm (28 in)
Rod Material	304 stainless steel tube
Weight	5 kg (11 lb)
Base Material	Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
Base Footprint	416 W x 430 L mm (16 3/8 x 16 15/16 in)

A110	Safety stand with 711 mm (28 in) rod, stand base and allen key.
A110BASE	Safety stand base and allen key. Order rod separately (Parts ROD28, ROD38, ROD48)
ROD28	Stand rod only, 711 mm (28 in) length.
ROD38	Stand rod only, 965 mm (38 in) length.
ROD48	Stand rod only, 1219 mm (48 in) length.

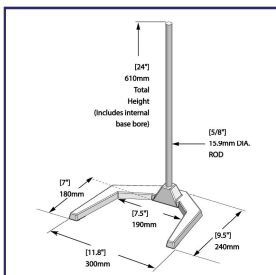
Features

- Wide base and H configuration
- Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- Compatible with three lengths of stand rods
- Rods interchangeable using same allen key

Benefits

- Excellent stability
- Chemical and corrosion resistant – durable and easy to clean
- Flexibility to mount stirrer higher for taller vessels and reaction systems
- Easy to adapt to process needs

Description	CODE	Price
Stand Only	CLS-A110	233.00
Base Only	CLS-A110BASE	182.90
Complete with 28" Rod	CLS-A110-28	292.20
Complete with 38" Rod	CLS-A110-38	318.80
Complete with 48" Rod	CLS-A110-48	344.40



CLS-A210
CAFRAMO LAB SO-
LUTIONS®, COMPACT
STAND WITH BASE

Sturdy stand in a smaller bench footprint, for Caframo compact stirrer models CLS-BDC2002 and CLS-BDC2010. The unique offset design accommodates Caframo clamp so stirrer locates impeller in centre of vessel. The cast zinc-aluminum alloy base is coated for protection from corrosion and chemical spills.

Compact stand with 610 mm (24 in) rod, stand base, and allen key

Rod Diameter	16 mm (5/8 in)
Rod Material	304 stainless steel
Weight	2.6 kg (5.7 lb)
Base Material	Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
Base Footprint	240 mm x 300 mm (9 1/2 in x 11 7/8 in)

Features

- Unique offset design centers impeller in vessel
- Base is cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- Small footprint

Benefits

- Base provides excellent stability for smaller sized stirrers
- Chemical and corrosion resistant – durable and easy to clean
- Able to use within limited bench space

CODE	Price
CLS-A210	206.40





This manual lift, heavy duty stand and base provides a solid mount for the Caframo Crossover when mixing in drums or tanks up to 122 cm (48 in) in diameter. This stand comes with a removable caster base which allows the stand to be installed permanently to the floor or any surface. The four swiveling caster base provides smooth travel and easy portability. When relocation is complete, two casters lock in place. Height is manually adjusted, in one inch increments secured in place by a clevis pin. The vertical mounting plate provides a clamping surface for the C-clamp to attach to – easy one person installation.

Portable heavy duty stand, includes four swivel casters, two with brakes.



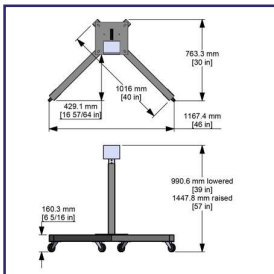
Stand Height	99 – 145 cm (39 – 57 in)
Caster Base Footprint	102 x 102 cm (40 x 40 in)
Square Base Footprint	30.5 x 30.5 cm (12 x 12 in)
Square Base Mounting	6.4 mm (¼ in) thickness, with four 14 x 25 mm (⅝ x 1 in) slots and 250 mm (10 in) center mounting holes secured with 13 mm (½ in) anchor bolts
Weight Capacity	91 kg (200 lb) maximum
Vessel	122 cm (48 in) maximum diameter
Material	Carbon steel, painted

Features

- Heavy gauge plate steel & square tubing
- Portable
- Adjustable height

Benefits

- Durable stand to use with 1540 Crossover mixer
- Easily move mixer without dismounting
- Adaptable to use with a variety of vessels and equipment



CLS-A118

CAFRAMO LAB SOLUTIONS®, MANUAL HEAVY DUTY STAND

CODE	Price
CLS-A118	1,216.10



**CLS-A215****CAFRAMO LAB SOLUTIONS®, COMPACT STAND WITH BASE**

Support stand for Caframo's CLS-BDC250 Petite Stirrer. Conveniently portable and easy to assemble for changing work stations or field work. The cast mild steel base is coated for protection from corrosion and chemical spills. Included as part of CLS-BDC250 stirrer package.

Petite stand with 500 mm (19 3/4 in) rod, stand base, and lock nut.

Rod Diameter	10 mm (3/8")
Rod Length	500 mm (19 3/4")
Rod Material	304 stainless steel
Weight	900 g (2 lb)
Base Material	Cast mild steel coated with chemical resistant epoxy paint
Base Footprint	190 mm x 240 mm (7 1/2" x 9 5/8")

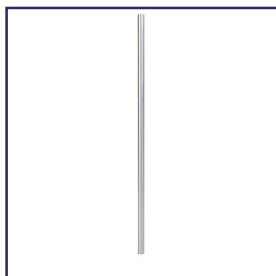
Features

- Base is mild steel coated with chemical resistant epoxy paint
- Small footprint
- Stand weighs less than 1 kg (2.2 lb)

Benefits

- Chemical and corrosion resistant – durable and easy to clean
- Excellent stability within limited bench space
- Easily portable

<u>CODE</u>	<u>Price</u>
CLS-A215	134.90

**CLS-ROD****CAFRAMO LAB SOLUTIONS®, STANDS & CLAMPS, STAND ROD**

Stand rod only, compatible with A110 stand base. Customize your A112 or A114 stand to fit your apparatus. Stand rod composed of 304 stainless steel, 965 mm (38 in) long and 25 mm (1 in) diameter.

Also available in additional lengths: ROD28 is 711 mm (28 in) and ROD48 is 1219 mm (48 in).

Rod Diameter	25 mm (1 in)
Rod Material	304 stainless steel tube

Features

- 304 stainless steel
- Compatible in A110 stand base
- Installed using base allen key

Benefits

- Chemically inert and corrosion resistant
- Flexibility to customize stand for taller vessels and chemical reaction systems
- Easy to adapt to apparatus needs

<u>Length</u>	<u>CODE</u>	<u>Price</u>
28"	CLS-ROD28	82.70
38"	CLS-ROD38	93.00
48"	CLS-ROD48	103.20

**CLS-A300****CAFRAMO LAB SOLUTIONS®, STANDS & CLAMPS, ACCESSORY ROD**

Accessory rod to be paired with A112, A113, and A114 stands. One or two rods can thread into the front legs of the stand base, determined by application. Useful for mounting accessories or reaction apparatus. Rod is 711 mm (28 in) long and 16 mm (5/8 in) diameter, with one threaded end and a stainless steel jam nut. Made of 303 stainless steel.

Accessory rod 711 x 16 mm (28 x 5/8 in), threaded with nut.

Rod Diameter	16 mm (5/8 in)
Rod Length	711 mm (28 in)
Rod Material	303 stainless steel

Features

- 303 stainless steel
- Threads into the front legs of the A112 A113 or A114 stand base

Benefits

- Chemically inert and corrosion resistant
- Able to mount additional reaction apparatus

<u>CODE</u>	<u>Price</u>
CLS-A300	130.20





A popular clamp for its durability, strength, and ease of use. Includes a convenient place to hold chuck key. The cast zinc-aluminum alloy is coated for protection from corrosion and chemical spills.

Features

- Cast zinc-aluminum alloy coated with chemical resistant epoxy paint
- No tool required
- Place to hold chuck key

Benefits

- Chemical and corrosion resistant – durable and easy to clean
- Easy and quick one-handed tightening
- Convenient and accessible location when key is needed



CLS-A120
CAFRAMO LAB SO-
LUTIONS®, FASTEN-
ING CLAMP

Accommodates Stirrer Rod

12.5 mm (½ in)

16 mm (⅝ in)

CODE

CLS-A120

CLS-A122

Price

94.00

104.20



CLS-A600SET
CAFRAMO LAB SO-
LUTIONS®, HIGH
SPEED COLLET SET

Achieve greater stability stirring at speeds 1800-6000 rpm. Set includes collet, 16 mm (⅝ in) 440 stainless steel shaft with an end turned down to 8 mm (⅝ in), and three impeller 316 stainless steel blades with 8 mm (⅝ in) bores. Shaft and blades have polished finish. Set includes straight blade A163, dispersion blade A164, and pitched blade propeller A165. Tools and hardware are included for installation to a 13 mm (½ in) motor output shaft of overhead stirrer. To be used with BDC3030 or BDC6015 overhead stirrers.

Collet, 16 mm (⅝ in) diameter shaft, straight blade A163, dispersion blade A164, pitched blade propeller A165, and allen key.

Speed Range	1800-6000 rpm
Fits Motor Shaft	13 mm (½ in)
Collet Material	316 stainless steel
Shaft Material	Polished 440 stainless steel
Shaft Length	260 mm (10 ¼ in)
Shaft Diameter	16 mm (⅝ in)
Impeller Bores	8 mm (⅝ in)
A163 Diameter	40 mm (1 ⅝ in)
A164 Diameter	48 mm (1 ⅞ in)
A165 Diameter	64 mm (2 ½ in)
Blade Rotation	Left hand
Weight	660 g (1.5 lb)
Weight	46 g (1.6 oz)

Features

- For high speed mixing (1800-6000 rpm)
- Chuck key or allen key attaches collet to output shaft
- Shaft has turned down end to 8 mm (⅝ in)

Benefits

- Greater stability for extended stirring at higher speeds
- No additional tools required
- Customize to any impeller with 8 mm (⅝ in) bore

CODE

CLS-A600SET

Price

556.90





CLS-S100
CAFRAMO LAB SO-
LUTIONS®, IMPELLER
SET

Shaft and impeller blades to fit collet of BDC250 stirrer, all electropolished 316L stainless steel. Includes one radial blade and one axial blade and interchangeable set screw. Is included in BDC250 stirrer package.

Mixing shaft, axial and radial mixing blades, and set screw.

Impeller Shaft Dimensions	188 x 6.0 mm (7 3/8 x 0.24 in)
Radial and Axial Blades Dimensions	13 x 30 mm (1/2 x 1 3/16 in)
Blade Rotation	Left hand
Material	Electropolished 316L stainless steel
Weight	40 g (1.4 oz)

Features

- Electropolished 316 L stainless steel
- Axial and radial blades included
- Set screw compatible with standard tool

Benefits

- Chemical and corrosion resistant
- Choice of two types of flow
- Blades easily interchangeable

<u>CODE</u>	<u>Price</u>
CLS-S100	89.70



CLS-CG1
CAFRAMO LAB SO-
LUTIONS®, CHUCK
GUARD

Implement safety with a quick snap of this clear polyurethane chuck guard to the stirrer housing. Creates barrier around moving chuck, as well as protects chuck from chemical splashes. Use with overhead stirrers BDC1850, BDC3030, and BDC6015. Easy to attach and remove.

Chuck guard, clear polyurethane

Material	Chemical-resistant polyurethane
Weight	14 g (0.5 oz), magnets

Features

- Magnets securely snap guard into place on stirrer housing over the chuck
- Creates a barrier around the spinning chuck
- Chemical-resistant polyurethane

Benefits

- Easy to install and remove
- Protects users from the moving chuck
- Protects the chuck from splashes

<u>CODE</u>	<u>Price</u>
CLS-CG1	65.20



CLS-CG5
CAFRAMO LAB SO-
LUTIONS®, CHUCK
GUARD

Implement safety by sliding this guard over the chuck. Creates barrier around moving chuck, with the snug fit protecting from splashing and corrosive fumes. Use with overhead stirrers BDC2002, BDC2010, BDC1850, BDC3030, BDC6015.

BDC1850, BDC3030, and BDC6015 have chuck guard CG1 included with stirrer

Material	Chemical-resistant vinyl
Fasteners	Slides onto chuck
Weight	18 g (0.65 oz)

Features

- Black chemical resistant vinyl
- Slides into place over the chuck

Benefits

- Protects the chuck from splashes
- Simple to install and remove

<u>CODE</u>	<u>Price</u>
CLS-CG5	16.30





CLS-CG6
CAFRAMO LAB SO-
LUTIONS®, CHUCK
SHAFT GUARD

Guards the rotating chuck and shaft for safety and protects chuck from chemical splashes. The chuck hex tool is compatible with the bolts included for simple installation. The tough polycarbonate ABS is easy to clean. This guard is included with the purchase of a Caframo Crossover model 1540. Includes Chuck Shaft Guard, hardware and hex key.

Chuck Shaft Guard polycarbonate ABS, three 3 mm hex bolts, and hex key.

Material	Polycarbonate ABS
Fasteners	3 mm hex bolts
Length	200 mm (7 7/8 in)
Weight	200 g (0.5 lb)

Features

- Guards rotating chuck and upper shaft
- Polycarbonate ABS
- Installs with three bolts
- Bolts compatible with chuck hex tool

Benefits

- Protects operators from moving parts
- Easy to clean
- Easy installation and removal
- No additional tools required

<u>CODE</u>	<u>Price</u>
CLS-CG6	181.50



CLS-S200
CAFRAMO LAB SO-
LUTIONS®, SCREEN
PROTECTOR

Protect the resistive touch screen from chemical splashes and dust. Restore screen visibility and responsiveness by installing this transparent protective barrier. Simply remove backing, clean surface and apply. The resin-coated polyethylene terephthalate (PET) is chemically resistant to most cleaners, alcohols, esters, ketones, including dilute acids and dilute alkalis. Includes two screen protectors, two cleaning wipes and instructions for application. Use with industrial mixer 1540.

Screen Protector, includes two screen protectors, two cleaning wipes and instructions.

Material	Resin-coated PET (polyethylene terephthalate)
Dimensions	62 x 110 mm (2 7/16 x 4 5/16 in)
Chemical Resistance	DIN 42115
RoHS Compliant	Yes

Features

- Transparent
- Flexible
- Resin-coated PET
- Simple installation

Benefits

- Preserves visibility of screen
- Maintains functionality with gloved hand
- Chemical resistant and easy to wipe clean
- Quick and easy replacement

<u>CODE</u>	<u>Price</u>
CLS-S200	47.00



CLS-13CSET CAFRAMO LAB SO- LUTIONS®, CHUCK SET

Chuck is used with Caframo High Torque and Compact overhead stirrers, accepting impeller shafts up to 10 mm ($\frac{3}{8}$ in) diameter. Chuck key includes hex tool for removal from stirrer's output shaft for cleaning or replacement. Through shaft capability allows for easy adjustment of impeller height. Compatible with Caframo chuck guards CG1 and CG5.

Chuck and chuck key for Caframo High Torque and Compact stirrers, includes set screw and hex tool for installation.

Material	420 stainless steel
Through Shaft	Yes
Impeller Shaft Diameters	Adjustable to 10 mm ($\frac{3}{8}$ in)
Fits Motor Shaft	13 mm ($\frac{1}{2}$ in)
Multipurpose Tool	Chuck key and 2.5 mm hex tool in one
Weight	280 g (0.6 lb)

Features

- Accepts shafts up to 10 mm ($\frac{3}{8}$ in) diameter
- Through shaft
- 420 stainless steel
- Keyed chuck
- Chuck key includes 2.5 mm hex installation tool
- Available chuck guards CG1 and CG5

Benefits

- Adjustable for a wide range of shaft diameters
- Easy adjustment of impeller height
- High strength and high wear resistance
- Secure attachment for high torque mixing
- Tool provided for chuck installation and removal for cleaning
- Chuck guard option for safety and chuck protection from splashes

<u>CODE</u>	<u>Price</u>
CLS-13CSET	132.60



CLS-13CKEY CAFRAMO LAB SO- LUTIONS®, CHUCK KEY

Chuck key from 13CSET. Firmly tightens the chuck to secure the mixing shaft in place, and loosens chuck for quick removal or adjustment of impeller. Includes 2.5 mm hex tool for installation and removal of chuck from stirrer's output shaft for cleaning or replacement.

Chuck key only for 13CSET chuck, includes hex tool for chuck installation.

Material	420 stainless steel
Multipurpose Tool	Chuck key and 2.5 mm hex tool in one
Dimensions	81 x 40 mm ($3\frac{3}{16}$ x $1\frac{9}{16}$ in)
Weight	40 g (1.4 oz)

Features

- 420 stainless steel
- Multipurpose tool

Benefits

- High strength and high wear resistance
- Chuck key and 2.5 mm hex tool provided for installation and removal of chuck

<u>CODE</u>	<u>Price</u>
CLS-13CKEY	25.50





CLS-A016SET CAFRAMO LAB SO- LUTIONS®, CHUCK SET

Chuck is used with Caframo Crossover 1540 mixer, accepting impeller shafts up to 16 mm ($\frac{5}{8}$ in) diameter. Chuck key includes hex tool for removal from mixer's output shaft for cleaning or replacement. Through shaft capability allows for easy adjustment of impeller height. Compatible with Caframo Chuck Shaft Guard (CG6).

Material	420 stainless steel
Through Shaft	Yes
Impeller Shaft Diameters	Adjustable to 15.9 mm ($\frac{5}{8}$ in)
Fits Motor Shaft	24.8 mm (0.98 in)
Multipurpose Tool	Chuck key and 3 mm hex tool in one
Weight	1.1 kg (2.4 lb)

Features

- Accepts shafts up to 16 mm ($\frac{5}{8}$ in) diameter
- Through shaft
- 420 stainless steel
- Keyed chuck
- Chuck key includes 3 mm hex tool
- Available Chuck Shaft Guard CG6

Benefits

- Adjustable for a wide range of shaft diameters
- Easy adjustment of impeller height
- High strength and high wear resistance
- Secure attachment for high torque mixing
- Easy installation and removal for chuck cleaning
- Guards spinning chuck and shaft

<u>CODE</u>	<u>Price</u>
CLS-A016SET	296.30



CLS-A016KEY CAFRAMO LAB SO- LUTIONS®, CHUCK KEY

Chuck key from the A016SET. Firmly tightens the chuck to secure the mixing shaft in place, and loosens chuck for quick removal or adjustment of impeller. Includes 3 mm hex tool for installation and removal of chuck from mixer's output shaft. Can also be used to install Caframo Chuck Shaft Guard (CG6).

Material	420 stainless steel
Multipurpose Tool	Chuck key and 3 mm hex tool in one
Dimensions	132 x 70 mm ($5 \frac{3}{16}$ x $2 \frac{3}{4}$ in)
Weight	160 g (5.6 oz)

Features

- Accepts shafts up to 16 mm ($\frac{5}{8}$ in) diameter
- Through shaft
- 420 stainless steel
- Keyed chuck
- Chuck key includes 3 mm hex tool
- Available Chuck Shaft Guard CG6

Benefits

- Adjustable for a wide range of shaft diameters
- Easy adjustment of impeller height
- High strength and high wear resistance
- Secure attachment for high torque mixing
- Easy installation and removal for chuck cleaning
- Guards spinning chuck and shaft

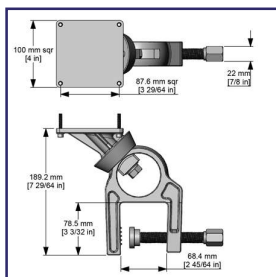
<u>CODE</u>	<u>Price</u>
CLS-A016KEY	36.70





Maximum flexibility and functionality. Angle the mixer into the vessel to improve mixing efficiencies. Position the mixer to accommodate additional equipment or simplify complex configurations. The C-clamp design allows the mixer to be mounted to any stable vertical support, stand, frame, or drum. A single bolt positions mixer at desired angle on two axes. Set includes C-clamp, clamp adapter, and hardware. Use with industrial mixer 1540.

C-clamp set. Includes C-clamp, clamp adaptor, four mounting bolts, four split and lock washers, and hex key.



Material	Cast 304 stainless steel, electropolished
Angle Positioning Bolt	Compatible with 19 mm (¾ in) wrench
C-Clamp Adjustment Screw	Compatible with a 22 mm (⅞ in) wrench
Weight	2.6 kg (5.7 lb)

Features

- Sturdy two-piece design
- 304 electropolished stainless steel
- Pivoting adapter
- Universal C-clamp
- Standard sized hardware

Benefits

- Excellent stability
- Chemical and corrosion resistant – easy to clean
- Flexibility to mount in wide range of positions
- Compatible with variety of vertical supports
- No specialized tools required

<u>CODE</u>	<u>Price</u>
CLS-A128SET	620.30

CLS-A128SET CAFRAMO LAB SOLUTIONS®, C-CLAMP SET



Ensure easy and secure mounting to existing structures, stands or any stable horizontal surface. Slotted bolt pattern allows for flexible bolt positioning, installed with standard tools. Manufactured of durable electropolished 304 stainless steel. Includes plate and four mounting bolts with flat and split lock washers, and hex key. Use with industrial mixer 1540.

Plate mount. Includes plate, four mounting bolts, four flat washers, four split lock washers, and hex key.

Material	Electropolished 304 stainless steel
Dimensions	100 x 260 x 6.4 mm (4 x 10 ¼ x ¼ in)
Weight	1.3 kg (2.8 lb)

Features

- 6.4 mm (¼ in) thickness
- Stainless steel construction
- Slotted bolt pattern
- Standard sized hardware

Benefits

- Excellent stability
- Chemical resistant and easy to clean
- Compatible with variety of mounting surfaces
- No specialized tools required

<u>CODE</u>	<u>Price</u>
CLS-A129	193.10

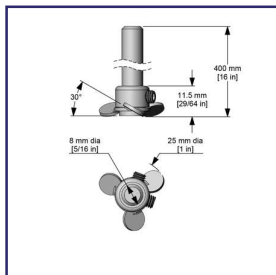
CLS-A129 CAFRAMO LAB SOLUTIONS®, PLATE MOUNT





Blade and shaft are conveniently bundled together, able to address a variety of stirring applications. This axial flow impeller is effective for low shear mixing. The 25 mm (1 in) diameter blade fixes to an 8 mm ($\frac{5}{16}$ in) diameter shaft with included set screws. Blade and shaft are both 316L stainless steel, with the propeller blade electropolished finish and the shaft with passivated finish.

Pitched blade propeller, 25 mm (1 in) diameter blade paired with 400 mm (16 in) shaft, includes set screws.



Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ in)
Blade Diameter	25 mm (1 in)
Blade Rotation	Left hand
Blade Material	Electropolished 316L stainless steel
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Shaft Material	Passivated 316L stainless steel
Weight	168 g (0.37 lb)

Features

- 316L stainless steel
- Secured to shaft with set screws
- Pitched blade propeller
- High speed low shear axial flow

Benefits

- Chemically inert and corrosion resistant
- Able to adjust position of impeller blade along shaft
- Scale up advantage if propeller used in production
- Serves a wide range of applications – a popular choice of impeller

CLS-A190 CAFRAMO LAB SO- LUTIONS®, IMPELLER & SHAFT

<u>CODE</u>	<u>Price</u>
CLS-A190	98.90



This popular impeller serves a wide range of stirring applications, pairing the blade and shaft in a convenient package. This axial flow impeller is effective for high speed, low to medium viscosity mixing. The 64 mm (2 $\frac{1}{2}$ in) diameter blade fixes to an 8 mm ($\frac{5}{16}$ in) diameter shaft with included set screws. Blade and shaft are electropolished 316L stainless steel. For low shear, high top to bottom pumping capacity with high gas injection, able to vortex 19 L (5 gal) of water at 3600 rpm. This product replaces the Pitched Blade Propeller Model CLS-A160.

Cast pitched blade propeller, 64 mm (2 $\frac{1}{2}$ in) diameter blade paired with 400 mm (16 in) shaft, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Blade Diameter	64 mm (2 $\frac{1}{2}$ in)
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Material	Electropolished 316L stainless steel
Weight	181 g (0.4 lb)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

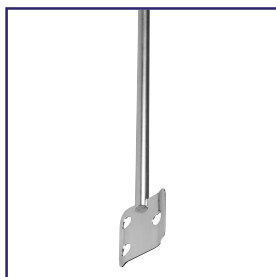
Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A166	115.20

CLS-A166 CAFRAMO LAB SO- LUTIONS®, PRO- PELLER & SHAFT, PITCHED BLADE





CLS-A250

CAFRAMO LAB SOLUTIONS®, COMPACT SQUARE BLADE

This tangential flow impeller is effective for low speed, high viscosity mixing. The 38 mm (1 1/2") square blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. For stirring small volumes of viscous product.

Square blade impeller, 38 mm (1 1/2 in) square blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	38 mm (1 1/2") square blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	159 g (0.3 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A250	97.90



CLS-A150

CAFRAMO LAB SOLUTIONS®, SQUARE BLADE IMPELLER

This tangential flow impeller is effective for low speed, high viscosity mixing. The 70 mm (2 3/4") square blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. For stirring small volumes of viscous product.

Square blade impeller, 70 mm (2 3/4 in) square blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	70 mm (2 3/4") square blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	180 g (0.4 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A150	98.90



CLS-A141

CAFRAMO LAB SOLUTIONS®, COLLAP-SIBLE BLADE IMPELLER

This radial flow impeller is a popular choice for high speed, low viscosity mixing in carboys or narrow neck flasks. The blades are pinned to an 8 mm (5/16") diameter shaft, fanning out with agitation to a maximum diameter of 90 mm (3 1/2"). Blades and shaft are electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 1000 rpm.

Straight blade impeller, 10 – 90 mm (3/8 – 3 1/2 in) diameter blade, pinned to shaft

Flow Pattern	Radial
Blade Diameter	10 mm – 90 mm (3/8" – 3 1/2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	127 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Collapsible blades enter any opening over 10 mm (3/8 in) diameter
- Pinned to shaft

Benefits

- Chemically inert and corrosion resistant
- Fits in narrow neck vessels and carboys
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A141	91.80





CLS-A140
CAFRAMO LAB SO-
LUTIONS®, PIVOTING
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 60 mm (2 3/8") diameter straight blade is pinned to an 8 mm (5/16") diameter shaft, allowing blade to pivot with agitation. Blade and shaft are electropolished 316L stainless steel. A moderate shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 800 rpm.

Straight blade impeller, 60 mm (2 3/8 in) diameter blade, pinned to shaft

Flow Pattern	Radial
Blade Diameter	60 mm (2 3/8")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	126 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Pinned to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A140	96.90



CLS-A130
CAFRAMO LAB SO-
LUTIONS®, CROSSED
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 50 mm (2") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with high vortexing properties, creating a vortex in 19 L (5 gal) of water at 900 rpm.

Crossed blade impeller, welded to shaft

Flow Pattern	Radial
Blade Diameter	50 mm (2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	128 g (0.3 lb)

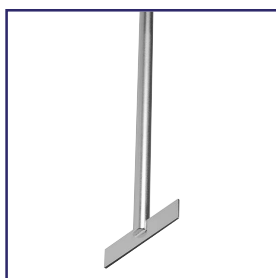
Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A130	91.80



CLS-A131
CAFRAMO LAB SO-
LUTIONS®, STRAIGHT
BLADE IMPELLER

This radial flow impeller is effective for high speed, low viscosity mixing. The 50 mm (2") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties, creating a vortex in 19 L (5 gal) of water at 1200 rpm.

Straight blade impeller, 50 mm (2 in) diameter blade, welded to shaft

Flow Pattern	Radial
Blade Diameter	50 mm (2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	128 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A131	91.80





CLS-A231

CAFRAMO LAB SOLUTIONS®, COMPACT STRAIGHT BLADE

This radial flow impeller is effective for high speed, low viscosity mixing. The 30 mm (1 ¼") diameter blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. A high shear impeller with moderate vortexing properties.

Straight blade impeller, 32 mm (1 ¼ in) diameter blade, welded to shaft

Flow Pattern	Radial
Blade Diameter	30 mm (1 ¼")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	120 g (0.3 lb)

Features

- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A231	91.80



CLS-A163

CAFRAMO LAB SOLUTIONS®, STRAIGHT BLADE ONLY

Straight blade of 40 mm (1 ½") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear, low viscosity mixing with moderate vortexing, this blade will vortex 19 L (5 gal) of water at 1200 rpm.

Straight 40 mm (1 ⅝ in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in the A600SET high speed collet set.

Flow Pattern	Radial
Bore Diameter	8 mm (5/16")
Blade Diameter	40 mm (1 ½")
Blade Height	13 mm (½")
Material	Electropolished 316L stainless steel
Weight	20 g (0.71 oz)

Features

- Electropolished 316L stainless steel
- Straight blade

Benefits

- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A163	77.50





CLS-A164 **CAFRAMO LAB SO-** **LUTIONS®, DISP-** **ERSION BLADE ONLY**

Dispersion blade of 48 mm (1 7/8") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear mixing at medium to high speeds.

Precision dispersion 48 mm (1 7/8 in) blade only, with 8 mm (5/16 in) bore, includes set screws

This blade is included in the A600SET high speed collet set.

Flow Pattern	Laminar
Bore Diameter	8 mm (5/16")
Blade Diameter	48 mm (1 7/8")
Material	Electropolished 316L stainless steel
Weight	38.4 g (1.35 oz)

Features

- Electropolished 316L stainless steel
- High shear

Benefits

- Chemically inert and corrosion resistant
- Broken particles are dispersed by the laminar flow set up by the blade

<u>CODE</u>	<u>Price</u>
CLS-A164	189.70



CLS-A165 **CAFRAMO LAB SO-** **LUTIONS®, PITCHED** **BLADE ONLY**

Pitched blade propeller of 65 mm (2 1/2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection, this blade will vortex 19 L (5 gal) of water at 3600 rpm.

Cast pitched blade propeller 64 mm (2 1/2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	65 mm (2 1/2")
Material	Electropolished 316L stainless steel
Weight	23 g (0.8 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

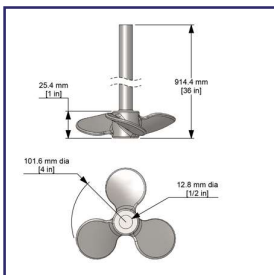
<u>CODE</u>	<u>Price</u>
CLS-A165	92.80





With the blade welded to the shaft, this impeller is immediately ready to use with the 1540 Crossover and start mixing. No tightening or adjusting of set screws is needed, and the one piece impeller is desirable for pharmaceutical, food and other sanitary applications. The three-blade square pitch propeller is 102 mm (4 in) diameter, composed of 316L stainless steel. Blade is cast, then polished and buffed to a mirror surface finish type #4. The 13 mm (½ in) diameter shaft is constructed of ground and polished 316 stainless steel for enhanced corrosion protection, 914 mm (36 in) length.

A354 shaft diameter only compatible with 1540 chuck.



Pitched blade propeller 102 mm (4 in) diameter, welded to 914 mm (36 in) shaft.

Flow Pattern	Axial
Blade Diameter	102 mm (4 in)
Blade Material	Polished 316L stainless steel
Shaft Length	914 mm (36 in)
Shaft Diameter	13 mm (½ in)
Shaft Material	Polished 316 stainless steel

Features

- Polished 316L and 316 stainless steel
- Propeller welded to shaft
- Pitched blade propeller
- 12.5 mm (½ in) diameter shaft

Benefits

- Chemically inert and corrosion resistant
- One piece impellers desirable for sanitary applications
- Scale up advantage when propeller used in production
- Compatible with a wide range of chucks and collets

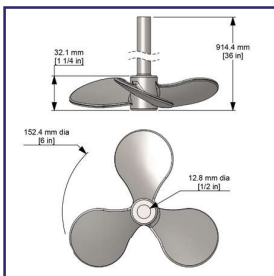
CLS-A354
CAFRAMO LAB SO-
LUTIONS®, PRO-
PELLER AND SHAFT

<u>CODE</u>	<u>Price</u>
CLS-A354	630.00



With the blade welded to the shaft, this impeller is immediately ready to use with the 1540 Crossover and start mixing. No tightening or adjusting set screws is needed, and the one piece impeller is desirable for pharmaceutical, food and other sanitary applications. The three-blade square pitch propeller is 152 mm (6 in) diameter, composed of 316L stainless steel. Blade is cast, then polished and buffed to a mirror surface finish type #4. The 13 mm (½ in) diameter shaft is constructed of ground and polished 316 stainless steel for enhanced corrosion protection, 914 mm (36 in) length.

A356 shaft diameter only compatible with 1540 chuck.



Pitched blade propeller 152 mm (6 in) diameter, welded to 914 mm (36 in) shaft.

Flow Pattern	Axial
Blade Diameter	152 mm (6 in)
Blade Material	Polished 316L stainless steel
Shaft Length	914 mm (36 in)
Shaft Diameter	13 mm (½ in)
Shaft Material	Polished 316 stainless steel

Features

- Polished 316L and 316 stainless steel
- Propeller welded to shaft
- Pitched blade propeller
- 12.5 mm (½ in) diameter shaft

Benefits

- Chemically inert and corrosion resistant
- One piece impellers desirable for sanitary applications
- Scale up advantage when propeller used in production
- Compatible with a wide range of chucks and collets

CLS-A356
CAFRAMO LAB SO-
LUTIONS®, PRO-
PELLER AND SHAFT,
5.9" DIAMETER

<u>CODE</u>	<u>Price</u>
CLS-A356	669.90





CLS-A551
CAFRAMO LAB SO-
LUTIONS®, TURBINE
3 BLADE PROPELLER
ONLY

Turbine blade of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For high shear mixing with moderate vortexing.

Turbine 3 blade propeller 50 mm (2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

Flow Pattern	Radial
Bore Diameter	8 mm (5/16")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	16.2 g (0.6 oz)

Features

- Electropolished 316L stainless steel
- Turbine 3 blade propeller

Benefits

- Chemically inert and corrosion resistant
- High shear with moderate vortexing characteristics

<u>CODE</u>	<u>Price</u>
CLS-A551	39.00



CLS-A553
CAFRAMO LAB SO-
LUTIONS®, TURBINE
3 BLADE PROPELLER
ONLY

Turbine blade of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 9.5 mm (3/8") bore is compatible with Caframo shafts P-A713, P-A723, P-A733, P-A743, and P-A753. Set screws included. For high shear mixing with moderate vortexing.

Turbine 3 blade propeller 50 mm (2 in) blade only, with 9.5 mm (3/8 in) bore, includes set screws.

Flow Pattern	Radial
Bore Diameter	9.5 mm (3/8")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	15.9 g (0.6 oz)

Features

- Electropolished 316L stainless steel
- Turbine 3 blade propeller

Benefits

- Chemically inert and corrosion resistant
- High shear with moderate vortexing characteristics

<u>CODE</u>	<u>Price</u>
CLS-A553	39.00



CLS-A511
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 25 mm (1") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 25 mm (1 in) blade only, with 8 mm (5/16 in) bore, includes set screws

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	25 mm (1")
Material	Electropolished 316L stainless steel
Weight	7.0 g (0.25 oz)

Features

- 316L stainless steel
- Secured to shaft with set screws
- Pitched blade propeller
- High speed low shear axial flow

Benefits

- Chemically inert and corrosion resistant
- Able to adjust position of impeller blade along shaft
- Scale up advantage if propeller used in production
- Serves a wide range of applications – a popular choice of impeller

<u>CODE</u>	<u>Price</u>
CLS-A511	37.00





CLS-A521
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 38 mm (1 ½") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 38 mm (1 ½ in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	38 mm (1 ½")
Material	Electropolished 316L stainless steel
Weight	9.4 g (0.33 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A521	37.00



CLS-A531
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 8 mm (5/16") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 50 mm (2 in) blade only, with 8 mm (5/16 in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm (5/16")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	12.9 g (0.46 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A531	37.00





CLS-A533
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 50 mm (2") diameter, composed of electropolished 316L stainless steel. The 9.5 mm ($\frac{3}{8}$ ") bore is compatible with Caframo shafts P-A713, P-A723, P-A733, P-A743, and P-A753. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 50 mm (2 in) blade only, with 9.5 mm ($\frac{3}{8}$ in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	9.5 mm ($\frac{3}{8}$ ")
Blade Diameter	50 mm (2")
Material	Electropolished 316L stainless steel
Weight	12.9 g (0.46 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A533	37.00



CLS-A541
CAFRAMO LAB SO-
LUTIONS®, PITCHED
BLADE PROPELLER
ONLY

Pitched blade propeller of 75 mm (3") diameter, composed of electropolished 316L stainless steel. The 8 mm ($\frac{5}{16}$ ") bore is compatible with all Caframo shafts. Set screws included. For low shear, high top-to-bottom pumping capacity with high gas injection.

Pitched blade propeller 78 mm (3 in) blade only, with 8 mm ($\frac{5}{16}$ in) bore, includes set screws.

This blade is included in A600SET high speed collet set.

Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ ")
Blade Diameter	75 mm (3")
Material	Electropolished 316L stainless steel
Weight	29.7 g (1.0 oz)

Features

- Electropolished 316L stainless steel
- Pitched blade propeller

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if propeller used in production

<u>CODE</u>	<u>Price</u>
CLS-A541	41.00





Pitched blade turbine of 100 mm (4 in) diameter, composed of electropolished 316L stainless steel. The 8 mm ($\frac{5}{16}$ in) bore is compatible with all Caframo shafts. Set screws included. Axial flow with moderate shear for moderate viscosity mixing.

Pitched 4 blade turbine 100 mm (4 in) blade only, with 8 mm ($\frac{5}{16}$ in) bore, includes set screws.

Flow Pattern	Axial
Bore Diameter	8 mm ($\frac{5}{16}$ in)
Blade Diameter	100 mm (4 in)
Blade Rotation	Left hand
Pitch	45°
Material	Electropolished 316L stainless steel
Weight	46 g (1.6 oz)

Features

- Electropolished 316L stainless steel
- Four-blade pitched turbine
- Moderate shear axial flow
- Secured to shaft with set screws

Benefits

- Chemically inert and corrosion resistant
- Scale up advantage if turbine used in production
- Serves a wide range of applications
- Able to add multiple blades along shaft and easy to clean

<u>CODE</u>	<u>Price</u>
CLS-A561	77.00

CLS-A561 CAFRAMO LAB SO- LUTIONS®, 4 BLADE PITCHED ONLY



A radial flow PTFE impeller for high speed, low viscosity mixing in narrow neck flasks. The blades are attached to an 8 mm ($\frac{5}{16}$ in) diameter PTFE-coated shaft, fanning out with agitation to a maximum diameter of 40 mm ($1\frac{1}{2}$ in). The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE Collapsible Impeller, up to 40 mm ($1\frac{5}{16}$ in) diameter blade

Flow Pattern	Radial
Blade Diameter	40 mm ($1\frac{1}{2}$ in)
Shaft Length	400 mm (16 in)
Shaft Diameter	8 mm ($\frac{5}{16}$ in)
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	91 g (0.2 lb)

Features

- PTFE blades
- Collapsible blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece

Benefits

- Excellent chemical (including acidic and caustic) resistance
- Fits in narrow neck vessels and Erlenmeyer flasks
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A180	205.80

CLS-A180 CAFRAMO LAB SO- LUTIONS®, PTFE COLLAPSIBLE IM- PELLER





CLS-A183
CAFRAMO LAB SO-
LUTIONS®, PTFE AN-
CHOR PADDLE

A tangential flow PTFE impeller for low speed, higher viscosity mixing. The 80 mm (3 1/8") blade is attached to an 8 mm (5/16") diameter PTFE-coated shaft, designed for use in round bottom vessels and reaction flasks. The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE Anchor Paddle, 80 mm (3 1/8 in) blade

Flow Pattern	Tangential
Blade Diameter	80 mm (3 1/8")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	113 g (0.2 lb)

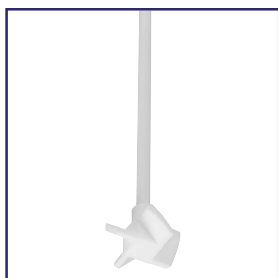
Features

- Tangential flow
- PTFE blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece

Benefits

- Effective for low speed medium to high viscosity mixing
- Excellent chemical (including acidic and caustic) resistance
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-A183	294.00



CLS-A185
CAFRAMO LAB SO-
LUTIONS®, PTFE 4
BLADE PITCHED
PROPELLER

An axial flow PTFE impeller for high speed, low viscosity mixing. With 45° pitched blades, the 40 mm (1 1/2") diameter impeller is attached to an 8 mm (5/16") diameter PTFE-coated shaft. The stainless steel core of the shaft provides stability. PTFE (polytetrafluoroethylene) can be used under the most adverse conditions. This high performance coating is insoluble, non-contaminating and has exceptional thermal resistance. It is easy to clean, does not scratch other surfaces and is unbreakable.

PTFE 4 blade propeller, 40 mm (1 1/2 in) blade

Flow Pattern	Axial
Blade Diameter	40 mm (1 1/2")
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	PTFE blades, with stainless steel core in shaft for stability
Weight	113 g (0.2 lb)

Features

- PTFE blades
- Stainless steel core in shaft
- High heat resistance
- Autoclavable
- Scratch and chip resistant
- Poor adhesion – materials release easily from impeller
- One piece
- 45° blade pitch

Benefits

- Excellent chemical (including acidic and caustic) resistance
- Provides stability to impeller
- Suitable for heated processes
- Good for biotechnology processes
- Low risk of particles introduced to batch
- Easy to clean
- Quick to insert and begin mixing
- Right hand rotation (solution pushed downwards when propeller spins clockwise)

<u>CODE</u>	<u>Price</u>
CLS-A185	268.80





A712	Shaft – 305 mm (12 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 110 g (0.2 lb)
A162	Shaft – 406 mm (16 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 150 g (0.3 lb)
A722	Shaft – 457 mm (18 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 180 g (0.4 lb)
A742	Shaft – 610 mm (24 in) length x 8 mm ($\frac{5}{16}$ in) diameter, 240 g (0.5 lb)

Use with: Any blade with an 8 mm ($\frac{5}{16}$ in) diameter bore

Features

- Passivated 316L stainless steel
- 8 mm ($\frac{5}{16}$ in) diameter

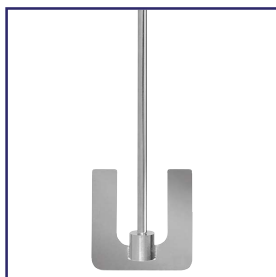
Benefits

- Chemically inert and corrosion resistant
- Fits blades having 8 mm ($\frac{5}{16}$ in) bore and majority of bench top overhead stirrer chucks

CLS-A162
CAFRAMO LAB SO-
LUTIONS®, IM-
PELLERS & SHAFTS,
SHAFTS

	<u>Material</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
	316 SS Electropolished	16 x 5/16"	CLS-A162	56.10
	316 SS Passivated	12 x 5/16"	CLS-A712	40.80
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	12 x 3/8"	CLS-A713	47.40
	316 SS Passivated	18 x 5/16"	CLS-A722	62.20
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	18 x 3/8"	CLS-A723	62.20
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	20 x 3/8"	CLS-A733	79.50
	316 SS Passivated	24 x 5/16"	CLS-A742	83.60
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	24 x 3/8"	CLS-A743	86.70
316 SS Passivated with 1/2 x 5/16" end	316 SS Passivated	30 x 3/8"	CLS-A753	111.10





CLS-U044
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 4x4"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 102 mm x 102 mm (4" x 4") anchor blade is welded to an 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Fits the Sweep accessory covers SW4. The high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 102 x 102 mm (4 x 4 in) blade, welded to shaft.

Flow Pattern	Tangential
Blade Diameter	102 mm x 102 mm (4" x 4") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	280 g (0.6 lb)

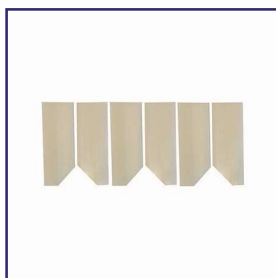
Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft
- Fits Sweep accessory SW4

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing
- Sweeps product from wall of standard 4 L beaker

<u>CODE</u>	<u>Price</u>
CLS-U044	201.90



CLS-SW4
CAFRAMO LAB SO-
LUTIONS®, SWEEP
BLADE

Maximize the stirring results of Caframo's U044 anchor impeller with the sweep blade accessory. Effectively move viscous product from vessel walls back to the centre for thorough mixing. The Silicone SCX 0570 is compliant with FDA 21 CFR 177.2600 and resilient to stir batches with viscosities up to 38,000 mPas. Compatible with a standard 4 L beaker for continuous sweeping while stirring. Ideal for formulating creams and lotions. Comes as a package of 6 (3 pairs). Please note a vessel clamp is required.

Sweep blades only, package of 6 (3 pairs)

Note: Vessel clamp is required, optimal performance using 4 L beaker

Material	Silicone SCX 0570 – Compliant with FDA 21 CFR 177.2600
Compatible Impeller	U044 anchor paddle
Blade Dimensions	152 x 55 mm (6 x 2 $\frac{3}{16}$ in)
Vessel	Standard 4 L beaker
Viscosity Range	0-38,000 mPas (0-38,000 cP)
Temperature Maximum	100 °C (210 °F)
Weight (U044SW)	1.5 kg (3.4 lb)
Weight (SW4)	0.5 kg (1.2 lb)

Features

- Viscosity range 0-38 000 mPas
- Sweeps product from vessel wall
- Heat tolerant up to 100 °C (210 °F)
- Silicone compliant for processes regulated by FDA 21 CFR 177.2600
- Molded silicone

Benefits

- Viscous product mixing
- No longer requires a spatula to scrape down
- Can be used in heated processes
- Material approved for repeated use in food processes
- Easily modified or customized by trimming with scissors

<u>CODE</u>	<u>Price</u>
CLS-SW4	76.50





CLS-U044SW
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE AND SWEEP
BLADE, 4x4"

Achieve enhanced process results with the addition of silicone sweep blades to our popular CLS-U044 anchor impeller. The impeller with sweep is effective for low speed, high viscosity mixing up to 38 000 mPa·s. The tangential flow 100 mm x 100 mm (4" x 4") anchor blade is welded to an 9.5 mm (3/8") diameter shaft, all electropolished 316L stainless steel. Sweep accessory blades slide over the anchor arms, enabling the combination to scrape sides of a standard 4 L beaker as it stirs. Sweep material silicone SCX 0570 is compliant with FDA 21 CFR 177.2600. A vessel clamp is required when using this impeller. Due to the torque required for effective stirring, we recommend using only with the Caframo overhead stirrer models CLS-BDC1850 and CLS-BDC3030.

U044 anchor paddle, sized 102 x 102 mm (4 x 4 in), with two sweep blades included

Vessel clamp is required, optimal performance using 4 L beaker

Flow Pattern	Tangential
Blade Diameter	102 mm x 102 mm (4" x 4") anchor blade
Blade and Sweep Diameter	145 mm (5 3/4 in)
Blade and Sweep Dimensions	150 x 145 mm (6 x 5 3/4 in)
Shaft Length	914 mm (36 in)
Shaft Diameter	9.5 mm (3/8 in)
Material – Impeller	Electropolished 316L stainless steel
Material – Sweep accessory	Silicone SCX 0570
Weight (U044SW)	1.5 kg (3.4 lb)
Weight (SW4)	0.5 kg (1.2 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Blade welded to shaft
- Viscosity range 0-38 000 mPa·s
- Sweeps product from vessel wall
- Heat tolerant up to 100 °C (210 °F)
- Silicone compliant for processes regulated by FDA 21 CFR 177.2600
- Molded silicone

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing
- Viscous product mixing
- No longer requires a spatula to scrape down
- Can be used in heated processes
- Material approved for repeated use in food processes
- Easily modified or customized by trimming with scissors

<u>CODE</u>	<u>Price</u>
CLS-U044SW	223.30



CLS-U022
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 2x2"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 50 mm x 50 mm (2" x 2") anchor blade is welded to an 8 mm (5/16") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 51 x 51 mm (2 x 2 in) blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	50 mm x 50 mm (2" x 2") anchor blade
Shaft Length	400 mm (16")
Shaft Diameter	8 mm (5/16")
Material	Electropolished 316L stainless steel
Weight	180 g (0.4 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U022	176.40





CLS-U055
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 5×5"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 125 mm x 125 mm (5" x 5") anchor blade is welded to a 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall.

Anchor impeller, 127 x 127 mm (5 x 5 in), welded to shaft

Flow Pattern	Tangential
Blade Diameter	125 mm x 125 mm (5" x 5") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	300 g (0.7 lb)

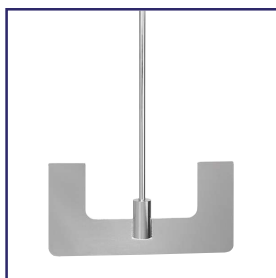
Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U055	217.20



CLS-U510
CAFRAMO LAB SO-
LUTIONS®, ANCHOR
PADDLE, 5×10"

This tangential flow impeller is effective for low speed, high viscosity mixing. The 125 mm x 250 mm (5" x 10") anchor blade is welded to a 9.5 mm ($\frac{3}{8}$ ") diameter shaft, all electropolished 316L stainless steel. Sometimes referred to as a "sweep", the high shear at the edges makes it a good choice to use close to the vessel wall. Due to the torque required for effective stirring, we recommend the Caframo overhead stirrer CLS-BDC1850.

Anchor impeller, 127 x 254 mm (5 x 10 in) blade, welded to shaft

Flow Pattern	Tangential
Blade Diameter	125 mm x 250 mm (5" x 10") anchor blade
Shaft Length	914 mm (36")
Shaft Diameter	9.5 mm ($\frac{3}{8}$ ")
Material	Electropolished 316L stainless steel
Weight	720 g (1.6 lb)

Features

- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

Benefits

- Effective for low speed high viscosity mixing
- Chemically inert and corrosion resistant
- One piece – quick to insert and begin mixing

<u>CODE</u>	<u>Price</u>
CLS-U510	257.00





CW-005.5
COWIE®, PTFE
SHAFT STIRRING,
SHAFTS FOR BLADES

Shafts for Blades are for use with PTFE Stirrer Blades series CW-002.xxx.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø	Length	CODE	Price
6 mm	300 mm	CW-005.530.1	50.90
6 mm	400 mm	CW-005.540.1	51.87
6 mm	500 mm	CW-005.550.1	52.84
8 mm	300 mm	CW-005.530.8.1	66.09
8 mm	400 mm	CW-005.540.8.1	66.94
8 mm	500 mm	CW-005.550.8.1	68.23
9.5 mm	550 mm	CW-005.555.1	66.56
9.5 mm	650 mm	CW-005.565.1	67.92
9.5 mm	650EX mm	CW-005.0565.1	75.33
9.5 mm	750EX mm	CW-005.0575.1	76.71
10 mm	650EX mm	CW-005.0565.10.1	84.04
10 mm	750EX mm	CW-005.0575.10.1	86.78
10 mm	1000EX mm	CW-005.05100.10.1	120.67
12 mm	650EX mm	CW-005.0565.12.1	137.69
12 mm	750EX mm	CW-005.0575.12.1	140.10
12 mm	1000EX mm	CW-005.05100.12.1	150.36
16 mm	750EX mm	CW-005.0575.16.1	188.12
16 mm	1000EX mm	CW-005.05100.16.1	201.71



CW-002
COWIE®, PTFE
SHAFT STIRRING,
STIRRER BLADES

Stirrer Blades fit all standard shafts for blades, totally inert and non-scratch. Hole diam 6.5mm, 3.2mm thick, PTFE Shafts for these blades are CW-005.5XX Series.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Blade Type	Dimensions W x Ht	CODE	Price
Plain End	65 mm x 25 mm	CW-002.1065.1	5.84
Plain End	75 mm x 25 mm	CW-002.1075.1	6.25
Plain End	105 mm x 25 mm	CW-002.1105.1	7.05
Plain End	125 mm x 25 mm	CW-002.1125.1	7.36
Plain End	150 mm x 25 mm	CW-002.1150.1	8.17
Square End	52 mm x 14 mm	CW-002.052.1	4.28
Square End	76 mm x 19 mm	CW-002.076.1	5.55
Square End	90 mm x 28 mm	CW-002.090.1	7.58



CW-005.6
COWIE®, ADJUSTABLE ROTORS, 4
BLADE ANGLED TYPE
45°

Adjustable Rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut. Rotor diameters are nominal.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Measurement</u>	<u>Shaft Ø</u>	<u>Rotor Ø</u>	<u>CODE</u>	<u>Price</u>
Imperial	1/4"	1 1/2"	CW-005.6.250.15	81.59
Imperial	5/16"	1 1/2"	CW-005.6.313.15	84.85
Imperial	3/8"	2 1/2"	CW-005.6.375.25	91.38
Imperial	1/2"	3 1/2"	CW-005.6.500.35	137.07
Imperial	5/8"	4"	CW-005.6.625.40	159.89
Metric	6 mm	40 mm	CW-005.606040	81.59
Metric	8 mm	40 mm	CW-005.608040	84.85
Metric	10 mm	60 mm	CW-005.610060	91.38
Metric	10 mm	90 mm	CW-005.610090	137.07
Metric	12 mm	70 mm	CW-005.612070	104.42
Metric	12 mm	90 mm	CW-005.612090	137.07
Metric	16 mm	100 mm	CW-005.616100	159.89



CW-005.7
COWIE®, ADJUSTABLE ROTORS, FLAT

Adjustable Rotors slide over standard shafts and lock in place to give the most effective stirring patterns. All PTFE with glass filled PTFE lock nut. Rotor diameters are nominal.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

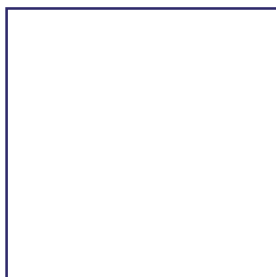
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Measurement	Shaft Ø	Rotor Ø	CODE	Price
Imperial	1/4"	3"	CW-005.7.250.3	71.78
Imperial	5/16"	3"	CW-005.7.313.3	71.78
Imperial	3/8"	3"	CW-005.7.375.3	71.78
Imperial	1/2"	4"	CW-005.7.500.4	86.47
Imperial	5/8"	6"	CW-005.7.625.6	111.59
Metric	6 mm	70 mm	CW-005.706070	71.78
Metric	8 mm	70 mm	CW-005.708070	71.78
Metric	10 mm	70 mm	CW-005.710070	71.78
Metric	10 mm	100 mm	CW-005.710100	86.47
Metric	12 mm	100 mm	CW-005.712100	86.47
Metric	12 mm	150 mm	CW-005.712150	111.59
Metric	16 mm	100 mm	CW-005.716100	88.12
Metric	16 mm	150 mm	CW-005.716150	111.59


CW-005.9
COWIE®, ADJUSTABLE TURBINE

Adjustable Turbine Shaft Stirrers are for use with plain glass, metal or PTFE shafts.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
8	50	CW-005.90850	84.16
8	75	CW-005.90875	106.75
10	75	CW-005.91075	110.19
10	100	CW-005.910100	141.58
12	75	CW-005.91275	117.97
12	100	CW-005.912100	149.25
16	100	CW-005.916100	165.34
16	150	CW-005.916150	248.47



CW-005.3
COWIE®, ANCHOR

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Shaft Ø mm	Length mm	Rotor Ø mm	CODE	Price
6	300	80	CW-005.330.2	74.85
6	400	80	CW-005.340.2	75.75
6	500	80	CW-005.350.2	76.71
8	300	80	CW-005.330.8.2	93.86
8	400	80	CW-005.340.8.2	94.70
8	500	80	CW-005.350.8.2	95.91
9.5	550	100	CW-005.355.2	98.98
9.5	550	140	CW-005.355.1.2	109.12
9.5	650	100	CW-005.365.2	100.25
9.5	650	140	CW-005.365.1.2	110.42
9.5	650EX	140	CW-005.0365.1.2	110.42
9.5	750EX	140	CW-005.0375.1.2	118.86
10	550	100	CW-005.355.10.2	124.17
10	650EX	140	CW-005.0365.10.2	125.51
10	750EX	140	CW-005.0375.10.2	126.88
12	650EX	140	CW-005.0365.12.2	172.41
12	750EX	140	CW-005.0375.12.2	174.73
12	1000EX	140	CW-005.03100.12.2	191.14
16	750EX	140	CW-005.0375.16.2	271.14
16	750EX	180	CW-005.0375.16.1.2	271.14
16	1000EX	140	CW-005.03100.16.2	248.35
16	1000EX	180	CW-005.03100.16.1.2	248.35



CW-005.4
COWIE®,
CENTRIFUGAL

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
6	300	40	CW-005.430.2	83.35
6	400	40	CW-005.440.2	84.18
6	500	50	CW-005.450.2	85.18
8	300	40	CW-005.430.8.2	96.43
8	400	40	CW-005.440.8.2	97.18
8	500	50	CW-005.450.8.2	98.47
9.5	550	70	CW-005.455.2	101.97
9.5	650	70	CW-005.465.2	103.09
9.5	650EX	70	CW-005.0465.2	103.09
9.5	750EX	70	CW-005.0475.2	110.72
10	550	70	CW-005.455.10.2	116.20
10	650EX	70	CW-005.0465.10.2	117.34
10	750EX	70	CW-005.0475.10.2	118.57
12	650EX	80	CW-005.0465.12.2	151.43
12	750EX	80	CW-005.0475.12.2	153.54
12	1000EX	80	CW-005.04100.12.2	193.78
16	750EX	80	CW-005.0475.16.2	198.07
16	1000EX	80	CW-005.04100.16.2	208.46



CW-005.2
COWIE®, SCREW
PROPELLER

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

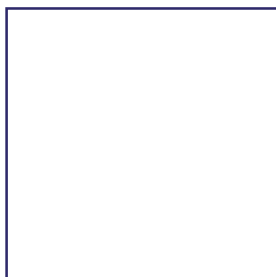
PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
6	300	40	CW-005.230.2	91.10
6	400	40	CW-005.240.2	92.49
6	500	50	CW-005.250.2	98.46
8	300	40	CW-005.230.8.2	110.05
8	400	40	CW-005.240.8.2	110.91
8	500	50	CW-005.250.8.2	121.81
9.5	550	60	CW-005.255.2	139.92
9.5	650	60	CW-005.265.2	144.29
9.5	650EX	60	CW-005.0265.2	150.01
9.5	750EX	60	CW-005.0275.2	162.40
10	550	70	CW-005.255.10.2	162.84
10	650EX	70	CW-005.0265.10.2	165.51
10	750EX	70	CW-005.0275.10.2	167.51
12	650EX	80	CW-005.0265.12.2	207.17
12	750EX	80	CW-005.0275.12.2	209.61
12	1000EX	80	CW-005.02100.12.2	272.17
16	750EX	80	CW-005.0275.16.2	269.93
16	750EX	100	CW-005.0275.16.1.2	278.39
16	1000EX	100	CW-005.02100.16.2	328.17
16	1000EX	120	CW-005.02100.16.1.2	344.14



CW-005.8
COWIE®, RETREAT
CURVE

Retreat Curve Shaft Stirrers are a fully moulded product with a retreat angle of 30°.

Shaft Stirrers have a unique, fully moulded construction featuring a PTFE rotor moulded to a fully PTFE encapsulated steel reinforced drive shaft.

- Chemically inert
- Easy to clean
- No cross contamination
- Unbreakable
- Non Scratch
- Use up to ca. 280°C

Plus

- Exposed stainless steel core version (EX) for extra rigid clamping in the drive chuck
- Exposed length 50mm

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>Blade Height mm</u>	<u>CODE</u>	<u>Price</u>
8	300	50	10	CW-005.80850.300	112.70
8	300	75	15	CW-005.80875.300	128.29
8	400	50	10	CW-005.80850.400	116.13
8	400	75	15	CW-005.80875.400	131.68
10	400	50	10	CW-005.81050.400	127.91
10	400	75	10	CW-005.81075.400	138.75
10	500	50	10	CW-005.81050.500	131.52
10	500	75	10	CW-005.81075.500	147.03



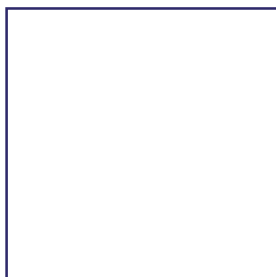
CW-PC710
COWIE®, HIGH PER-
FORMANCE SHAFT
GUIDE WITH NPT
THREAD

COWIE® HP Shaft Guides provide an effective guide for use with GLASS and METAL Shaft Stirrers over a wide range of temperature without shedding particles from the seal whilst maintaining vacuum. The seal is made from a specially formulated PTFE-PEEK composite and this material is also used to provide a moulded-in guide ring to aid alignment of the shaft. The maximum recommended speeds are 500rpm continuous or 800rpm intermittent. HP Shaft Guides have an NPT thread for direct assembly into COWIE® Reactor Lids. PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>Shaft Ø mm</u>	<u>NPT Thread</u>	<u>Height mm</u>	<u>AF Hex mm</u>	<u>CODE</u>	<u>Price</u>
19	1"	80	40	CW-PC710.1925.PK	279.95
16	1"	80	40	CW-PC710.1625.PK	221.33
12	1"	67	40	CW-PC710.1225.PK	156.24
10	1"	67	40	CW-PC710.1025.PK	162.75
8	1"	67	40	CW-PC710.0825.PK	171.92
10	3/4"	63	28	CW-PC710.1019.PK	156.24
8	3/4"	63	28	CW-PC710.0819.PK	156.24


CW-PC709
**COWIE®, UNIVERSAL
STIRRER GUIDE WITH
NPT THREAD**

COWIE® Universal Stirrer Guides have an NPT Screw Thread Fitting for direct assembly into COWIE® Reactor Lids or NPT Extension Adapters and can be used with PTFE Shaft Stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi) performance
- No shedding
- Maximum recommended speeds are continuous 500rpm, intermittent 800rpm

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

Shaft Ø mm	NPT Thread	Height mm	Guide Ø mm	CODE	Price
8	3/4"	63	44	CW-PC709.0819.PK	CALL
8	3/4"	106	44	CW-PC709.0819	380.58
8	1"	67	44	CW-PC709.0825.PK	CALL
8	1"	110	44	CW-PC709.0825	380.58
10	3/4"	63	44	CW-PC709.1019.PK	CALL
10	3/4"	106	44	CW-PC709.1019	380.58
10	1"	67	44	CW-PC709.1025.PK	CALL
10	1"	110	44	CW-PC709.1025	380.58
12	3/4"	106	44	CW-PC709.1219.PK	CALL
12	3/4"	106	44	CW-PC709.1219	445.33
12	1"	67	54	CW-PC709.1225.PK	CALL
12	1"	112	54	CW-PC709.1225	445.33
16	1"	80	54	CW-PC709.1625.PK	CALL
16	1"	112	54	CW-PC709.1625	445.33
19	1"	80	54	CW-PC709.1925.PK	CALL


CW-005.0
COWIE®, HIGH PERFORMANCE SHAFT GUIDE

COWIE® HP Shaft Guides provide an effective guide for use with GLASS and METAL Shaft Stirrers over a wide range of temperature without shedding particles from a specially formulated PTFE-PEEK seal whilst maintaining vacuum. In the version designated .PK a moulded-in PTFE-PEEK guide ring located at the end of the taper provides a guide to assist alignment of the shaft. For the PEEK version use the suffix .PK – eg, 005.0.0619.PK The maximum recommended speeds are 500rpm continuous or 800rpm intermittent. Replacement parts available.

Note: PEEK has reduced chemical resistance compared to PTFE and may be affected by acids, phenols and halogen based compounds.

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

Cone Type	Shaft Ø mm	Joint Size	Height mm	Ring Ø mm	CODE	Price
A - Full Length	6	19/22	60	42	CW-005.0.0619	182.91
A - Full Length	6	24/40	60	42	CW-005.0.0624	199.53
A - Full Length	8	19/38	60	42	CW-005.0.0819	182.91
A - Full Length	8	24/40	60	42	CW-005.0.0824	199.53
A - Full Length	10	24/40	60	42	CW-005.0.1024	199.53
A - Full Length	10	29/42	60	50	CW-005.0.1029	207.83
A - Full Length	10	34/45	60	50	CW-005.0.1034	216.13
A - Full Length	10	45/50	60	58	CW-005.0.1045	232.84
A - Full Length	12	29/42	70	50	CW-005.0.1229	199.53
A - Full Length	16	34/45	70	50	CW-005.0.1634	282.69
A - Full Length	19	45/50	70	58	CW-005.0.1945	357.50
A - Full Length, PEEK Seal	6	19/22	60	42	CW-005.0.0619.PK	CALL
A - Full Length, PEEK Seal	6	24/40	60	42	CW-005.0.0624.PK	CALL
A - Full Length, PEEK Seal	8	19/38	60	42	CW-005.0.0819.PK	201.21
A - Full Length, PEEK Seal	8	24/40	60	42	CW-005.0.0824.PK	219.57
A - Full Length, PEEK Seal	10	24/40	60	42	CW-005.0.1024.PK	219.57
A - Full Length, PEEK Seal	10	29/42	60	50	CW-005.0.1029.PK	228.70
A - Full Length, PEEK Seal	10	34/45	60	50	CW-005.0.1034.PK	237.85
A - Full Length, PEEK Seal	10	45/50	60	58	CW-005.0.1045.PK	256.17
A - Full Length, PEEK Seal	12	29/42	70	50	CW-005.0.1229.PK	219.57
A - Full Length, PEEK Seal	16	34/45	70	50	CW-005.0.1634.PK	310.98
A - Full Length, PEEK Seal	19	45/40	70	58	CW-005.0.1945.PK	424.04
B - Medium Length, PEEK Seal	6	19/26	60	42	CW-005.00.0619.PK	CALL
B - Medium Length, PEEK Seal	6	24/29	60	42	CW-005.00.0624.PK	CALL
B - Medium Length, PEEK Seal	8	19/26	60	42	CW-005.00.0819.PK	174.13
B - Medium Length, PEEK Seal	8	24/29	60	42	CW-005.00.0824.PK	174.13
B - Medium Length, PEEK Seal	10	24/29	60	42	CW-005.00.1024.PK	174.13
B - Medium Length, PEEK Seal	10	29/32	60	58	CW-005.00.1029.PK	184.37
B - Medium Length, PEEK Seal	10	45/50	60	50	CW-005.00.1045.PK	240.71
B - Medium Length, PEEK Seal	12	29/32	60	50	CW-005.00.1229.PK	209.99
B - Medium Length, PEEK Seal	16	34/35	70	50	CW-005.00.1634.PK	292.01
B - Medium Length, PEEK Seal	16	45/40	70	58	CW-005.00.1645.PK	307.30
B - Medium Length, PEEK Seal	19	45/40	70	58	CW-005.00.1945.PK	332.89


CW-005.1
**COWIE®, UNIVERSAL
STIRRER GUIDE**

COWIE® Universal Stirrer Guides for use with standard taper ground glass joints can be used with PTFE Shaft Stirrers and glass and metal shaft stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal and a Glass Ball-Bearing for rigidity and smoothness of operation.

- Exceptional chemical resistance
- Anti-whip and reduced vibration
- Vacuum (5mmHg) and pressure (3-5psi)
- No shedding
- Maximum recommended speeds; continuous 500rpm, intermittent 800rpm

Replacement parts available.

PTFE Shaft Stirring

A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture. PTFE used in the Manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- One piece fused construction
- Chemically Inert
- Designed to reduce contamination and simplify cleaning
- Non-scratch

<u>Cone Type</u>	<u>Shaft Ø mm</u>	<u>Joint Size</u>	<u>Height mm</u>	<u>Guide Ø mm</u>	<u>CODE</u>	<u>Price</u>
A - Full Length	6	19/22	96	45	CW-005.101.1.7	465.16
A - Full Length	6	24/40	96	45	CW-005.102.7	465.16
A - Full Length	8	24/40	96	45	CW-005.104.7	465.16
A - Full Length	10	24/40	96	45	CW-005.105.7	465.16
A - Full Length	10	29/42	96	45	CW-005.106.7	465.16
A - Full Length	12	29/42	110	55	CW-005.108.7	544.27
A - Full Length	16	34/45	110	55	CW-005.111.7	544.27
A - Full Length	16	45/50	110	55	CW-005.112.7	544.27
B - Medium Length	6	19/26	96	45	CW-005.201.7	422.86
B - Medium Length	6	24/29	96	45	CW-005.202.7	422.86
B - Medium Length	8	19/26	96	45	CW-005.203.7	422.86
B - Medium Length	8	24/29	96	45	CW-005.204.7	422.86
B - Medium Length	10	24/29	96	45	CW-005.205.7	422.86
B - Medium Length	10	29/32	96	45	CW-005.206.7	422.86
B - Medium Length	10	34/35	96	45	CW-005.207.7	422.86
B - Medium Length	12	29/32	110	55	CW-005.208.7	494.80
B - Medium Length	12	34/35	110	55	CW-005.209.7	494.80
B - Medium Length	16	34/35	110	55	CW-005.211.7	494.80
B - Medium Length	16	45/40	110	55	CW-005.212.7	494.80



CW-010.4
COWIE®, PTFE JOINT-
WARE, FLASK
STOPPERS

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Size</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
8	Grey	CW-010.4.08	7.36
9	Black	CW-010.4.09	7.36
13	Orange	CW-010.4.13	8.95
16	White	CW-010.4.16	10.56
19	Blue	CW-010.4.19	12.48
22	Green	CW-010.4.22	19.05
27	Yellow	CW-010.4.27	21.28
32	Red	CW-010.4.32	39.42
38	Black	CW-010.4.38	49.82



CW-010.11
COWIE®, PTFE JOINT-
WARE, SELF RELEAS-
ING STOPPERS

Self Releasing Stoppers fit standard taper ground glass joints, with sealing rings and self releasing ring for ease of removal.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum

<u>Joint Size</u>	<u>Height mm</u>	<u>CODE</u>	<u>Price</u>
19/38	62	CW-010.1119	29.88
24/40	65	CW-010.1124	38.89
34/45	70	CW-010.1134	49.29
45/50	75	CW-010.1145	86.87


CW-PC704
**COWIE®, PTFE JOINT-
WARE, STANDARD
TAPER COMPRES-
SION FITTINGS**

Compression Fittings fit standard taper ground glass joints to hold items such as temperature probes and sampling tubes securely in place.

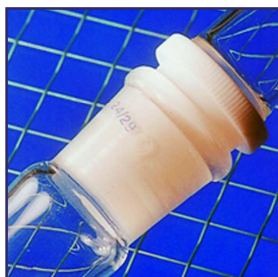
Compression fittings are manufactured from pure PTFE with a PEEK olive to give a secure grip.

PTFE Plugs are available to seal compression fittings without removing the fitting.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

Joint Size	Bore	CODE	Price	Joint Size	Bore	CODE	Price
19/38	1/8"	CW-PC704.1938.125	55.32	34/45	1/2"	CW-PC704.3445.500	89.85
19/38	1/4"	CW-PC704.1938.250	56.65	34/45	9/16"	CW-PC704.3445.560	90.17
19/38	5/16"	CW-PC704.1938.312	56.65	34/45	5/8"	CW-PC704.3445.625	95.63
19/38	1/2"	CW-PC704.1938.500	59.46	34/45	3/4"	CW-PC704.3445.750	92.63
				34/45	1"	CW-PC704.3445.1000	108.05
19/38	3 mm	CW-PC704.1938.03	55.32	34/45	12 mm	CW-PC704.3445.12	89.85
19/38	6 mm	CW-PC704.1938.06	56.65	34/45	14 mm	CW-PC704.3445.14	90.17
19/38	8 mm	CW-PC704.1938.08	56.65	34/45	16 mm	CW-PC704.3445.16	95.63
19/38	12 mm	CW-PC704.1938.12	59.46	34/45	19 mm	CW-PC704.3445.19	92.63
				34/45	25 mm	CW-PC704.3445.25	108.05
24/40	1/4"	CW-PC704.2440.250	64.00				
24/40	5/16"	CW-PC704.2440.312	64.00				
24/40	1/2"	CW-PC704.2440.500	66.81	45/50	1/2"	CW-PC704.4550.500	128.08
24/40	9/16"	CW-PC704.2440.560	67.11	45/50	9/16"	CW-PC704.4550.560	128.42
24/40	5/8"	CW-PC704.2440.625	72.53	45/50	5/8"	CW-PC704.4550.625	133.83
				45/50	3/4"	CW-PC704.4550.750	130.86
24/40	6 mm	CW-PC704.2440.06	64.00	45/50	1"	CW-PC704.4550.1000	141.25
24/40	8 mm	CW-PC704.2440.08	64.00				
24/40	12 mm	CW-PC704.2440.12	66.81	45/50	12 mm	CW-PC704.4550.12	128.08
24/40	14 mm	CW-PC704.2440.14	67.11	45/50	14 mm	CW-PC704.4550.14	128.42
24/40	16 mm	CW-PC704.2440.16	72.53	45/50	16 mm	CW-PC704.4550.16	133.83
				45/50	19 mm	CW-PC704.4550.19	130.86
29/42	1/2"	CW-PC704.2942.500	81.81	45/50	25 mm	CW-PC704.4550.25	141.25
29/42	9/16"	CW-PC704.2942.560	82.13				
29/42	5/8"	CW-PC704.2942.625	87.60				
29/42	3/4"	CW-PC704.2942.750	84.60				
29/42	12 mm	CW-PC704.2942.12	81.81				
29/42	14 mm	CW-PC704.2942.14	82.13				
29/42	16 mm	CW-PC704.2942.16	87.60				
29/42	19 mm	CW-PC704.2942.19	84.60				



CW-020
**COWIE®, PTFE JOINT-
WARE, RIGID JOINT
SLEEVES**

Rigid Sleeves are grease-free, high vacuum seals for standard taper ground glass joints, with substantial shoulder for ease of handling and repeated use. High vacuum performance (leakage rate is less than 1×10^{-4} torr, litre, sec.⁻¹) is attained using transverse sealing rings. Wall thickness of rigid sleeves is 0.5mm.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
10/30	CW-020.110	9.44
14/20	CW-020.114.1	10.00
19/22	CW-020.119.1	12.06
24/40	CW-020.124	15.51
29/42	CW-020.129	21.02
34/45	CW-020.134	23.45
45/50	CW-020.145	40.05
55/50	CW-020.155	47.65



CW-030
**COWIE®, PTFE JOINT-
WARE, JOINT
CLAMPS**

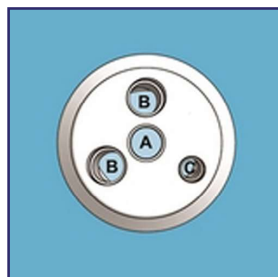
Safe • Reliable • Long Life • Exceptional Value

Joint Clamps are unaffected by all chemical reagents. Totally encapsulated steel spring maintains strength to 280°C. Adjust simply by compression-extension by hand.

PTFE used in the manufacture of COWIE® Jointware is pure, virgin material which conforms to FDA and USP Class VI requirements.

- Chemically inert
- Prevent sticking
- Grease free
- Eliminate contamination
- High vacuum
- Safety

<u>Joint Size</u>	<u>Color</u>	<u>CODE</u>	<u>Price</u>
10/-	No Color	CW-030.010.1	5.81
10/-	Green	CW-030.010.1.SG	7.25
12/-	No Color	CW-030.012.1	6.09
12/-	Purple	CW-030.012.1.SP	7.60
14/-	No Color	CW-030.014.1	6.63
14/-	Yellow	CW-030.014.1.SY	8.26
19/-	No Color	CW-030.019.1	6.89
19/-	Blue	CW-030.019.1.SB	8.58
24/-	No Color	CW-030.024.1	7.14
24/-	Green	CW-030.024.1.SG	8.91
29/-	No Color	CW-030.029.1	7.58
29/-	Red	CW-030.029.1.SR	9.44
34/-	No Color	CW-030.034.1	8.10
34/-	Orange	CW-030.034.1.SO	10.08
40/-	No Color	CW-030.040.1	8.54
40/-	Yellow	CW-030.040.1.SY	10.64
45/-	No Color	CW-030.045.1	9.32
45/-	Brown	CW-030.045.1.SB	11.61



CW-PC705
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, LIDS FOR
SELF ASSEMBLY
WITH REMOVABLE
PORTS

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is Pure, Chemically Resistant, Cleanable, and Durable.

The COWIE® Reactor Lid System is designed to meet these demands and provide a versatile and cost effective means for the assembly of a whole range of equipment in flanged reactors and similar vessels and offers these unique features.

- Screw-in assembly of fittings to give flexibility, versatility, and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

Flange mm	Port	Qty	NPT Thread	CODE	Price
60	A	1	1/2" Vertical Center Port	CW-PC705.060.003	162.52
	B	2	1/2" 10° x 10° Compound Angle		
	C	1	1/4" Vertical		
60	A	1	1/2" Vertical Center Port	CW-PC715.060.004	148.44
	B	3	1/2" 10° x 10° Compound Angle		
100	A	1	3/4" Vertical Raised Center Port	CW-PC705.100.002	242.18
	B	2	3/4" Vertical		
	C	1	1" 10° x 10° Compound Angle		
	D	3	1/4" Vertical		
100	A	1	3/4" Vertical Raised Center Port	CW-PC715.100.003	242.18
	B	2	3/4" Vertical Raised Center Port		
	C	2	3/4" 10° Angle		
	D	2	1/4" Vertical		
150	A	1	1" Vertical Center Port	CW-PC705.150.002	338.14
	B	2	1" Vertical		
	C	1	1" 10° x 10° Compound Angle		
	D	3	1/2" Vertical		
150	A	1	1" Vertical Center Port	CW-PC715.150.003	338.14
	B	3	1" Vertical		
	C	1	1" 10° x 10° Compound Angle		
	D	4	1/2" Vertical		
200	A	1	1" Vertical Center Port	CW-PC705.200.002	483.62
	B	3	1 1/2" Vertical		
	C	2	1" 10° x 10° Compound Angle		
	D	2	1/2" Vertical		
200	A	1	1" Vertical Center Port	CW-PC715.200.003	493.07
	B	3	1 1/2" Vertical		
	C	1	1" 10° Angle		
	D	1	1 1/2" 10° x 10° Compound Angle		
	E	2	1/2" Vertical		



**CW-PC715
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS,
PREASSEMBLED
LIDS WITH REMOV-
ABLE PORTS**

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is Pure, Chemically Resistant, Cleanable, and Durable.

The COWIE® Reactor Lid System is designed to meet these demands and provide a versatile and cost effective means for the assembly of a whole range of equipment in flanged reactors and similar vessels and offers these unique features.

- Screw-in assembly of fittings to give flexibility, versatility, and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>Flange mm</u>	<u>Base</u>	<u>Type</u>	<u>Taper Joint</u>	<u>Port Size</u>	<u>CODE</u>	<u>Price</u>
60	Center	Vertical	24/-	1/2" NPT	CW-PC715.060.001	188.65
	Side 1	10° x 10° Compound Angle	14/-	1/2" NPT		
	Side 2	10° x 10° Compound Angle	14/-	1/2" NPT		
	Side 3	10° x 10° Compound Angle	14/-	1/2" NPT		
60	Center	Vertical	24/-	1/2" NPT	CW-PC715.060.002	198.17
	Side 1	10° x 10° Compound Angle	19/-	1/2" NPT		
	Side 2	10° x 10° Compound Angle	19/-	1/2" NPT		
	Side 3	10° x 10° Compound Angle	19/-	1/2" NPT		
100	Center	Vertical	24/-	3/4" NPT	CW-PC715.100.001	342.03
	Side 1	Vertical	24/-	3/4" NPT		
	Side 2	10° Angle	24/-	3/4" NPT		
	Side 3	10° Angle	19/-	3/4" NPT		
	Side 4	10° x 10° Compound Angle	24/-	3/4" NPT		
100	Center	Vertical	29/-	3/4" NPT	CW-PC715.100.002	384.57
	Side 1	Vertical	24/-	3/4" NPT		
	Side 2	10° Angle	19/-	3/4" NPT		
	Side 3	10° Angle	24/-	3/4" NPT		
	Side 4	10° x 10° Compound Angle	29/-	3/4" NPT		
150	Center	Vertical	29/-	1" NPT	CW-PC715.150.001	505.51
	Side 1	Vertical	24/-	1" NPT		
	Side 2	Vertical	29/-	1" NPT		
	Side 3	10° Angle	45/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
150	Center	Vertical	34/-	1" NPT	CW-PC715.150.002	528.09
	Side 1	Vertical	29/-	1" NPT		
	Side 2	Vertical	29/-	1" NPT		
	Side 3	10° Angle	45/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
200	Center	Vertical	34/-	1" NPT	CW-PC715.200.001	707.22
	Side 1	Vertical	29/-	1" NPT		
	Side 2	Vertical	29/-	1" NPT		
	Side 3	10° Angle	29/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
	Side 5	10° Angle	45/-	1 1/2" NPT		
200	Center	Vertical	45/-	1" NPT	CW-PC715.200.002	782.34
	Side 1	Vertical	34/-	1" NPT		
	Side 2	Vertical	45/-	1" NPT		
	Side 3	10° Angle	24/-	1" NPT		
	Side 4	10° x 10° Compound Angle	29/-	1" NPT		
	Side 5	10° Angle	45/-	1 1/2" NPT		



CW-PC702
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, BLANKING
NUTS FOR NPT
PORTS

NPT Blanking Nuts/Plugs are used to seal unused ports. To assemble simply screw the NPT Blanking Nut into a corresponding NPT port of the reactor lid.

<u>NPT Port</u>	<u>CODE</u>	<u>Price</u>
1/4"	CW-PC702.025	8.86
1/2"	CW-PC702.050	9.45
3/4"	CW-PC702.075	14.29
1.0"	CW-PC702.100	19.78
1.5"	CW-PC702.150	38.55



CW-PC713
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, EXTENSION
ADAPTERS

Male/Female NPT Extension Adapters optimise the use of NPT entry ports by the provision of additional port sizes and raising the height of the entry port from the lid. This gives even more flexibility of assembly and enables a greater range of fittings to be used – this is especially the case for 60mm lids with multiple ports where the use of an extension adapter allows the use of a central stirrer guide.

NPT Extension Adapters are manufactured in Glass Filled PTFE for improved mechanical strength.

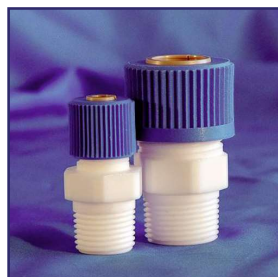
<u>Male NPT</u>	<u>Female NPT</u>	<u>Nominal Height</u>	<u>Max Shaft Ø</u>	<u>CODE</u>	<u>Price</u>
1/4"	1/2"	40 mm	8.5 mm	CW-PC713.025050.GF	33.11
1/2"	1/4"	36 mm	14 mm	CW-PC713.050025.GF	33.11
1/2"	1/2"	36 mm	14 mm	CW-PC713.050050.GF	33.11
1/2"	3/4"	46 mm	14 mm	CW-PC713.050075.GF	50.84
3/4"	3/4"	46 mm	18 mm	CW-PC713.075075.GF	60.04
3/4"	1"	46 mm	18 mm	CW-PC713.075100.GF	60.04
1"	1"	43 mm	24 mm	CW-PC713.100100.GF	62.96
1"	1 1/2"	43 mm	24 mm	CW-PC713.100150.GF	101.10



CW-PC701
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS,
REPLACEMENTS
PARTS

Seal pack includes 1 clamp nut, 1 nut, and 1 olive. Olive pack includes 5 replacement olives.

<u>Seal Pack</u>			<u>Olive 5 Pack</u>	
<u>Bore</u>	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
1/8"	CW-PC701.0125	8.88	CW-PC701.125	11.53
1/4"	CW-PC701.0250	9.45	CW-PC701.250	14.45
5/16"	CW-PC701.0312	10.43	CW-PC701.312	12.48
1/2"	CW-PC701.0500	13.42	CW-PC701.500	16.96
9/16"	CW-PC701.0560	14.01	CW-PC701.560	16.24
5/8"	CW-PC701.0625	19.32	CW-PC701.625	20.06
3/4"	CW-PC701.0750	21.71	CW-PC701.750	21.43
1"	CW-PC701.01000	30.91	CW-PC701.1000	35.37
3 mm	CW-PC701.003	8.88	CW-PC701.03	11.53
6 mm	CW-PC701.006	9.45	CW-PC701.06	14.45
7 mm	CW-PC701.007	11.74	CW-PC701.07	11.98
8 mm	CW-PC701.008	10.43	CW-PC701.08	12.48
9 mm	CW-PC701.009	11.93	CW-PC701.09	14.73
12 mm	CW-PC701.012	13.42	CW-PC701.12	16.96
14 mm	CW-PC701.014	14.01	CW-PC701.14	16.24
16 mm	CW-PC701.016	19.32	CW-PC701.16	20.06
19 mm	CW-PC701.019	21.71	CW-PC701.19	21.43
25 mm	CW-PC701.025	30.91	CW-PC701.25	35.37

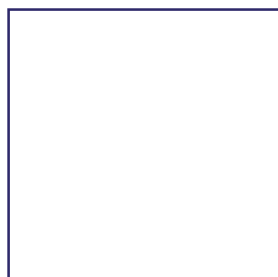


CW-PC701
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, NPT
COMPRESSION
SCREW FITTINGS

Compression Fittings are used with PTFE Reactor Lids to hold items such as temperature probes and sampling tubes securely in place. Compression fittings are manufactured from pure PTFE and include a PEEK olive to give a secure grip.

Compression fittings for standard taper ground glass joints are also available.

NPT Thread	Bore	CODE	Price	NPT Thread	Bore	CODE	Price
1/4"	1/8"	CW-PC701.025.125	23.59	3/4"	5/16"	CW-PC701.075.312	36.09
1/4"	1/4"	CW-PC701.025.250	21.23	3/4"	1/2"	CW-PC701.075.500	35.36
1/4"	3 mm	CW-PC701.025.03	22.54	3/4"	9/16"	CW-PC701.075.560	30.51
1/4"	6 mm	CW-PC701.025.06	22.61	3/4"	5/8"	CW-PC701.075.625	49.11
				3/4"	3/4"	CW-PC701.075.750	54.31
1/2"	1/4"	CW-PC701.050.250	31.31	3/4"	8 mm	CW-PC701.075.08	39.07
1/2"	5/16"	CW-PC701.050.312	29.55	3/4"	12 mm	CW-PC701.075.12	39.51
1/2"	1/2"	CW-PC701.050.500	31.61	3/4"	14 mm	CW-PC701.075.14	32.77
1/2"	9/16"	CW-PC701.050.560	32.88	3/4"	16 mm	CW-PC701.075.16	52.73
1/2"	6 mm	CW-PC701.050.06	33.55	3/4"	19 mm	CW-PC701.075.19	58.33
1/2"	7 mm	CW-PC701.050.07	30.93				
1/2"	8 mm	CW-PC701.050.08	30.93	1"	1/2"	CW-PC701.100.500	48.21
1/2"	9 mm	CW-PC701.050.09	31.65	1"	9/16"	CW-PC701.100.560	51.44
1/2"	12 mm	CW-PC701.050.12	33.76	1"	5/8"	CW-PC701.100.625	55.67
1/2"	14 mm	CW-PC701.050.14	35.90	1"	3/4"	CW-PC701.100.750	63.62
				1"	1"	CW-PC701.100.1000	70.64
				1"	8 mm	CW-PC701.100.08	45.21
				1"	12 mm	CW-PC701.100.12	53.46
				1"	14 mm	CW-PC701.100.14	55.25
				1"	16 mm	CW-PC701.100.16	59.80
				1"	19 mm	CW-PC701.100.19	68.33
				1"	25 mm	CW-PC701.100.25	77.36



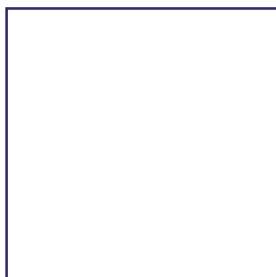
CW-PC708
COWIE®, PTFE REAC-
TOR LIDS, ROD BAF-
FLES

Rod Baffles are used to increase agitation and promote thorough mixing. Feature a stainless steel core fully encapsulated in PTFE to give a product which is chemically resistant and non-contaminating. Assemble with corresponding compression fitting.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

Shaft Ø mm	Shaft Length mm	Baffle mm	Overall Length mm	CODE	Price
8	150	16 x 12 x 150	300	CW-PC708.008.150	92.70
8	200	16 x 12 x 150	350	CW-PC708.008.200	97.78
8	250	16 x 12 x 150	400	CW-PC708.008.250	102.97
12	150	20 x 15 x 200	350	CW-PC708.012.150	128.80
12	200	20 x 15 x 200	400	CW-PC708.012.200	131.20
12	250	20 x 15 x 200	450	CW-PC708.012.250	133.77
16	150	35 x 22 x 250	400	CW-PC708.016.150	182.64
16	200	35 x 22 x 250	450	CW-PC708.016.200	187.76
16	250	35 x 22 x 250	500	CW-PC708.016.250	197.88



CW-PC711
COWIE®, PTFE REAC-
TOR LIDS, STANDARD
TAPER JOINTS FOR
NPT PORTS

Standard Taper Joint Fittings for use with COWIE® PTFE Reactor Lids.

Suitable for 'A' and 'B' length jointware.

To assemble simply screw the tapered NPT joint into a corresponding NPT port of the reactor lid.

Reactor Lid System

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is Pure, Chemically Resistant, Cleanable, and Durable.

The COWIE® Reactor Lid System is designed to meet these demands and provide a versatile and cost effective means for the assembly of a whole range of equipment in flanged reactors and similar vessels and offers these unique features.

- Screw-in assembly of fittings to give flexibility, versatility, and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>NPT Thread</u>	<u>Cone Taper</u>	<u>Dimensions mm</u>	<u>CODE</u>	<u>Price</u>
1/2"	14/-	45 H x 21.5 Ø	CW-PC711.1413	21.49
1/2"	19/-	50 H x 27 Ø	CW-PC711.1913	25.16
1/2"	24/-	67 H x 34 Ø	CW-PC711.2413	30.41
1/2"	29/-	68 H x 40 Ø	CW-PC711.2913	43.92
3/4"	19/-	55 H x 27 Ø	CW-PC711.1919	26.78
3/4"	24/-	55 H x 34 Ø	CW-PC711.2419	31.30
3/4"	29/-	68 H x 40 Ø	CW-PC711.2919	46.24
3/4"	34/-	75 H x 47 Ø	CW-PC711.3419	57.98
3/4"	45/-	89 H x 58 Ø	CW-PC711.4519	84.69
1"	24/-	60 H x 34 Ø	CW-PC711.2425	35.66
1"	29/-	60 H x 40 Ø	CW-PC711.2925	40.54
1"	34/-	75 H x 47 Ø	CW-PC711.3425	61.88
1"	45/-	90 H x 58 Ø	CW-PC711.4525	86.53
1 1/2"	24/-	55 H x 48 Ø	CW-PC711.2438	53.08
1 1/2"	29/-	55 H x 48 Ø	CW-PC711.2938	54.20
1 1/2"	34/-	55 H x 48 Ø	CW-PC711.3438	52.58
1 1/2"	45/-	80 H x 61 Ø	CW-PC711.4538	74.33





CW-PC703 COWIE®, PTFE REAC- TOR LIDS, PTFE PLUGS

Plugs are used to seal a compression fitting without the need to remove the compression fitting from the reactor lid.

Reactor Lid System

Many of today's process chemistry, pharmaceutical and biotech laboratories and manufacturing units face an increasing demand to use equipment which is Pure, Chemically Resistant, Cleanable, and Durable.

The COWIE® Reactor Lid System is designed to meet these demands and provide a versatile and cost effective means for the assembly of a whole range of equipment in flanged reactors and similar vessels and offers these unique features.

- Screw-in assembly of fittings to give flexibility, versatility, and significant cost savings.
- All fittings are interchangeable for the same thread sizes.
- Can accommodate all usual ancillary equipment, condensers, probes, etc.
- Improved durability and safety compared to conventional glass lids.
- High mechanical strength to support large probes and other equipment.
- Improved thermal insulation.
- Reduced condensation.

PTFE used in the manufacture of COWIE® PTFE Laboratory Products is pure, virgin material, which conforms to FDA and USP Class VI requirements.

- Chemically Inert
- Reduce contamination and simplify cleaning
- Non-scratch
- Reduce breakages
- Improved safety

<u>Bore</u>	<u>CODE</u>	<u>Price</u>	<u>Bore</u>	<u>CODE</u>	<u>Price</u>
1/8"	CW-PC703.125	1.89	3 mm	CW-PC703.03	1.89
1/4"	CW-PC703.250	2.98	6 mm	CW-PC703.06	2.98
5/16"	CW-PC703.312	2.72	7 mm	CW-PC703.07	CALL
1/2"	CW-PC703.500	5.67	8 mm	CW-PC703.08	2.72
9/16"	CW-PC703.560	5.67	9 mm	CW-PC703.09	CALL
5/8"	CW-PC703.625	8.56	12 mm	CW-PC703.12	5.67
3/4"	CW-PC703.750	7.84	14 mm	CW-PC703.14	5.67
1"	CW-PC703.1000	15.86	16 mm	CW-PC703.16	8.56
			19 mm	CW-PC703.19	7.84
			25 mm	CW-PC703.25	15.86



CW-500 COWIE®, PTFE TEM- PERATURE PROBES, TOTAL IMMERSION

Designed for total immersion, suitable for use in autoclaves and most corrosive liquids.

Sensor PRT100 Class A

Cable 4 Core PFA insulated with white PFA over sheath.

Supplied without plug.

Our dual expertise in the technologies of Temperature Sensing and PTFE Processing enables us to produce a range of fully encapsulated, PTFE Temperature Probes which combine the outstanding properties of PTFE with well-proven thermometric techniques.

- Outstanding chemical resistance
- No contamination of working media
- A wide range of operating temperature and tolerances
- Almost any shape or size
- Give reduced down times and replacements
- Can eliminate thermowells

<u>Body Ø</u>	<u>Body L</u>	<u>Cable L</u>	<u>CODE</u>	<u>Price</u>
5 mm	50 mm	1 M	CW-500.050.1.1	95.91
5 mm	50 mm	2 M	CW-500.050.1.2	110.73
5 mm	50 mm	3 M	CW-500.050.1.3	125.55
5 mm	50 mm	4 M	CW-500.050.1.4	140.37
5 mm	50 mm	5 M	CW-500.050.1.5	155.19





CW-500 COWIE®, PTFE TEM- PERATURE PROBES, PLATINUM RESIST- ANCE

COWIE® Platinum Resistance Temperature Probes combine the outstanding properties of PTFE with the reliability and accuracy of Platinum Resistance thermometry.

- Inert and Non Contaminating
- -180°C to +280°C
- Pressure Resistant

All components are fully encapsulated in pure PTFE. The Body has a stainless steel core for rigidity but can be bent. With push-on ferrule.

Sensor PRT100 Class A. TCR = 3850 ppm/°C.

Cable 4 Wire; 2 Red, 2 White. PFA insulated, white PFA oversheath. 1 meter of cable fused to body. Option to increase cable length.

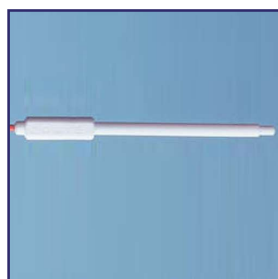
Response 50%, 6-14 seconds.

Supplied without plug. Special plugs on request.

Our dual expertise in the technologies of Temperature Sensing and PTFE Processing enables us to produce a range of fully encapsulated, PTFE Temperature Probes which combine the outstanding properties of PTFE with well-proven thermometric techniques.

- Outstanding chemical resistance
- No contamination of working media
- A wide range of operating temperature and tolerances
- Almost any shape or size
- Give reduced down times and replacements
- Can eliminate thermowells

Body Ø	Body L	Ferrule L	Cable L	CODE	Price	Body Ø	Body L	Ferrule L	Cable L	CODE	Price
6 mm	100 mm	35 mm	1 M	CW-500.106.1.1	120.82	8 mm	200 mm	40 mm	1 M	CW-500.208.1.1	132.56
6 mm	100 mm	35 mm	2 M	CW-500.106.1.2	135.64	8 mm	200 mm	40 mm	2 M	CW-500.208.1.2	147.38
6 mm	100 mm	35 mm	3 M	CW-500.106.1.3	150.46	8 mm	200 mm	40 mm	3 M	CW-500.208.1.3	162.20
6 mm	100 mm	35 mm	4 M	CW-500.106.1.4	165.28	8 mm	200 mm	40 mm	4 M	CW-500.208.1.4	177.02
6 mm	100 mm	35 mm	5 M	CW-500.106.1.5	180.10	8 mm	200 mm	40 mm	5 M	CW-500.208.1.5	191.84
6 mm	200 mm	40 mm	1 M	CW-500.206.1.1	130.01	8 mm	300 mm	40 mm	1 M	CW-500.300.1.1	140.08
6 mm	200 mm	40 mm	2 M	CW-500.206.1.2	144.83	8 mm	300 mm	40 mm	2 M	CW-500.300.1.2	154.90
6 mm	200 mm	40 mm	3 M	CW-500.206.1.3	159.65	8 mm	300 mm	40 mm	3 M	CW-500.300.1.3	169.72
6 mm	200 mm	40 mm	4 M	CW-500.206.1.4	174.47	8 mm	300 mm	40 mm	4 M	CW-500.300.1.4	185.54
6 mm	200 mm	40 mm	5 M	CW-500.206.1.5	189.29	8 mm	300 mm	40 mm	5 M	CW-500.300.1.5	199.36
7 mm	100 mm	35 mm	1 M	CW-500.100.1.1	121.65	8 mm	400 mm	50 mm	1 M	CW-500.400.1.1	148.33
7 mm	100 mm	35 mm	2 M	CW-500.100.1.2	136.47	8 mm	400 mm	50 mm	2 M	CW-500.400.1.2	163.15
7 mm	100 mm	35 mm	3 M	CW-500.100.1.3	151.29	8 mm	400 mm	50 mm	3 M	CW-500.400.1.3	177.97
7 mm	100 mm	35 mm	4 M	CW-500.100.1.4	166.11	8 mm	400 mm	50 mm	4 M	CW-500.400.1.4	192.79
7 mm	100 mm	35 mm	5 M	CW-500.100.1.5	180.93	8 mm	400 mm	50 mm	5 M	CW-500.400.1.5	207.61
7 mm	200 mm	40 mm	1 M	CW-500.200.1.1	130.61	9 mm	500 mm	60 mm	1 M	CW-500.500.1.1	164.21
7 mm	200 mm	40 mm	2 M	CW-500.200.1.2	145.43	9 mm	500 mm	60 mm	2 M	CW-500.500.1.2	179.03
7 mm	200 mm	40 mm	3 M	CW-500.200.1.3	160.25	9 mm	500 mm	60 mm	3 M	CW-500.500.1.3	193.85
7 mm	200 mm	40 mm	4 M	CW-500.200.1.4	175.07	9 mm	500 mm	60 mm	4 M	CW-500.500.1.4	208.67
7 mm	200 mm	40 mm	5 M	CW-500.200.1.5	189.89	9 mm	500 mm	60 mm	5 M	CW-500.500.1.5	223.49
7 mm	300 mm	40 mm	1 M	CW-500.307.1.1	139.18	9 mm	600 mm	60 mm	1 M	CW-500.600.1.1	182.22
7 mm	300 mm	40 mm	2 M	CW-500.307.1.2	154.00	9 mm	600 mm	60 mm	2 M	CW-500.600.1.2	197.04
7 mm	300 mm	40 mm	3 M	CW-500.307.1.3	168.82	9 mm	600 mm	60 mm	3 M	CW-500.600.1.3	211.86
7 mm	300 mm	40 mm	4 M	CW-500.307.1.4	183.64	9 mm	600 mm	60 mm	4 M	CW-500.600.1.4	226.68
7 mm	300 mm	40 mm	5 M	CW-500.307.1.5	198.46	9 mm	600 mm	60 mm	5 M	CW-500.600.1.5	241.50
						9 mm	700 mm	45 mm	1 M	CW-500.700.1.1	212.01
						9 mm	700 mm	45 mm	2 M	CW-500.700.1.2	226.83
						9 mm	700 mm	45 mm	3 M	CW-500.700.1.3	241.65
						9 mm	700 mm	45 mm	4 M	CW-500.700.1.4	256.47
						9 mm	700 mm	45 mm	5 M	CW-500.700.1.5	271.29
						9 mm	900 mm	45 mm	1 M	CW-500.900.1.1	226.73
						9 mm	900 mm	45 mm	2 M	CW-500.900.1.2	241.55
						9 mm	900 mm	45 mm	3 M	CW-500.900.1.3	256.37
						9 mm	900 mm	45 mm	4 M	CW-500.900.1.4	271.19
						9 mm	900 mm	45 mm	5 M	CW-500.900.1.5	286.01


CW-600
COWIE®, PTFE TEMPERATURE PROBES, THERMOCOUPLE PROBES, TYPE K

COWIE® Thermocouples combine the outstanding properties of PTFE with the reliability of Thermocouple thermometry.

- Inert and Non-Contaminating
- -180°C to +280°C
- Pressure Resistant

All components are fully encapsulated in pure PTFE. The body has a stainless steel core for rigidity but can be bent. With push-on ferrule.

Sensor Type K Thermocouple
Cable PFA insulated with PFA oversheath.
Response 50%, 6-14 seconds.

Our dual expertise in the technologies of Temperature Sensing and PTFE Processing enables us to produce a range of fully encapsulated, PTFE Temperature Probes which combine the outstanding properties of PTFE with well-proven thermometric techniques.

- Outstanding chemical resistance
- No contamination of working media
- A wide range of operating temperature and tolerances
- Almost any shape or size
- Give reduced down times and replacements
- Can eliminate thermowells

Body Ø	Body L	Ferrule L	Cable L	CODE	Price	Body Ø	Body L	Ferrule L	Cable L	CODE	Price
6 mm	100 mm	35 mm	1 M	CW-600.106.1.1	105.19	8 mm	200 mm	40 mm	1 M	CW-600.208.1.1	116.94
6 mm	100 mm	35 mm	2 M	CW-600.106.1.2	121.24	8 mm	200 mm	40 mm	2 M	CW-600.208.1.2	132.99
6 mm	100 mm	35 mm	3 M	CW-600.106.1.3	137.29	8 mm	200 mm	40 mm	3 M	CW-600.208.1.3	149.04
6 mm	100 mm	35 mm	4 M	CW-600.106.1.4	153.34	8 mm	200 mm	40 mm	4 M	CW-600.208.1.4	165.09
6 mm	100 mm	35 mm	5 M	CW-600.106.1.5	169.39	8 mm	200 mm	40 mm	5 M	CW-600.208.1.5	181.14
6 mm	200 mm	40 mm	1 M	CW-600.206.1.1	114.33	8 mm	300 mm	40 mm	1 M	CW-600.301.1.1	124.55
6 mm	200 mm	40 mm	2 M	CW-600.206.1.2	130.38	8 mm	300 mm	40 mm	2 M	CW-600.301.1.2	140.60
6 mm	200 mm	40 mm	3 M	CW-600.206.1.3	146.43	8 mm	300 mm	40 mm	3 M	CW-600.301.1.3	156.65
6 mm	200 mm	40 mm	4 M	CW-600.206.1.4	162.48	8 mm	300 mm	40 mm	4 M	CW-600.301.1.4	172.70
6 mm	200 mm	40 mm	5 M	CW-600.206.1.5	178.53	8 mm	300 mm	40 mm	5 M	CW-600.301.1.5	188.75
7 mm	100 mm	35 mm	1 M	CW-600.101.1.1	105.98	8 mm	400 mm	50 mm	1 M	CW-600.401.1.1	132.80
7 mm	100 mm	35 mm	2 M	CW-600.101.1.2	122.03	8 mm	400 mm	50 mm	2 M	CW-600.401.1.2	148.85
7 mm	100 mm	35 mm	3 M	CW-600.101.1.3	138.08	8 mm	400 mm	50 mm	3 M	CW-600.401.1.3	164.90
7 mm	100 mm	35 mm	4 M	CW-600.101.1.4	154.13	8 mm	400 mm	50 mm	4 M	CW-600.401.1.4	180.95
7 mm	100 mm	35 mm	5 M	CW-600.101.1.5	170.18	8 mm	400 mm	50 mm	5 M	CW-600.401.1.5	197.00
7 mm	200 mm	40 mm	1 M	CW-600.201.1.1	114.99	9 mm	500 mm	60 mm	1 M	CW-600.501.1.1	151.82
7 mm	200 mm	40 mm	2 M	CW-600.201.1.2	131.04	9 mm	500 mm	60 mm	2 M	CW-600.501.1.2	167.87
7 mm	200 mm	40 mm	3 M	CW-600.201.1.3	147.09	9 mm	500 mm	60 mm	3 M	CW-600.501.1.3	183.92
7 mm	200 mm	40 mm	4 M	CW-600.201.1.4	163.14	9 mm	500 mm	60 mm	4 M	CW-600.501.1.4	199.97
7 mm	200 mm	40 mm	5 M	CW-600.201.1.5	179.19	9 mm	500 mm	60 mm	5 M	CW-600.501.1.5	216.02
7 mm	300 mm	40 mm	1 M	CW-600.307.1.1	123.62	9 mm	600 mm	60 mm	1 M	CW-600.601.1.1	166.75
7 mm	300 mm	40 mm	2 M	CW-600.307.1.2	139.67	9 mm	600 mm	60 mm	2 M	CW-600.601.1.2	182.80
7 mm	300 mm	40 mm	3 M	CW-600.307.1.3	155.72	9 mm	600 mm	60 mm	3 M	CW-600.601.1.3	198.85
7 mm	300 mm	40 mm	4 M	CW-600.307.1.4	171.77	9 mm	600 mm	60 mm	4 M	CW-600.601.1.4	214.90
7 mm	300 mm	40 mm	5 M	CW-600.307.1.5	187.82	9 mm	600 mm	60 mm	5 M	CW-600.601.1.5	230.95
						9 mm	700 mm	45 mm	1 M	CW-600.701.1.1	193.03
						9 mm	700 mm	45 mm	2 M	CW-600.701.1.2	209.08
						9 mm	700 mm	45 mm	3 M	CW-600.701.1.3	225.13
						9 mm	700 mm	45 mm	4 M	CW-600.701.1.4	241.18
						9 mm	700 mm	45 mm	5 M	CW-600.701.1.5	257.23
						9 mm	900 mm	45 mm	1 M	CW-600.901.1.1	207.88
						9 mm	900 mm	45 mm	2 M	CW-600.901.1.2	223.93
						9 mm	900 mm	45 mm	3 M	CW-600.901.1.3	239.98
						9 mm	900 mm	45 mm	4 M	CW-600.901.1.4	256.03
						9 mm	900 mm	45 mm	5 M	CW-600.901.1.5	272.08



The dual purpose Thermocouple Baffle Probe (Type K) is for use in reaction systems to increase agitation and promote thorough mixing whilst also acting as a temperature probe. All components are fully encapsulated in PTFE to ensure purity and chemical resistance and have a stainless steel core for rigidity.

Sensor Type K Thermocouple
Cable PFA insulated with PFA oversheath.

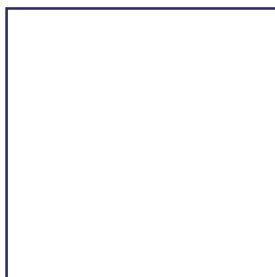
Supplied with miniplug not fitted for ease of assembly.

Our dual expertise in the technologies of Temperature Sensing and PTFE Processing enables us to produce a range of fully encapsulated, PTFE Temperature Probes which combine the outstanding properties of PTFE with well-proven thermometric techniques.

CW-PC707 COWIE®, PTFE TEM- PERATURE PROBES, THERMOCOUPLE BAFFLE PROBES

- Outstanding chemical resistance
- No contamination of working media
- A wide range of operating temperature and tolerances
- Almost any shape or size
- Give reduced down times and replacements
- Can eliminate thermowells

<u>Shaft Ø</u>	<u>Shaft L</u>	<u>Baffle</u>	<u>Overall L</u>	<u>Cable L</u>	<u>CODE</u>	<u>Price</u>
8 mm	150 mm	16 x 12 x 150 mm	300 mm	1 M	CW-PC707.608.150.1.1	148.51
8 mm	150 mm	16 x 12 x 150 mm	300 mm	2 M	CW-PC707.608.150.1.2	164.56
8 mm	150 mm	16 x 12 x 150 mm	300 mm	3 M	CW-PC707.608.150.1.3	180.61
8 mm	150 mm	16 x 12 x 150 mm	300 mm	4 M	CW-PC707.608.150.1.4	196.66
8 mm	150 mm	16 x 12 x 150 mm	300 mm	5 M	CW-PC707.608.150.1.5	212.71
8 mm	200 mm	16 x 12 x 150 mm	350 mm	1 M	CW-PC707.608.200.1.1	158.70
8 mm	200 mm	16 x 12 x 150 mm	350 mm	2 M	CW-PC707.608.200.1.2	174.75
8 mm	200 mm	16 x 12 x 150 mm	350 mm	3 M	CW-PC707.608.200.1.3	190.80
8 mm	200 mm	16 x 12 x 150 mm	350 mm	4 M	CW-PC707.608.200.1.4	206.85
8 mm	200 mm	16 x 12 x 150 mm	350 mm	5 M	CW-PC707.608.200.1.5	222.90
8 mm	250 mm	16 x 12 x 150 mm	400 mm	1 M	CW-PC707.608.250.1.1	163.76
8 mm	250 mm	16 x 12 x 150 mm	400 mm	2 M	CW-PC707.608.250.1.2	179.81
8 mm	250 mm	16 x 12 x 150 mm	400 mm	3 M	CW-PC707.608.250.1.3	195.86
8 mm	250 mm	16 x 12 x 150 mm	400 mm	4 M	CW-PC707.608.250.1.4	211.91
8 mm	250 mm	16 x 12 x 150 mm	400 mm	5 M	CW-PC707.608.250.1.5	227.96
12 mm	150 mm	20 x 15 x 200 mm	350 mm	1 M	CW-PC707.612.150.1.1	199.68
12 mm	150 mm	20 x 15 x 200 mm	350 mm	2 M	CW-PC707.612.150.1.2	215.73
12 mm	150 mm	20 x 15 x 200 mm	350 mm	3 M	CW-PC707.612.150.1.3	231.78
12 mm	150 mm	20 x 15 x 200 mm	350 mm	4 M	CW-PC707.612.150.1.4	247.83
12 mm	150 mm	20 x 15 x 200 mm	350 mm	5 M	CW-PC707.612.150.1.5	263.88
12 mm	200 mm	20 x 15 x 200 mm	400 mm	1 M	CW-PC707.612.200.1.1	219.98
12 mm	200 mm	20 x 15 x 200 mm	400 mm	2 M	CW-PC707.612.200.1.2	236.03
12 mm	200 mm	20 x 15 x 200 mm	400 mm	3 M	CW-PC707.612.200.1.3	252.08
12 mm	200 mm	20 x 15 x 200 mm	400 mm	4 M	CW-PC707.612.200.1.4	268.13
12 mm	200 mm	20 x 15 x 200 mm	400 mm	5 M	CW-PC707.612.200.1.5	284.18
12 mm	250 mm	20 x 15 x 200 mm	450 mm	1 M	CW-PC707.612.250.1.1	240.22
12 mm	250 mm	20 x 15 x 200 mm	450 mm	2 M	CW-PC707.612.250.1.2	256.27
12 mm	250 mm	20 x 15 x 200 mm	450 mm	3 M	CW-PC707.612.250.1.3	272.32
12 mm	250 mm	20 x 15 x 200 mm	450 mm	4 M	CW-PC707.612.250.1.4	288.37
12 mm	250 mm	20 x 15 x 200 mm	450 mm	5 M	CW-PC707.612.250.1.5	304.42
16 mm	150 mm	35 x 22 x 250 mm	400 mm	1 M	CW-PC707.616.150.1.1	273.97
16 mm	150 mm	35 x 22 x 250 mm	400 mm	2 M	CW-PC707.616.150.1.2	290.02
16 mm	150 mm	35 x 22 x 250 mm	400 mm	3 M	CW-PC707.616.150.1.3	306.07
16 mm	150 mm	35 x 22 x 250 mm	400 mm	4 M	CW-PC707.616.150.1.4	322.12
16 mm	150 mm	35 x 22 x 250 mm	400 mm	5 M	CW-PC707.616.150.1.5	338.17
16 mm	200 mm	35 x 22 x 250 mm	450 mm	1 M	CW-PC707.616.200.1.1	294.23
16 mm	200 mm	35 x 22 x 250 mm	450 mm	2 M	CW-PC707.616.200.1.2	310.28
16 mm	200 mm	35 x 22 x 250 mm	450 mm	3 M	CW-PC707.616.200.1.3	326.33
16 mm	200 mm	35 x 22 x 250 mm	450 mm	4 M	CW-PC707.616.200.1.4	342.38
16 mm	200 mm	35 x 22 x 250 mm	450 mm	5 M	CW-PC707.616.200.1.5	358.43
16 mm	250 mm	35 x 22 x 250 mm	500 mm	1 M	CW-PC707.616.250.1.1	314.56
16 mm	250 mm	35 x 22 x 250 mm	500 mm	2 M	CW-PC707.616.250.1.2	330.61
16 mm	250 mm	35 x 22 x 250 mm	500 mm	3 M	CW-PC707.616.250.1.3	346.66
16 mm	250 mm	35 x 22 x 250 mm	500 mm	4 M	CW-PC707.616.250.1.4	362.71
16 mm	250 mm	35 x 22 x 250 mm	500 mm	5 M	CW-PC707.616.250.1.5	378.76



The dual purpose Platinum Resistance Baffle Probe (PRT100) is for use in reaction systems to increase agitation and promote thorough mixing whilst also acting as a temperature probe. All components are fully encapsulated in PTFE to ensure purity and chemical resistance and have a stainless steel core for rigidity.

Sensor PRT100 Class A

Cable 4 Wire; 2 Red, 2 White. PFA insulated, white PFA oversheath.

Supplied without plug.

Our dual expertise in the technologies of Temperature Sensing and PTFE Processing enables us to produce a range of fully encapsulated, PTFE Temperature Probes which combine the outstanding properties of PTFE with well-proven thermometric techniques.

CW-PC707
COWIE®, PTFE TEM-
PERATURE PROBES,
PLATINUM RESIST-
ANCE BAFFLE
PROBES

- Outstanding chemical resistance
- No contamination of working media
- A wide range of operating temperature and tolerances
- Almost any shape or size
- Give reduced down times and replacements
- Can eliminate thermowells

<u>Shaft Ø</u>	<u>Shaft L</u>	<u>Baffle</u>	<u>Overall L</u>	<u>Cable L</u>	<u>CODE</u>	<u>Price</u>
8 mm	150 mm	16 x 12 x 150 mm	300 mm	1 M	CW-PC707.508.150.1.1	185.50
8 mm	150 mm	16 x 12 x 150 mm	300 mm	2 M	CW-PC707.508.150.1.2	200.32
8 mm	150 mm	16 x 12 x 150 mm	300 mm	3 M	CW-PC707.508.150.1.3	215.14
8 mm	150 mm	16 x 12 x 150 mm	300 mm	4 M	CW-PC707.508.150.1.4	229.96
8 mm	150 mm	16 x 12 x 150 mm	300 mm	5 M	CW-PC707.508.150.1.5	244.78
8 mm	200 mm	16 x 12 x 150 mm	350 mm	1 M	CW-PC707.508.200.1.1	194.21
8 mm	200 mm	16 x 12 x 150 mm	350 mm	2 M	CW-PC707.508.200.1.2	209.03
8 mm	200 mm	16 x 12 x 150 mm	350 mm	3 M	CW-PC707.508.200.1.3	223.85
8 mm	200 mm	16 x 12 x 150 mm	350 mm	4 M	CW-PC707.508.200.1.4	238.67
8 mm	200 mm	16 x 12 x 150 mm	350 mm	5 M	CW-PC707.508.200.1.5	253.49
8 mm	250 mm	16 x 12 x 150 mm	400 mm	1 M	CW-PC707.508.250.1.1	204.45
8 mm	250 mm	16 x 12 x 150 mm	400 mm	2 M	CW-PC707.508.250.1.2	219.27
8 mm	250 mm	16 x 12 x 150 mm	400 mm	3 M	CW-PC707.508.250.1.3	234.09
8 mm	250 mm	16 x 12 x 150 mm	400 mm	4 M	CW-PC707.508.250.1.4	248.91
8 mm	250 mm	16 x 12 x 150 mm	400 mm	5 M	CW-PC707.508.250.1.5	263.73
12 mm	150 mm	20 x 15 x 200 mm	350 mm	1 M	CW-PC707.512.150.1.1	230.07
12 mm	150 mm	20 x 15 x 200 mm	350 mm	2 M	CW-PC707.512.150.1.2	244.89
12 mm	150 mm	20 x 15 x 200 mm	350 mm	3 M	CW-PC707.512.150.1.3	259.71
12 mm	150 mm	20 x 15 x 200 mm	350 mm	4 M	CW-PC707.512.150.1.4	274.53
12 mm	150 mm	20 x 15 x 200 mm	350 mm	5 M	CW-PC707.512.150.1.5	289.35
12 mm	200 mm	20 x 15 x 200 mm	400 mm	1 M	CW-PC707.512.200.1.1	250.39
12 mm	200 mm	20 x 15 x 200 mm	400 mm	2 M	CW-PC707.512.200.1.2	CALL
12 mm	200 mm	20 x 15 x 200 mm	400 mm	3 M	CW-PC707.512.200.1.3	280.03
12 mm	200 mm	20 x 15 x 200 mm	400 mm	4 M	CW-PC707.512.200.1.4	294.85
12 mm	200 mm	20 x 15 x 200 mm	400 mm	5 M	CW-PC707.512.200.1.5	309.67
12 mm	250 mm	20 x 15 x 200 mm	450 mm	1 M	CW-PC707.512.250.1.1	270.66
12 mm	250 mm	20 x 15 x 200 mm	450 mm	2 M	CW-PC707.512.250.1.2	285.48
12 mm	250 mm	20 x 15 x 200 mm	450 mm	3 M	CW-PC707.512.250.1.3	300.30
12 mm	250 mm	20 x 15 x 200 mm	450 mm	4 M	CW-PC707.512.250.1.4	315.12
12 mm	250 mm	20 x 15 x 200 mm	450 mm	5 M	CW-PC707.512.250.1.5	329.94
16 mm	150 mm	35 x 22 x 250 mm	400 mm	1 M	CW-PC707.516.150.1.1	304.45
16 mm	150 mm	35 x 22 x 250 mm	400 mm	2 M	CW-PC707.516.150.1.2	319.27
16 mm	150 mm	35 x 22 x 250 mm	400 mm	3 M	CW-PC707.516.150.1.3	334.09
16 mm	150 mm	35 x 22 x 250 mm	400 mm	4 M	CW-PC707.516.150.1.4	348.91
16 mm	150 mm	35 x 22 x 250 mm	400 mm	5 M	CW-PC707.516.150.1.5	363.73
16 mm	200 mm	35 x 22 x 250 mm	450 mm	1 M	CW-PC707.516.200.1.1	324.68
16 mm	200 mm	35 x 22 x 250 mm	450 mm	2 M	CW-PC707.516.200.1.2	339.50
16 mm	200 mm	35 x 22 x 250 mm	450 mm	3 M	CW-PC707.516.200.1.3	354.32
16 mm	200 mm	35 x 22 x 250 mm	450 mm	4 M	CW-PC707.516.200.1.4	369.14
16 mm	200 mm	35 x 22 x 250 mm	450 mm	5 M	CW-PC707.516.200.1.5	383.69
16 mm	250 mm	35 x 22 x 250 mm	500 mm	1 M	CW-PC707.516.250.1.1	344.98
16 mm	250 mm	35 x 22 x 250 mm	500 mm	2 M	CW-PC707.516.250.1.2	359.80
16 mm	250 mm	35 x 22 x 250 mm	500 mm	3 M	CW-PC707.516.250.1.3	374.62
16 mm	250 mm	35 x 22 x 250 mm	500 mm	4 M	CW-PC707.516.250.1.4	389.44
16 mm	250 mm	35 x 22 x 250 mm	500 mm	5 M	CW-PC707.516.250.1.5	404.26



PRG-5400
HEMISPHERICAL, "O"
SERIES

The "O" Series hemispherical mantles cover and heat only the bottom half of flask. Supplied with a separable 4 foot 2-wire cord with locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Capacity	Wattage	CODE	Price
50 ml	60	-01	164.43
100 ml	80	-02	182.57
250 ml	180	-03	201.85
500 ml	270	-04	225.67
1,000 ml	380	-05	252.88
2,000 ml	500	-06	276.70
3,000 ml	500	-07	307.31
5,000 ml	600	-08	374.22
12,000 ml	2-650	-09	759.78



PRG-5401
HEATING / INSULAT-
ING TOPS

These tops either insulate or heat and are designed for use with Series M, TM, or STM mantles. They prevent vapor condensation in the upper half of a flask during distillation of high-boiling materials. All 115-volt tops are CSA certified. Electrical connection consists of separable 4 ft., 2-wire cord and locking connector. Accommodates up to a 3-neck flask.

Description	Flask Capacity	Flask Diameter	Heating Top Wattage	CODE	Price
Insulating	250 ml	83 mm	140	-01	197.32
Insulating	300 ml	86 mm	140	-02	197.32
Insulating	500 ml	101 mm	140	-03	213.19
Insulating	1,000 ml	137 mm	140	-04	238.14
Insulating	2,000 ml	170 mm	200	-05	254.02
Insulating	3,000 ml	183 mm	200	-06	228.78
Insulating	5,000 ml	220 mm	300	-07	349.27
Insulating	12,000 ml	293 mm	590	-08	535.25
Insulating	22,000 ml	347 mm	650	-09	607.82
Insulating	50,000 ml	456 mm	1,000	-10	983.18
Insulating	72,000 ml	522 mm	1,000	-11	1,149.88
Heating-115v	250 ml	83 mm	140	-21	224.53
Heating-115v	300 ml	86 mm	140	-22	263.09
Heating-115v	500 ml	101 mm	140	-23	277.83
Heating-115v	1,000 ml	137 mm	140	-24	309.58
Heating-115v	2,000 ml	170 mm	200	-25	320.92
Heating-115v	3,000 ml	183 mm	200	-26	353.81
Heating-115v	5,000 ml	220 mm	300	-27	447.93
Heating-115v	12,000 ml	293 mm	590	-28	747.31
Heating-115v	22,000 ml	347 mm	650	-29	806.27
Heating-115v	50,000 ml	456 mm	1,000	-30	1,251.94
Heating-230v	250 ml	83 mm	140	-40	277.83
Heating-230v	300 ml	86 mm	140	-41	277.83
Heating-230v	500 ml	101 mm	140	-42	285.77
Heating-230v	1,000 ml	137 mm	140	-43	342.47
Heating-230v	2,000 ml	170 mm	200	-44	343.60
Heating-230v	3,000 ml	183 mm	200	-45	369.68
Heating-230v	5,000 ml	220 mm	300	-46	460.40
Heating-230v	12,000 ml	293 mm	590	-47	763.18
Heating-230v	22,000 ml	347 mm	650	-48	823.28
Heating-230v	50,000 ml	456 mm	1,000	-49	1,270.08
Heating-230v	72,000 ml	522 mm	1,000	-50	1,443.58





PRG-5402
SPHERICAL, "O"
SERIES

The "O" Series mantles cover 1, 2, and 3-neck flasks completely with a 2 zone power supply to prevent heat loss. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Flask Capacity</u>	<u>Top Wattage</u>	<u>Bottom Wattage</u>	<u>CODE</u>	<u>Price</u>
50 ml	None	60	-01	344.74
100 ml	None	80	-02	348.14
250 ml	None	180	-03	358.34
500 ml	None	270	-04	410.51
1,000 ml	140	380	-05	687.20
2,000 ml	200	500	-06	718.96
3,000 ml	200	500	-07	755.24
5,000 ml	300	600	-08	896.99
12,000 ml	590	2-650	-09	1,620.49



PRG-5404
TRIPOD SUPPORT,
"O" SERIES

Floor model tripod support. For "O" Series heating mantle. Aluminum basket straps and mounting holes for leg support included.

<u>Flask Capacity</u>	<u>Height</u>	<u>CODE</u>	<u>Price</u>
5,000 ml	12"	-01	235.87
12,000 ml	14"	-02	242.68
22,000 ml	14"	-03	257.42



PRG-5406
EXTENSION SUP-
PORT, "O" SERIES

Support series for "O" Series mantle 50 ml - 500 ml. Attaches to lab rack or table top stands. Extension rod is 3/8".

<u>Flask Capacity</u>	<u>I.D.</u>	<u>CODE</u>	<u>Price</u>
50 ml	3 3/4"	-01	85.05
100-200 ml	4 7/8"	-02	87.32
250-300 ml	5 1/2"	-03	87.32
500 ml	5 7/8"	-04	89.59
1,000 ml	7 1/4"	-05	97.52
2,000 ml	8 3/4"	-06	103.19
3,000 ml	9 3/8"	-07	106.60
5,000 ml	11 7/8"	-08	111.13





PRG-5408
SPHERICAL, "TM"
SERIES

"TM" Series mantles with bottom half of flask providing heat source. Mantles are supplied with detachable 4 foot, 3-wire cord and locking connectorm except for 50 and 72 liter flask size, which have terminal boxes. All 115 volt items are CSA certified, except CODES 01-04. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Wattage	Voltage	CODE	Price
50 ml	60	115	-01	249.48
100 ml	80	115	-02	249.48
125 ml	80	115	-03	249.48
200 ml	100	115	-04	249.48
250 ml	180	115	-05	255.15
300 ml	180	115	-06	273.29
500 ml	270	115	-07	293.71
1,000 ml	380	115	-08	312.98
2,000 ml	500	115	-09	326.59
3,000 ml	500	115	-10	388.96
5,000 ml	600	115	-11	481.95
12,000 ml	2-650	115	-12	901.53
22,000 ml	2-770	115	-13	1,038.74
50,000 ml	3-1,000	115	-14	1,646.57
50,000 ml	3-1,000	230	-15	1,661.31
72,000 ml	2-2,000	230	-16	1,876.77



PRG-5410
STIR COMBO, WITH
CONTROLLER

Similar to heating mantle PRG-5408, with the addition of an electromagnetic stirring system capable of 50-750 RPM. Please note heating and stirring require separate controllers as a complete system. Complete set supplied with mantle, stir controller, connection wire and Teflon® stir bar. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Complete		Mantle Only	
	CODE	Price	CODE	Price
250 ml	-01	616.68	-11	CALL
500 ml	-02	635.04	-12	CALL
1,000 ml	-03	664.20	-13	CALL
2,000 ml	-04	1,397.52	-14	CALL
3,000 ml	-05	1,409.40	-15	CALL
5,000 ml	-06	1,508.76	-16	CALL
12,000 ml	-07	1,671.84	—	—
22,000 ml	-08	1,800.36	—	—



PRG-5412
SPHERICAL, "M"
SERIES

"M" Series mantles are similar to the "TM" Series except the outer aluminum housing is spherical, making it more compact. See PRG-5414 and PRG-5416 for mantle supports. Supplied with 4 foot, 3-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

Flask Size	Wattage	Voltage	CODE	Price
50 ml	60	115	-01	284.63
100 ml	80	115	-02	284.63
125 ml	80	115	-03	284.63
250 ml	180	115	-04	268.65
500 ml	270	115	-05	296.70
1,000 ml	380	115	-06	321.79
2,000 ml	500	115	-07	343.95
3,000 ml	500	115	-08	416.27
5,000 ml	600	115	-09	501.89
12,000 ml	2-650	115	-10	922.59
22,000 ml	2-770	115	-11	1,048.05
50,000 ml	3-1,000	115	-12	1,653.26
72,000 ml	2-2,000	230	-13	1,845.16



PRG-5414
SERIES "M" TRIPOD
SUPPORT

Tripod supports for "M" Series mantles. Available in both bench or floor models.

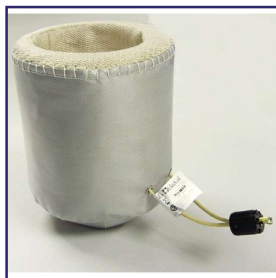
<u>Flask Size</u>	<u>Bench Height</u>	<u>CODE</u>	<u>Price</u>	<u>Floor Height</u>	<u>CODE</u>	<u>Price</u>
3,000 ml	14"	-01	110.71	—	—	—
5,000 ml	14"	-02	115.15	—	—	—
12,000 ml	14"	-03	146.13	24-36"	-13	410.37
22,000 ml	14"	-04	191.91	24-36"	-14	432.49
50,000 ml	16"	-05	191.91	24-36"	-15	516.65
72,000 ml	18"	-06	243.56	24-36"	-16	531.40



PRG-5416
SERIES "M" EXTEN-
SION SUPPORT

Support for "M" Series mantles 50-5,000 ml. Attaches to lab racks or table top stands.

<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
50-200 ml	-01	78.23
250-500 ml	-02	84.15
1,000 ml	-03	87.10
2,000-3,000 ml	-04	92.99
5,000 ml	-05	95.95



PRG-5418
BEAKER, GRIFFIN,
"O" SERIES

The flexible "O" Series mantle for Griffin beakers will heat even small volumes of liquid because heat is evenly concentrated at the bottom of the mantle. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Beaker Capacity</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
50 ml	40	-01	221.42
100 ml	100	-02	236.18
150 ml	100	-03	240.60
250 ml	140	-04	245.04
400 ml	240	-05	255.38
600 ml	325	-06	289.32
800 ml	350	-07	296.70
1,000 ml	430	-08	333.61
2,000 ml	550	-09	352.79
3,000 ml	630	-10	364.60
4,000 ml	710	-11	392.66





PRG-5420
BEAKER, GRIFFIN,
"TM" SERIES

"TM" Series mantles are similar to PRG-5418, except with an aluminum housing. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Beaker Capacity</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
600 ml	325	-01	274.56
800 ml	350	-02	278.99
1,000 ml	430	-03	289.32
2,000 ml	550	-04	326.22
3,000 ml	630	-05	349.85
4,000 ml	710	-06	367.56



PRG-5422
REACTION KETTLE,
"O" SERIES

The "O" Series mantle for resin reaction flasks. Supplied with a separable 4 foot, 2-wire cord and locking connector. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Kettle Capacity</u>	<u>I.D.</u>	<u>Depth</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
500 ml	3 3/4"	4 1/2"	270	-01	354.27
1,000 ml	4 1/4"	5 1/4"	335	-02	367.56
2,000 ml	5 1/2"	6"	470	-03	382.32
3,000 ml	5 1/2"	9"	550	-04	407.41
4,000 ml	5 1/2"	11"	750	-05	417.73



PRG-5424
REACTION KETTLE,
"TM" SERIES

The "TM" Series mantle is similar to PRG-5422 "O" Series, except "TM" has an aluminum housing and 4 foot, 3-wire cord for a ground. All 115 volt items are CSA certified. For mantle controllers see PRG-5432 through PRG-5450. Available in 230 volts by request.

<u>Kettle Capacity</u>	<u>I.D.</u>	<u>Depth</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
500 ml	3 3/4"	4 1/2"	270	-01	330.66
1,000 ml	4 1/4"	5 1/4"	335	-02	345.40
2,000 ml	5 1/2"	6"	470	-03	354.27
3,000 ml	5 1/2"	9"	550	-04	398.56
4,000 ml	5 1/2"	11"	750	-05	433.98



**PRG-5449
THERMOCOUPLES
"J"**

Thermocouples "J" type for use with PRG-5430 digital thermometers. All supplied with plugs.

<u>For Liquid Immersion</u>		<u>Temperature Range</u>	<u>CODE</u>	<u>Price</u>
24 gauge iron-constantan, 1/8" O.D. 6" long stainless steel probe. 48" long fiberglass insulated duplex lead with stainless steel over-braid.		0-370° C	-01	95.95
24 gauge iron-constantan, 1/8" O.D. 6" Teflon® coated stainless steel probe. 48" long Teflon® insulated duplex lead.		0-260° C	-02	154.99
<u>Not For Liquid Immersion</u>		<u>Temperature Range</u>	<u>CODE</u>	<u>Price</u>
20 gauge iron-constantan, 72" long, fiberglass-insulated duplex lead wire with welded tip.		0-480° C	-03	51.66
24 gauge iron-constantan, 36" long, fiberglass-insulated duplex lead wire with welded tip.		0-480° C	-04	39.85



**PRG-5430
DIGITAL THERMO-
METER**

Handheld microprocessor thermometer is battery operated with a 4-digit, 1/2" LCD display. Reads temperature in Celsius with display changes to Fahrenheit. Range is -190 to 1000° C (-310 to 1832° F). Power source is a 9 volt battery (included) with a life of 200 hours. "J" thermocouple is PRG-5449.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
PR-1000	-01	376.40



**PRG-5432
TEMPERATURE CON-
TROL, POWRTROL**

Solid state Powrtrol provides precision manual control of heating tapes and mantles. Output range is adjustable from 0-100% of rated voltage with controller linear from 2-100%. ON/OFF switch is lighted and is supplied with 10 amp circuit breaker and 3-wire cord.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>Case Dimensions</u>	<u>CODE</u>	<u>Price</u>
PL-120	120	10	4 x 4 x 3 3/8" H	-01	206.66
PL-124	240	10	4 x 4 x 3 3/8" H	-02	324.75



PRG-5434
TEMPERATURE CON-
TROLLER,
POWRTWIN

Similar to PRG-5432, except handles two separate circuits at one time. Often convenient for 2 circuit heating mantles. Not available with 240 volt.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>Case Dimensions</u>	<u>CODE</u>	<u>Price</u>
PL-1202	120	7	8 x 6 x 3 3/8" H	-01	324.75



PRG-5436
TEMPERATURE CON-
TROL,
MINITROL

Controller is manually adjusted for heating operation. Minitrol has only a percentage timer design without a sensing element. Operating voltage load is from 5.5%-100%. For use with heating mantles and tapes. Electrical 3-wire cord supplied.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>CODE</u>	<u>Price</u>
PL-312	120	12	-01	215.46
PL-324	240	10	-02	243.56



PRG-5438
TEMPERATURE CON-
TROL,
MINITWIN

Similar to PRG-5436, except with a separate dual control. Convenient for mantles with two circuits. Not available in 240 volt. Electrical 3-wire cord supplied.

<u>Number</u>	<u>Volts</u>	<u>Amps</u>	<u>CODE</u>	<u>Price</u>
PL-312	120	12	-01	309.99



PRG-5440
TEMPERATURE CON-
TROL, AUTOMATIC,
DIGITROL II

Digitrol uses a 1/16 DIN microprocessor base control. May be used with mantles, heating tapes, small ovens and other load resistive elements. Digitrol accuracy is 0.1% with a range of 32-999° F (0-750° C). Control is furnished with an immersion iron - constantan J thermocouple and a lighted ON/OFF switch. Electrical 3-wire cord supplied.

Number	Volts	Amps	CODE	Price
PL-612	120	15	-01	937.33
PL-624	240	10	-02	1,070.20



PRG-5444
TEMPERATURE CON-
TROL, MANTLE
MINDER II

An automatic time positioning control for heating mantles, cords and tapes. Control dial calibrated in °F/°C. Furnished with a immersion-iron constant and thermocouple for accuracy of 1.5% of full scale. Range is 0-1000° F. Electrical 3-wire cord supplied.

Number	Volts	Amps	CODE	Price
PL-512	120	10	-01	627.35
PL-524	240	5	-02	686.39



PRG-5950
LOW PROFILE CON-
TROLS

The low profile temperature controls feature a format with 1, 2, or 3 load receptacles. Control uses one thermocouple to operate all load receptacles simultaneously. easy set-up and simple input commands make this control very "user friendly". These controls are single-loop, auto-tuning temperature controllers that automatically set PID control parameters for optimum system performance. For use with heating mantles, tapes, ovens, water baths or other processes requiring accurate control.

Electrical Rating	Number	Temperature Range	Load Receptacles	Thermocouple	CODE	Price
15@120V, 1800W	PLSM112	0-750° C	1	Type J	-01	CALL
15@120V, 1800W	PLSM112K	-200-1250° C	1	Type K	-02	CALL
15@120V, 1800W	PLSM112T	-200-350° C	1	Type T	-03	CALL
15@120V, 1800W	PLSM212	0-750° C	2	Type J	-04	CALL
15@120V, 1800W	PLSM212K	-200-1250° C	2	Type K	-05	CALL
15@120V, 1800W	PLSM212T	-200-750° C	2	Type T	-06	CALL
15@120V, 1800W	PLSM312	0-750° C	3	Type J	-07	CALL
15@120V, 1800W	PLSM312K	-200-1250° C	3	Type K	-08	CALL
15@120V, 1800W	PLSM312T	-200-350° C	3	Type T	-09	CALL
10@240V, 2400W	PLSM124	0-750° C	1	Type J	-10	CALL
10@240V, 2400W	PLSM124K	-200-1250° C	1	Type K	-11	CALL
10@240V, 2400W	PLSM124T	-200-350° C	1	Type T	-12	CALL
10@240V, 2400W	PLSM224	0-750° C	2	Type J	-13	CALL
10@240V, 2400W	PLSM224K	-200-1250° C	2	Type K	-14	CALL
10@240V, 2400W	PLSM224T	-200-750° C	2	Type T	-15	CALL



PRG-5952
"TM" SERIES HEAT
MANTLE, SPHERICAL,
BOTTOM HOLE

"TM" Series mantles are aluminum housed and equipped with a 3.0" center hole to accept a drain valve. The 115 volt mantles have a 4 foot long, 3-wire, twist-lock electrical cord (supplied) and the 230 volt are equipped with a terminal box.

<u>Flask Size in Liters</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
12	115	2@650	-01	1,342.64
12	230	2@650	-21	1,375.18
22	115	2@770	-02	1,533.02
22	230	2@770	-22	1,570.49
50	115	3@1000	-03	2,309.32
50	230	3@1000	-23	2,345.11
72	230	2@2000	-24	2,677.11
100	230	3@1800	-25	4,916.46
200	230	4@2000	-26	4,841.60

<u>Cylindrical Column O.D.</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
315 mm	115	2@650	-31	2,734.06
315 mm	230	2@650	-41	2,734.06
415 mm	115	2@770	-32	3,246.71
415 mm	230	2@770	-42	3,246.71
486 mm	230	2@2000	-43	5,565.81



PRG-5954
INSULATING/HEATING
JACKET

These columns are available for insulating or with heating capabilities. The heated units are designed to withstand an internal operating temperature of 450° C. These mantles wrap around the column and have a single lace up fastener which allows visibility into the vessel.

<u>Cylindrical Column O.D.</u>	<u>Length</u>	<u>Volts</u>	<u>Watts Per Circuit</u>	<u>CODE</u>	<u>Price</u>
315 mm	15"	—	Insulating	-01	1,490.73
315 mm	15"	115	2@900	-21	1,985.46
315 mm	30"	—	Insulating	-02	1,985.46
315 mm	30"	115	3@1200	-22	2,644.59
315 mm	40"	—	Insulating	-03	2,454.15
315 mm	40"	115	4@1200	-23	3,279.27
415/457 mm	30"	—	Insulating	-04	2,538.79
415/457 mm	30"	115	5@1050	-24	3,385.06
415/457 mm	40"	—	Insulating	-05	3,014.01
415/457 mm	40"	115	6@1150	-25	4,019.76



**PRG-R
INSULATING/HEATING
JACKET**

3 and 6 Position

Cabinet is clear anodized aluminum with black PTFE coating

Individual elements are easily replaced within minutes

Six position ranges from 100 to 300 ml flask capacity 29 1/4" w x 9 1/2" d x 5 1/4" t

Three position ranges from 500 to 1000 ml flask capacity 24" w x 11 1/4" d x 6 1/4" t

Mid-temperature range to 450 degree C (RX Series)

High-temperature range to 650 degree C (RJ Series)

<u>Flask Size</u>	<u>Temperature Range</u>	<u>Positions</u>	<u>Volts</u>	<u>Wattage</u>	<u>CODE</u>	<u>Price</u>
100/125 ml	Mid	6	120	85	PRG-RX-12712	2,126.00
100/125 ml	High	6	120	140	PRG-RJ-12712	2,133.00
250/300 ml	Mid	6	120	125	PRG-RX-30412	2,144.00
250/300 ml	High	6	120	210	PRG-RJ-30412	2,165.00
500 ml	Mid	3	120	180	PRG-RX-50212	1,778.00
500 ml	High	3	120	300	PRG-RJ-50212	1,778.00
1000 ml	Mid	3	120	290	PRG-RX-100012	1,867.00
1000 ml	High	3	240	450	PRG-RJ-100024	1,900.00

<u>Options</u>	<u>Positions</u>	<u>Voltage</u>	<u>CODE</u>	<u>Price</u>
Percentage Timer	3	120	PRG-RL-3312	432.00
Percentage Timer	6	120	PRG-RL-3612	764.00
Percentage Timer	3	240	PRG-RL-3324	476.00
Proportional Voltage	3	120	PRG-RL-4312	633.00
Proportional Voltage	6	120	PRG-RL-4612	1,105.00
Proportional Voltage	3	240	PRG-RL-4324	680.00



**HEI-STANDARD
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-STANDARD**

According to the motto “just stir and heat”, our entry model of the Hei-Standard was manufactured with two rotary knobs to enable direct access to the two main functions. The speed and temperature are set using a scale. The maximum values are 1.400 rpm and 300 °C.

This magnetic stirrer is very easy to use and is equipped with the most important safety features. The heating function can be activated separately.

The patented Kera-Disk® footprint made of anodized aluminum, is chemical-resistant, scratch-proof, and has a diameter of 135 or 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The material used also enables the fastest heating times.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±5 °C	±5 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	—	—
Timer	—	—
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110521	HEI-036110519

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
135 mm	HEI-036110521	CALL
145 mm	HEI-036110519	1,224.09



HEI-TEC
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-TEC

Hei-Tec is the classic model among magnetic stirrers. It enables users to gently stir up to 1,400 rpm and to heat up to a temperature of 300°C with a high degree of precision. These features, along with its robust construction and sophisticated functionalities such as key illumination, encompass our mantra of "Research made easy!"

The patented Kera-Disk® footprint made of anodized aluminum, is chemically resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The material used also enables the fastest heating times.

The Hei-Tec magnetic stirrer provides a digital display for setting your desired temperature exactly to the degree. This precise temperature without overshooting is controlled by two selectable heating modes (FAST/PRECISE) and the optional external temperature sensor Pt1000.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±1 °C	±1 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	—	—
Timer	—	—
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110620 & HEI-036110583	HEI-036110550 & HEI-036110582

<u>Plate Diameter</u>	<u>With Pt1000</u>	<u>CODE</u>	<u>Price</u>
135 mm	No	HEI-036110620	CALL
135 mm	Yes	HEI-036110583	1,347.59
145 mm	No	HEI-036110550	1,223.18
145 mm	Yes	HEI-036110582	1,347.10



HEI-PLATE-
SILVER-1
HEIDOLPH, MAG-
NETIC STIRRER, HEI-
PLATE, SILVER 1
PACKAGE

This package includes:

- Magnetic Stirrer Hei-Tec
- Temperature sensor Pt1000 (AISI 316Ti)
- Pt1000 clamping system (includes support rod and attachment with cable inlet)

<u>CODE</u>	<u>Price</u>
HEI-036110573	1,467.81



**HEI-CONNECT
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-CONNECT**

In our proven Hei-PLATE magnetic stirrer line, the Hei-Connect combines gentle stirring (up to 1,400 rpm) with a precise heating function (up to 300 °C). Unique in its robust design and secure functionality, this model stands out with additional features giving you complete control and an easy, accurate documentation of your process parameters.

The unique Kera-Disk® footprint is chemically resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint. The anodized aluminum from which it is made enables the fastest possible heating times.

The Hei-Connect magnetic stirrer provides a digital display for setting your desired temperature exactly to the degree. This precise temperature without overshooting is controlled by two selectable heating modes (FAST/PRECISE) and the optional external temperature sensor Pt1000.

To facilitate process control and documentation, the Hei-Connect is equipped with a timer and an RS 232 interface. The free Hei-Control Software is included in the scope of delivery.

Specifications

Rotation speed range	100 – 1,400 rpm	100 – 1,400 rpm
Speed accuracy	±2 %	±2 %
Max. stirring capacity (H ₂ O)	20 l	20 l
Hotplate temperature	20 – 300 °C	20 – 300 °C
Heating power	600 W	600 W
Accuracy temperature setting	±1 °C	±1 °C
Temperature accuracy with external temp. sensor	±1 °C	±1 °C
Safety circuit hotplate	25 °C over hotplate temperature	25 °C over hotplate temperature
Plate diameter ø	135 mm	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	with Pt 1000	with Pt 1000
Residual heat indicator	yes	yes
Smooth start	yes	yes
Analog / digital interface	yes (RS 232)	yes (RS 232)
Timer	yes	yes
Protection class DIN EN 60529	IP 32	IP 32
Product Number	HEI-036110602 & HEI-036110604	HEI-036110601 & HEI-036110603

<u>Plate Diameter</u>	<u>With Pt1000</u>	<u>CODE</u>	<u>Price</u>
135 mm	No	HEI-036110602	1,780.15
135 mm	Yes	HEI-036110604	1,724.99
145 mm	No	HEI-036110601	1,720.81
145 mm	Yes	HEI-036110603	1,724.99



**HEI-PLATE-
SILVER-2
HEIDOLPH, MAG-
NETIC STIRRER, HEI-
PLATE, SILVER 2
PACKAGE**

This package includes:

- Magnetic Stirrer Hei-Connect
- Temperature sensor Pt1000 (AISI 316Ti)
- Pt1000 clamping system (includes support rod and attachment with cable inlet)
- Interface cable RS 232

<u>CODE</u>	<u>Price</u>
HEI-036110605	2,133.76



HEI-MIX-S
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-MIX S

The Hei-Mix S is the first choice for titrations and biochemical applications such as those associated with operating a small fermenter. The PVDF (thermoplastic fluoropolymer) footprint is of white color: In this way, color changes during the application can be precisely tracked.

The Hei-Mix S also has a robust housing made of polyamide and is suitable for continuous operation with stirring volumes of up to 5 liters. Thanks to a wide speed range of up to 2,200 rpm, you can mix your sample quickly but gently. Efficient work is therefore guaranteed.

In addition, you save space in your laboratory because the Hei-Mix S requires only 126 x 80 x 140 mm of space with a footprint of 104 mm in diameter.

Specifications

Rotation speed range	100 – 2,200 rpm
Speed accuracy	±5 %
Max. stirring capacity (H ₂ O)	5 l
Hotplate temperature	—
Heating power	—
Accuracy temperature setting	—
Temperature accuracy with external temp. sensor	—
Safety circuit hotplate	—
Plate diameter ø	104 mm
Plate material	PVDF
Sensor breakage protection	—
Residual heat indicator	—
Smooth start	yes
Analog / digital interface	—
Timer	—
Protection class DIN EN 60529	IP 21
Product Number	HEI-036110460

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
104 mm	HEI-036110460	439.09



HEI-MIX-L
HEIDOLPH, MAG-
NETIC STIRRER, MR
HEI-MIX L

Based on our proven magnetic stirrer series with heating function, the Hei-Mix L was especially developed for applications with thermolabile substances. This is because this model has no heating, and the heat from the motor is also not transferred to the footprint.

The Hei-Mix L magnetic stirrer without heating function is ideal for applications up to 20 liters and can gently stir your solution in a speed range of 100-1.400 rpm. In addition, the rotation speed ramps up slowly until it has reached the desired value. This prevents splashes, uneven starts, or jumps of the stirring rod.

The patented Kera-Disk® footprint made of aluminum with a ceramic coating, is chemical-resistant, scratch-proof, and has a diameter of 145 mm. This unique size makes it suitable for use with many accessories and samples on a small footprint.

Specifications

Rotation speed range	100 – 1,400 rpm
Speed accuracy	±2 %
Max. stirring capacity (H ₂ O)	20 l
Hotplate temperature	—
Heating power	—
Accuracy temperature setting	—
Temperature accuracy with external temp. sensor	—
Safety circuit hotplate	—
Plate diameter ø	145 mm
Plate material	Kera-Disk® (Silumin with ceramic coating)
Sensor breakage protection	—
Residual heat indicator	—
Smooth start	yes
Analog / digital interface	—
Timer	—
Protection class DIN EN 60529	IP 32
Product Number	HEI-036110465

<u>Plate Diameter</u>	<u>CODE</u>	<u>Price</u>
145 mm	HEI-036110465	812.00



HEI-TOR-C
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE CORE

Heidolph's lightest overhead stirrer is here – with a torque of 40 Ncm!

Thanks to its weight of 2.3 kg, the Hei-TORQUE Core is easier to carry than the other models and can be mounted on a stand and/or in various closed systems. However, this does not mean that this stirrer will be less powerful.

The additional name "Core" emphasizes that it is a model of selected functions and important safety features that provide tangible help with any stirring task. Above all, the Hei-TORQUE Core scores with its simple operation: The quick-action chuck (Quick Chuck) can be opened and closed very easily without a key. The "Max" button allows you to reach the maximum speed of 2,000 rpm in no time. Thanks to the display, you can keep an overview of all application parameters.

The Hei-TORQUE Core has a quick-action chuck with a diameter of 10.5 mm and can therefore be combined with a variety of stirring tools. To achieve the best possible homogeneity, it is suitable for viscosities up to 10,000 mPa s or volumes up to 25 liters (H₂O).

Specifications

Number of speed gears	1
Rotation speed range	2 – 2,000 rpm
Rotation speed indicator	digital monochrom 2"
Speed control	electronic
Max. torque	40 Ncm
Torque indicator	symbol
Overheat protection	automatic cut-out
Viscosity max.	10,000 mPa s
Stirring cap. (H ₂ O), max.	25 l
Through-shaft design	✓
Shaft diameter, max.	10.5 mm
Counter/ Timer	✓
Analog / digital interface	—
Power rating motor input	105 W
Protection class DIN EN 60529	IP 42
Product number	HEI-036090005

<u>CODE</u>	<u>Price</u>
HEI-036090005	1,868.62



**HEI-TOR-P
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE PRECISION**

The devices of the Hei-TORQUE Precision line are Heidolph high performance overhead stirrers.

The Hei-TORQUE Value 100 is a overhead stirrer with a wide speed range (10 – 2,000 rpm) and a maximum torque of 100 Ncm. It can powerfully stir viscosities up to 60,000 mPas or volumes up to 50 liters (H₂O).

The Hei-TORQUE Precision 200 laboratory stirrer is ideal for the powerful stirring of viscosities up to 100,000 mPas or volumes up to 50 liters (H₂O). It has a wide speed range (10 – 2,000 rpm) and a maximum torque of 200 Ncm.

The Hei-TORQUE Precision 400 laboratory stirrer is ideal for the powerful stirring of viscosities up to 250,000 mPas or volumes up to 100 liters (H₂O). Thanks to its 2-gear stage design, it stirs particularly powerfully in the speed range up to 400 rpm and is therefore particularly suitable for applications with highly viscous media that require mixing in the lower speed range. However, operation at speeds of up to 2,000 rpm is also possible in the second speed.

In addition, the Hei-TORQUE Precision offers, above all, the possibility of ramp programming, process monitoring (including timer function, torque trend display as a value), as well as the necessary equipment for documenting your application parameters. For this it is equipped with two interfaces – USB and RS232 – which give you the greatest flexibility to connect the device to a PC, a programmable logic controller (PLC) or an automation system such as e.g. LabManager. The scope of delivery includes the free Hei-Control software for remote control of up to 4 devices via PC.

The overhead stirrer Hei-TORQUE Precision performs every stirring task with minimal noise thanks to the latest engine technology. The safety-related start/stop touch-function serves to minimize the risk of unintentional switching on.

Suitable for use in fume hoods or as a drive for reactor superstructures, the Hei-TORQUE Precision 100 has a quick-action chuck (quick chuck with safety ring) with a diameter of 10.5 mm, which can be combined with a large number of stirring tools.

Specifications

Number of speed gears	1	1	2
Rotation speed range	10 – 2,000 rpm	10 – 2,000 rpm	10 – 400 rpm / 20 – 2,000 rpm
Rotation speed indicator	digital color 3.2"	digital color 3.2"	digital color 3.2"
Speed control	electronic	electronic	electronic
Max. torque	100 Ncm	200 Ncm	400 Ncm
Torque indicator	precise value	precise value	precise value
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity max.	60,000 mPa s	100,000 mPa s	250,000 mPa s
Stirring cap. (H ₂ O), max.	50 l	50 l	100 l
Through-shaft design	✓	✓	✓
Shaft diameter, max.	10.5 mm	10.5 mm	10.5 mm
Counter/ Timer	✓	✓	✓
Analog / digital interface	USB and RS 232	USB and RS 232	USB and RS 232
Power rating motor input	90 W	120 W	150 W
Protection class DIN EN 60529	IP 54	IP 54	IP 54
Product number	HEI-036093090	HEI-036093110	HEI-036093150

<u>Max. Torque</u>	<u>CODE</u>	<u>Price</u>
100 Ncm	HEI-036093090	2,746.20
200 Ncm	HEI-036093110	3,667.00
400 Ncm	HEI-036093150	5,076.00



**HEI-TOR-V
HEIDOLPH, OVER-
HEAD STIRRER, HEI-
TORQUE VALUE**

The Hei-TORQUE Value 100 is an overhead stirrer with a wide speed range (10 – 2,000 rpm) and a maximum torque of 100 Ncm. With it you can optimally stir viscosities up to 60,000 mPa s or volumes up to 50 liters (H₂O).

With Hei-TORQUE Value 200 you can optimally stir viscosities up to 100,000 mPa s or volumes up to 50 liters (H₂O). Thanks to a wide speed range from 10 to 2,000 rpm and a maximum torque of 200 Ncm, it works particularly powerful.

With Hei-TORQUE Value 400 you can optimally stir viscosities up to 250,000 mPa s or volumes up to 100 liters (H₂O). Thanks to its 2-gear stage design, it stirs particularly powerfully in the speed range up to 400 rpm and is therefore particularly suitable for applications with highly viscous media that require mixing in the lower speed range. However, operation at speeds of up to 2,000 rpm is also possible in the second speed.

The Hei-TORQUE Value performs every stirring task with minimal noise thanks to the latest engine technology. This overhead stirrer is also very user-friendly in terms of operation and safety. The 2.4 inch display makes it very easy to set the application parameters and control the process (e.g. using the torque trend display). The safety-related start/stop touch-function serves to minimize the risk of unintentional switching on.

Suitable for use in fume hoods or as a drive for reactor superstructures, the Hei-TORQUE Value has a quick-action chuck (quick chuck with safety ring) with a diameter of 10.5 mm, which can be combined with a large number of stirring tools.

Specifications

Number of speed gears	1	1	2
Rotation speed range	10 – 2,000 rpm	10 – 2,000 rpm	10 – 400 rpm / 20 – 2,000 rpm
Rotation speed indicator	digital color 2.4"	digital color 2.4"	digital color 2.4"
Speed control	electronic	electronic	electronic
Max. torque	100 Ncm	200 Ncm	400 Ncm
Torque indicator	symbol	symbol	symbol
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity max.	60,000 mPa s	100,000 mPa s	250,000 mPa s
Stirring cap. (H ₂ O), max.	50 l	50 l	100 l
Through-shaft design	✓	✓	✓
Shaft diameter, max.	10.5 mm	10.5 mm	10.5 mm
Counter/ Timer	—	—	—
Analog / digital interface	—	—	—
Power rating motor input	90 W	120 W	150 W
Protection class DIN EN 60529	IP 54	IP 54	IP 54
Product number	HEI-036093030	HEI-036093050	HEI-036093070

<u>Max. Torque</u>	<u>CODE</u>	<u>Price</u>
100 Ncm	HEI-036093030	2,300.00
200 Ncm	HEI-036093050	3,220.00
400 Ncm	HEI-036093070	4,140.00



HEI-5-WAY-CLAMP-SILICONE-STRAP
HEIDOLPH, STARFISH
WORKSTATION, 5-
WAY CLAMP, SIL-
ICONE STRAP

This 5-way clamp can be fitted around the StarFish support rod for fixing round bottom flasks. The terminal consists of five telescopic arms, which can be individually expanded.

They are equipped with heat-resistant silicone straps. Due to their elasticity, they are suitable for securing round bottom flasks from 15 to 70 mm diameter to the structure.

The silicone straps can be purchased separately if required.

<u>CODE</u>	<u>Price</u>
HEI-015892140	506.42



HEI-5-WAY-CLAMP-VELCRO-STRAP
HEIDOLPH, STARFISH
WORKSTATION, 5-
WAY CLAMP, VELCRO
STRAP

For reactions that require a larger construction such as soxhlet apparatus, reflux reactors etc., this 5-way clamp can be installed around the StarFish support rod. The terminal consists of five telescopic arms, which can be individually expanded.

They are equipped with velcro straps. These secure the structure and at the same time allow unrestricted adjustment up or down.

The velcro straps can be purchased separately as required.

<u>CODE</u>	<u>Price</u>
HEI-015890310	482.20



HEI-GAS-VAC-UUM-DISTRIBUTION-MANIFOLD
HEIDOLPH, STARFISH
WORKSTATION,
GAS/VACUUM DISTRI-
BUTION MANIFOLD

Distributes inert gas or vacuum evenly from any output source to up to five different stations or vessels. Regulating the gas or vacuum is not possible.

All connectors have a leak-free coupling that closes automatically as soon as the connection is disconnected. This makes it possible to use the distributor with any number of vessels (max. 5).

<u>CODE</u>	<u>Price</u>
HEI-015890350	595.18



Reducing insert made of aluminum for a 5 ml round bottom flask.

Suitable for 250 ml Starfish MonoBlock and PolyBlock.

Chemical resistant. Can be heated up to 260 °C.

HEI-INSERT-FOR-5-ML-FLASKS
HEIDOLPH, STARFISH
WORKSTATION, IN-
SERT FOR 5 ML
FLASKS

CODE Price
HEI-015890300 94.83



Reducing insert made of aluminum for a 10 ml round bottom flask.

Suitable for Starfish MonoBlock and PolyBlock 250 ml.

Chemical resistant. Can be heated up to 260 °C.

HEI-INSERT-FOR-10-ML-FLASKS
HEIDOLPH, STARFISH
WORKSTATION, IN-
SERT FOR 10 ML
FLASKS

CODE Price
HEI-015890290 94.83



Reducing insert made of aluminum for a 25 ml round bottom flask.

Suitable for 250 ml Starfish MonoBlock and PolyBlock.

Chemical resistant. Can be heated up to 260 °C.

HEI-INSERT-FOR-25-ML-FLASKS
HEIDOLPH, STARFISH
WORKSTATION, IN-
SERT FOR 25 ML
FLASKS

CODE Price
HEI-015890280 94.83



Reducing insert made of aluminum for a 50 ml round bottom flask.

Suitable for 250 ml Starfish MonoBlock and PolyBlock.

Chemical resistant. Can be heated up to 260 °C.

HEI-INSERT-FOR-50-ML-FLASKS
HEIDOLPH, STARFISH
WORKSTATION, IN-
SERT FOR 50 ML
FLASKS

CODE Price
HEI-015890270 94.83



Reducing insert made of aluminum for a 100 ml round bottom flask.

Suitable for 250 ml Starfish MonoBlock and PolyBlock.

Chemical resistant. Can be heated up to 260 °C.

HEI-INSERT-FOR-100-ML-FLASKS
HEIDOLPH, STARFISH
WORKSTATION, IN-
SERT FOR 100 ML
FLASKS

CODE Price
HEI-015890260 94.83



Reducing insert made of aluminum for a 150 ml round bottom flask.

Suitable for 250 ml Starfish MonoBlock and PolyBlock.

Chemical resistant. Can be heated up to 260 °C.

HEI-INSERT-FOR-150-ML-FLASKS
HEIDOLPH, STARFISH
WORKSTATION, IN-
SERT FOR 150 ML
FLASKS

CODE Price
HEI-015890250 94.83



Attachment for max. 5 round bottom flasks of 250 ml.

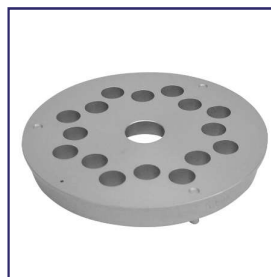
The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890070	524.57

HEI-MONOBLOCK-FOR-5X250-ML-FLASKS
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 5 x 250 ML FLASKS



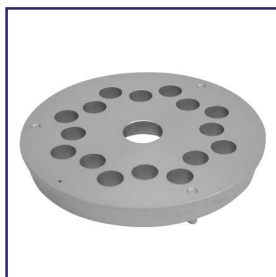
Attachment for up to 16 test tubes with a diameter of 24 mm.

The attachment is chemical-resistant. It is made of aluminum and is suitable for heating bath temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation. The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890090	419.65

HEI-MONOBLOCK-FOR-16X24-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 16 X 24 MM TEST TUBES



Attachment for up to 16 test tubes with a diameter of 25 mm.

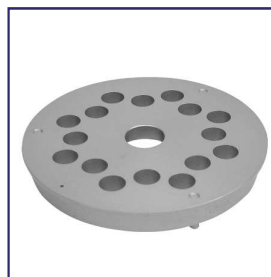
The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890080	419.65

HEI-MONOBLOCK-FOR-16X25-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 16 X 25 MM TEST TUBES



Attachment for up to 16 reagent vials, such as vials or wetted glasses with snap-on lid, with a diameter of 28 mm.

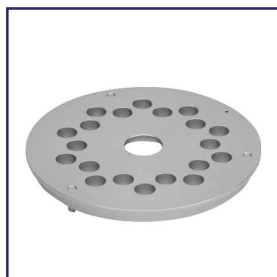
The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015892040	467.46

HEI-MONOBLOCK-FOR-16X28-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 16 X 28 MM TEST TUBES



HEI-MONOBLOCK-FOR-20X21-MM-REAGANT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 20 X 21 MM REAGANT VIALS

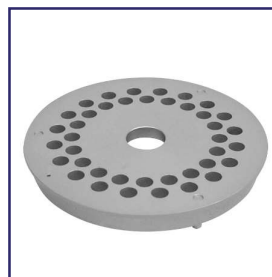
Attachment for up to 20 reagent vials, such as vials or wetted glasses with snap-on lid, with a diameter of 21 mm.

The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890120	419.65



HEI-MONOBLOCK-FOR-40X12-MM-REAGANT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 40 X 12 MM REAGANT VIALS

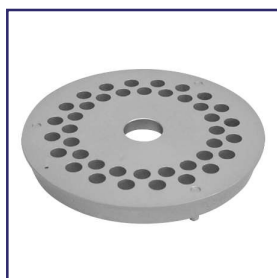
Attachment for up to 40 reagent vials, such as vials or wetted glasses with snap-on lid, with a diameter of 12 mm.

The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890150	419.65



HEI-MONOBLOCK-FOR-40X12-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 40 X 12 MM TEST TUBES

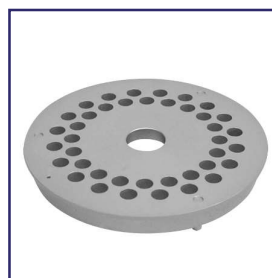
Attachment for up to 40 test tubes with a diameter of 12 mm.

The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890110	419.65



HEI-MONOBLOCK-FOR-40X15-MM-REAGANT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 40 X 15 MM REAGANT VIALS

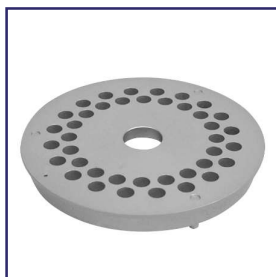
Attachment for up to 40 reagent vials, such as vials or wetted glasses with snap-on lid, with a diameter of 15 mm.

The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

<u>CODE</u>	<u>Price</u>
HEI-015890140	419.65



Attachment for up to 40 test tubes with a diameter of 16 mm.

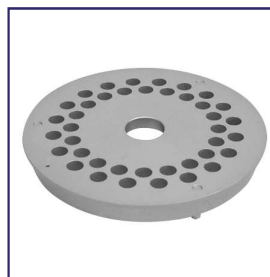
The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-MONOBLOCK-FOR-40X16-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 40 X 16 MM TEST TUBES

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation.

The MonoBlocks are attachments for several reaction vessels of the same size.

CODE	Price
HEI-015890100	419.65



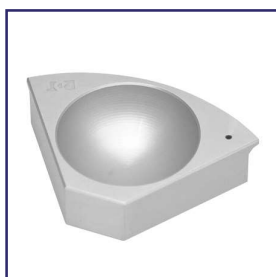
Attachment for up to 40 reagent vials, such as vials or wetted glasses with snap-on lid, with a diameter of 17 mm.

The attachment is chemical-resistant. It is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-MONOBLOCK-FOR-40X17-MM-REAGENT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
MONOBLOCK FOR 40 X 17 MM REAGENT VIALS

With the StarFish base plate, the MonoBlocks are one of the basic elements of the entire StarFish Workstation. The MonoBlocks are attachments for several reaction vessels of the same size.

CODE	Price
HEI-015890140	419.65



Chemical-resistant attachment segment for a 250 ml round flask.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-1X250-ML-FLASK
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 1 X 250 ML FLASKS

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

CODE	Price
HEI-015890160	223.95



Chemical-resistant attachment segment for up to 3 reagent vessels (vials) with a diameter of 21 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-3X21-MM-REAGENT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 3 X 21 MM REAGENT VIALS

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

CODE	Price
HEI-015890210	195.71



Chemical-resistant attachment segment for up to 3 test tubes with a diameter of 24 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-3X24-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 3 X 24 MM TEST TUBES

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

CODE	Price
HEI-015890180	195.71



Chemical-resistant attachment segment for up to 3 test tubes with a diameter of 25 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-3X25-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 3 X 25 MM TEST TUBES

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

CODE	Price
HEI-015890170	195.71



Chemical-resistant attachment segment for up to 3 reagent vessels (vials) with a diameter of 28 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-3X28-MM-REAGENT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 3 X 28 MM REAGENT VIALS

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

CODE	Price
HEI-015892050	222.70



Chemical-resistant attachment segment for up to 7 reagent vessels (vials) with a diameter of 17 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-7X17-MM-REAGENT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 7 X 17 MM REAGENT VIALS

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

CODE	Price
HEI-015890220	197.73



Chemical-resistant attachment segment for up to 9 reagent vessels (vials) with a diameter of 12 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-9X12-MM-REAGENT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 9 X 12 MM REAGENT VIALS

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

<u>CODE</u>	<u>Price</u>
HEI-015890240	203.77



Chemical-resistant attachment segment for up to 9 test tubes with a diameter of 12 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-9X12-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 9 X 12 MM TEST TUBES

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

<u>CODE</u>	<u>Price</u>
HEI-015890200	195.71



Chemical-resistant attachment segment for up to 9 reagent vessels (vials) with a diameter of 15 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-9X15-MM-REAGENT-VIALS
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 9 X 15 MM REAGENT VIALS

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

<u>CODE</u>	<u>Price</u>
HEI-015890230	195.71



Chemical-resistant attachment segment for up to 9 test tubes with a diameter of 16 mm.

The segment is made of aluminum and is suitable for heating temperatures up to 260 °C.

HEI-POLYBLOCK-FOR-9X16-MM-TEST-TUBES
HEIDOLPH, STARFISH WORKSTATION,
POLYBLOCK FOR 9 X 16 MM TEST TUBES

With the Starfish base plate, the PolyBlocks are among the basic elements of the entire StarFish Workstation. The PolyBlocks are attachment segments that can be combined for reaction vessels of different sizes (up to 5 different inserts per Starfish system).

<u>CODE</u>	<u>Price</u>
HEI-015890190	195.71



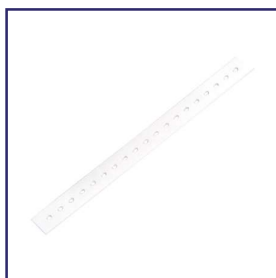
**HEI-REPLACE-
MENT-ADHESIVE-
PADS-FOR-TELES
COPIC-ARMS**
HEIDOLPH, STARFISH
WORKSTATION, RE-
PLACEMENT ADHE-
SIVE PADS FOR
TELESCOPIC ARMS

For reactions that require a larger construction such as soxhlet apparatus, reflux reactors etc., this 5-way clamp can be installed around the StarFish support rod. The terminal consists of five telescopic arms, which can be individually expanded.

They are equipped with velcro straps. These secure the structure and at the same time allow unrestricted adjustment up or down.

The adhesive pads must be attached to both sides of each telescope arm. 10 pieces included.

<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
10	HEI-015890320	24.21



**HEI-SPARE-SIL-
ICONE-STRAPS**
HEIDOLPH, STARFISH
WORKSTATION,
SPARE SILICONE
STRAPS

This 5-way clamp can be fitted around the StarFish support rod for fixing round bottom flasks. The terminal consists of five telescopic arms, which can be individually expanded.

They are equipped with heat-resistant silicone straps. Due to their elasticity, they are suitable for securing round bottom flasks from 15 to 70 mm diameter to the structure.

5 pieces included.

<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
5	HEI-015892170	36.32



**HEI-SPARE-VEL-
CRO-STRAPS**
HEIDOLPH, STARFISH
WORKSTATION,
SPARE VELCRO
STRAPS

For reactions that require a larger construction such as soxhlet apparatus, reflux reactors etc., this 5-way clamp can be installed around the StarFish support rod. The clamp consists of five telescopic arms, which are equipped with velcro straps.

The velcro straps fasten the structure, e.g. reflux condensers, and at the same time allow unrestricted adjustment up or down.

5 pieces included

<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
5	HEI-015890330	24.21



**HEI-STARFISH-
BASE-PLATE**
HEIDOLPH, STARFISH
WORKSTATION, BASE
PLATE

For all reactions that are to be carried out in parallel, you need the StarFish base plate, which stands securely on the 145 mm surface of the magnetic stirrer.

Particularly relevant for chemical reactions: The base plate is made of aluminum and enables the fastest heat transfer. With the help of two safety lifting handles (optionally available), you can lift and transport the entire reaction structure easily and safely with the base plate.

<u>CODE</u>	<u>Price</u>
HEI-015890020	466.06



**HEI-STARFISH-
SUPPORT-ROD**
HEIDOLPH, STARFISH
WORKSTATION, SUP-
PORT ROD

Support rod to screw into the StarFish base plate and provide a support for water and gas/vacuum manifolds and clamps for condensers and flasks.

For reactions that require a larger setup, such as Soxhlet apparatus, reflux reactors, etc., you need this support rod to screw into the StarFish base plate, which stands securely on the surface of the magnetic stirrer.

The support rod is made of stainless steel and has a maximum length of 650 mm with a diameter of 12 mm.

<u>CODE</u>	<u>Price</u>
HEI-015890410	82.72



**HEI-STARFISH-DI-
VISIBLE-SUP-
PORT-ROD**
HEIDOLPH, STARFISH
WORKSTATION, DI-
VISIBLE SUPPORT
ROD

For secure fixation of round bottom flask and for reactions that require a larger setup, such as Soxhlet apparatus, reflux reactors, etc., you need this support rod to screw into the StarFish base plate, which stands securely on the surface of the magnetic stirrer.

Depending on the requirements, only half of the stainless steel support rod can be assembled. Its maximum length is 650 mm with 12 mm diameter.

<u>CODE</u>	<u>Price</u>
HEI-015890420	159.39





Particularly relevant for chemical reactions that require heat supply: The insulated safety lifting handles can be screwed firmly to the base plate for safe removal of the system from the hot magnetic stirrer plate.

The safety lifting handles are available as a pair.

<u>CODE</u>	<u>Price</u>
HEI-015890060	466.06

**HEI-STARFISH-
SAFETY-HAN-
DLES**
HEIDOLPH, STARFISH
WORKSTATION,
SAFETY HANDLES



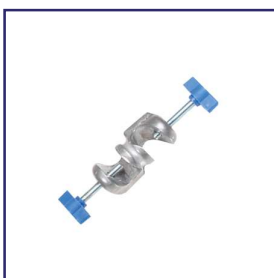
Distributes water evenly from any output source to up to five reflux condensers.

Two water-distribution manifolds are always used in the set-up. One is for distributing the water and a second one for collecting the water again

All connectors have a leak-free coupling that closes automatically when it is disconnected. This makes it possible to use the distributor with any number of reflux condensers (max. 5).

<u>CODE</u>	<u>Price</u>
HEI-015890340	595.18

**HEI-WATER-DIS-
TRIBUTION-MANI-
FOLD**
HEIDOLPH, STARFISH
WORKSTATION,
WATER DISTRIBU-
TION MANIFOLD



Boss head made of anodized aluminum, used to fix retort clamps to stand rods for perfect vertical alignment.

Suitable for stand rods with up to 13.1 mm maximum diameter.

<u>CODE</u>	<u>Price</u>
HEI-015882550	34.30

HEI-BOSS-HEAD
HEIDOLPH, HEAT-ON,
BOSS HEAD



All in one package for maximum safety, stability and perfect vertical alignment.

This package includes a 500 mm stainless steel stand rod compatible with the magnetic stirrer with thread for blocks up to 5 liter + 1x boss head and 1x retort clamp.

<u>CODE</u>	<u>Price</u>
HEI-015882550	34.30

**HEI-FLASK-
STAND-&-CLAMP-
KIT**
HEIDOLPH, HEAT-ON,
FLASK STAND &
CLAMP KIT



HEI-HEAT-ON-100-ML-BLOCK
HEIDOLPH, HEAT-ON,
100 ML BLOCK WITH
FLASK SIDEARM
CUTOUTS

This Heat-On Block is suitable for 100 ml multineck flasks, as the lateral recesses were designed for this purpose.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 50 ml.

<u>CODE</u>	<u>Price</u>
HEI-015882055	409.56



HEI-HEAT-ON-250-ML-BLOCK
HEIDOLPH, HEAT-ON,
250 ML BLOCK

This Heat-On Block is suitable for all applications in which a 250 ml round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 125 ml.

<u>CODE</u>	<u>Price</u>
HEI-015882060	435.79



HEI-HEAT-ON-250-ML-BLOCK-WITH-CUTOFFS
HEIDOLPH, HEAT-ON,
250 ML BLOCK WITH
LATERAL FLASK CUT-
OUTS

This Heat-On Block is suitable for 250 ml multineck flasks, as the lateral recesses were designed for this purpose.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 125 ml.

<u>CODE</u>	<u>Price</u>
HEI-015882060	488.25



HEI-HEAT-ON-500-ML-BLOCK
HEIDOLPH, HEAT-ON,
500 ML BLOCK

This Heat-On Block is suitable for all applications in which a 500 ml round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 250 ml.

<u>CODE</u>	<u>Price</u>
HEI-015882070	457.99





HEI-HEAT-ON-1-L-BLOCK
HEIDOLPH, HEAT-ON,
1 L BLOCK

This Heat-On Block is suitable for all applications in which a 1 liter round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 500 ml.

CODE	Price
HEI-015882080	488.25



HEI-HEAT-ON-2-L-BLOCK
HEIDOLPH, HEAT-ON,
2 L BLOCK

This Heat-On Block is suitable for all applications in which a 2 liter round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 1 liter.

CODE	Price
HEI-015882090	673.87



HEI-HEAT-ON-3-L-BLOCK
HEIDOLPH, HEAT-ON,
3 L BLOCK

This Heat-On Block is suitable for all applications in which a 3 liter round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 1.5 liter.

CODE	Price
HEI-015882100	726.33



HEI-HEAT-ON-4-L-BLOCK
HEIDOLPH, HEAT-ON,
4 L BLOCK

This Heat-On Block is suitable for all applications in which a 4 liter round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 2 liter.

CODE	Price
HEI-015882105	1,033.00





HEI-HEAT-ON-5-L-BLOCK
HEIDOLPH, HEAT-ON,
5 L BLOCK

This Heat-On Block is suitable for all applications in which a 5 liter round bottom flask is to be heated up.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

For comfortable and safe transport of the Heat-On Blocks – especially in hot condition – optional safety lifting handles are available separately.

For an efficient reaction with no loss of media, it is recommended to use solvent volumes of up to 2.5 liter.

<u>CODE</u>	<u>Price</u>
HEI-015882300	1,123.79



HEI-HEAT-ON-MULTI-WELL-10-ML-INSERT
HEIDOLPH, HEAT-ON,
MULTI-WELL 10 ML
INSERT

This Heat-On insert is suitable for heating 10 ml round bottom flasks.

For optimal use it is recommended that you buy the Multi-Well holder together with safety lifting handles.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

<u>CODE</u>	<u>Price</u>
HEI-015882010	112.98



HEI-HEAT-ON-MULTI-WELL-25-ML-INSERT
HEIDOLPH, HEAT-ON,
MULTI-WELL 25 ML
INSERT

This Heat-On insert is suitable for heating 25 ml round bottom flasks.

For optimal use it is recommended that you buy the Multi-Well holder together with safety lifting handles.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

<u>CODE</u>	<u>Price</u>
HEI-015882020	112.98



HEI-HEAT-ON-MULTI-WELL-50-ML-INSERT
HEIDOLPH, HEAT-ON,
MULTI-WELL 50 ML
INSERT

This Heat-On insert is suitable for heating 50 ml round bottom flasks.

For optimal use it is recommended that you buy the Multi-Well holder together with safety lifting handles.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

<u>CODE</u>	<u>Price</u>
HEI-015882030	112.98



HEI-HEAT-ON-MULTI-WELL-100-ML-INSERT
HEIDOLPH, HEAT-ON, MULTI-WELL 100 ML INSERT

This Heat-On insert is suitable for heating 100 ml round bottom flasks.

For optimal use it is recommended that you buy the Multi-Well holder together with safety lifting handles.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

<u>CODE</u>	<u>Price</u>
HEI-015882040	139.19



HEI-HEAT-ON-MULTI-WELL-150-ML-INSERT
HEIDOLPH, HEAT-ON, MULTI-WELL 150 ML INSERT

This Heat-On insert is suitable for heating 150 ml round bottom flasks.

For optimal use it is recommended that you buy the Multi-Well holder together with safety lifting handles.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

<u>CODE</u>	<u>Price</u>
HEI-015882050	195.71



HEI-HEAT-ON-MULTI-WELL-HOLDER
HEIDOLPH, HEAT-ON, MULTI-WELL HOLDER

The Multi-Well holder is recommended for optimal use of the Heat-On inserts. Like all Heat-On inserts and blocks, the Multi-Well holder is made of PTFE coated aluminum. This guarantees not only the fastest heat transfer and easy cleaning but also scratch and chemical resistance.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

The Multi-Well holder can enclose up to two Heat-On inserts at a time, which allows multiple combinations to be created. Our Multi-Well packages are available for you.

The Heat-On Multi-Well holder is supplied without safety lifting handles. These are available separately.

<u>CODE</u>	<u>Price</u>
HEI-015882000	355.09



HEI-PACKAGE-HEAT-ON-MULTI-WELL-BASIC
HEIDOLPH, HEAT-ON, MULTI-WELL BASIC PACKAGE

This package includes the Multi-Well holder and 3 inserts for small round bottom flasks. The Heat-On inserts are suitable for 25-ml, 50-ml and 100-ml round bottom flasks respectively; a maximum of two flasks at a time can be received by the Multi-Well holder.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

The safety lifting handles are optional and so they are available separately.

<u>CODE</u>	<u>Price</u>
HEI-015852010	778.79



**HEI-PACKAGE-
HEAT-ON-MULTI-
WELL**
HEIDOLPH, HEAT-ON,
MULTI-WELL PACK-
AGE

This package includes the Multi-Well holder and 6 inserts for small round bottom flasks.

The Heat-On inserts are suitable for two 25 ml, 50 ml and 100 ml round bottom flasks respectively; a maximum of two flasks at a time can be received by the Multi-Well holder.

The maximum temperature for continuous use is 260 °C. In order to measure this precisely with a temperature sensor, a small hole is provided on one side of the Heat-On Block.

The safety lifting handles are optional and so they are available separately.

CODE	Price
HEI-015852000	1,141.95



**HEI-HEAT-ON-
SAFETY-LIFTING-
HANDLES**
HEIDOLPH, HEAT-ON,
SAFETY LIFTING
HANDLES

The Heat-On safety lifting handles are like the handles on a hot pan: essential for your safety.

Available as a pair, the safety lifting handles are easy to operate. Simply press the blue button to insert and remove the handles.

The bottom element, which is placed in the Heat-On Block or the Multi-Well holder, is made of stainless steel.

CODE	Price
HEI-015882140	149.94



**HEI-HOLDER-FOR-
TEMPERATURE-
SENSOR-FOR-LA
RGE-BLOCKS**
HEIDOLPH, HEAT-ON,
HOLDER FOR TEM-
PERATURE SENSOR,
FOR LARGE BLOCKS

This holder is provided to secure the temperature sensor in position. It consists of:

- a 500 mm long stainless steel stand rod for large blocks up to 5 liter
- and a polyamide holder with cable conduit, which prevents the cable from touching the hotplate or block.

Includes support rod and attachment with cable inlet.

CODE	Price
HEI-036300884	236.27



**HEI-RETORT-
CLAMP**
HEIDOLPH, HEAT-ON,
RETORT CLAMP

Standard laboratory clamp to hold glass devices on ground glass cone / socket for perfect vertical alignment.

The four prongs – cork-lined on the inside and aluminum on the outside – can securely hold glass devices with a diameter from 2 to 85 mm firmly in place.

CODE	Price
HEI-036300884	236.27



- Stand tube Ø: 25 mm
- Length: 1,000 mm
- Leg distance: 370 mm
- Weight: 6.0 kg

<u>CODE</u>	<u>Price</u>
HEI-036300530	534.22

HEI-STAND-S2-XXL
HEIDOLPH, ACCESSORIES, STAND, S2, XXL



- Stand tube Ø: 32 mm
- Length: 725 – 1,025 mm
- Leg distance: 370 mm
- Weight: 7.7 kg

<u>CODE</u>	<u>Price</u>
HEI-036300540	1,068.45

HEI-TELESCOPIC-STAND
HEIDOLPH, ACCESSORIES, TELESCOPIC STAND



- For stand S2, S2 XXL and telescope stand
- Ø 13-32 mm

<u>CODE</u>	<u>Price</u>
HEI-036300550	167.27

HEI-CLAMP
HEIDOLPH, ACCESSORIES, CLAMP



For 1 liter round bottom flasks.

<u>CODE</u>	<u>Price</u>
HEI-036110450	164.39

HEI-CONCAVE-BLOCK-ADAPTER
HEIDOLPH, ACCESSORIES, CONCAVE BLOCK ADAPTER



Supplied with chuck.

<u>CODE</u>	<u>Price</u>
HEI-036300600	1,027.68

HEI-FLEXIBLE-SHAFT
HEIDOLPH, ACCESSORIES, FLEXIBLE SHAFT



For safe fixation on lab frames to gain extra lab space.

Comes with clamp as standard.

<u>CODE</u>	<u>Price</u>
HEI-036306060	338.51

HEI-HOLDING-DEVICE
HEIDOLPH, ACCESSORIES, HOLDING DEVICE





PTFE-coated

CODE
HEI-036110440 Price
235.77

**HEI-HEATING-
BATH-1-L**
HEIDOLPH, ACCES-
SORIES, HEATING
BATH, 1 LITER



Max. temperature 250 °C.

CODE
HEI-036110430 Price
190.27

**HEI-HEATING-
BATH-1-L-FOR-OIL**
HEIDOLPH, ACCES-
SORIES, HEATING
BATH, 1 LITER, FOR
OIL



PTFE-coated

CODE
HEI-036110420 Price
268.21

**HEI-HEATING-
BATH-2-L**
HEIDOLPH, ACCES-
SORIES, HEATING
BATH, 2 LITER



Max. temperature 250 °C.

CODE
HEI-036110410 Price
244.64

**HEI-HEATING-
BATH-2-L-FOR-OIL**
HEIDOLPH, ACCES-
SORIES, HEATING
BATH, 2 LITER, FOR
OIL



PTFE-coated

CODE
HEI-036110400 Price
289.59

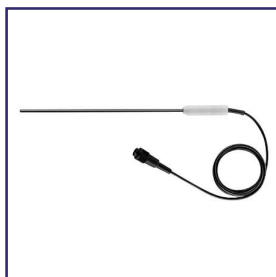
**HEI-HEATING-
BATH-4-L**
HEIDOLPH, ACCES-
SORIES, HEATING
BATH, 4 LITER



Max. temperature 250 °C.

CODE
HEI-036110390 Price
268.21

**HEI-HEATING-
BATH-4-L-FOR-OIL**
HEIDOLPH, ACCES-
SORIES, HEATING
BATH, 4 LITER, FOR
OIL



For:

- Hei-Tec
- Hei-Connect
- Hei-End

Material	CODE	Price
Stainless Steel	HEI-036110350	212.23
Glass Coated	HEI-036110360	281.19

HEI-Pt1000-TEMPERATURE-SENSOR
HEIDOLPH, ACCESSORIES, PT1000 TEMPERATURE SENSOR



Includes support rod and attachment with cable inlet.

CODE	Price
HEI-036300883	200.73

HEI-Pt1000-CLAMPING-SYSTEM
HEIDOLPH, ACCESSORIES, PT1000 CLAMPING SYSTEM



For Hei-Connect and Hei-TORQUE Precision models.

CODE	Price
HEI-036306014	41.82

HEI-RS-232-CABLE
HEIDOLPH, ACCESSORIES, RS 232 (9-POLE)



- Material: PMMA
- Incl. adapter set
- Adjusts between 187 mm and 312 mm

CODE	Price
HEI-036300610	150.54

HEI-SHAFT-GUARD
HEIDOLPH, ACCESSORIES, SHAFT GUARD



For attaching an existing shaft guard to a Hei-TORQUE stirrer.

CODE	Price
HEI-036300612	155.74

HEI-SHAFT-GUARD-ADAPTER-SET
HEIDOLPH, ACCESSORIES, SHAFT GUARD ADAPTER SET



Ground joint cone made of PTFE with sealing rings on the outside to prevent sticking of the connection and to reduce danger of breaking glass. A special gasket made of PTFE and an FPM o-ring which is compressed by a GL screw cap provide a good sealing of the stirrer shaft. This gasket can be exchanged after wearing. Suitable for vacuum, perfect bearing for stainless steel and glass stirrer shafts.

Accepts Ø 8 mm shafts

CODE	Price
HEI-036300590	149.50

HEI-STIRRER-GUIDE
HEIDOLPH, ACCESSORIES, STIRRER GUIDE (NS 29/32 PTFE)



Replaceable cover against splashes and dripping water for:

- Hei-Tec
- Hei-Connect
- Hei-End
- Hei-Mix L

<u>CODE</u>	<u>Price</u>
HEI-036306040	24.05

**HEI-SILICONE-
PROTECTIVE-
COVER-1**
HEIDOLPH, ACCES-
SORIES, SILICONE
PROTECTIVE COVER
1



Replaceable cover against splashes and dripping water for:

- Hei-Standard

<u>CODE</u>	<u>Price</u>
HEI-036306050	24.87

**HEI-SILICONE-
PROTECTIVE-
COVER-2**
HEIDOLPH, ACCES-
SORIES, SILICONE
PROTECTIVE COVER
2



- Pack of 20 pcs.
- Higher turbulence and shearing force than cylindrical bars
- Ideal for quickest possible mixing (e.g. for liquid transfer, titration)

For applications in:

- Beaker
- Flat bottom vessels

Max. stirring capacity (H₂O):

- 25 – 50 ml

<u>CODE</u>	<u>Price</u>
HEI-015880270	225.97

**HEI-STIRRING-
BARS-CROSS-
SHAPE**
HEIDOLPH, ACCES-
SORIES, STIRRING
BARS, CROSS SHAPE
(16.5 mm)



- 25, 40, 50 mm each
- Smooth operating conditions at optimum contact area
- Long lifetime

For applications in:

- Beakers
- Crystallizing dishes
- Heating bathes
- Other flat bottom vessels

Max. stirring capacity (H₂O):

- 25 mm Stirring bar: -500 ml
- 40 mm Stirring bar: 500 – 2,000 ml
- 50 mm Stirring bar: 2,000 – 5,000 ml

<u>CODE</u>	<u>Price</u>
HEI-036300930	33.45

**HEI-STIRRING-
BARS-CYLINDRI-
CAL-SHAPE**
HEIDOLPH, ACCES-
SORIES, STIRRING
BARS, CYLINDRICAL
SHAPE





- Pack of 3 pcs.
- The shape is similar to that of the flask and ensures complete mixing
- Equipped with an oval magnetic core, more force is available than with a cylindrical magnetic core

For applications in:

- Round bottom flasks e.g. for reaction mixtures

<u>CODE</u>	<u>Price</u>
HEI-036111260	20.55

**HEI-STIRRING-
BARS-OVAL-
SHAPE**
HEIDOLPH, ACCES-
SORIES, STIRRING
BARS, OVAL SHAPE



Pack of 10 pcs.

<u>CODE</u>	<u>Price</u>
HEI-015882570	74.66

**HEI-STIRRING-
BARS-EVAL-
UATION-KIT**
HEIDOLPH, ACCES-
SORIES, STIRRING
BARS, EVALUATION
KIT



JK-210

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE**

The Model 210 has 1200 Watts of power which is sufficient for heating mantles up to 5L in size along with most laboratory ovens and hot plates. Controller has the ability to display temperature without heating. The Model 210 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 5L.

Specifications

Dimensions 3.25" H x 5.25" W x 7.25" D
Power 10 Amps @ 120VAC, 1200 Watts

Description	Controller Type	CODE	Price
Controller Only	Type J	JK-210-J	860.00
Complete	Type J	JK-210-J-S	955.00
Controller Only	Type K	JK-210-K	860.00
Complete	Type K	JK-210-K-S	955.00
Controller Only	Type RTD	JK-210-PT	870.00
Complete	Type RTD	JK-210-PT-S	1,025.00
Controller Only	Type T	JK-210-T	860.00
Complete	Type T	JK-210-T-S	955.00



JK-210-TIMER

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE,
WITH 100 HOUR DIGI-
TAL TIMER**

The Model 210 has 1200 Watts of power which is sufficient for heating mantles up to 5L in size along with most laboratory ovens and hot plates. Controller has the ability to display temperature without heating. The Model 210 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 5L. With the addition of a 100 hour digital timer to turn heating ON or OFF when time has expired.

Specifications

Dimensions 3.4" H x 6.75" W x 6" D
Power 10 Amps @ 120VAC, 840 Watts

Description	Controller Type	CODE	Price
Controller Only	Type J	JK-210-TIMER-J	955.00
Complete	Type J	JK-210-TIMER-J-S	1,050.00
Controller Only	Type K	JK-210-TIMER-K	955.00
Complete	Type K	JK-210-TIMER-K-S	1,050.00
Controller Only	Type RTD	JK-210-TIMER-PT	965.00
Complete	Type RTD	JK-210-TIMER-PT-S	1,120.00
Controller Only	Type T	JK-210-TIMER-T	955.00
Complete	Type T	JK-210-TIMER-T-S	1,050.00



JK-250

**J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, WITH
BOTH HEATING AND
COOLING OUTLETS**

The Model 250 has 3 power outlets for maximum versatility in research. Two of the outlets are used for heating up to 1800 watts (mantles up to 22L).

The third outlet (360 watts), used normally for cooling, is programmable to provide power below, above, or at the entered temperature. This third outlet can also be used to turn on an alarm for an over or under temperature condition. Controller has the ability to display temperature without heating. The Model 250 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquids from 1ul to 22L. Available with a choice of Type "T", "J" or "K" thermocouple.

Specifications

Dimensions 3.25" H x 7.5" W x 9" D
Power Heating Outlets #1 & #2: 15
Amps @ 120VAC, 1800 Watts
Cooling/Alarm Outlet #3: 3 Amps
@ 12VAC, 360 Watts

Description	Controller Type	CODE	Price
Controller Only	Type J	JK-250-J	985.00
Complete	Type J	JK-250-J-S	1,080.00
Controller Only	Type K	JK-250-K	985.00
Complete	Type K	JK-250-S	1,080.00
Controller Only	Type RTD	JK-250-PT	985.00
Complete	Type RTD	JK-250-S	1,140.00
Controller Only	Type T	JK-250-T	985.00
Complete	Type T	JK-250-T-S	1,080.00



JK-260-TIMER
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, COMPACT,
RESEARCH GRADE,
WITH BOTH HEATING
AND COOLING OUT-
LETS, WITH 100
HOUR DIGITAL TIMER

The J-Kem® Scientific microprocessor based temperature controller is for use with pilot plant reactors. The Model 260 disconnects all output power if the process temperature exceeds the entered temperature by a user-specified amount, or following recovery from a power failure. The outputs remain disconnected until manually reset. Over temperature condition is signaled by an indicator lamp and audible alarm. Controller has two outlets on the front for connection to heaters. The Model 260 controls temperature to within $\pm 0.1^{\circ}\text{C}$ of liquid.

Specifications

Dimensions 3.25" H x 7.5" W x 9" D
 Power 15 amps @ 120 VAC, 1800 Watts

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type RTD
 Type RTD
 Type T
 Type T

CODE

JK-260-TIMER-J
 JK-260-TIMER-J-S
 JK-260-TIMER-K
 JK-260-TIMER-K-S
 JK-260-TIMER-PT
 JK-260-TIMER-PT-S
 JK-260-TIMER-T
 JK-260-TIMER-T-S

Price

1,175.00
 1,270.00
 1,175.00
 1,270.00
 1,175.00
 1,330.00
 1,175.00
 1,270.00



JK-270
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, SINGLE
CHANNEL, HIGH
SAFETY, BUILT IN
BACK UP CON-
TROLLER

J-Kem® Scientific micoprocessor temperature controller. The only temperature controller available with a completely INDEPENDENT BACK UP controller to guard against accidents from equipment failure.

The desired temperature is entered into the digital display of the setpoint controller which regulates heating. A high temperature limit is then entered into the second digital back-up. If the reaction reaches the setpoint of the second controller, power is shut off from the output circuit until the unit is manually reset. Both controllers independently monitor the reaction temperature and in the event that one controller fails, the other takes over to prevent an accident. Available with a choice of Type "T", "J", or "K" thermocouple.

Specifications

Dimensions 3.25" H x 7.55" W x 9" D
 Power 15 amps @ 120 VAC, 1800 Watts

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type T
 Type T

CODE

JK-270-J
 JK-270-J-S
 JK-270-K
 JK-270-K-S
 JK-270-T
 JK-270-T-S

Price

1,570.00
 1,720.00
 1,570.00
 1,720.00
 1,570.00
 1,720.00



JK-APOLLO
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, MULTI
CHANNEL, DUAL
TIMER

Apollo controls TWO independent reactions.

Features two independent temperature controllers in a single cabinet to regulate two independent reactions at the same time. Each temperature controller channel has a high power outlet and a 100 hour digital timer to turn heating OFF (or ON) at a user entered time. Features include: over-temperature protection circuits, dual temperature displays, selectable operating modes, double fused, and 100% solid state design. Contains J-KEM's patented power control computer which provides 0.1o C regulation of anything.

Specifications

Dimensions 4" H x 8.2" W x 9" D
 Power 15 Amps @ 120VAC, 1800 Watts, 1500 Watts per Channel

Description

Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type K
 Type K
 Type RTD
 Type RTD
 Type T
 Type T

CODE

JK-APOLLO-J
 JK-APOLLO-J-S
 JK-APOLLO-K
 JK-APOLLO-K-S
 JK-APOLLO-PT
 JK-APOLLO-PT-S
 JK-APOLLO-T
 JK-APOLLO-T-S

Price

1,595.00
 1,795.00
 1,595.00
 1,795.00
 1,595.00
 1,920.00
 1,595.00
 1,795.00



JK-GEMINI
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, MULTI
CHANNEL, DUAL
TIMER, WITH DIGITAL
TIMER ON ONE
CHANNEL

J-Kem® Scientific Gemini-2 dual temperature controller permits control of two independent reactions with digital displays for both channels. Each channel is 1200 Watts MAX (1800 Watts total), 15 Amps @ 120VAC, and features advanced microprocessor PID control algorithm. Channel one also has a 100 hour digital timer. Safety features include 100% solid state, double fused, audible error alarm, and over temperature circuitry that disconnects power if an over temperature condition occurs.

Specifications

Dimensions 3.5" H x 7.75" W x 8.75" D
 Power 15 Amps @ 120VAC, 1200 Watts MAX/Channel, 1800 Watts (Total)

Description

Controller Only
 Complete
 Controller Only, CE Approved
 Complete, CE Approved
 Controller Only
 Complete
 Controller Only, CE Approved
 Complete, CE Approved
 Controller Only
 Complete
 Controller Only, CE Approved
 Complete, CE Approved
 Controller Only
 Complete

Controller Type

Type J
 Type J
 Type J
 Type J
 Type K
 Type K
 Type K
 Type K
 Type K
 Type K
 Type T
 Type T
 Type T
 Type T
 Type T
 Type RTD
 Type RTD

CODE

JK-GEMINI-J
 JK-GEMINI-J-S
 JK-GEMINI-CE-J
 JK-GEMINI-CE-J-S
 JK-GEMINI-K
 JK-GEMINI-K-S
 JK-GEMINI-CE-K
 JK-GEMINI-CE-K-S
 JK-GEMINI-T
 JK-GEMINI-T-S
 JK-GEMINI-CE-T
 JK-GEMINI-CE-T-S
 JK-GEMINI-PT
 JK-GEMINI-PT-S

Price

1,425.00
 1,625.00
 1,495.00
 1,685.00
 1,425.00
 1,625.00
 1,495.00
 1,685.00
 1,425.00
 1,625.00
 1,495.00
 1,685.00
 1,425.00
 1,745.00



JK-HCC
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, HIGH CUR-
RRENT, CONTROLLER
ONLY

The J-KEM® Scientific HCC controller is designed to power large scale equipment such as 50L to 100L heating mantles. Designed with the same safety features as the Model 270, the HCC incorporates a 100 hour digital timer to turn heating on or off.

Specifications

Dimensions 5.5" H x 12" W x 12" D
 Power 120VAC, 3600 Watts, 30 Amps

Description	Controller Type	CODE	Price
VAC: 130, AMP: 30, WATTS: 3600	Type J	JK-HCC-130-J	1,915.00
VAC: 130, AMP: 30, WATTS: 3600	Type K	JK-HCC-130-K	1,915.00
VAC: 130, AMP: 30, WATTS: 3600	Type T	JK-HCC-130-T	1,915.00
VAC: 240, AMP: 15, WATTS: 3600	Type J	JK-HCC-130-J	1,940.00
VAC: 240, AMP: 15, WATTS: 3600	Type K	JK-HCC-130-K	1,940.00
VAC: 240, AMP: 15, WATTS: 3600	Type T	JK-HCC-130-T	1,940.00
VAC: 240, AMP: 15, WATTS: 7200	Type J	JK-HCC-130-J	2,045.00
VAC: 240, AMP: 15, WATTS: 7200	Type K	JK-HCC-130-K	2,045.00
VAC: 240, AMP: 15, WATTS: 7200	Type T	JK-HCC-130-T	2,045.00



JK-LS-120
J-KEM® SCIENTIFIC,
TEMPERATURE CON-
TROLLER, LAB
SAFETY

Combines the features of J-KEM's temperature monitor with our Water Flow Monitor and adds a temperature limit controller creating a single versatile instrument. Plug any piece of equipment into the monitor and if the water flow rate falls below the user set level, or the reaction temperature goes above or below the set limits, outlet power is turned off until the controller is manually reset. Also disconnects power following recovery from a power failure. USB communications and free KEM-Net software provide GLP/GMP data and alarm logging.

Input type K: -50 to 1200° C

Requires selection of a flow sensor

Specifications

Dimensions 3.5" H x 5.25" W x 7.25" D
 Power 120VAC, 1800 Watts

Controller Type	CODE	Price
Type J	JK-LS-120-J	840.00
Type K	JK-LS-120-K	840.00
Type T	JK-LS-120-T	840.00



JK-WATER
FLOW
MONITOR
J-KEM® SCIENTIFIC,
WATER FLOW
MONITOR

Precisely monitors the flow rate of water through a condenser, water bath, or other piece of equipment. If the flow rate falls below the minimum rate set by the user (i.e. loss of pressure, broken hose), power is turned off to the monitor's output receptacle and any equipment plugged into it. Power remains off until being manually reset. Requires selection of a flow sensor. The optional water shut off valve stops water flow during an alarm condition preventing a flooded lab. Digital sensor measures actual coolant flow rate. Optional audible and digital alarms.

Description	CODE	Price
Water Shut Off Valve	JK-250WV	182.50
120V, 1800W	JK-WFM-120	385.00
230V, 2300W	JK-WFM-230	385.00
0.1 to 2.5 L/minute	JK-WFM-01	240.00
1 to 10 L/minute	JK-WFM-02	240.00
2 to 30 L/minute	JK-WFM-03	240.00
Audible Alarm	JK-WFM-AA	65.00
Digital Alarm Outlet	JK-WFM-OC	35.00



JK-DVR
J-KEM® SCIENTIFIC,
DIGITAL VACUUM
REGULATOR

An ideal instrument for laboratory vacuum regulation. Connect the regulator to any vacuum pump or vacuum source and then to any piece of equipment to regulate pressure in most cases to ± 1 torr. A pressure ramp feature evacuates equipment at a user defined rate to eliminate bumping due to solvent degassing or over-evacuation. The vacuum regulator is ideally suited for large volume distillations, rotary evaporators and vacuum chambers. Recover > 99% of solvent from rotary evaporators.

- NO Mercury
- 100% digital pressure entry and control
- Wetted parts are 100% stainless steel and Teflon
- Vacuum ramping feature eliminates bumping
- USB port and free software for PC control
- Resists: All organic solvents Acids Bases Water

Not recommended for small volume distillations or applications which involve a continuous purge with gas, these applications are better performed by J-KEM's Precision Vacuum Regulator, Model DVR-1000.

Two Styles of Regulators to Choose From

Model DVR-200

Designed for continuous vacuum sources, such as oil-filled vacuum pumps, aspirators, or systems that are "always on", like in-house vacuum systems. The DVR-200 regulates pressure by opening and closing a valve that separates the vacuum source from the system being evacuated. In most cases, the DVR-200 is the best choice.

Model DVR-280

Designed for use with diaphragm vacuum pumps that regulate pressure by turning the pump On and Off. The DVR-280 doubles the life of diaphragm pumps by starting the pump at atmospheric pressure before connecting it to the vacuum system.

Specifications: 120 & 230 Vac @ 100 watts. Vacuum fittings: 1/8" NPTM. Dimensions: 3.4" x 5.4" x 7.4" (H x W x D) □ Warranty: Electronics: 2 yr; transducer and vacuum valve: 6 mo., but void if damaged by chemical buildup. Recover > 99% of solvent from rotary evaporators Solvent DVR Pressure (mm Hg) Solvent Volume Time to Dryness Percent Recovery Ether 475 torr 340 mL 14.6 min 99.6% CH₂Cl₂ 300 torr 360 mL 21.9 min 99.8% CH₂Cl₂ 100 torr 255 mL 5.9 min 99.5% EtOAc 90 torr 316 mL 17.0 min 99.9% Toluene 50 torr 273 mL 15.7 min 99.4%

<u>CODE</u>	<u>Price</u>
JK-DVR-200	1,365.00
JK-DVR-280	1,435.00





JK-THERMOCOUPLE-PROBES
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES

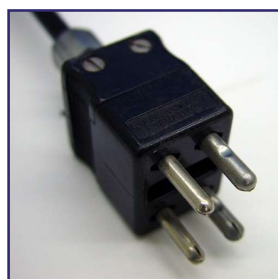
All sensors are housed in 304 stainless steel sheaths.

Teflon overcoating is PFA coating over stainless steel probe.

Note: To read temperatures accurately, the type of the thermocouple must match the controller's type. On a new controller, the type is the letter immediately following the model number: 210-K-S.

Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Controller	Coated	Length	1/16"		1/8"		1/4"	
			CODE	Price	CODE	Price	CODE	Price
Type T	Teflon	2"	—	—	JK-T-1/8-T-2	64.00	—	—
Type T	Teflon	4"	—	—	JK-T-1/8-T-4	64.00	—	—
Type T	Teflon	6"	JK-T-1/16-T-6	69.97	JK-T-1/8-T-6	71.04	JK-T-1/4-T-6	75.35
Type T	Teflon	8"	JK-T-1/16-T-8	69.97	JK-T-1/8-T-8	71.04	JK-T-1/4-T-8	75.35
Type T	Teflon	10"	—	—	JK-T-1/8-T-10	71.04	JK-T-1/4-T-10	75.35
Type T	Teflon	12"	JK-T-1/16-T-12	69.97	JK-T-1/8-T-12	71.04	JK-T-1/4-T-12	75.35
Type T	Teflon	16"	—	—	JK-T-1/8-T-16	75.00	—	—
Type T	Teflon	18"	JK-T-1/16-T-18	83.96	JK-T-1/8-T-18	85.04	JK-T-1/4-T-18	93.65
Type T	Teflon	24"	JK-T-1/16-T-24	95.80	JK-T-1/8-T-24	96.08	JK-T-1/4-T-24	105.49
Type T	Teflon	26"	—	—	—	—	JK-T-1/4-T-26	96.00
Type T	Teflon	27"	—	—	—	—	JK-T-1/4-T-27	96.00
Type T	Teflon	31"	—	—	—	—	JK-T-1/4-T-31	96.00
Type T	Teflon	36"	JK-T-1/16-T-36	107.64	JK-T-1/8-T-36	108.72	JK-T-1/4-T-36	117.33
Type T	Teflon	45"	—	—	JK-T-1/8-T-45	104.00	JK-T-1/4-T-45	108.00
Type T	Teflon	48"	—	—	JK-T-1/8-T-48	104.00	JK-T-1/4-T-48	108.00
Type T	Uncoated	3"	—	—	JK-T-1/8-U-3	34.00	—	—
Type T	Uncoated	4"	—	—	JK-T-1/8-U-4	34.00	JK-T-1/4-U-4	38.00
Type T	Uncoated	6"	JK-T-1/16-U-6	37.67	JK-T-1/8-U-6	38.75	JK-T-1/4-U-6	43.06
Type T	Uncoated	8"	JK-T-1/16-U-8	37.67	JK-T-1/8-U-8	38.75	JK-T-1/4-U-8	43.06
Type T	Uncoated	10"	—	—	—	—	JK-T-1/4-U-10	43.06
Type T	Uncoated	12"	JK-T-1/16-U-12	37.67	JK-T-1/8-U-12	38.75	JK-T-1/4-U-12	43.06
Type T	Uncoated	18"	JK-T-1/16-U-18	51.67	JK-T-1/8-U-18	52.74	JK-T-1/4-U-18	61.35
Type T	Uncoated	20"	—	—	—	—	JK-T-1/4-U-20	49.00
Type T	Uncoated	24"	JK-T-1/16-U-24	63.51	JK-T-1/8-U-24	64.58	JK-T-1/4-U-24	73.20
Type T	Uncoated	36"	JK-T-1/16-U-36	77.64	JK-T-1/8-U-36	76.42	JK-T-1/4-U-36	85.04
Type K	Teflon	6"	JK-K-1/16-T-6	69.97	JK-K-1/8-T-6	71.04	JK-K-1/4-T-6	75.35
Type K	Teflon	8"	JK-K-1/16-T-8	69.97	JK-K-1/8-T-8	71.04	JK-K-1/4-T-8	75.35
Type K	Teflon	10"	JK-K-1/16-T-10	69.97	JK-K-1/8-T-10	71.04	JK-K-1/4-T-10	75.35
Type K	Teflon	12"	JK-K-1/16-T-12	69.97	JK-K-1/8-T-12	71.04	JK-K-1/4-T-12	75.35
Type K	Teflon	16"	—	—	JK-K-1/8-T-16	75.00	—	—
Type K	Teflon	18"	JK-K-1/16-T-18	83.96	JK-K-1/8-T-18	85.04	JK-K-1/4-T-18	93.65
Type K	Teflon	24"	JK-K-1/16-T-24	95.80	JK-K-1/8-T-24	96.88	JK-K-1/4-T-24	105.49
Type K	Teflon	36"	JK-K-1/16-T-36	107.64	JK-K-1/8-T-36	108.72	JK-K-1/4-T-36	117.33
Type K	Teflon	48"	—	—	JK-K-1/8-T-48	104.00	JK-K-1/4-T-48	108.00
Type K	Uncoated	3"	—	—	JK-K-1/8-U-3	34.00	—	—
Type K	Uncoated	6"	JK-K-1/16-U-6	37.67	JK-K-1/8-U-6	38.75	JK-K-1/4-U-6	43.06
Type K	Uncoated	8"	JK-K-1/16-U-8	37.67	JK-K-1/8-U-8	38.75	—	—
Type K	Uncoated	10"	JK-K-1/16-U-10	37.67	JK-K-1/8-U-10	38.75	—	—
Type K	Uncoated	12"	JK-K-1/16-U-12	37.67	JK-K-1/8-U-12	38.75	JK-K-1/4-U-12	43.06
Type K	Uncoated	18"	JK-K-1/16-U-18	51.67	JK-K-1/8-U-18	52.74	JK-K-1/4-U-18	61.35
Type K	Uncoated	24"	JK-K-1/16-U-24	63.51	JK-K-1/8-U-24	64.58	JK-K-1/4-U-24	73.20
Type K	Uncoated	32"	—	—	—	—	JK-K-1/4-U-32	66.00
Type K	Uncoated	36"	—	—	JK-K-1/8-U-36	76.42	JK-K-1/4-U-36	85.04
Type J	Teflon	6"	JK-J-1/16-T-6	69.97	JK-J-1/8-T-6	71.04	JK-J-1/4-T-6	75.35
Type J	Teflon	8"	JK-J-1/16-T-8	69.97	JK-J-1/8-T-8	71.04	JK-J-1/4-T-8	75.35
Type J	Teflon	10"	—	—	JK-J-1/8-T-10	71.04	JK-J-1/4-T-10	75.35
Type J	Teflon	12"	JK-J-1/16-T-12	69.97	JK-J-1/8-T-12	71.04	JK-J-1/4-T-12	75.35
Type J	Teflon	18"	JK-J-1/16-T-18	83.96	JK-J-1/8-T-18	85.04	JK-J-1/4-T-18	93.65
Type J	Teflon	24"	JK-J-1/16-T-24	95.80	JK-J-1/8-T-24	96.88	JK-J-1/4-T-24	105.49
Type J	Teflon	36"	JK-J-1/16-T-36	107.64	JK-J-1/8-T-36	108.72	JK-J-1/4-T-36	117.33
Type J	Teflon	42"	—	—	—	—	JK-J-1/4-T-42	111.95
Type J	Teflon	48"	—	—	—	—	JK-J-1/4-T-48	127.02
Type J	Teflon	72"	—	—	—	—	JK-J-1/4-T-72	132.00
Type J	Uncoated	6"	JK-J-1/16-U-6	37.67	JK-J-1/8-U-6	38.75	JK-J-1/4-U-6	43.06
Type J	Uncoated	8"	JK-J-1/16-U-8	37.67	JK-J-1/8-U-8	38.75	—	—
Type J	Uncoated	10"	JK-J-1/16-U-10	37.67	JK-J-1/8-U-10	38.75	JK-J-1/4-U-10	43.06
Type J	Uncoated	12"	JK-J-1/16-U-12	37.67	JK-J-1/8-U-12	38.75	JK-J-1/4-U-12	43.06
Type J	Uncoated	14"	—	—	JK-J-1/8-U-14	45.00	—	—
Type J	Uncoated	18"	JK-J-1/16-U-18	51.67	JK-J-1/8-U-18	52.74	JK-J-1/4-U-18	61.35
Type J	Uncoated	24"	JK-J-1/16-U-24	63.51	JK-J-1/8-U-24	64.58	JK-J-1/4-U-24	73.20
Type J	Uncoated	30"	—	—	—	—	JK-J-1/4-U-30	59.00
Type J	Uncoated	36"	—	—	JK-J-1/8-U-36	76.42	JK-J-1/4-U-36	85.04



JK-TC270
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES, DUAL ELE-
MENTS

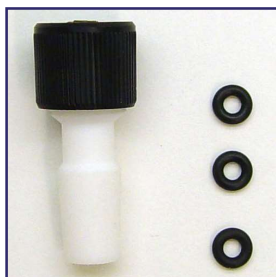
Dual element thermocouples contain two independent thermocouples in a single probe. All sensors are housed in 304 stainless steel sheaths.

Teflon overcoating is PFA coating over stainless steel probe.

Note: To read temperatures accurately, the type of the thermocouple must match the controller's type. On a new controller, the type is the letter immediately following the model number: 210-K-S.

Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Controller	Coated	Length	1/8"		1/4"	
			CODE	Price	CODE	Price
Type T	Teflon	6"	—	—	JK-TC270-T14T6	115.00
Type T	Teflon	12"	JK-TC270-T18T12	113.02	JK-TC270-T14T12	125.94
Type T	Teflon	18"	JK-TC270-T18T18	124.86	JK-TC270-T14T18	137.78
Type T	Teflon	24"	JK-TC270-T18T24	136.70	JK-TC270-T14T24	149.62
Type T	Teflon	36"	—	—	JK-TC270-T14T36	164.69
Type T	Teflon	40"	—	—	JK-TC270-T14T40	170.00
Type T	Teflon	45"	—	—	JK-TC270-T14T45	170.00
Type T	Uncoated	6"	JK-TC270-T18U6	103.00	—	—
Type T	Uncoated	12"	JK-TC270-T18U12	104.41	JK-TC270-T14U12	117.33
Type T	Uncoated	18"	JK-TC270-T18U18	118.40	JK-TC270-T14U18	131.32
Type T	Uncoated	24"	JK-TC270-T18U24	134.55	JK-TC270-T14U24	1134.55
Type T	Glass	12"	—	—	JK-TC270-T14G12	160.38
Type T	Glass	18"	—	—	JK-TC270-T14G18	174.38
Type K	Teflon	6"	JK-TC270-K18T6	113.02	JK-TC270-K14T6	115.00
Type K	Teflon	8"	—	—	JK-TC270-K14T8	115.00
Type K	Teflon	12"	JK-TC270-K18T12	113.02	JK-TC270-K14T12	125.94
Type K	Teflon	18"	JK-TC270-K18T18	124.86	JK-TC270-K14T18	137.78
Type K	Teflon	24"	JK-TC270-K18T24	136.70	JK-TC270-K14T24	149.62
Type K	Teflon	30"	JK-TC270-K18T30	136.00	—	—
Type K	Teflon	36"	—	—	JK-TC270-K14T36	164.69
Type K	Teflon	45"	—	—	JK-TC270-K14T45	170.00
Type K	Teflon	48"	—	—	JK-TC270-K14T48	170.00
Type K	Uncoated	6"	JK-TC270-K18U6	104.41	—	—
Type K	Uncoated	12"	JK-TC270-K18U12	104.41	JK-TC270-K14U12	112.82
Type K	Uncoated	18"	JK-TC270-K18U18	118.40	JK-TC270-K14U18	131.32
Type K	Uncoated	24"	JK-TC270-K18U24	134.55	JK-TC270-K14U24	134.55
Type K	Glass	12"	—	—	JK-TC270-K14G12	160.38
Type K	Glass	18"	—	—	JK-TC270-K14G18	174.38
Type K	Glass	24"	—	—	JK-TC270-K14G24	179.76
Type J	Teflon	6"	JK-TC270-J18T6	103.00	—	—
Type J	Teflon	12"	JK-TC270-J18T12	113.02	JK-TC270-J14T12	125.94
Type J	Teflon	18"	JK-TC270-J18T18	124.86	JK-TC270-J14T18	137.78
Type J	Teflon	24"	JK-TC270-J18T24	136.70	JK-TC270-J14T24	149.62
Type J	Teflon	36"	—	—	JK-TC270-J14T36	164.69
Type J	Uncoated	12"	JK-TC270-J18U12	104.41	JK-TC270-J14U12	117.33
Type J	Uncoated	18"	JK-TC270-J18U18	118.40	JK-TC270-J14U18	131.32
Type J	Uncoated	24"	JK-TC270-J18U24	134.55	—	—
Type J	Glass	12"	—	—	JK-TC270-J14G12	160.38
Type J	Glass	18"	—	—	JK-TC270-J14G18	174.38
Type J	Glass	24"	—	—	JK-TC270-J14G24	179.76



JK-Thermocouple Probe Adapter
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES ADAPTER

Forms an air tight seal between temperature probes and standard taper joints. Not suitable for high vacuums. Includes replacement internal o-ring. Sold individually.

Probe Diameter	Standard Taper Joint	CODE	Price
1/16"	10/18	JK-1016	42.75
1/16"	14/20	JK-1416	49.20
1/16"	19/22	JK-1916	64.50
1/16"	24/40	JK-2416	58.70
1/16"	29/42	JK-2916	66.30
1/8"	10/18	JK-1018	38.75
1/8"	14/20	JK-1418	24.95
1/8"	19/22	JK-1918	68.80
1/8"	24/40	JK-2418	26.95
1/4"	14/20	JK-1414	24.45
1/4"	24/40	JK-2414	39.95
1/4"	29/42	JK-2914	52.85



JK-Thermocouple Adapter
J-KEM® SCIENTIFIC,
THERMOCOUPLE
ADAPTER

Adapts between large (OST) and small (SMP) thermocouple plugs. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Adapter Type	Controller Type	CODE	Price
SMP Male to OST Female	J	JK-ADA-J	12.95
SMP Male to OST Female	K	JK-ADA-K	12.95
SMP Male to OST Female	T	JK-ADA-T	12.95
OST Male to SMP Female	J	JK-ADA-J	12.95
OST Male to SMP Female	K	JK-ADA-K	12.95
OST Male to SMP Female	T	JK-ADA-T	12.95



JK-Thermocouple Probe Adapter O-rings
J-KEM® SCIENTIFIC,
THERMOCOUPLE
PROBES ADAPTER,
REPLACEMENT
O-RINGS

Package of 12.

Size	Material	Options	CODE	Price
1/16" Probe	Viton™	Internal	JK-161OR	12.00
1/8" Probe	Viton®	Internal	JK-181OR	12.00
1/8" Probe	Kalrez®	Internal	JK-181ORK	44.80
1/4" Probe	Viton™	Internal	JK-141OR	12.00
1/4" Probe	Kalrez®	Internal	JK-141ORK	80.00
1/4" Probe	Teflon®	Internal	JK-141ORT	27.00
14/20	Viton™	External	JK-1420E	9.00
14/20	Kalrez®	External	JK-1420EK	61.50
14/20	Teflon®	External	JK-1420ET	21.00
24/40	Viton™	External	JK-2440E	12.00
24/40	Kalrez®	External	JK-2440EK	66.90
24/40	Teflon®	External	JK-2440ET	13.15
29/42	Viton™	External	JK-2942E	12.00
29/42	Kalrez®	External	JK-2942EK	94.20
29/42	Teflon®	External	JK-2942ET	15.20





JK-StraightCord
J-KEM® SCIENTIFIC,
THERMOCOUPLE
CORD, STRAIGHT

Teflon insulated wire for superior chemical resistance. Made from 24 gauge single stranded wire. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Length	Style	Plug	Controller Type	Options	CODE	Price
10'	OST	Large	RTD	Straight	JK-EXT-10-Pt/100-OST	26.25
10'	OST	Large	J	Straight	JK-EXT-10-J-OST	26.25
10'	OST	Large	K	Straight	JK-EXT-10-K-OST	26.25
10'	OST	Large	T	Straight	JK-EXT-10-T-OST	26.25
10'	OST	Large	J	Straight, Dual	JK-EXT-270-J	59.50
10'	OST	Large	K	Straight, Dual	JK-EXT-270-K	59.50
10'	OST	Large	T	Straight, Dual	JK-EXT-270-T	59.50
10'	SMP	Mini	J	Straight	JK-EXT-10-J-SMP	26.25
10'	SMP	Mini	K	Straight	JK-EXT-10-K-SMP	26.25
10'	SMP	Mini	T	Straight	JK-EXT-10-T-SMP	26.25
10'	SMP	Mini	RTD	Straight, Two Wire	JK-EXT-10-Pt/100-2-SMP	26.25
20'	OST	Large	J	Straight	JK-EXT-20-J-OST	36.30
20'	OST	Large	K	Straight	JK-EXT-20-K-OST	36.30
20'	OST	Large	T	Straight	JK-EXT-20-T-OST	36.30
20'	SMP	Mini	J	Straight	JK-EXT-20-J-SMP	36.30
20'	SMP	Mini	K	Straight	JK-EXT-20-K-SMP	36.30
20'	SMP	Mini	T	Straight	JK-EXT-20-T-SMP	36.30
25'	OST	Large	J	Straight, Dual	JK-EXT-25-270-J	94.25
25'	OST	Large	K	Straight, Dual	JK-EXT-25-270-K	94.25
25'	OST	Large	T	Straight, Dual	JK-EXT-25-270-T	94.25



JK-CoiledCord
J-KEM® SCIENTIFIC,
THERMOCOUPLE
CORD, COILED

Retractable coiled cord saves space in crowded hoods. 26 gauge multi-strand wire with PVC insulation. Probes are color coded! On an existing controller, the thermocouple type is indicated by the color of the thermocouple receptacle on the front. Type T (blue), K (yellow), J (black), and Pt/100 (white).

Length	Style	Plug	Controller Type	CODE	Price
10'	OST	Large	J	JK-CC-10-J-OST	39.80
10'	OST	Large	K	JK-CC-10-K-OST	39.80
10'	OST	Large	T	JK-CC-10-T-OST	39.80
10'	OST	Large	RTD	JK-CC-10-Pt/100-OST	56.20
10'	SMP	Mini	J	JK-CC-10-J-SMP	33.80
10'	SMP	Mini	K	JK-CC-10-K-SMP	33.80
10'	SMP	Mini	T	JK-CC-10-T-SMP	33.80
10'	SMP	Mini	RTD	JK-CC-10-Pt/100-SMP	60.00
20'	OST	Large	J	JK-CC-20-J-OST	67.00
20'	OST	Large	K	JK-CC-20-K-OST	67.00
20'	OST	Large	T	JK-CC-20-T-OST	67.00
20'	SMP	Mini	J	JK-CC-20-J-SMP	67.00
20'	SMP	Mini	K	JK-CC-20-K-SMP	67.00
20'	SMP	Mini	T	JK-CC-20-T-SMP	67.00





JB-F250
JULABO, F SERIES,
F250

JULABO F Series Recirculating Coolers are a great way to replace tap water and are ideal for basic cooling tasks with 250 W to 1 kW cooling power. Models include a splash-proof membrane keypad with LED temperature display and integrated timer. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

May be used with water, water/glycol mixtures and silicone fluids.

The F250 comes with 8 and 10 mm hose barbs. The F500 / F1000 come with 8 and 12 mm hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 10 mm inner dia. (pump connections M10x1 male)

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

Specs-At-A-Glance

Cooling Capacity	0.09 kW @ -5 °C, 0.18 kW @ 0 °C, 0.21 kW @ 5 °C, 0.22 kW @ 10 °C, 0.24 kW @ 15 °C, 0.25 kW @ 20 °C
Working Temp Range (°C)	-10 ... +40
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	5.08
Dimensions W x L x H (in)	9.5 x 16 x 21
Fluid Type	Water, Other
Weight (lbs)	60
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9620025.02	3,874.00
230 V / 60 Hz	JB-9620025.13	3,874.00



JB-F500
JULABO, F SERIES,
F500

JULABO F Series Recirculating Coolers are a great way to replace tap water and are ideal for basic cooling tasks with 250 W to 1 kW cooling power. Models include a splash-proof membrane keypad with LED temperature display and integrated timer. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

May be used with water, water/glycol mixtures and silicone fluids.

The F250 comes with 8 and 10 mm hose barbs. The F500 / F1000 come with 8 and 12 mm hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

Specs-At-A-Glance

Cooling Capacity	0.25 kW @ 0 °C, 0.3 kW @ 5 °C, 0.4 kW @ 10 °C, 0.5 kW @ 20 °C
Working Temp Range (°C)	0 ... +40
Pump Capacity Flow Rate (l/min)	24
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25
Dimensions W x L x H (in)	14.8 x 17.3 x 23.2
Fluid Type	Water, Other
Weight (lbs)	75
Power Options	115 V / 60 Hz, 230 V / 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9620050.02	5,582.00
230 V / 60 Hz	JB-9620050.13	5,582.00



JB-F1000
JULABO, F SERIES,
F1000

JULABO F Series Recirculating Coolers are a great way to replace tap water and are ideal for basic cooling tasks with 250 W to 1 kW cooling power. Models include a splash-proof membrane keypad with LED temperature display and integrated timer. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

May be used with water, water/glycol mixtures and silicone fluids.

The F250 comes with 8 and 10 mm hose barbs. The F500 / F1000 come with 8 and 12 mm hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Environmentally-friendly operation with low energy consumption
- Compact design
- Splash-proof membrane keypad with LED temperature display
- Straightforward filling and draining
- Filling level indicator
- May be used with water, water/glycol, JULABO Thermal G

Specs-At-A-Glance

Cooling Capacity	0.35 kW @ 0 °C, 0.55 kW @ 5 °C, 0.7 kW @ 10 °C, 1 kW @ 20 °C
Working Temp Range (°C)	0 ... +40
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
Dimensions W x L x H (in)	14.8 x 19.3 x 25.2
Fluid Type	Water, Other
Weight (lbs)	99
Power Options	115 V / 60 Hz, 230 V / 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9620100.02	7,419.00
230 V / 60 Hz	JB-9620100.13	7,419.00



JB-FL300
JULABO, FL SERIES,
FL300

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male) se mit M16x1 Außengewinde)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)

Specs-At-A-Glance

Cooling Capacity	0.1 kW @ -20°C , 0.15 kW @ -10°C , 0.2 kW @ 0°C , 0.3 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.8 x 19.7 x 23.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	86
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz

Power Options	CODE	Price
115 V / 60 Hz	JB-9660003.2	6,138.00
230 V / 60 Hz	JB-9660003.13	6,138.00


JB-FL601
**JULABO, FL SERIES,
FL601**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male) ss mit M16x1 Außengewinde)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)

Specs-At-A-Glance

Cooling Capacity	0.2 kW @ 20°C , 0.33 kW @ -10°C , 0.4 kW @ 0°C , 0.6 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
External Devices	Remote Control
Dimensions W x L x H (in)	12.6 x 19.7 x 23.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	106
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz

Power Options	CODE	Price
115 V / 60 Hz	JB-9661006.2	8,553.00
230 V / 60 Hz	JB-9661006.13	8,553.00



JB-FL1201
JULABO, FL SERIES,
FL1201

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator

Specs-At-A-Glance

Cooling Capacity	0.3 kW @ 20°C , 0.6 kW @ -10°C , 0.9 kW @ 0°C , 1.2 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
External Devices	Remote Control
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	168
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9661012.2	8,818.00
115 V / 60 Hz	JB-9661012.2.CSA/UL	10,413.00
230 V / 60 Hz	JB-9661012.13	8,818.00
230 V / 60 Hz	JB-9661012.13.CSA/UL	10,413.00



JB-FL1203
JULABO, FL SERIES,
FL1203

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)

Specs-At-A-Glance

Cooling Capacity	0.2 kW @ 20°C , 0.5 kW @ -10°C , 0.8 kW @ 0°C , 1.2 kW @ 20°C	
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$	
Pump Capacity Flow Rate (l/min)	40	
Heating or Cooling Capability	Cooling Only	
Pump Capacity Flow Pressure (psi)	7.25...43.51	
External Devices	Remote Control	
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2	
Fluid Type	Silicone, Water, Other	
Weight (lbs)	161	
Power Options	230 V / 60 Hz, 230 V / 60 Hz NRTL	

Power Options	CODE	Price
230 V / 60 Hz	JB-9663012.13	10,159.00
230 V / 60 Hz NRTL	JB-9663012.13.CSA/UL	11,720.00



JB-FL1701
JULABO, FL SERIES,
FL1701

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure indicator

Specs-At-A-Glance

Cooling Capacity	0.35 kW @ -20°C , 0.8 kW @ 10°C , 1.1 kW @ 0°C , 1.7 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	23
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	14.5
External Devices	Remote Control
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	187
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9661017.2	9,449.00
115 V / 60 Hz NRTL	JB-9661017.2.CSA/UL	11,156.00
230 V / 60 Hz	JB-9661017.13	9,449.00
230 V / 60 Hz NRTL	JB-9661017.13.CSA/UL	11,156.00



JB-FL1703
JULABO, FL SERIES,
FL1703

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.2 kW @ 20°C , 0.6 kW @ -10°C , 0.9 kW @ 0°C , 1.7 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	40
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	Remote Control
Dimensions W x L x H (in)	19.7 x 29.9 x 25.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	201
Power Options	230 V / 60 Hz, 230 V / 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 60 Hz	JB-9663017.13	9,449.00
230 V / 60 Hz NRTL	JB-9663017.13.CSA/UL	11,156.00



JB-FL2503
JULABO, FL SERIES,
FL2503

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male) / 4 Außengewinde

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.5 kW @ 20°C , 1.2 kW @ -10°C , 1.5 kW @ 0°C , 2.5 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	40
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	Remote Control
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3
Weight (lbs)	271
Power Options	230 V / 50 Hz, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)

Power Options
 230 V / 60 Hz

CODE
 JB-9663025.13

Price
 13,187.00


JB-FL2506
**JULABO, FL SERIES,
FL2506**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 each barbed fittings for tubing 1 inner dia (pumpconnections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pump pressure indicator
- By-pass valve to adjust pum pressure

Specs-At-A-Glance

Cooling Capacity	0.3 kW @ 10°C , 1 kW @ 0°C , 2.5 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	-15 ... +40
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	287
Power Options	230 V / 50 Hz, 230 V / 60 Hz

Power Options
230 V / 60 Hz

CODE
JB-9666025.13

Price
14,520.00



JB-FL4003
JULABO, FL SERIES,
FL4003

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 3/4 inner dia. (pump connections G3/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.65 kW @ -20°C , 1.5 kW @ -10°C , 2.4 kW @ 0°C , 4 kW @ 20°C	
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$	
Pump Capacity Flow Rate (l/min)	40	
Heating or Cooling Capability	Cooling Only	
Pump Capacity Flow Pressure (psi)	7.25...43.51	
External Devices	Remote Control	
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3	
Fluid Type	Silicone, Water, Other	
Weight (lbs)	271	
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz	
<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 60 Hz	JB-9663040.16	16,482.00



JB-FL4006
JULABO, FL SERIES,
FL4006

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 inner dia. (pump connections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	0.05 kW @ -20°C , 0.9 kW @ -10°C , 1.9 kW @ 0°C , 4 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	23.6 x 29.9 x 45.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	346
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
 230 V / 60 Hz

CODE
 JB-9666040.16

Price
 18,544.00


JB-FL7006
**JULABO, FL SERIES,
FL7006**

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 inner dia. (pump connections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	1.55 kW @ 20°C , 3 kW @ -10°C , 5.1 kW @ 0°C , 7 kW @ 20°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	30.7 x 33.5 x 58.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	556
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
230 V / 60 Hz

CODE
JB-9666070.16

Price
22,783.00



JB-FL11006
JULABO, FL SERIES,
FL11006

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 I.W. (pump connections with G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

Specs-At-A-Glance

Cooling Capacity	11 kW @ 20°C , 3 kW @ -20°C , 5 kW @ -10°C , 7.5 kW @ 0°C
Working Temp Range ($^{\circ}\text{C}$)	$-20 \dots +40$
Pump Capacity Flow Rate (l/min)	60
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	7.25...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	30.7 x 33.5 x 58.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	547
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
 230 V / 60 Hz

CODE
 JB-9666110.16

Price
 25,174.00



JB-FL20006
JULABO, FL SERIES,
FL20006

JULABO FL Series Recirculating Cooler / Chillers for routine laboratory cooling applications. PID temperature control provides $\pm 0.5^{\circ}\text{C}$ stability. Proportional cooling control adjusts the cooling power to the load of the application and saves energy. Units incorporate RS232 interface and alarm output for PC integration and control. Models include a splash-proof membrane keypad with LED temperature display. Easy filling / draining with a fill level indicator and overflow port on the back. Units constructed of stainless steel and high grade plastic with stainless steel internal tank. Centrifugal pressure pump provides circulation to external application.

Air and water-cooled versions. Units with 3 and 6 bar pump include internal by-pass for pressure adjustment. Analog pressure gauge on front of the unit displays circuit pressure.

May be used with water, water/glycol mixtures and silicone fluids.

The FL300, FL601, FL1201, FL1701, FLW1701 come with 8 and 12 mm hose barbs. The FLxxx3 models come with 3/4" hose barbs. The FLxxx6 models come with 1" hose barbs.

Included with each unit: 2 barbed fittings for tubing 1 inner dia. (pump connections G1 1/4 male)

- Ergonomic design and easy operation
- Splash-proof keypad
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure
- Air cooled

Specs-At-A-Glance

Cooling Capacity	1.1 kW @ -20°C , 10 kW @ 0°C , 20 kW @ 20°C , 6 kW @ -10°C
Working Temp Range ($^{\circ}\text{C}$)	$-25 \dots +40$
Pump Capacity Flow Rate (l/min)	80
Heating or Cooling Capability	Cooling Only
Pump Capacity Flow Pressure (psi)	11.6...87.02
External Devices	Remote Control
Dimensions W x L x H (in)	37.4 x 45.3 x 63.4
Fluid Type	Silicone, Water, Other
Weight (lbs)	794
Power Options	230 V / 3 Ph. / 60 Hz / 36 A, 400 V / 3 Ph. / 50 Hz / 18 A

Power Options
 230 V / 60 Hz

CODE
 JB-9666200.16

Price
 38,458.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.06 kW @ -20 °C, 0.17 kW @ 0 °C, 0.22 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 15.4 x 25.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	57.4
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)



JB-CD-200F
JULABO, CORIO™,
CD-200F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012701.02	5,400.00
230 V / 60 Hz	JB-9012701.13	5,400.00



JB-CD-300F
JULABO, CORIO™,
CD-300F

CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.

PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1

Specs-At-A-Glance

Cooling Capacity	0.11 kW @ -20 °C, 0.28 kW @ 0 °C, 0.31 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-25 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.6 x 26
Fluid Type	Silicone, Water, Other
Weight (lbs)	61.8
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012703.02	6,272.00
230 V / 60 Hz	JB-9012703.13	6,272.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.06 kW @ -30 °C, 0.18 kW @ -20 °C, 0.29 kW @ -10 °C, 0.53 kW @ 0 °C, 0.6 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 18.5 x 27.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	79.4
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)



JB-CD-600F
JULABO, CORIO™,
CD-600F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012704.02	7,899.00
230 V / 60 Hz	JB-9012704.13	7,899.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.06 kW @ -30 °C, 0.18 kW @ -20 °C, 0.29 kW @ -10 °C, 0.53 kW @ 0 °C, 0.6 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	4.8
External Devices	Remote Control
Dimensions W x L x H (in)	14.2 x 18.1 x 29.1
Fluid Type	Silicone, Water, Other
Weight (lbs)	87.9
Power Options	115 V / 60 Hz, 230 V / 60 Hz



JB-CD-601F
JULABO, CORIO™,
CD-601F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9012705.02	8,663.00
230 V / 60 Hz	JB-9012705.13	8,663.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.01 kW @ -40 °C, 0.07 kW @ -30 °C, 0.2 kW @ 20 °C, 0.35 kW @ -10 °C, 0.5 kW @ 0 °C, 0.9 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	4.8
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 29.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	114.6
Power Options	115 V / 60 Hz, 230 V / 60 Hz



JB-CD-900F
JULABO, CORIO™,
CD-900F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9012706.02	8,799.00
230 V / 60 Hz	JB-9012706.13	8,799.00



CORIO™ CD refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CD circulator incorporates easy change-over for control of fluid circulation internally or externally. Refrigeration combinations offer a low temperature range from -20 °C to -40 °C with an upper limit of 150 °C. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB connection for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Centrifugal pump capacity of 15 L/min with pressure to 5.1 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.13 kW @ -40 °C, 0.27 kW @ -30 °C, 0.53 kW @ -20 °C, 0.75 kW @ -10 °C, 0.98 kW @ 0 °C, 1 kW @ 10 °C, 1 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +150
Pump Capacity Flow Rate (l/min)	15
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	16.5 x 19.3 x 27.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	113.5
Power Options	115 V / 60 Hz, 230 V / 60 Hz



JB-CD-1000F
JULABO, CORIO™,
CD-1000F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9012707.02	10,663.00
230 V / 60 Hz	JB-9012707.13	10,663.00



CORIO™ CD Heating Circulator combinations with stainless steel bath tanks for routine laboratory tasks. Units include bright LED display and easy operation.

CORIO™ CD immersion circulator provides temperatures from +20 to +150 °C . Integrated pump enables temperature incubation for internal or external bath applications. A lever below the display enables simple adjustment between internal and external flow. Pump capacity: 15 L/min; 5.1 PSI. The integrated USB port provide external PC communication for control / monitoring and data logging.

The CORIO™ CD has M16x1 male pump connections and comes with sets of 8 and 12 mm hose barbs. Stainless steel tanks include drain port.

For internal and external temperature applications. High quality stainless steel bath tanks with bath lid, drain tap and integrated cooling coil.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.2 x 16.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	19.4
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL
Additional Options	NRTL (select voltage/frequency combinations only)



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012504.02	2,882.00
230 V / 60 Hz	JB-9012504.13	2,882.00
230 V / 60 Hz NRTL	JB-9012504.13.CSA/UL	3,682.00

JB-CD-BC4
JULABO, CORIO™,
CD-BC4



CORIO™ CD Heating Circulator combinations with stainless steel bath tanks for routine laboratory tasks. Units include bright LED display and easy operation.

CORIO™ CD immersion circulator provides temperatures from +20 to +150 °C . Integrated pump enables temperature incubation for internal or external bath applications. A lever below the display enables simple adjustment between internal and external flow. Pump capacity: 15 L/min; 5.1 PSI. The integrated USB port provide external PC communication for control / monitoring and data logging.

The CORIO™ CD has M16x1 male pump connections and comes with sets of 8 and 12 mm hose barbs. Stainless steel tanks include drain port.

For internal and external temperature applications. High quality stainless steel bath tanks with bath lid, drain tap and integrated cooling coil.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	9.5 x 17.4 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	22.1
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz, 230 V / 60 Hz NRTL
Additional Options	NRTL (select voltage/frequency combinations only)



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012506.02	3,341.00
230 V / 60 Hz	JB-9012506.13	3,341.00
230 V / 60 Hz NRTL	JB-9012506.13.CSA/UL	4,141.00

JB-CD-BC6
JULABO, CORIO™,
CD-BC6



CORIO™ CD Heating Circulator combinations with stainless steel bath tanks for routine laboratory tasks. Units include bright LED display and easy operation.

CORIO™ CD immersion circulator provides temperatures from +20 to +150 °C . Integrated pump enables temperature incubation for internal or external bath applications. A lever below the display enables simple adjustment between internal and external flow. Pump capacity: 15 L/min; 5.1 PSI. The integrated USB port provide external PC communication for control / monitoring and data logging.

The CORIO™ CD has M16x1 male pump connections and comes with sets of 8 and 12 mm hose barbs. Stainless steel tanks include drain port.

For internal and external temperature applications. High quality stainless steel bath tanks with bath lid, drain tap and integrated cooling coil.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +150
Pump Capacity Flow Rate (l/min)	15
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.08
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 19.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	26.9
Power Options	115 V / 60 Hz NRTL, 230 V / 60 Hz
Additional Options	NRTL (select voltage/frequency combinations only)



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz NRTL	JB-9012512.02	3,689.00
230 V / 60 Hz	JB-9012512.13	3,689.00

JB-CD-BC12
JULABO, CORIO™,
CD-BC12



JULABO CORIO™ CP Immersion Circulator for routine laboratory tasks. Unit includes bright LED display and easy operation. A quick connect bath clamp is included.

The CORIO™ CP immersion circulator provides temperatures to 200 °C for internal bath applications up to 50 L. The CP includes USB and RS232 ports for external PC control / communication and data-logging. With an optional pump set the CP can circulate to external applications with flow control via a manual lever. Adjustable pump speed enables flow rates from 8...27 L/min with pressures from 1.5...10.2 PSI.



- Precise temperature control
- For internal and external applications (accessories required)
- For bath tanks with a max. filling volume of 50 liters
- Bright, white, easy to read display
- Very quiet
- Easy operation
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	5.2 x 6.3 x 14.3
Fluid Type	Silicone, Water, Other
Weight (lbs)	6.3
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013000.22	2,309.00
200 V - 230 V / 50 - 60 Hz	JB-9013000.33	2,309.00



JB-CORIO-CP
JULABO, CORIO™,
CP



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.02 kW @ -20 °C, 0.1 kW @ -10 °C, 0.15 kW @ 0 °C, 0.2 kW @ 20 °C, 0.2 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 15.4 x 25.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	57.4
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



JB-CP-200F
JULABO, CORIO™,
CP-200F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013701.02	6,059.00
230 V / 50 - 60 Hz	JB-9013701.33	6,059.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.02 kW @ -20 °C, 0.1 kW @ -10 °C, 0.15 kW @ 0 °C, 0.2 kW @ 20 °C, 0.2 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	17.4 x 16.2 x 17.4
Fluid Type	Silicone, Water, Other
Weight (lbs)	55.2
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013702.02	6,059.00
230 V / 50 - 60 Hz	JB-9013702.33	6,059.00

JB-CP-201F
JULABO, CORIO™,
CP-201F



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



JB-CP-300F
JULABO, CORIO™,
CP-300F

Specs-At-A-Glance

Cooling Capacity	0.08 kW @ -20 °C, 0.19 kW @ -10 °C, 0.27 kW @ 0 °C, 0.3 kW @ 20 °C, 0.3 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-30 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.5 x 16.6 x 26
Fluid Type	Silicone, Water, Other
Weight (lbs)	61.8
Power Options	115 V / 60 Hz, 230 V / 60 Hz

Power Options

115 V / 60 Hz
230 V / 60 Hz

CODE

JB-9013703.02
JB-9013703.13

Price

6,845.00
6,845.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.54 kW @ 10 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 18.5 x 27.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	78.7
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 50 – 60 Hz



Power Options

115 V / 60 Hz
115 V / 60 Hz NRTL
230 V / 50 - 60 Hz

CODE

JB-9013704.02
JB-9013704.02.CSA/UL
JB-9013704.33

Price

8,395.00
8,395.00
8,395.00

JB-CP-600F
JULABO, CORIO™,
CP-600F



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	14.2 x 18.1 x 29.1
Fluid Type	Silicone, Water, Other
Weight (lbs)	84.9
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013705.02	8,917.00
230 V / 50 - 60 Hz	JB-9013705.33	8,917.00

JB-CP-601F
JULABO, CORIO™,
CP-601F



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.11 kW @ -30 °C, 0.31 kW @ 20 °C, 0.52 kW @ -10 °C, 0.8 kW @ 0 °C, 0.9 kW @ 20 °C, 0.9 kW @ 200 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-38 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 29.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	114.6
Power Options	115 V / 60 Hz, 115 V / 60 Hz NRTL, 230 V / 50 – 60 Hz



JB-CP-900F
JULABO, CORIO™,
CP-900F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013706.02	9,171.00
115 V / 60 Hz NRTL	JB-9013706.02.CSA/UL	9,971.00
230 V / 50 - 60 Hz	JB-9013706.33	9,171.00



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.13 kW @ -40 °C, 0.27 kW @ -30 °C, 0.53 kW @ -20 °C, 0.75 kW @ -10 °C, 0.98 kW @ 0 °C, 1 kW @ 10 °C, 1 kW @ 20 °C
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-50 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	16.5 x 19.3 x 27.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	113.5
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9013707.02	10,941.00
230 V / 50 - 60 Hz	JB-9013707.33	10,941.00

JB-CP-1000F
JULABO, CORIO™,
CP-1000F



CORIO™ CP refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations offer low temperatures between -20 °C to -50 °C with an upper limit of 200 °C. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs.

USB and RS232 connections for external PC control and data-logging. A space-saving cooling coil design yields more usable space in the bath tank. Bath lid and drain tap included.



PID temperature control provides ± 0.03 °C stability. Adjustable centrifugal pump capacity of 8... 27 L/min with pressures 1.5... 10.2 psi.

Stainless steel bath tank. Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over (internal and external circulation)
- External pump connections (M16x1)
- USB & RS232 connection
- Space-saving cooling coil design yields more usable space in the bath tank
- Bath lid and drain tap included
- Removable ventilation grid
- Refrigeration unit without side vents
- Class III (FL) according to DIN 12876-1



Specs-At-A-Glance

Cooling Capacity	0.13 kW @ -30 °C, 0.35 kW @ -20 °C, 0.6 kW @ -10 °C, 0.9 kW @ 0 °C, 0.95 kW @ 10 °C, 1 kW @ 20 °C
Heating Capacity (kW)	2 @ 230 V
Heating or Cooling Capability	Both
Working Temp Range (°C)	-38 ... +100
Pump Capacity Flow Rate (l/min)	8...27
Pump Capacity Flow Pressure (psi)	1.5... 10.2
External Devices	Remote Control
Dimensions W x L x H (in)	17.7 x 25.2 x 37.4
Fluid Type	Silicone, Water, Other
Weight (lbs)	163.1
Power Options	230 V / 50 – 60 Hz



JB-CP-1001F
JULABO, CORIO™,
CP-1001F

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9013708.33	13,424.00



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.2 x 16.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	19.4
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013405.22	3,645.00
200 V - 230 V / 50 - 60 Hz	JB-9013504.33	3,645.00



JB-CORIO-CP-BC4
JULABO, CORIO™,
CP-BC4



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	9.5 x 17.4 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	22.1
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz NRTL



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013506.22	4,026.00
200 V - 230 V / 50 - 60 Hz	JB-9013506.33	4,026.00
200 V - 230 V / 50 - 60 Hz NRTL	JB-9013506.33.CSA/UL	4,826.00



JB-CORIO-CP-BC6
JULABO, CORIO™,
CP-BC6



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 19.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	26.5
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013512.22	4,341.00
200 V - 230 V / 50 - 60 Hz	JB-9013512.33	4,341.00



JB-CORIO-CP-BC12
JULABO, CORIO™,
CP-BC12



CORIO™ CP heating circulators are suitable for temperature applications to 200 °C with circulation to an external apparatus or immersing a device in the bath tank. The CORIO™ CP circulator incorporates easy change-over for control of fluid circulation internally or externally.

Pump inlet/outlet fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated cooling coil and drain ports. Bright LED display with easy to use interface including USB and RS232 connections for external PC control and data-logging. PID temperature control provides ± 0.02 °C stability. Adjustable centrifugal pump capacity of 8-27 L/min with pressure from 1.5-10.2 psi



Class III (FL) according to DIN 12876-1

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Models for internal and external applications
- Bright, white, easy to read display
- Very quiet
- Easy pump change-over between internal and external circulation
- USB & RS232 connection
- High-quality bath tanks made of stainless steel with bath lid and drain tap
- Integrated cooling coil for counter-cooling



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...27
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5... 0.2
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.5 x 18.9
Fluid Type	Silicone, Water, Other
Weight (lbs)	41.9
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
100 V - 115 V / 50 - 60 Hz	JB-9013526.22	4,829.00
200 V - 230 V / 50 - 60 Hz	JB-9013526.33	4,829.00



JB-CORIO-CP-BC26
JULABO, CORIO™,
CP-BC26



JB-DD-200F
JULABO, DYNEO™,
DD-200F

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.02 kW @ -20 °C, 0.1 kW @ -10 °C, 0.15 kW @ 0 °C, 0.17 kW @ 10 °C, 0.2 kW @ 20 °C, 0.2 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 15.4 x 25.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	56.7
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz
Additional Options	Base Model, Analog Interface, Digital Interface

Power Options	Additional Options	CODE	Price
115 V / 60 Hz	Base Model	JB-9021701.02	6,363.00
115 V / 60 Hz	Analog Interface	JB-9021701.02.A	7,054.00
115 V / 60 Hz	Digital Interface	JB-9021701.02.D	6,923.00
230 V / 50 - 60 Hz	Base Model	JB-9021701.33	6,363.00
230 V / 50 - 60 Hz	Analog Interface	JB-9021701.33.A	7,054.00
230 V / 50 - 60 Hz	Digital Interface	JB-9021701.33.D	6,923.00



JB-DD-300F
JULABO, DYNEO™,
DD-300F

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.08 kW @ -20 °C, 0.19 kW @ -10 °C, 0.27 kW @ 0 °C, 0.3 kW @ 10 °C, 0.3 kW @ 20 °C, 0.3 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-25 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.4 x 16.5 x 26
Fluid Type	Silicone, Water, Other
Weight (lbs)	61
Power Options	115 V / 60 Hz, 230 V / 60 Hz
Additional Options	Base Model, Analog Interface, Digital Interface, NRTL

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	Base Model	JB-9021703.02	6,823.00
115 V / 60 Hz	Analog Interface	JB-9021703.02.A	8,298.00
115 V / 60 Hz	Digital Interface	JB-9021703.02.D	8,210.00
115 V / 60 Hz	NRTL	JB-9021703.02.CSA/UL	7,963.00
230 V / 50 - 60 Hz	Base Model	JB-9021703.13	7,163.00
230 V / 50 - 60 Hz	Analog Interface	JB-9021703.13.A	8,298.00
230 V / 50 - 60 Hz	Digital Interface	JB-9021703.13.D	8,210.00
230 V / 50 - 60 Hz	NRTL	JB-9021703.13.CSA/UL	7,963.00



JB-DD-600F
JULABO, DYNEO™,
DD-600F

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ±0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 18.5 x 27.2
Fluid Type	Silicone, Water, Other
Weight (lbs)	79
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz
Additional Options	Base Model, Analog Interface, Digital Interface, NRTL

Power Options	Additional Options	CODE	Price
115 V / 60 Hz	Base Model	JB-9021704.02	8,386.00
115 V / 60 Hz	Analog Interface	JB-9021704.02.A	9,275.00
115 V / 60 Hz	Digital Interface	JB-9021704.02.D	9,283.00
115 V / 60 Hz	NRTL	JB-9021704.02.CSA/UL	9,186.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021704.33	8,386.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021704.33.A	9,275.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021704.33.D	9,283.00



JB-DD-601F
JULABO, DYNEO™,
DD-601F

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.04 kW @ -30 °C, 0.16 kW @ -20 °C, 0.27 kW @ -10 °C, 0.44 kW @ 0 °C, 0.6 kW @ 10 °C, 0.6 kW @ 20 °C, 0.6 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-35 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	14.2 x 18.1 x 29.1
Fluid Type	Silicone, Water, Other
Weight (lbs)	84.2
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	Base Model	JB-9021705.02	8,900.00
115 V / 60 Hz	Analog Interface	JB-9021705.02.A	9,795.00
115 V / 60 Hz	Digital Interface	JB-9021705.02.D	9,802.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021705.33	8,900.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021705.33.A	9,795.00
200 V - 230 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021705.33.A.CSA/UL	10,595.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021705.33.D	9,802.00
200 V - 230 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021705.33.D.CSA/UL	10,602.00
200 V - 230 V / 50 - 60 Hz	NRTL	JB-9021705.33.CSA/UL	10,595.00



JB-DD-900F
JULABO, DYNEO™,
DD-900F

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ±0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port.

Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.11 kW @ -30 °C, 0.31 kW @ 20 °C, 0.52 kW @ -10 °C, 0.8 kW @ 0 °C, 0.85 kW @ 10 °C, 0.9 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-38 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 29.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	114
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	Base Model	JB-9021706.02	9,464.00
115 V / 60 Hz	Analog Interface	JB-9021706.02.A	10,102.00
115 V / 60 Hz	Digital Interface	JB-9021706.02.D	10,111.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021706.33	9,464.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021706.33.A	10,102.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021706.33.D	10,111.00



JB-DD-1000F
JULABO, DYNEO™,
DD-1000F

DYNEO™ refrigerated/heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank. Refrigeration combinations afford low temperature capabilities from -20 °C to -50 °C with an upper temperature limit of 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. A color TFT display with central rotary knob controller includes a multi-lingual interface, integrated programmer, Pt100 port for external temperature control, USB connection for external PC control and data-logging with digital options including RS232 port or an analog module interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Stainless steel bath tanks with integrated drain port. Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Powerful cooling machines
- Suitable for internal and external applications
- Optimized cooling coil design saves space in the bath tank
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces (optional)
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.11 kW @ -40 °C, 0.25 kW @ -30 °C, 0.51 kW @ -20 °C, 0.73 kW @ -10 °C, 0.96 kW @ 0 °C, 1 kW @ 10 °C, 1 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-50 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	16.5 x 19.3 x 27.6
Fluid Type	Silicone, Water, Other
Weight (lbs)	112.9
Power Options	115 V / 60 Hz, 200 V – 230 V / 50 – 60 Hz

Power Options	Additional Options	CODE	Price
115 V / 60 Hz	Base Model	JB-9021707.02	11,261.00
115 V / 60 Hz	Analog Interface	JB-9021707.02.A	11,871.00
115 V / 60 Hz	Analog Interface and NRTL	JB-9021707.02.A.CSA/UL	12,671.00
115 V / 60 Hz	Digital Interface	JB-9021707.02.D	11,595.00
115 V / 60 Hz	Digital Interface and NRTL	JB-9021707.02.D.CSA/UL	12,395.00
115 V / 60 Hz	NRTL	JB-9021707.02.CSA/UL	12,061.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021707.33	11,261.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021707.33.A	11,871.00
200 V - 230 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021707.33.A.CSA/UL	12,671.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021707.33.D	11,595.00
200 V - 230 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021707.33.D.CSA/UL	12,395.00
200 V - 230 V / 50 - 60 Hz	NRTL	JB-9021707.33.CSA/UL	12,061.00



JB-DD-BC4
JULABO, DYNEO™,
DD-BC4

DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.

Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.1 x 16.1 x 16.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	18.7
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021504.22	4,077.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021504.22.A	4,723.00
110 V - 115 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021504.22.A.CSA/UL	5,523.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021504.22.D	4,240.00
110 V - 115 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021504.22.D.CSA/UL	5,040.00
110 V - 115 V / 50 - 60 Hz	NRTL	JB-9021504.22.CSA/UL	4,877.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021504.33	4,077.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021504.33.A	4,723.00
200 V - 230 V / 50 - 60 Hz	Analog Interface and NRTL	JB-9021504.33.A.CSA/UL	5,523.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021504.33.D	4,240.00
200 V - 230 V / 50 - 60 Hz	Digital Interface and NRTL	JB-9021504.33.D.CSA/UL	5,040.00
200 V - 230 V / 50 - 60 Hz	NRTL	JB-9021504.33.CSA/UL	4,877.00



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)

- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	9.4 x 17.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	21.4
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021506.22	4,628.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021506.22.A	5,180.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021506.22.D	4,626.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021506.33	4,628.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021506.33.A	5,180.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021506.33.D	4,626.00

JB-DD-BC6
JULABO, DYNEO™,
DD-BC6



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Both
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	13 x 19.3 x 18.5
Fluid Type	Silicone, Water, Other
Weight (lbs)	26.2
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz

JB-DD-BC12 JULABO, DYNEO™, DD-BC12

<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021512.22	4,655.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021512.22.A	5,539.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021512.22.D	4,760.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021512.33	4,655.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021512.33.A	5,539.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021512.33.D	4,760.00



DYNEO™ heating circulators are suitable for temperature applications with circulation to an external apparatus or immersing a device in the bath tank for temperatures to 200 °C. The DYNEO™ DD circulator incorporates easy change-over for control of fluid circulation internally or externally. Unit fittings M16x1 male threaded adapters including a pair of 8 and 12 mm hose barbs. Systems include insulated stainless-steel tanks with integrated drain valve. Color TFT display with central rotary knob controller, multi-lingual interface, integrated programmer, Pt100 port for external temperature control. USB connection for external PC control and data-logging; Digital option includes RS232 port; analog option includes analog interface for voltage or current control. PID temperature control provides ± 0.01 °C stability. Infinitely variable centrifugal pump capacity of 8-27 L/min with pressure to 1.5-10.2 psi. Class III (FL) according to DIN 12876-1.



Included with each unit: 2 each barbed fitting for tubing 8 and 12 mm inner dia. (pump connections M16x1 male)



- Suitable for internal and external applications
- Powerful and infinitely adjustable pressure pump
- Flow rate 22 l/min, pressure 0.6 bar
- Easy switching between internal and external circulation
- Large color TFT display, multilingual interface
- Central rotary knob (controller) simplifies operation
- Integrated programmer for 8 x 60 program steps
- Integrated external Pt100 connection
- USB port
- RS232 interface or analog interfaces
- Bath cover included with delivery
- Integrated drain makes emptying liquid easy and safe.
- High-quality thermal insulation of the bath tank



Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +200
Pump Capacity Flow Rate (l/min)	8...23
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	1.5...8.7
External Devices	Remote Control
Dimensions W x L x H (in)	15.4 x 24.4 x 18.9
Fluid Type	Silicone, Water, Other
Weight (lbs)	41.2
Power Options	100 V – 115 V / 50 – 60 Hz, 200 V – 230 V / 50 – 60 Hz



<u>Power Options</u>	<u>Additional Options</u>	<u>CODE</u>	<u>Price</u>
110 V - 115 V / 50 - 60 Hz	Base Model	JB-9021526.22	5,116.00
110 V - 115 V / 50 - 60 Hz	Analog Interface	JB-9021526.22.A	6,017.00
110 V - 115 V / 50 - 60 Hz	Digital Interface	JB-9021526.22.D	5,217.00
200 V - 230 V / 50 - 60 Hz	Base Model	JB-9021526.33	5,116.00
200 V - 230 V / 50 - 60 Hz	Analog Interface	JB-9021526.33.A	6,017.00
200 V - 230 V / 50 - 60 Hz	Digital Interface	JB-9021526.33.D	5,217.00

JB-DD-BC26
JULABO, DYNEO™,
DD-BC26



JB-CF31
JULABO, HIGHTECH,
CF31

The Cryo-Compact refrigerated/heating circulators have a very small footprint which is ideal for placing on bench top or in a fume hood with limited space. Models feature M16x1 male pump connections for external temperature applications with 8 and 12 mm hose barbs.

The HighTech CF31/CF41 units have a working temperature range from -30(-40) to +200 °C and include a dual screen display with numeric keypad for easy data entry and instrument reading. RS232 port for external communication and Pt100 sensor connection for external monitoring and control. A 4-speed centrifugal pressure / suction pump provides 22-26 L/min flow with 5.8-10.2 psi pressure / 2.9-5.6 psi suction. Integrated programmer with 6 x 60 program steps.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- Ergonomic design and easy operation
- Small overall dimensions for lowest space requirement
- Splash-proof keypad
- Bright VFD display and interactive LCD dialog display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- Electronically adjustable pump stages
- External Pt100 sensor connection
- Integrated programmer with 6x60 program steps
- Early warning system for low liquid level
- 3-point calibration
- TCF Temperature Control Features
- Adjustable high temperature cut-off
- Classification 3 according to DIN12876-1
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath
- Front drain

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.15 kW @ -20 °C, 0.25 kW @ 0 °C, 0.32 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-30 ... +200
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	9.4 x 18.1 x 15.7
Fluid Type	Silicone, Water
Weight (lbs)	79
Power Options	115 V / 60 Hz, 230 V / 60 Hz

Power Options

115 V / 60 Hz
230 V / 60 Hz

CODE

JB-9400331.2
JB-9400331.13

Price

10,113.00
10,113.00



JJ-CF41
JULABO, HIGHTECH,
CF41

The Cryo-Compact refrigerated/heating circulators have a very small footprint which is ideal for placing on bench top or in a fume hood with limited space. Models feature M16x1 male pump connections for external temperature applications with 8 and 12 mm hose barbs.

The HighTech CF31/CF41 units have a working temperature range from -30(-40) to +200 °C and include a dual screen display with numeric keypad for easy data entry and instrument reading. RS232 port for external communication and Pt100 sensor connection for external monitoring and control. A 4-speed centrifugal pressure / suction pump provides 22-26 L/min flow with 5.8-10.2 psi pressure / 2.9-5.6 psi suction. Integrated programmer with 6 x 60 program steps.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- Ergonomic design and easy operation
- Small overall dimensions for lowest space requirement
- Splash-proof keypad
- Bright VFD display and interactive LCD dialog display
- Highly precise ICC cascade temperature control
- RS232/RS485 interface for PC connection
- Electronically adjustable pump stages
- External Pt100 sensor connection
- Integrated programmer with 6x60 program steps
- Early warning system for low liquid level
- 3-point calibration
- TCF Temperature Control Features
- Adjustable high temperature cut-off
- Classification 3 according to DIN12876-1
- Pump connections for external temperature applications
- Bath opening for temperature control of small objects in the bath
- Front drain

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Cooling Capacity	0.28 kW @ -20 °C, 0.4 kW @ 0 °C, 0.47 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +200
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	11 x 18.1 x 18.1
Fluid Type	Silicone, Water
Weight (lbs)	92
Power Options	115 V / 60 Hz, 230 V / 60 Hz

Power Options

115 V / 60 Hz
 230 V / 60 Hz

CODE

JB-9400341.2
 JB-9400341.13

Price

11,188.00
 11,188.00



JB-FP51-SL
JULABO, HIGHTECH,
FP51-SL

JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 male).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control
- Proportional cooling control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.26 kW @ -40 °C, 1 kW @ -20 °C, 1.5 kW @ 0 °C, 2 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-51 ... +200
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	18.1 x 21.7 x 35
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	198
Power Options	208 V / 3 Ph. / 60 Hz, 230 V / 3 Ph. / 50 Hz, 400 V / 3 Ph. / 50 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
208 V / 3 Ph. / 60 Hz, 230 V / 3 Ph. / 50 Hz, 400 V / 3 Ph. / 50 Hz	JB-9352751.16.N	16,668.00



JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.1 kW @ -60 °C, 0.65 kW @ -40 °C, 1.6 kW @ -20 °C, 2.8 kW @ 0 °C, 3 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-60 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	23.2 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	343
Power Options	230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

**JB-HIGHTECH-
FP52-SL**
JULABO, HIGHTECH,
FP52-SL

Options	CODE	Price
FP52-SL-N	JB-9352752.16.N	33,810.00
FP52-SL-N150	JB-9352752.16.N150	37,607.00



JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.



Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



JB-FP-55-SL
JULABO, HIGHTECH,
FP55-SL

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.13 kW @ -60 °C, 0.7 kW @ -40 °C, 2.2 kW @ -20 °C, 4.1 kW @ 0 °C, 5.2 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-60 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.08-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	33.5 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	400
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

<u>Power Options</u>
230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz
FP55-SL-N150

<u>CODE</u>	<u>Price</u>
JB-9352755.16.N	39,253.00
JB-9352755.16.N150	42,994.00



JB-FP89-HL
JULABO, HIGHTECH,
FP89-HL

JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units. The FP89-HL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring. An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.

Power requirement: two outlets 208-230V/60Hz/16A.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control
-

Specs-At-A-Glance

Heating Capacity (kW)	1.3 @ 230 V
Cooling Capacity	0.2 kW @ -80 °C, 0.58 kW @ -60 °C, 0.75 kW @ -40 °C, 0.88 kW @ -20 °C, 0.92 kW @ 0 °C, 1 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-90 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	21.7 x 23.6 x 36.2
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	297
Power Options	230 V / 50 Hz, 230 V / 60 Hz

Power Options

230 V / 50 - 60 Hz

CODE

JB-9312689.13

Price

28,261.00



JULABO Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.



Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



**JB-HIGHTECH-
FP90-SL**
JULABO, HIGHTECH,
FP90-SL

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.15 kW @ -80 °C, 0.75 kW @ -60 °C, 1.35 kW @ -40 °C, 1.6 kW @ -20 °C, 1.7 kW @ 0 °C, 1.8 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-90 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	23.2 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	430

Power Options

FP90-SL-N
FP90-SL-N150

CODE

JB-9352790.16.N
JB-9352790.16.N150

Price

45,504.00
48,713.00



JULABO water-cooled Ultra-low refrigerated circulators for heating and cooling are suitable for external temperature tasks. Powerful circulating pump systems and high heating and cooling capacities guarantee short heat-up and cool-down times. ACC □Active Cooling Control□ provides active cooling control across the whole temperature range. An energy saving feature is provided by the proportional cooling capacity control in the □FP□ refrigeration units.

The SL circulator controller with dual VFD and LCD digital displays includes a keypad for easy data entry. The integrated programmer enables saving of 6 x 60 program steps and also includes a RS232 port for external PC communication and Pt100 port for external temperature control / monitoring.

An adjustable centrifugal pressure / suction pump with flow rate from 22-26 L/min; pressure flow 5.8-10.2 psi; suction flow 2.9-5.8 psi. M16x1 male pump connections with 8 and 12 mm hose barbs. The Smart Pump function automatically adjusts pump rate to compensate for increases in fluid viscosity.



Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).



**JB-HIGHTECH-
FPW91-SL**
JULABO, HIGHTECH,
FPW91-SL

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump
- Proportional cooling control
- Active Cooling Control

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Cooling Capacity	0.75 kW @ -80 °C, 2 kW @ -60 °C, 3.1 kW @ -40 °C, 3.7 kW @ -20 °C, 4.1 kW @ 0 °C, 4.5 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-91 ... +100
Pump Capacity Flow Rate (l/min)	22-26
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	33.5 x 29.9 x 45.7
Fluid Type	Silicone, Water, Fluorinert/Galden, Other
Weight (lbs)	653
Power Options	230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Power Options
FPW91-SL

CODE
JB-9352793.16.N

Price
58,079.00



JB-HE-4
JULABO, HIGHTECH,
HE-4

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +250
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.5 x 15.7
Fluid Type	Silicone, Water, Other
Weight (lbs)	24.2
Power Options	100 V – 115 V / 50 – 60 Hz, 100 V – 115 V / 50 – 60 Hz NRTL, 230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL
Additional Options	NRTL (select voltage/frequency combinations only)

Power Options	CODE	Price
100 V - 115 V / 50 - 60 Hz	JB-9212504.22	4,077.00
100 V - 115 V / 50 - 60 Hz NRTL	JB-9212504.22.CSA/UL	4,877.00
230 V / 50 - 60 Hz	JB-9212504.33	4,077.00
230 V / 50 - 60 Hz NRTL	JB-9212504.33.CSA/UL	4,877.00



JB-HL-4
JULABO, HIGHTECH,
HL-4

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump

Specs-At-A-Glance

Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Working Temp Range (°C)	+20 ... +250
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.5 x 15.7
Fluid Type	Silicone, Water, Other
Weight (lbs)	24.2
Power Options	100 V – 115 V / 50 – 60 Hz, 230 V / 50 – 60 Hz

Power Options

100 V - 115 V / 50 - 60 Hz
230 V / 50 - 60 Hz

CODE

JB-9312504.22
JB-9312504.33

Price

7,567.00
7,567.00



JB-SE-6
JULABO, HIGHTECH,
SE-6

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -+20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range (°C)	+20 ... +300
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.9 x 17.3
Fluid Type	Silicone, Water
Weight (lbs)	29.7
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9252506.33	7,850.00
230 V / 50 - 60 Hz NRTL	JB-9252506.33.CSA/UL	8,650.00



JB-SE-12
JULABO, HIGHTECH,
SE-12

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20°C to $+250^{\circ}\text{C}$ or $+300^{\circ}\text{C}$. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of $\pm 0.01^{\circ}\text{C}$. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232 interface for online communication
- Integrated programmer for 10 program steps

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range ($^{\circ}\text{C}$)	$+20 \dots +300$
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	11.8 x 16.9 x 18.5
Fluid Type	Silicone, Water
Weight (lbs)	30.8
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9252512.33	7,894.00
230 V / 50 - 60 Hz NRTL	JB-9252512.33.CSA/UL	9,694.00



JB-SL-6
JULABO, HIGHTECH,
SL-6

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range (°C)	+20 ... +300
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	8.3 x 16.9 x 17.3
Fluid Type	Silicone, Water
Weight (lbs)	29.7
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

Power Options	CODE	Price
230 V / 50 - 60 Hz	JB-9352506.33	8,513.00
230 V / 50 - 60 Hz NRTL	JB-9352506.33.CSA/UL	9,313.00



JB-SL-12
JULABO, HIGHTECH,
SL-12

The HighTech Series of JULABO Heating Circulators provide a range of operating temperatures from -20 °C to +250 °C or +300 °C. These temperature control units are suitable for temperature control of internal and external applications.

Models include a 4-speed centrifugal pressure/suction pump providing 22-26 L/min with pressures from 5.8-10.2 psi / suction from 2.9-5.8 psi. The smart-pump feature adjusts pump speed with changes to fluid viscosity. Units come with M16x1 male fittings with 8 and 12 mm hose barbs. TCF temperature control provides a stability of ± 0.01 °C. RS232 interface for PC integration. The bath float level switch provides an early warning for low liquid level.

Models include the a large TFT display, Pt100 external sensor outlet for external measurement and control and an integrated programmer for 10 (HE/SE) or 60 (HL/SL) program steps. Includes port for optional analog interface (8900100).

HL and SL models include the HE/SE features with the addition of a LCD screen with numeric keypad for easy set point entry and easy to read product information. Expanded programming capability with 6 x 60 program steps. Units include Stakei connectors for control of optional solenoid valve or HSP booster pump.

All units include an integrated cooling coil.

Included with each unit: 2 each barbed fittings for tubing 8 and 12 mm inner dia. (pump connections M16x1 female).

- VFD COMFORT DISPLAY
- LCD DIALOG DISPLAY backlit for convenient interactive operation
- Keypad for setpoints, warning/safety values and menu functions
- ICC (Intelligent Cascade Control), self-optimizing temperature control
- TCF Temperature Control Features to optimize the control behaviour
- ATC3 3-Point-Calibration
- Pt100 External sensor connection for measurement and control
- SMART PUMP, electronically adjustable pump stages
- Early warning system for low liquid level (DBGM 203 06 059.8)
- Adjustable high temperature cut-out, visible via display
- RS232/RS485 interface for online communication
- Integrated programmer for 6 x 60 program steps
- Connections for solenoid valve and HSP booster pump

Specs-At-A-Glance

Heating Capacity (kW)	3 @ 230 V
Working Temp Range (°C)	+20 ... +300
Pump Capacity Flow Rate (l/min)	22-26
Heating or Cooling Capability	Heating Only
Pump Capacity Flow Pressure (psi)	5.8-10.2
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	11.8 x 16.9 x 18.5
Fluid Type	Silicone, Water
Weight (lbs)	30.8
Power Options	230 V / 50 – 60 Hz, 230 V / 50 – 60 Hz NRTL

Power Options	CODE	Price
230 V / 50 - 60 Hz	JB-9352512.33	8,677.00
230 V / 50 - 60 Hz NRTL	JB-9352512.33.CSA/UL	9,477.00



JB-PRESTO-A30
JULABO, PRESTO®,
A30

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)	2.3 @ 208 V / 60 Hz, 2.7 @ 230 V / 50 Hz
Cooling Capacity	0.05 kW @ -30 °C, 0.2 kW @ 20 °C, 0.3 kW @ 10 °C, 0.4 kW @ 0 °C, 0.5 kW @ -20 °C, 0.5 kW @ 100 °C, 0.5 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-30 ... +250
Pump Capacity Flow Rate (l/min)	25
Pump Capacity Flow Pressure (psi)	7.25
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	9.5 x 22.9 x 24
Fluid Type	Silicone, Fluorinert/Galden, Other
Weight (lbs)	137
Power Options	208 V / 60 Hz, 230 V / 50 Hz

Power Options
 230 V / 50 Hz

CODE
 JB-9420300.14

Price
 17,668.00



JB-PRESTO-A40
JULABO, PRESTO®,
A40

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)	2.3 @ 208 V / 60 Hz, 2.7 @ 230 V / 50 – 60 Hz
Cooling Capacity	0.1 kW @ -40 °C, 0.3 kW @ -30 °C, 0.6 kW @ 20 °C, 0.9 kW @ 0 °C, 1.2 kW @ 100 °C, 1.2 kW @ 20 °C, 1.2 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +250
Pump Capacity Flow Rate (l/min)	16...40
Pump Capacity Flow Pressure (psi)	1.45...18.85
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	12.7 x 22.9 x 26
Fluid Type	Silicone, Fluorinert/Galden, Other
Weight (lbs)	174
Power Options	208 V / 60 Hz, 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-9420401.14	25,867.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust



Specs-At-A-Glance

Heating Capacity (kW)

Cooling Capacity

5.5 @ 208 V, 6 @ 230 V, 6 @ 400 V

0.3 kW @ -40 °C, 1 kW @ -30 °C, 1.8 kW @ 20 °C, 2.6 kW @ -10 °C, 3.3 kW @ 0 °C, 3.4 kW @ 200 °C, 3.5 kW @ 20 °C

Both

Heating or Cooling Capability

Working Temp Range (°C)

Pump Capacity Flow Rate (l/min)

Pump Capacity Flow Pressure (psi)

-45 ... +250

35...76

6.74 ... 43.5 @ 208V, 6.74 ... 46.4 @ 230V, 6.74 ... 46.4 @ 400V

External Devices

Dimensions W x L x H (in)

Fluid Type

Weight (lbs)

Power Options

External Temp Probe, Remote Control

20.9 x 26.2 x 49.6

Silicone, Fluorinert/Galden, Other

463

230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz



JB-PRESTO-A45
JULABO, PRESTO®,
A45

Model	CODE	Price
A45	JB-9420452.16	43,866.00
A45t	JB-9420452.16.T	47,187.00


JB-PRESTO-A80
**JULABO, PRESTO®,
A80**

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)

1.5 @ 208 V / 60 Hz, 1.8 @ 230 V / 50 Hz

Cooling Capacity

 0.1 kW @ -80 °C, 0.65 kW @ -60 °C, 1.1 kW @ -20 °C,
1.1 kW @ -40 °C, 1.1 kW @ 100 °C, 1.2 kW @ 0 °C, 1.2
kW @ 200 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-80 ... +250

Pump Capacity Flow Rate (l/min)

16...40

Pump Capacity Flow Pressure (psi)

1.45...18.85

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

16.9 x 25.6 x 49.5

Fluid Type

Silicone, Fluorinert/Galden

Weight (lbs)

362

Power Options

208 V / 60 Hz, 230 V / 50 Hz

Model	CODE	Price
A80	JB-9420801.14	43,047.00
A80t	JB-9420801.16.T	45,353.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



JB-PRESTO-A85
JULABO, PRESTO®,
A85

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Removable venting grid for simplified removal of dust

Specs-At-A-Glance

Heating Capacity (kW)	5.5 @ 208 V, 6 @ 230 V, 6 @ 400 V
Cooling Capacity	0.4 kW @ -80 °C, 2.2 kW @ -60 °C, 2.4 kW @ -20 °C, 2.4 kW @ -40 °C, 2.4 kW @ 0 °C, 2.5 kW @ 20 °C, 2.8 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-85 ... +250
Pump Capacity Flow Rate (l/min)	35...80
Pump Capacity Flow Pressure (psi)	6.96 ... 46.42 @ 400V, 6.96 ... 46.42 @ 230V, 6.96 ... 43.51 @ 208V
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	24.1 x 42.6 x 49.3
Fluid Type	Silicone, Fluorinert/Galden
Weight (lbs)	805
Power Options	230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

<u>Model</u>	<u>CODE</u>	<u>Price</u>
A80	JB-9420852.16	73,328.00
A80t	JB-9420852.16.T	79,238.00



JB-PRESTO-W40
JULABO, PRESTO®,
W40

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Water Cooled

Specs-At-A-Glance

Heating Capacity (kW)	2.3 @ 208 V / 60 Hz, 2.7 @ 230 V / 50 – 60 Hz
Cooling Capacity	0.3 kW @ -30 °C, 0.7 kW @ -40 °C, 0.8 kW @ -10 °C, 1 kW @ 0 °C, 1.2 kW @ 100 °C, 1.2 kW @ 20 °C, 1.2 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-40 ... +250
Pump Capacity Flow Rate (l/min)	16...40
Pump Capacity Flow Pressure (psi)	1.45...18.85
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	12.7 x 22.9 x 26
Fluid Type	Silicone, Fluorinert/Galden, Other
Weight (lbs)	172
Power Options	208 V / 60 Hz, 230 V / 50 – 60 Hz

<u>Model</u>	<u>CODE</u>	<u>Price</u>
W40	JB-9421401.14	26,866.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top

JB-PRESTO-W50 JULABO, PRESTO®, W50

Specs-At-A-Glance

Heating Capacity (kW)	5.5 @ 208 V, 6 @ 230 V, 6 @ 400 V
Cooling Capacity	0.6 kW @ -40 °C, 1.8 kW @ -30 °C, 3 kW @ -20 °C, 5 kW @ -10 °C, 6.5 kW @ 0 °C, 7 kW @ 200 °C, 7.5 kW @ 20 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-50 ... +250
Pump Capacity Flow Rate (l/min)	35...76
Pump Capacity Flow Pressure (psi)	6.74 ... 43.5 @ 208V, 6.74 ... 46.4 @ 230V, 6.74 ... 46.4 @ 400V
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	20.9 x 26.2 x 49.6
Fluid Type	Silicone, Fluorinert/Galden, Other
Weight (lbs)	463
Power Options	208 V – 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Model	CODE	Price
W50	JB-9421502.16	56,795.00
W50t	JB-9421502.16.T	63,678.00





JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top



JB-PRESTO-W55
JULABO, PRESTO®,
W55

Specs-At-A-Glance

Heating Capacity (kW)

Cooling Capacity

12.5 @ 208 V, 15 @ 230 V, 15 @ 400 V

0.3 kW @ -50 °C, 1.2 kW @ -40 °C, 10 kW @ 0 °C, 13.5

kW @ 200 °C, 15 kW @ 20 °C, 2.5 kW @ -30 °C, 4 kW

@ 20 °C, 6.5 kW @ -10 °C

Both

-55 ... +250

Heating or Cooling Capability

Working Temp Range (°C)

Pump Capacity Flow Rate (l/min)

35...80

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

24 x 33.3 x 49.2

Fluid Type

Silicone, Fluorinert/Galden, Other

Weight (lbs)

634.9

Power Options

208 V – 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz

Model

CODE

Price

W55

JB-9421552.16

67,185.00



PRESTO W56 water-cooled highly dynamic temperature control unit. Range -56...+250 °C with 27 kW heating power and 25.8 kW cooling power at 20 °C.

- Powerful circulating pumps, electronically adjustable in stages or by setting the pressure value
- Choose between a magnetically coupled centrifugal pump or a magnetically coupled gear pump for pressures up to 3.2 bar and virtually constant flow rate at any pressure
- Integrated 5.7" industrial color touchscreen displays all essential information and enables simple fingertip control
- Extensive warning, protection, and monitoring functions with detailed self-explanatory messages
- ICC cascade control for extraordinary precision, temperature stability ± 0.05 °C ... ± 0.2 °C
- Ambient temperature range +5 °C to +40 °C
- Integrated programmer with real-time clock
- Filling level indicator and pump capacity displayed electronically
- Interface for SD memory card
- Connections for USB, Ethernet, RS232, and Alarm output
- Integrated Modbus
- Optional analog connections, RS485, Profibus DP
- 1-stage water-cooled refrigeration system
- Sealed design enables operation to 150 °C with glycol/water and accessories



Specs-At-A-Glance

Heating Capacity (kW)

27

Cooling Capacity

1.4 kW @ -50 °C, 11.5 kW @ -20 °C, 16.9 kW @ -10 °C,
19 kW @ 200 °C, 23.1 kW @ 0 °C, 25.8 kW @ 20 °C,
3.5 kW @ -40 °C, 7.1 kW @ -30 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-56 ... +250

Pump Capacity Flow Rate (l/min)

35...80

Pump Capacity Flow Pressure (psi)

7...46.4

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

23.6 x 37 x 64.6

Fluid Type

Silicone, Water/Glycol, Fluorinert/Galden

Weight (lbs)

849

Power Options

480 V / 3 PPE / 60 Hz, 400 V / PPE / 50 Hz



Model

CODE

Price

W56

JB-9421562.17

91,573.00



JB-PRESTO-W56
JULABO, PRESTO®,
W56



JB-PRESTO-W80
JULABO, PRESTO®,
W80

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5.7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top
- Water cooled

Specs-At-A-Glance

Heating Capacity (kW)

Cooling Capacity

1.5 @ 208 V / 60 Hz, 1.8 @ 230 V / 50 Hz

0.1 kW @ -80 °C, 0.65 kW @ -60 °C, 1.1 kW @ -20 °C,
 1.1 kW @ -40 °C, 1.2 kW @ 0 °C, 1.2 kW @ 100 °C, 1.2
 kW @ 20 °C, 1.2 kW @ 200 °C

Heating or Cooling Capability

Both

Working Temp Range (°C)

-80 ... +250

Pump Capacity Flow Rate (l/min)

16...40

Pump Capacity Flow Pressure (psi)

1.45...18.85

External Devices

External Temp Probe, Remote Control

Dimensions W x L x H (in)

16.9 x 25.6 x 49.5

Fluid Type

Silicone, Fluorinert/Galden

Weight (lbs)

351

Power Options

208 V / 60 Hz, 230 V / 50 Hz

<u>Model</u>	<u>CODE</u>	<u>Price</u>
W80	JB-9421801.14	43,047.00
W80t	JB-9421801.16.T	44,137.00



JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.



The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.



JB-PRESTO-W85
JULABO, PRESTO®,
W85

- For highly precise, external temperature applications
- Rapid heating and cooling
- Fast compensation of exothermic reaction
- Wide working temperature ranges without changing fluids
- Highest performance with small footprint
- Space-saving design optimizes space utilization in your lab
- NEW 5,7" industrial color TFT touch screen
- well-organized view of important information with unmatched, intuitive user friendliness
- Up to 3 user level with password management
- NEW USB (Host und Device)
- NEW Ethernet
- NEW SD-Card slot
- RS232 / optional RS485 / optional Profibus DP
- Stand-by input
- Filling system accessible from the top

Specs-At-A-Glance

Heating Capacity (kW)	230 V / 3 Ph. / 50 Hz, 230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz
Cooling Capacity	0.4 kW @ -80 °C, 2.2 kW @ -60 °C, 2.4 kW @ -20 °C, 2.4 kW @ -40 °C, 2.4 kW @ 0 °C, 2.5 kW @ 20 °C, 2.8 kW @ 200 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-85 ... +250
Pump Capacity Flow Rate (l/min)	35...80
Pump Capacity Flow Pressure (psi)	6.96 ... 46.42 @ 400 V, 6.96 ... 46.42 @ 230 V, 6.96 ... 43.51 @ 208 V
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	24.1 x 33.3 x 49.3
Fluid Type	Silicone, Fluorinert/Galden
Weight (lbs)	738.6
Power Options	208 V / 60 Hz, 230 V / 50 Hz

Model	CODE	Price
W85	JB-9421852.16	73,115.00
W85t	JB-9421852.16.T	79,192.00



JB-PRESTO-W91
JULABO, PRESTO®,
W91

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250°C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- Extremely fast cool-down and heat-up times
- Wide working temperature range without changing the bath fluid
- Very fast compensation of exothermic and endothermic reactions
- Unsurpassed power and efficiency
- Heating capacity up to 36 kW
- Ambient temperature range +5 °C to +40 °C
- Space optimized design creates more room directly next to the units
- Integrated 5.7" industrial color touchscreen displays all essential information and enables simple fingertip control
- Extensive warning, protection, and monitoring functions with detailed self-explanatory messages
- ICC cascade control for extraordinary precision, temperature stability ± 0.05 °C \square ± 0.2 °C
- Integrated programmer with real-time clock
- Filling level indicator and pump capacity displayed electronically
- Powerful circulating pumps, electronically adjustable in stages or by setting the pressure value
- Interface for SD memory card
- Connections for USB, Ethernet, RS232, and Alarm output
- Optional analog connections, RS485, Profibus DP, Modbus

Specs-At-A-Glance

Heating Capacity (kW)	18
Cooling Capacity	10.5 kW @ -30 °C, 10.5 kW @ -40 °C, 11 kW @ 0 °C, 11 kW @ 100 °C, 11 kW @ 20 °C, 11 kW @ 200 °C, 2 kW @ -80 °C, 8 kW @ -60 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-91 ... +250
Pump Capacity Flow Rate (l/min)	26...80
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	37.4 x 50 x 74.8
Fluid Type	Silicone, Fluorinert/Galden
Power Options	400 V / 3 Ph. / 50 Hz, 480 V / 3 Ph. / 60 Hz
Weight (lbs)	1698

Model	CODE	Price
W91	JB-9421912.17	CALL
W91tt	JB-9421912.17.TT	CALL



JB-PRESTO-W92
JULABO, PRESTO®,
W92

JULABO PRESTO® Highly Dynamic Temperature Control Systems for highly precise temperature control of external applications. Systems offer rapid heating and cooling rates for fast compensation of external events. The hydraulically sealed heat exchanger design afford a wide working temperature range without changing fluids. All units feature a 5.7" industrial color TFT touch screen interface for unit operation, external integration and programming.

These instruments cover a working temperature range of -30 to +250 °C to -92 to 250 °C. Up to three user levels with password management enable safe, repeatable operation. Systems incorporate USB (host and device), Ethernet, SD-card slot, RS232 port, stand-by input and Pt100 external temperature sensor port.

The graphite bearing centrifugal pressure pump is lubricated by the bath fluid. All models (except for A30) can operate under pressure control to safeguard pressure sensitive applications (such as jacketed glass reactors).

Air and water-cooled versions available. Use only with approved JULABO fluids. Systems can operate with silicone fluids (Thermal P60 and Thermal P90) and HFEs (Fluorinert® and Galden®). Single stage PRESTO systems can operate with 1:1 ethylene glycol/water mixtures from -30 to +90 °C. Additional accessories available.

- Powerful circulating pumps, electronically adjustable in stages or by setting the pressure value
- Choose between a magnetically coupled centrifugal pump or a magnetically coupled gear pump for pressures up to 5.5 bar and virtually constant flow rate at any pressure
- Integrated 5.7" industrial color touchscreen displays all essential information and enables simple fingertip control
- Extensive warning, protection, and monitoring functions with detailed self-explanatory messages
- ICC cascade control for extraordinary precision, temperature stability ± 0.05 °C \square ± 0.2 °C
- Ambient temperature range +5 °C to +40 °C
- Integrated programmer with real-time clock
- Filling level indicator and pump capacity displayed electronically
- Interface for SD memory card
- Connections for USB, Ethernet, RS232, and Alarm output
- Optional analog connections, RS485, Profibus DP, Modbus
- 2-stage water-cooled refrigeration system

Specs-At-A-Glance

Heating Capacity (kW)	18
Cooling Capacity	10.5 kW @ -30 °C, 10.5 kW @ -40 °C, 11 kW @ 20 °C, 2 kW @ -80 °C, 20 kW @ 0 °C, 27 kW @ 20 °C, 29 kW @ 100 °C, 31 kW @ 200 °C, 8 kW @ -60 °C
Heating or Cooling Capability	Both
Working Temp Range (°C)	-92 ... +250
Pump Capacity Flow Rate (l/min)	26...80
Pump Capacity Flow Pressure (psi)	7.25...43.51
External Devices	External Temp Probe, Remote Control
Dimensions W x L x H (in)	37.4 x 50 x 74.8
Fluid Type	Silicone, Fluorinert/Galden
Power Options	400 V / 3 Ph. / 50 Hz, 480 V / 3 Ph. / 60 Hz
Weight (lbs)	1731

Model	CODE	Price
W92	JB-9421922.17	CALL
W92tt	JB-9421922.17.TT	CALL



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.

The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Space-saving model for use with one test tube rack



Specs-At-A-Glance

Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	0.5 @ 115 V, 0.5 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550504.22	988.00
230 V / 50 - 60 Hz	JB-9550504.33	988.00



JB-PURA-4
JULABO, PURA 4



Lift-up, transparent bath cover for PURA 4 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550580	235.00

JB-LIFT-UP-BATH-COVER-PURA-4
JULABO, PURA 4,
LIFT UP BATH COVER



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.

The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



Specs-At-A-Glance

Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.2 @ 115 V, 1.2 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550510.22	1,177.00
230 V / 50 - 60 Hz	JB-9550510.33	1,177.00



JB-PURA-10
JULABO, PURA 10



Lift-up, transparent bath cover for PURA 10 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550581	305.00

JB-LIFT-UP-BATH-COVER-PURA-10
JULABO, PURA 10,
LIFT UP BATH COVER



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



<u>Specs-At-A-Glance</u>	
Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.3 @ 115 V, 1.8 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550514.22	1,285.00
230 V / 50 - 60 Hz	JB-9550514.33	1,285.00



JB-PURA-14
JULABO, PURA 14



Lift-up, transparent bath cover for PURA 14 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550582	321.00

JB-LIFT-UP-BATH-COVER-PURA-14
JULABO, PURA 14,
LIFT UP BATH COVER



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
- 2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



Specs-At-A-Glance

Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.3 @ 115 V, 2 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550522.22	1,407.00
230 V / 50 - 60 Hz	JB-9550522.33	1,407.00



JB-PURA-22
JULABO, PURA 22



Lift-up, transparent bath cover for PURA 22 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550583	389.00

JB-LIFT-UP-BATH-COVER-PURA-22
JULABO, PURA 22,
LIFT UP BATH COVER



PURA water baths stand for a straightforward and safe working in the laboratory. The high-quality water baths offer a temperature stability of $\pm 0.15^{\circ}\text{C}$ 2). The working temperature range of $+18^{\circ}\text{C}$ to 99.9°C 1) allows a wide range of applications, such as routine laboratory work, temperature applications for samples, incubation, material testing, corrosion testing, temperature control applications of cultures as well as temperature tests of food and beverages and in the dental field.

All models (except PURA 4) come with an integrated drain screw for quick and clean draining of the baths. PURA water baths can be used flexibly and can be easily transported through ergonomic side recessed grips. Non-slip rubber feet ensure a firm footing and more safety in the laboratory.



The units are splash-proof, feature a (membrane) keypad and temperature display (LED) for ease of use. Operation in $^{\circ}\text{F}$ or $^{\circ}\text{C}$ with integrated timer. There are no disturbing parts inside the bath so that the entire inner surface can be used to safely temperature-control even small sample containers.

- 1) with counter-cooling/bath cover
2) with bath cover



- Ease of use
- Bright display
- Splash-proof protected mains switch
- Built-in dry running protection
- No disturbing elements in the bath
- Platform included as standard
- Integrated timer
- Non-slip rubber feet
- Ergonomic recessed grips
- Integrated drain screw



Specs-At-A-Glance

Working Temp Range ($^{\circ}\text{C}$)	+18 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
Heating Capacity (kW)	1.3 @ 115 V, 2 @ 230 V
Power Options	100 V – 115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
100 V – 115 V / 60 Hz	JB-9550530.22	1,660.00
230 V / 50 - 60 Hz	JB-9550530.33	1,660.00



JB-PURA-30
JULABO, PURA 30



Lift-up, transparent bath cover for PURA 30 water bath up to 99.9°C . The bath cover is made from plexiglass and polycarbonate.

CODE	Price
JB-9550584	476.00

JB-LIFT-UP-BATH-COVER-PURA-30
JULABO, PURA 30,
LIFT UP BATH COVER



**JB-WATER-BATH-
SW22
JULABO, SW22**

JULABO SW shaking water baths for unsupervised sample incubation. Stainless steel construction with an operating range from +20 to +99.9 °C. User-friendly operation via keypad with bright LED display. Electronic timer from 1 min to 9h 59min. Integrated RS232 interface for integration to PC software for control and data logging. Early low water level warning system. Early warning system with high and low temperature limits ensures that samples maintain the proper temperature. A removable shaking carriage for easy sample removal. A wide range of accessories, including bath covers, are available. Shaking frequency adjustable from 20 to 200 rpm. Shaking stroke = 15 mm.

SW22 unit with ± 0.2 °C stability. SW23 incorporates a water circulation pump for a stability of ± 0.02 °C.

- MICROPROCESSOR technology with PID temperature control
- Bright MULTI-DISPLAY (LED)
- Seamless, splash-proof keypad
- Splash-proof mains switch
- Electronic timer for setting the running time (0:01 to 9:59 h:min)
- On-line communication via built-in RS232 interface
- Early warning system with high and low temperature limits
- Drain screw for conveniently emptying the bath
- Dry-running protection / safety temperature fixed at 105 °C
- Wide range of accessories including lift-up Makrolon bath cover available
- EasyTemp control software is available free of charge
- Removable shaking carriage
- Shaking frequency adjustable from 20 to 200 rpm
- Shaking frequency indicated on MULTI-DISPLAY (LED)
- Shaking stroke 15 mm

Specs-At-A-Glance

Working Temp Range (°C)	+20 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
External Devices	Remote Control
Dimensions W x L x H (in)	27.6 x 13.8 x 10.2
Weight (lbs)	49
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz

Power Options	CODE	Price
115 V / 60 Hz	JB-9550322.2	4,170.00
230 V / 50 - 60 Hz	JB-9550322.3	4,170.00



**JB-WATER-BATH-
SW23**
JULABO, SW23

JULABO SW shaking water baths for unsupervised sample incubation. Stainless steel construction with an operating range from +20 to +99.9 °C. User-friendly operation via keypad with bright LED display. Electronic timer from 1 min to 9h 59min. Integrated RS232 interface for integration to PC software for control and data logging. Early low water level warning system. Early warning system with high and low temperature limits ensures that samples maintain the proper temperature. A removable shaking carriage for easy sample removal. A wide range of accessories, including bath covers, are available. Shaking frequency adjustable from 20 to 200 rpm. Shaking stroke = 15 mm.

SW22 unit with ± 0.2 °C stability. SW23 incorporates a water circulation pump for a stability of ± 0.02 °C.

Included with each unit: integrated circulating pump for best temperature stability and homogeneity

- MICROPROCESSOR technology with PID temperature control
- Bright MULTI-DISPLAY (LED)
- Seamless, splash-proof keypad
- Splash-proof mains switch
- Electronic timer for setting the running time (0:01 to 9:59 h:min)
- On-line communication via built-in RS232 interface
- Early warning system with high and low temperature limits
- Drain screw for conveniently emptying the bath
- Dry-running protection / safety temperature fixed at 105 °C
- Wide range of accessories including lift-up Makrolon bath cover available
- EasyTemp control software is available free of charge
- Removable shaking carriage
- Shaking frequency adjustable from 20 to 200 rpm
- Shaking frequency indicated on MULTI-DISPLAY (LED)
- Shaking stroke 15 mm
- With integrated circulation pump

Specs-At-A-Glance

Working Temp Range (°C)	+20 ... +99
Heating or Cooling Capability	Heating Only
Fluid Type	Water
External Devices	Remote Control
Dimensions W x L x H (in)	27.6 x 13.8 x 10.2
Weight (lbs)	51
Heating Capacity (kW)	1 @ 115 V, 2 @ 230 V
Power Options	115 V / 60 Hz, 230 V / 50 – 60 Hz

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 60 Hz	JB-9550323.2	5,139.00
230 V / 50 - 60 Hz	JB-9550323.3	5,193.00



Test tube rack for 60 tubes. 100 mm tall x 16/17 mm diameter. High grade plastic for operation to 100 °C. Integrated bottom ridge for drying over open baths: PURA water baths and CORIO product heating baths.

<u>Tube Size</u>	<u>CODE</u>	<u>Price</u>
100 x 16/17mm	JB-9970300	97.00

JB-TEST-TUBE- RACKS-60

**JULABO, TEST TUBE
RACKS, 60 TUBES**



Test tube rack for 90 tubes. 75 mm tall x 12/13 mm diameter. High grade plastic for operation to 100 °C. Integrated bottom ridge for drying over open baths: PURA water baths and CORIO product heating baths.

<u>Tube Size</u>	<u>CODE</u>	<u>Price</u>
75 x 12/13mm	JB-9970301	97.00

JB-TEST-TUBE- RACKS-90

**JULABO, TEST TUBE
RACKS, 90 TUBES**



Test tube rack for 21 tubes to 30 mm diameter. High grade plastic for operation to 100 °C. Integrated bottom ridge for drying over open baths: PURA water baths and CORIO product heating baths.

<u>Tube Size</u>	<u>CODE</u>	<u>Price</u>
75 x 12/13mm	JB-9970303	97.00

JB-TEST-TUBE- RACKS-21

**JULABO, TEST TUBE
RACKS, 21 TUBES**





Test tube rack, for 28 tubes, 16/17 mm, dia. Immersion depth 80 mm. For use with F25-HE, F25-HL.

<u>Tube Size</u>	<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
80 x 16/17 mm	28	JB-8970320	154.00
65 x 12/13mm	38	JB-8970321	193.00

**JB-TEST-TUBE-
RACKS-F25**
JULABO, TEST TUBE
RACKS, F25



For use with shaking water baths SW22, SW23. Requires base tray JB-8970369.

<u>Temperature</u>	<u>Tube Size</u>	<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
to +80°C	11/12 mm	90	JB-8970382	161.00
to +80°C	12/13 mm	90	JB-8970381	119.00
to +80°C	16/17 mm	60	JB-8970380	119.00
to +80°C	30/31 mm	21	JB-8970383	119.00
to +100°C	11/12 mm	90	JB-8970346	230.00
to +100°C	12/13 mm	90	JB-8970345	224.00
to +100°C	15/16 or 16/17 mm	50	JB-8970344	225.00
to +100°C	30/31 mm	21	JB-8970347	217.00

**JB-TEST-TUBE-
RACKS-TT-RACK-
SW22-SW23**
JULABO, TEST TUBE
RACKS, TT RACK,
SW22 SW23



Made of stainless steel, up to +150°C. For use with: CORIO C-B5, CORIO C-BT5, CORIO CD-200F, CORIO CD-201F, CORIO CD-300F, CORIO CD-B5, CORIO CD-BT5, CORIO CP-200F, CORIO CP-201F, CORIO CP-300F, CORIO CP-BC4, CORIO CP-BC6, DYNEO DD-200F, DYNEO DD-201F, DYNEO DD-300F, CORIO CD-BC4, CORIO CD-BC6, DYNEO DD-BC4, DYNEO DD-BC6.

<u>Tube Size</u>	<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
100 x 17 mm	30	JB-9970320	167.00
75 x 12/13 mm	42	JB-9970321	167.00
40 x 10/11 mm	42	JB-9970322	167.00
For 50 ml	10	JB-9970323	167.00

**JB-TEST-TUBE-
RACKS-STAIN-
LESS-STEEL**
JULABO, TEST TUBE
RACKS, STAINLESS
STEEL



Basket for 20 Bottles 0.33 l / 0.5l made of stainless steel. For use with: CORIO CD-1001F, CORIO CP-1001F, DYNEO DD-1001F.

<u>CODE</u>	<u>Price</u>
JB-9970337	1,150.00

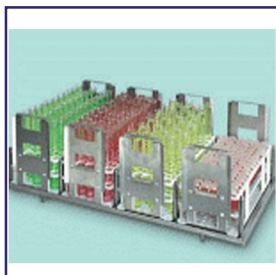
**JB-TEST-TUBE-
RACKS-BOTTLE-
BASKETS-1001F**
JULABO, TEST TUBE
RACKS, BOTTLE
BASKETS, 1001F



Immersion-height adjustable platform. Allows for manual adjustment of the bath depth for optimal sample placement.

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
13L / 17L	JB-9970503	491.00
19L / 27L	JB-9970502	539.00

**JB-TEST-TUBE-
RACKS-IMMER-
SION-HEIGHT-PLA-
TFORM**
JULABO, TEST TUBE
RACKS, BOTTLE
BASKETS, IMMER-
SION-HEIGHT PLAT-
FORM



Tray with 4 racks to +80°C. For use with shaking water baths: SW22 / SW23.

<u>Tube Size</u>	<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
100 x 16/17mm	240	JB-8960440	680.00
75 x 12/13mm	360	JB-8960441	680.00
30 x 11/12mm	360	JB-8960442	787.00
30/31mm	84	JB-8960443	680.00

**JB-TEST-TUBE-
RACKS-CARRIER-
TRAY-4X**
JULABO, TEST TUBE
RACKS, CARRIER
TRAY 4X





Carrier trays for Erlenmeyer flasks. For use with shaking water bath models SW22, SW23.

<u>Capacity</u>	<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
25 ml	45	JB-8970360	505.00
50 ml	32	JB-8970361	415.00
100 ml	18	JB-8970362	383.00
200 ml	15	JB-8970363	430.00
250 ml	11	JB-8970364	479.00
500 ml	8	JB-8970365	313.00
1000 ml	5	JB-8970366	506.00

**JB-TEST-TUBE-
RACKS-CARRIER-
TRAY-FOR-ERLEN
MEYER-FLASKS
JULABO, TEST TUBE
RACKS, CARRIER
TRAY FOR ERLEN-
MEYER FLASKS**



Basic tray for assembling a maximum of 4 test tube racks: JB-8970380, JB-8970381, JB-8970382 or JB-8970383. For use with shaking water bath models SW22, SW23.

<u>CODE</u>	<u>Price</u>
JB-8970369	308.00

**JB-TEST-TUBE-
RACKS-BASIC-
TRAY
JULABO, TEST TUBE
RACKS, BASIC TRAY**



Spring clamps for Erlenmeyer flasks. Installs on basic tray JB-8970620 (sold separately) for use with shaking water bath models SW22, SW23.

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
10 ml	JB-8970601	42.00
25 ml	JB-8970602	44.00
50 ml	JB-8970603	50.00
100 ml	JB-8970604	58.00
200/250 ml	JB-8970606	71.00
300 ml	JB-8970607	71.00
500 ml	JB-8970608	80.00
1000 ml	JB-8970609	95.00

**JB-SPRING-
CLAMPS-FOR-ER-
LENMEYER-FLAS
KS
JULABO, SPRING
CLAMPS, FOR ER-
LENMEYER FLASKS**





Basic tray for assembling spring clamps. For use with shaking water bath models SW22, SW23. Mix and match combinations of spring clamps 8970601 through 8970609 install on the basic tray.

CODE	Price
JB-8970620	326.00

JB-SPRING-CLAMPS-BASIC-TRAY
JULABO, SPRING CLAMPS, BASIC TRAY



Basic tray for assembling Erlenmeyer flasks from 25 to 1000 mL, including spring clamps. Arrange springs to hold flasks in preferred arrangement. For use in shaking water bath models SW22, SW23.

CODE	Price
JB-8970630	528.00

JB-SPRING-CLAMPS-UNIVERSAL-TRAY
JULABO, SPRING CLAMPS, UNIVERSAL TRAY



Spring clamps set for basic tray JB-8970630. Set including 12 spring clamps 135 mm and 5 spring clamps 190 mm length. Additional springs. For use with shaking water bath models SW22, SW23.

CODE	Price
JB-8970631	117.00

JB-SPRING-CLAMPS-SET
JULABO, SPRING CLAMPS SET



5 L Transparent bath tank up to +100°C for heating immersion circulators CORIO C and CD. Inner dimensions (WxL/D): 5.9 x 11.8 / 5.9"; Outer dimensions (WxL/D): 9.1 x 15 x 6.3".

CODE	Price
JB-9901305	316.00

JB-BATH-TANK-BT5
JULABO, BATH TANK, BT5



9 L Transparent bath tank up to +100°C for heating immersion circulators CORIO C and CD. Inner dimensions (WxL/D): 9.4 x 11.8 / 5.9"; Outer dimensions (WxL/D): 12.6 x 15 x 6.3".

CODE	Price
JB-9901309	394.00

JB-BATH-TANK-BT9
JULABO, BATH TANK, BT9



19 L Transparent bath tank up to +100°C for heating immersion circulators CORIO C and CD. Inner dimensions (WxL/D): 11.8 x 19.6 / 5.9"; Outer dimensions (WxL/D): 15 x 22.8 x 6.3".

CODE	Price
JB-9901319	511.00

JB-BATH-TANK-BT19
JULABO, BATH TANK, BT19





27 L Transparent bath tank up to +100°C for heating immersion circulators CORIO C and CD. Inner dimensions (WxL/D): 11.8 x 19.6 / 7.9"; Outer dimensions (WxL/D): 15 x 22.8 x 8.3".

CODE	Price
JB-9901327	586.00

JB-BATH-TANK-BT27
JULABO, BATH TANK, BT27



5 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 5.9 x 11.8 / 5.9"; Outer dimensions (WxL/D): 9.1 x 15 x 7.9".

CODE	Price
JB-9903405	432.00

JB-BATH-TANK-B5
JULABO, BATH TANK, B5



13 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 11.8 x 12.6 / 5.9"; Outer dimensions (WxL/D): 15 x 15.7 x 7.9".

CODE	Price
JB-9903413	743.00

JB-BATH-TANK-B13
JULABO, BATH TANK, B13



17 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 11.8 x 19.6 / 5.9"; Outer dimensions (WxL/D): 15 x 15.7 x 9.9".

CODE	Price
JB-9903417	877.00

JB-BATH-TANK-B17
JULABO, BATH TANK, B17



19 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 11.8 x 19.6 / 5.9"; Outer dimensions (WxL/D): 15 x 15.7 x 7.9".

CODE	Price
JB-9903419	871.00

JB-BATH-TANK-B19
JULABO, BATH TANK, B19



27 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 11.8 x 19.6 / 7.9"; Outer dimensions (WxL/D): 15 x 22.8 x 9.9".

CODE	Price
JB-9903427	1,118.00

JB-BATH-TANK-B27
JULABO, BATH TANK, B27





33 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 32.6 x 11.8 / 5.9"; Outer dimensions (WxL/D): 35.8 x 14.2 x 7.9".

<u>CODE</u>	<u>Price</u>
JB-9903433	2,645.00

JB-BATH-TANK-B33
JULABO, BATH TANK, B33



5 L Stainless steel bath tank up to +150°C, insulated for heating immersion circulators. Inner dimensions (WxL/D): 5.9 x 11.8 / 5.9"; Outer dimensions (WxL/D): 9.1 x 15 x 7.9".

<u>CODE</u>	<u>Price</u>
JB-9903439	2,761.00

JB-BATH-TANK-B39
JULABO, BATH TANK, B39



Lift-up Makrolon cover WxLxH: (51x35x16 cm): Prevent liquid losses due to evaporation, protects samples from contamination to +80°C, for SW22, SW23.

<u>CODE</u>	<u>Price</u>
JB-8970288	408.00

JB-BATH-COVER-LIFT-UP
JULABO, BATH COVERS, LIFT-UP PLASTIC COVER



Transparent bath cover made of plexiglas for a temperature range from -10C°...+80C° for use with CD-1001F, CP-1001F and DD-1001F refrigerated/heating circulators.

<u>CODE</u>	<u>Price</u>
JB-9970247	756.00

JB-BATH-COVER-TRANSPARENT-1001F
JULABO, BATH COVERS, TRANSPARENT, 1001F



Flat bath cover for PURA with appropriate sets of rings.

<u>Used For</u>	<u>Holes</u>	<u>CODE</u>	<u>Price</u>
PURA 10	1	JB-9970571	218.00
PURA 10	4	JB-9970570	349.00
PURA 14	6	JB-9970572	495.00
PURA 22	2	JB-9970575	364.00
PURA 22	6	JB-9970574	538.00
PURA 22	8	JB-9970573	643.00
PURA 30	3	JB-9970577	451.00
PURA 30	10	JB-9970576	899.00

JB-BATH-COVER-FLAT-FOR-PURA
JULABO, BATH COVERS, FLAT FOR PURA



JB-BATH-COVER-HEAT-EX-CHANGER-LID-4L-6L
JULABO, BATH COVERS, HEAT EX-CHANGER LID, 4L/6L

Bath cover with built-in heat exchanger. Stainless steel coils enable temperature control of a gas or liquid circulated through the coil with temperature control from the bath tank. Accessory suitable for models: CORIO CD-BC4, CORIO CD-BC6, CORIO CP-200F, CORIO CP-201F, CORIO CP-300F, CORIO CP-BC4, CORIO CP-BC6, DYNEO DD-200F, DYNEO DD-201F, DYNEO DD-300F, DYNEO DD-BC4, DYNEO DD-BC6

CODE	Price
JB-9970240	626.00



JB-BATH-COVER-HEAT-EX-CHANGER-LID-12L
JULABO, BATH COVERS, HEAT EX-CHANGER LID, 12L

Bath cover with built-in heat exchanger. Stainless steel coils enable temperature control of a gas or liquid circulated through the coil with temperature control from the bath tank. Accessory suitable for models: CORIO CD-BC12, CORIO CP-1000F, CORIO CP-600F, CORIO CP-601F, CORIO CP-BC12, DYNEO DD-1000F, DYNEO DD-600F, DYNEO DD-601F, DYNEO DD-BC12.

CODE	Price
JB-9970242	721.00



JB-BATH-FLUIDS-THERMAL-EG
JULABO, BATH FLUIDS, THERMAL EG

CAUTION: not suitable for use with exposure to aluminum components! Contact JULABO directly for information on ethylene glycol formulated for use with aluminum.

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal EG is clear, concentrated ethylene glycol with added stabilizer. Dilution of Thermal EG with water to a 1:1 ratio yields a working temperature range of -30...+80 °C rated for use in open bath JULABO units or from -30...+90 °C in single stage PRESTO units.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

Capacity	CODE	Price
5 Liter	JB-8891407	217.00
10 Liter	JB-8891406	391.00



**JB-BATH-FLUIDS-
THERMAL-C2
JULABO, BATH
FLUIDS, THERMAL C2**

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal C2 is a clear 2 cSt silicone fluid rated for use in open bath JULABO units with a working temperature range of -90...+60 °C. Care should be taken to observe atmospheric moisture condensation in the bath fluid with prolonged sub-ambient operation in humid environments. Water and silicone fluids are not miscible.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891401	661.00
10 Liter	JB-8891400	1,313.00



**JB-BATH-FLUIDS-
THERMAL-C5
JULABO, BATH
FLUIDS, THERMAL C5**

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal C5 is a clear 5 cSt silicone fluid rated for use in open bath JULABO units with a working temperature range of -60...+110 °C. Care should be taken to observe atmospheric moisture condensation in the bath fluid with prolonged sub-ambient operation in humid environments. Water and silicone fluids are not miscible.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891403	894.00
10 Liter	JB-8891402	1,777.00



**JB-BATH-FLUIDS-
THERMAL-C10
JULABO, BATH
FLUIDS, THERMAL
C10**

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal C10 is a clear 10 cSt silicone fluid rated for use in open bath JULABO units with a working temperature range of -20...+160 °C. Care should be taken to observe atmospheric moisture condensation in the bath fluid with prolonged sub-ambient operation in humid environments. Water and silicone fluids are not miscible. Operation at the maximum temperature for heating applications will result in vapor formation. Vapor formation at elevated temperatures is a normal occurrence for silicone fluids. The upper temperature limit of the fluid is lower than the fluid flashpoint.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891405	1,342.00
10 Liter	JB-8891404	2,665.00



**JB-BATH-FLUIDS-
THERMAL-C20S
JULABO, BATH
FLUIDS, THERMAL
C20S**

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal C20S is a light brown 20 cSt silicone fluid with added stabilizer rated for use in open bath JULABO units with a working temperature range of 0...+220 °C. Care should be taken to observe atmospheric moisture condensation in the bath fluid with prolonged sub-ambient operation in humid environments. Water and silicone fluids are not miscible. Operation at the maximum temperature for heating applications will result in vapor formation. Vapor formation at elevated temperatures is a normal occurrence for silicone fluids. The upper temperature limit of the fluid is lower than the fluid flashpoint.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891409	763.00
10 Liter	JB-8891408	1,415.00



JB-BATH-FLUIDS- THERMAL-C50S JULABO, BATH FLUIDS, THERMAL C50S

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal C50S is a light brown 50 cSt silicone fluid with added stabilizer rated for use in open bath JULABO units with a working temperature range of +20...+250 °C. Operation at the maximum temperature for heating applications will result in vapor formation. Vapor formation at elevated temperatures is a normal occurrence for silicone fluids. The upper temperature limit of the fluid is lower than the fluid flashpoint.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891411	957.00
10 Liter	JB-8891410	1,774.00



JB-BATH-FLUIDS- THERMAL-P60 JULABO, BATH FLUIDS, THERMAL P60

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal P60 is a clear 5 cSt silicone fluid rated for use in JULABO PRESTO units only with a working temperature range of -60...+250 °C. This temperature range is only valid when used in PRESTO systems! The internal PRESTO cold oil overlay technology enables for safe operation above the fluid flashpoint.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891413	1,137.00
10 Liter	JB-8891412	2,122.00





**JB-BATH-FLUIDS-
THERMAL-P90**
JULABO, BATH
FLUIDS, THERMAL
P90

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal P90 is a clear 2 cSt silicone fluid rated for use in JULABO PRESTO units only with a working temperature range of -90...+170 °C. This temperature range is only valid when used in PRESTO systems! The internal PRESTO cold oil overlay technology enables for safe operation above the fluid flashpoint.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891415	1,023.00
10 Liter	JB-8891414	1,972.00



**JB-BATH-FLUIDS-
THERMAL-H350**
JULABO, BATH
FLUIDS, THERMAL
H350

JULABO Thermal bath fluids are ideally suited for all of your temperature control applications and guarantee safe and reliable operation. Choosing the proper bath fluid is critical for the best temperature control results. Viscosity, oxidation characteristics and heat transfer of Thermal fluids are matched specifically with each JULABO temperature control unit. JULABO Thermal bath fluids have been carefully selected and optimized for maximum performance with JULABO instruments.

Thermal H350 is a light brown to colorless 47 cSt hydrocarbon-based fluid rated for use in JULABO Forte HT high temperature heating circulator units only with a working temperature range of +50...+350 °C. This temperature range is only valid when used in Forte HT systems! The internal Forte HT cold oil overlay technology enables for safe operation above the fluid flashpoint.

- Low Toxicity
- Low viscosity
- High stability
- Minimum odor
- Good heat conductivity
- Low corrosion tendency
- Wide temperature ranges

<u>Capacity</u>	<u>CODE</u>	<u>Price</u>
5 Liter	JB-8891415-1	1,023.00



USB Cable 2m, Type A-B

CODE	Price
JB-9900110	35.00

JB-DIGITAL-USB-CABLE
JULABO, DIGITAL,
USB CABLE



USB 2.0 Repeater extension cable, length 5m

Length	CODE	Price
5.0 m	JB-9900112	71.00
10.0 m	JB-9900114	85.00

JB-DIGITAL-USB-2.0-REPEATER
JULABO, DIGITAL,
USB 2.0 REPEATER



Electronic module with one input and two outputs for external programming or flow sensor or temperature recorder (current/voltage), scalable as well as Standby input and Alarm output. Available as option or to retrofit for circulators of the HighTech series.

CODE	Price
JB-8900100	662.00

JB-DIGITAL-ELECTRONIC-MODULE-ANALOG-CONNECTIONS
JULABO, DIGITAL,
ELECTRONIC MODULE, ANALOG CONNECTIONS



Electronic module with analog connections (Input, Output, Standby-In). For use with PRESTO A30, PRESTO A40, PRESTO A45, PRESTO A45t, PRESTO A80, PRESTO A80t, PRESTO A85, PRESTO A85t, PRESTO W40, PRESTO W50, PRESTO W50t, PRESTO W55, PRESTO W80, PRESTO W80t, PRESTO W85, PRESTO W85t, PRESTO W91, PRESTO W91tt, PRESTO W91x, PRESTO W92, PRESTO W92tt, PRESTO W92tx, PRESTO W92x

CODE	Price
JB-8900105	754.00

JB-DIGITAL-PRESTO-ELECTRONIC-MODULE
JULABO, DIGITAL,
PRESTO, ELECTRONIC MODULE



Module with Pt100 interface socket for 2. external Pt 100 sensors. Fo use with PRESTO systems only. Suitable for: PRESTO A40, PRESTO A45, PRESTO A45t, PRESTO A80, PRESTO A80t, PRESTO A85, PRESTO A85t, PRESTO W40, PRESTO W50, PRESTO W50t, PRESTO W55, PRESTO W80, PRESTO W80t, PRESTO W85, PRESTO W85t, PRESTO W91, PRESTO W91tt, PRESTO W91x, PRESTO W92, PRESTO W92tt, PRESTO W92tx, PRESTO W92x

CODE	Price
JB-8900106	4,258.00

JB-DIGITAL-PRESTO-Pt100-MODULE
JULABO, DIGITAL,
PRESTO, Pt100 MODULE





External Pt100 sensor, 200 x 6 mm, diameter, stainless steel, 1.5 m cable with 4-pin Lemosa plug. For use with JULABO systems having external Pt100 capability.

<u>CODE</u>	<u>Price</u>
JB-8981003	CALL

**JB-SENSORS-SS-
Pt100-200mm**
JULABO, SENSORS,
200mm SS Pt100



External Pt100 sensor, 20 x 2 mm, stainless steel, 1.5 m cable with 4-pin Lemosa plug. For use with JULABO systems having external Pt100 capability.

<u>CODE</u>	<u>Price</u>
JB-8981006	678.00

**JB-SENSORS-SS-
Pt100-20mm**
JULABO, SENSORS,
20mm SS Pt100



External Pt100 sensor, 300 x 6 mm, diameter, stainless steel, 1.5 m cable with 4-pin Lemosa plug. For use with JULABO systems having external Pt100 capability.

<u>CODE</u>	<u>Price</u>
JB-8981010	CALL

**JB-SENSORS-SS-
Pt100-300mm**
JULABO, SENSORS,
300mm SS Pt100



External Pt100 sensor 200 x 6 mm, stainless steel with PTFE coating, 3 m cable with 4-pin Lemosa plug. Usable for working temperatures from - 75 ...+250°C. Without handle. For use with JULABO systems having external Pt100 capability.

<u>CODE</u>	<u>Price</u>
JB-8981017	CALL

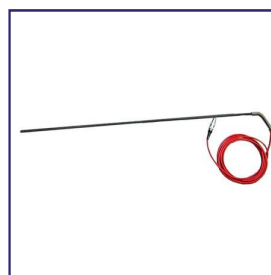
**JB-SENSORS-
PTFE-Pt100-
200mm**
JULABO, SENSORS,
200mm PTFE Pt100



External Pt100 sensor, 300 x 6 mm, stainless steel with PTFE coating, 3 m cable with 4-pin Lemosa plug. Usable for working temperatures from - 75°C to 250°C. Without handle. For use with JULABO systems having external Pt100 capability.

<u>CODE</u>	<u>Price</u>
JB-8981015	CALL

**JB-SENSORS-
PTFE-Pt100-
300mm**
JULABO, SENSORS,
300mm PTFE Pt100

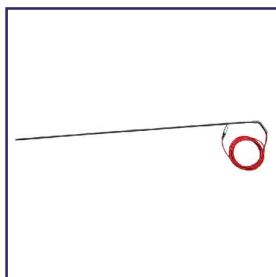


External Pt100 sensor, 600 x 6 mm, stainless steel with PTFE coating, 3 m cable with 4-pin Lemosa plug. For use with JULABO systems having external Pt100 capability.

<u>CODE</u>	<u>Price</u>
JB-8981013	CALL

**JB-SENSORS-
PTFE-Pt100-
600mm**
JULABO, SENSORS,
600mm PTFE Pt100



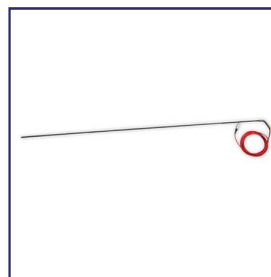


External Pt100 sensor, 900 x 6 mm, stainless steel with PTFE coating, 3 m cable with 4-pin Lemosa plug. Usable for working temperatures from - 75°C to 250°C. Without handle. For use with JULABO systems having external Pt100 capability.

JB-SENSORS-PTFE-Pt100-900mm
JULABO, SENSORS,
900mm PTFE Pt100

CODE
JB-8981016

Price
CALL

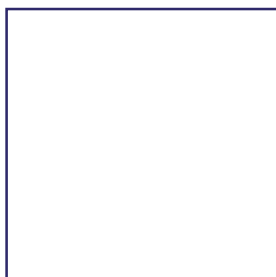


External Pt100 sensor, 1200 x 6 mm, stainless steel with PTFE coating, 3 m cable with 4-pin Lemosa plug. For use with JULABO systems having external Pt100 capability.

JB-SENSORS-PTFE-Pt100-1200mm
JULABO, SENSORS,
1200mm PTFE Pt100

CODE
JB-8981014

Price
CALL



External Pt100 sensor, 12' cable with 4-pin Lemosa plug. For use with JULABO units having Pt100 capability.

JB-SENSORS-EXTERNAL-Pt100
JULABO, SENSORS,
EXTERNAL, Pt100

<u>Length</u>	<u>Material</u>	<u>CODE</u>	<u>Price</u>
8"	Stainless Steel	JB-8891031	407.00
12"	PTFE	JB-8891019	734.00
12"	Stainless Steel	JB-8891018	431.00
24"	PTFE	JB-8891002	746.00
24"	Stainless Steel	JB-8891001	673.00
36"	PTFE	JB-8891004	962.00
36"	Stainless Steel	JB-8891003	743.00
48"	PTFE	JB-8891006	1,071.00
48"	PTFE	JB-8891032	693.00
48"	Stainless Steel	JB-8891005	960.00



M+R in-line Pt100 sensor, 1.5 m cable (measurement and control in external system). M16x1 male fittings with hose barb connections (barb connections are removable). For in-line Pt100 monitoring/control from an external position in the flow circuit. For use with JULABO systems having external Pt100 capability.

JB-SENSORS-M+R-IN-LINE-Pt100-M16
JULABO, SENSORS,
M+R IN-LINE Pt100,
M16

CODE
JB-8981020

Price
753.00



M+R in-line Pt100 sensor, 1.5 m cable (measurement and control in external system). M24x1.5 male fittings. For in-line Pt100 monitoring/control from an external position in the flow circuit. For use with JULABO systems having external Pt100 capability.

JB-SENSORS-M+R-IN-LINE-Pt100-M24
JULABO, SENSORS,
M+R IN-LINE Pt100,
M24

CODE
JB-8981021

Price
960.00



M+R in-line Pt100 sensor, 1.5 m cable (measurement and control in external system). M30x1.5 male fittings. For in-line Pt100 monitoring/control from an external position in the flow circuit. For use with JULABO systems having external Pt100 capability.

**JB-SENSORS-
M+R-IN-LINE-
Pt100-M30**
JULABO, SENSORS,
M+R IN-LINE Pt100,
M30

CODE	Price
JB-8981022	1,021.00



M+R in-line Pt100 sensor, 1.5 m cable (measurement and control in external system). M38x1.5 male fittings. For in-line Pt100 monitoring/control from an external position in the flow circuit. For use with JULABO systems having external Pt100 capability.

**JB-SENSORS-
M+R-IN-LINE-
Pt100-M38**
JULABO, SENSORS,
M+R IN-LINE Pt100,
M38

CODE	Price
JB-8981023	1,081.00



In-line Pressure sensor, 2 fittings (-95 ... +250°C). For use with PRESTO units only. Enables in-line pressure control from location in the fluid flow circuit.

**JB-PRESTO-
PRESSURE-SEN-
SORS**
JULABO, PRESTO,
PRESSURE SENSORS

Fitting Type	CODE	Price
M24x1.5 Male	JB-8980771	773.00
M30x1.5 Male	JB-8980772	802.00
M38x1.5 Male	JB-8980773	929.00



3.5 m Extension cable for Pt100 sensor, Lemosa-type. Highly recommended for use with PRESTO W91, W91tt, W91x, W91ttx, W92, W92tt, W92x, W92ttx.

**JB-SENSORS-
Pt100-EXTEN-
SION-CABLE**
JULABO, SENSORS,
Pt100 EXTENSION
CABLE

CODE	Price
JB-8981103	406.00



External Pt100 connector for wiring 4-wire Pt100 sensors. 4-pin Lemosa connection. For use with JULABO systems having external Pt100 sensor capability.

**JB-EXTERNAL-
PT100-CONNec-
TOR**
JULABO, PLUGS, EX-
TERNAL Pt100 CON-
NECTOR

CODE	Price
JB-8980131	93.00



External input, for an external shutoff switch, for example. In combination with analogop-tion 8900100 excluding PrestoPlus, Magnum91, Forte HT. Semichiller with Pro Option "3".

CODE	Price
JB-8980133	30.00

JB-STANDY-PLUG-3-POLE
JULABO, PLUGS,
STANDBY PLUG, 3
POLE



Alarm plug 5 pole. For use in combination with JULABO systems having an analog module.

CODE	Price
JB-8980135	30.00

JB-ALARM-PLUG-5-POLE
JULABO, PLUGS,
ALARM PLUG, 5 POLE



REG EPROG plug 6 pole for use with JULABO units having an analog module. For external PLC control via current or voltage.

CODE	Price
JB-8980136	30.00

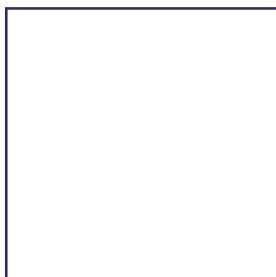
JB-REG-EPROG-PLUG-6-POLE
JULABO, PLUGS,
REG EPROG-PLUG, 6
POLE



Stakei Plug. For use with HL/SL circulators.

CODE	Price
JB-8980137	30.00

JB-STAKEI-PLUG
JULABO, PLUGS,
STAKEI PLUG



Measurement technology: magnetic-inductive;
Suitable Fluids: Thermal EG, Water-Glycol
Working temperature range: -40°C...+90°C
Accuracy: 1.56 ... 0.51 %
Flow rate: 1 ... 100 l/min

- 1) Fluid connectors: M30x1.5 male
- 2) Tubing diameter: DN15

Output signal: 4 ... 20 mA
Main power supply: 100-230V/50-60Hz
Power Supply and 2.5m analog signal cable to connect to PRESTO included. Assembled in frame (height app. 500mm)

- 1) Electronically controlled fluid-bypass may be required for small flow rates
- 2) Adapters may be required.

Options	CODE	Price
DN15	JB-8980731	7,464.00
DN25	JB-8980732	7,507.00

JB-FLOW-METER-MID-DN
JULABO, FLOW
METERS, MID DN





**JB-FLOW-METER-
CORIO-DN
JULABO, FLOW
METERS, CORIO DN**

Measurement technology: Coriolis.
Suitable Fluids: Thermal EG, P60, P90, Water-Glycol, Fluorinert®
Working temperature range: -40°C ... +150°C
Accuracy: 1.10 ... 0.10 %
Flow rate: 1 ... 100 l/min

- 1) Fluid connectors: M30x1.5 male
- 2) Tubing diameter: DN15

Output signal: 4 ... 20mA
Main power supply: 100-230V/50-60Hz
Power Supply and 2.5m analog signal cable to connect to PRESTO included
Assembled in frame (height app. 500mm)

- 1) Electronically controlled fluid-bypass may be required for small flow rates
- 2) Adapters may be required.

<u>Options</u>	<u>CODE</u>	<u>Price</u>
DN15	JB-8980735	14,882.00
Coriolis DN25	JB-8980736	15,635.00
Coriolis 2 DN25	JB-8980737	20,624.00



**JB-PRESTO-
FLUID-BY-PASS
JULABO, PRESTO,
FLUID BY-PASS**

Working temperature range: -92...+250°C
Control Instrument: high-resolution stepper motor valve
Suitable Fluids: THERMAL EG/P60/P90, Fluorinert®, Water-Glycol
Flow control range: 0.2 ... 100 Lpm *3)
Fluid connectors: M30 x 1.5 male *1) *2)
Power supply: via PRESTO (24 VDC / 0.5A)
Control input: CAN connector to connect to PRESTO (2.5m digital control cable included)
Housing design: stand alone with handles, stainless steel
Dimensions W x D x H (mm): 192 x 309 x 520
Weight (kg): 13.7

- 1) Adapters may be required
- 2) Tubing required to connect to PRESTO
- 3) max. Viscosity 50cSt. For use with PRESTO units only.

<u>CODE</u>	<u>Price</u>
JB-8980780	CALL



All necessary components to fix the Fluid-Bypass (8980780) to the PRESTO
Stainless steel tubing to connect Fluid-Bypass to PRESTO
Insulation, temperature resistant
Digital control cable

<u>PRESTO</u>	<u>CODE</u>	<u>Price</u>
A45 & W50	JB-8980781	1,462.00
W55	JB-8980783	1,462.00

**JB-PRESTO-
FLUID-BY-PASS-
CONNECTION-KIT**
JULABO, PRESTO,
FLUID BY-PASS, CON-
NECTION KIT



Factory installation of fluid by-
pass (8980780) and connec-
tion kit for PRESTO models
A45, A45t, W50, W50t and
W55.

<u>CODE</u>	<u>Price</u>
JB-8980784	1,839.00

**JB-PRESTO-
FLUID-BY-PASS-
CONNECTION-KIT-
FACTORY-INSTAL-
LATION**
JULABO, PRESTO,
FLUID BY-PASS, CON-
NECTION KIT, FAC-
TORY INSTALLATION



1 m CR tubing (-30...+120°C)
Chloroprene

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
6	JB-8930006	21.00
8	JB-8930008	21.00
10	JB-8930010	30.00
12	JB-8930012	36.00

JB-TUBING-CR
JULABO, TUBING, CR



1 m Viton tubing (-35...
+200°C)

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
8	JB-8930108	117.00
10	JB-8930110	133.00
12	JB-8930112	159.00

JB-TUBING-VITON
JULABO, TUBING,
VITON



Silicone tubing (-50...+180°C)
per meter. Not to be used with
silicone bath fluids!

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
8	JB-8930120	56.00
12	JB-8930122	63.00

**JB-TUBING-SIL-
ICONE**
JULABO, TUBING,
SILICONE



PTFE tubing (-60...+180°C)
per meter.

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
8	JB-8930140	142.00
12	JB-8930142	179.00

JB-TUBING-PTFE
JULABO, TUBING,
PTFE



Triple insulated (-100°C...
+350°C), M16 x 1 female fit-
tings.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
0.5m	JB-8930209	449.00
1.0m	JB-8930210	541.00
1.5m	JB-8930211	712.00
3.0m	JB-8930214	1,325.00

**JB-TUBING-
METAL-TRIPLE-IN-
SULATED-M16X1F**
JULABO, TUBING,
METAL, TRIPLE INSU-
LATED, M16X1F



Insulated (-50°C...+200°C), Metal tubing with connector M16x1 female fittings.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
0.5m	JB-8930220	354.00
1.0m	JB-8930221	444.00
1.5m	JB-8930222	550.00
3.0m	JB-8930223	1,014.00

**JB-TUBING-
METAL-INSU-
LATED-M16X1F**
JULABO, TUBING,
METAL, INSULATED,
M16X1F



Flexible Metal tubing, triple insulated, -100 ... +350°C., 2 fittings

<u>Length</u>	<u>Connection</u>	<u>CODE</u>	<u>Price</u>
1.0m	M24X1.5F	JB-8930261	712.00
1.0m	M30X1.5F	JB-8930271	1,055.00
1.5m	M24X1.5F	JB-8930262	887.00
1.5m	M30X1.5F	JB-8930272	1,324.00
1.5m	M38X1.5F	JB-8930282	1,534.00
2.0m	M24X1.5F	JB-8930263	1,070.00
2.0m	M30X1.5F	JB-8930273	1,547.00
2.0m	M38X1.5F	JB-8930283	1,973.00
3.0m	M24X1.5F	JB-8930264	1,403.00
3.0m	M30X1.5F	JB-8930274	2,014.00
3.0m	M38X1.5F	JB-8930284	2,436.00
5.0m	M30X1.5F	JB-8930275	3,118.00
5.0m	M38X1.5F	JB-8930285	3,699.00

**JB-TUBING-FLEX-
IBLE-METAL-TRI-
PLE-INSULATED**
JULABO, TUBING,
FLEXIBLE METAL,
TRIPLE INSULATED



1 m Reinforced tubing

<u>I.D.</u>	<u>CODE</u>	<u>Price</u>
8 mm	JB-8930308	50.00
12 mm	JB-8930312	56.00
3/4"	JB-8930319	78.00
1"	JB-8930325	105.00

JB-TUBING-TEX-TILE-RE-INFORCED
JULABO, TUBING, TEXTILE, RE-INFORCED



Flexible braided tubing G 3/4" (-30...+100°C) with 2 straight fittings with cap nut for cooling water connection.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
1.5m	JB-8930331	132.00
2.0m	JB-8930332	143.00

JB-TUBING-FLEX-IBLE-BRAIDED-STRAIGHT-FITTING GS
JULABO, TUBING, FLEXIBLE BRAIDED, STRAIGHT FITTINGS, G 3/4"



Flexible braided tubing G 3/4" (-30...+100°C) 1 straight fitting / 1 elbow fitting 90°, both with cap nut for cooling water connection.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
1.5m	JB-8930341	166.00
2.0m	JB-8930342	194.00

JB-TUBING-FLEX-IBLE-BRAIDED-1-STRAIGHT-FITTING G-1-ELBOW-FITTING
JULABO, TUBING, FLEXIBLE BRAIDED, 1 STRAIGHT FITTING, 1 ELBOW FITTING, G 3/4"



1 m Insulation

<u>I.D.</u>	<u>CODE</u>	<u>Price</u>
14 mm	JB-8930410	32.00
18 mm	JB-8930412	32.00
23 mm	JB-8930413	37.00
29 mm	JB-8930419	44.00
35 mm	JB-8930425	44.00

JB-TUBING-INSULATION
JULABO, TUBING, INSULATION





2 Tube clamps

Size	For Use With	CODE	Price
1	Rubber Tubing 8 mm ID	JB-8970480	31.00
2	Rubber Tubing 10 and 12 mm and Reinforced Tubing 8 mm ID	JB-8970481	30.00
3	Reinforced Tubing 12 mm or 1/2" ID	JB-8970482	30.00
4	Reinforced Tubing 3/4" ID	JB-8970483	36.00
5	Reinforced Tubing 1" ID	JB-8970484	36.00

JB-TUBE-CLAMPS JULABO, TUBE CLAMPS



Icing protection/sleeve for pump connectors. Install on pump and fitting connections to reduce ice build up / heat loss. Insulation with adjustable Velcro straps.

CODE	Price
JB-8970750	118.00

JB-ICING-PRO- TECTION JULABO, ICING PRO- TECTION/SLEEVE FOR PUMP CONNEC- TORS



Pump nozzle insulation set for use with circulators having M16x1 female pump inlet/outlet connections. Install on pump connections to reduce ice build up / heat loss.

CODE	Price
JB-8970751	118.00

JB-M16-INSULA- TION-SET JULABO, M16 INSU- LATION SET



Booster heater provides additional 6 kW heating capacity. Ideal for controlling the temperature of large or distant objects.

For Use With	CODE	Price
SL-12	JB-8810007	5,041.00
FP51-SL	JB-8810011	5,041.00
FP(W)52-SL, FP(W)55-SL, FP(W)90-SL, FPW91-SL	JB-8810012	5,041.00

JB-HST- BOOSTER- HEATER JULABO, HST BOOSTER HEATER





**JB-HSP-
BOOSTER-PUMP**
JULABO, HSP
BOOSTER PUMP

The HSP booster pump for all Ultra-Low Refrigerated Circulator models provides additional pump capacity of 30 l/min – 3 bar max. Ideal for controlling the temperature of large or distant objects.

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 60 Hz	JB-8810015.13	6,788.00
230 V / 60 Hz NRTL	JB-8810015.13.CSA/UL	8,126.00



**JB-BOOSTER-
PUMP-PRESTO-
UNITS**
JULABO, BOOSTER
PUMP FOR PRESTO
UNITS

The JULABO magnetically coupled Booster Pump is the ideal solution to increase the pressure or flow rate in your application. The Booster Pump is specifically designed to connect easily between the PRESTO® and your application. The Mag Drive Booster Pump can increase fluid pressure up to 2.1 bar. The stainless steel design of the Pump provides excellent resistivity against chemical effects. The magnetically driven design guarantees leak-free operation over an extraordinary temperature range of -90 ... +250°C. Pump type: Magnetically coupled centrifugal pump/ Pump material: Stainless steel. Suitable fluids: Water-Glycol, Silicon oil, Fluorinert®. Maximum Viscosity 50 cSt. Maximum flow rate 80 lpm. Maximum Pressure 2.1 bar. Fluid connectors M30x1.5 male. Power requirement supply 208V 230V±10% / 50-60 Hz. Current consumption 1.85 A (208V) / 2A (230V). Heat input 230W at full motor speed. Control input 3 pin connector to connect to PRESTO® (alarm out). Pump control cable included (5m). Pump pressure adjustment Manual Pump pressure indication. 2 pressure gauges, for input pressure and output pressure. Housing Material: Stainless steel. Weight (kg) 13.2S.

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
230 V / 50 - 60 Hz	JB-8810020.33	8,300.00



**JB-COOLING-
COIL-BATH-LID**
JULABO, COOLING
COIL, BATH LID

Bath lid made of stainless steel with special cooling coil.

<u>For Use With</u>	<u>CODE</u>	<u>Price</u>
F25-HE, F25-HL, HE-4, HL-4, SE-6, SL-6	JB-8970240	581.00
SE-12, SL-12	JB-8970242	642.00
F32-HE, F32-HL, FP50-HE, FP50-HL, FP51-SL, FPW50-HE, FPW50-HL	JB-8970243	642.00



External expansion vessel, 3 liters. Installs on back of unit to increase capacity for thermal fluid expansion during high temperature operation.

For Use With PRESTO

A30, A40 and W40

A45, A45, W50, W50t, A80, A80t, W80, W80t, A85, A85t, W85, W85t

CODE

JB-8970832

JB-8970833

Price

1,151.00

1,151.00

**JB-EXPANSION-
VESSEL-3L**
JULABO, EXPANSION
VESSEL, 3L



Solenoid valve for cooling water with Stakei connection. For use with HL-4, SL-6, SL-12, SL-26 heating circulators. Enables active cooling through the integrated cooling coil via tap water. Be sure to specify 115V or 230V when ordering. 8 mm Barb fittings.

Power Options

115 V / 50 - 60 Hz

230 V / 50 - 60 Hz

CODE

JB-8980703.2

JB-8980703.3

Price

621.00

621.00

**JB-VALVES-HL-SL-
COOLING-WATER-
SOLENOID**
JULABO, VALVES,
HL/SL COOLING
WATER SOLENOID



Cooling coil for retrofitting shaking water baths SW22/SW23. The cooling coil installs into the water bath through the drain tap. Once installed, the bath may be operated near or slightly below ambient temperature.

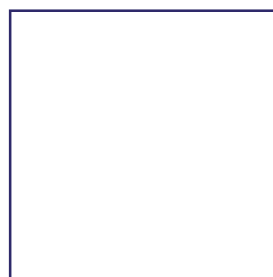
CODE

JB-8970416

Price

358.00

**JB-INSTALLATION-
COOLING-COIL**
JULABO, INSTALLA-
TION COOLING COIL



Stainless steel cooling coil inserts beneath false bottom of PURA water baths. Connect to cool tap water to achieve temperatures down to +18 °C in water bath.

PURA

10/14

22/30

CODE

JB-9970534

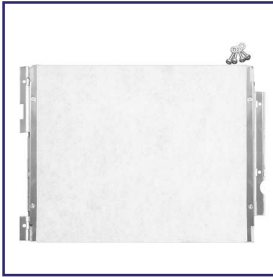
JB-9970536

Price

318.00

384.00

**JB-PURA-COOL-
ING-COIL**
JULABO, PURA COOL-
ING COIL



Filter mat for use with PRESTO A30. Installs on front of unit to protect condenser from dust and debris.

<u>CODE</u>	<u>Price</u>
JB-8970920	150.00

**JB-FILTERS-A30-
FILTER-MAT**
JULABO, FILTERS, A30
FILTER MAT



Filter mat for use with PRESTO A40. Installs on front of unit to protect condenser from dust and debris.

<u>CODE</u>	<u>Price</u>
JB-8970921	172.00

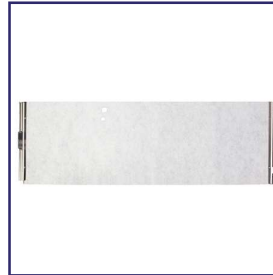
**JB-FILTERS-A40-
FILTER-MAT**
JULABO, FILTERS, A40
FILTER MAT



Filter mat for use with PRESTO A45, A45t. Installs on front of unit to protect condenser from dust and debris.

<u>CODE</u>	<u>Price</u>
JB-8970923	279.00

**JB-FILTERS-A45-
FILTER-MAT**
JULABO, FILTERS, A45
FILTER MAT



Filter mat for use with PRESTO A80, A80t. Installs on front of unit to protect condenser from dust and debris.

<u>CODE</u>	<u>Price</u>
JB-8970922	207.00

**JB-FILTERS-A80-
FILTER-MAT**
JULABO, FILTERS, A80
FILTER MAT



(Stakei to potential free change over contact) Input signal: Stakei connector with 0.5m connection cable (200...230V/50-60Hz) Output signal: potential free change over contact, 3pin.

<u>CODE</u>	<u>Price</u>
JB-8980024	409.00

**JB-SCB-CON-
VERTER-BOX**
JULABO, SCB CON-
VERTER BOX





Set of 2 solenoid valves (max. +100°C) to control in-line flow. Fittings: M16x1 male/female. Connects to Stakei outlet – make sure to specify 115V or 230V when ordering. Allows for fluid flow to application only when pump operates. Eliminates potential siphoning in the off state.

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
115 V / 50 - 60 Hz	JB-8980701.2	1,013.00
230 V / 50 - 60 Hz	JB-8980701.3	1,013.00

JB-M16-SOLE-NOID-VALVES
JULABO, M16 SOLE-NOID VALVES



Condensation trap with bath lid. Humidity absorber for FP50 and FP51. Greatly reduces atmospheric moisture condensation in bath tank fluid during operation at sub-ambient temperatures.

<u>CODE</u>	<u>Price</u>
JB-8970700	1,180.00

JB-CONDENSATION-TRAP-FP50-FP51
JULABO, BATH COVER, CONDENSATION TRAP, FP50/FP51



Condensation trap with bath cover. Greatly reduces atmospheric moisture condensation in bath tank fluid during operation at sub-ambient temperatures. For use with FP89.

<u>CODE</u>	<u>Price</u>
JB-8970702	1,294.00

JB-CONDENSATION-TRAP-FP89
JULABO, BATH COVER, CONDENSATION TRAP, FP89



Condensation trap for use with FP(W)52/55/80/90/FPW91 ultra-low refrigerate /heating circulators. Greatly reduces atmospheric moisture condensation in bath tank fluid during operation at sub-ambient temperatures.

<u>CODE</u>	<u>Price</u>
JB-8970705	834.00

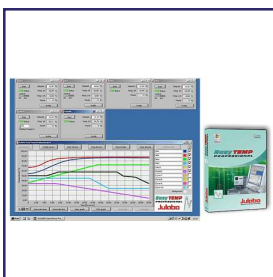
JB-ULTRA-LOW-CONDENSATION-TRAP
JULABO, BATH COVER, ULTRA LOW, CONDENSATION TRAP



Castor platform for F250.

<u>CODE</u>	<u>Price</u>
JB-8910045	191.00

JB-CASTOR-PLATFORM-F250
JULABO, CASTOR PLATFORM, F250



EasyTemp Professional control software. Enables control of up to 8 JULABO devices with data recording, ramp programming, formula implementation and loops.

<u>CODE</u>	<u>Price</u>
JB-8901105	1,962.00

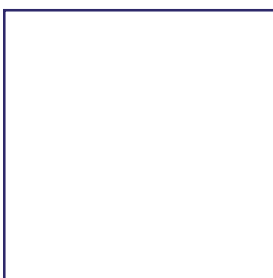
**JB-EASYTEMP-
PROFESSIONAL-
CONTROL-SOFTW
ARE**
JULABO, DIGITAL, EA-
SYTEMP PROFES-
SIONAL CONTROL
SOFTWARE



The USB Interface Adapter Cable (2.5 m) allows to connect JULABO instruments with RS232 interface to a PC with USB port. Included in delivery: USB Interface Cable RS232 9 pin USB Typ A. Adapter requires driver installation on PC.

<u>CODE</u>	<u>Price</u>
JB-8900110	178.00

**JB-USB-TO-SE-
RIAL-RS-232-DB9-
ADAPTER-CABLE**
JULABO, DIGITAL,
USB TO SERIAL RS-
232 DB9 ADAPTER
CABLE



RJ45 cable, length 5 m.

<u>CODE</u>	<u>Price</u>
JB-8980071	43.00

JB-RJ45-CABLE
JULABO, RJ45 CABLE



RS232 null modem interface cable. Interface cable RS232 9-pole/9-pole.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
2.5 m	JB-8980073	140.00
5.0 m	JB-8980074	152.00

**JB-RS232-INTER-
FACE-CABLE**
JULABO, RS232 IN-
TERFACE CABLE



RS232 interface cable, length 3 m. For use with shaking water bath models SW22, SW23 only!

<u>CODE</u>	<u>Price</u>
JB-8980075	140.00

**JB-SW-BATHS-
RS232-CABLE**
JULABO, SW BATHS
RS232 CABLE



PB-5 Option: Integrated Profibus DP for HL, SL. For use with F25-HL, F33-HL, F95-SL, FP35-HL, FP50-HL, FP51-SL, FP52-SL, FP52-SL-150C, FP55-SL, FP55-SL-150C, FP89-HL, FP90-SL, FP90-SL-150C, FPW52-SL, FPW55-SL, FPW55-SL-150C, FPW90-SL, FPW90-SL-150C, FPW91-SL, FW95-SL, HL-4, SL-12, SL-26, SL-6

<u>CODE</u>	<u>Price</u>
JB-8900005	1,413.00

JB-PB-5-OPTION
JULABO, PB-5 OPTION



JB-RS485-INTER-FACE
JULABO, RS485 IN-TERFACE

RS485 Interface for use with CF30, CF31, CF40, CF41, F25-HE, F25-HL, F32-HE, F32-HL, F33-HL, F34-HE, F95-SL, FP50-HE, FP50-HL, FP51-SL, FP52-SL, FP52-SL, FP52-SL-150C, FP55-SL, FP55-SL, FP55-SL-150C, FP89-HL, FP89-ME, FP90-SL, FP90-SL, FP90-SL-150C, FPW50-HE, FPW50-HL, FPW52-SL, FPW52-SL, FPW52-SL-150C, FPW55-SL, FPW55-SL, FPW55-SL-150C, FPW90-SL, FPW90-SL, FPW90-SL-150C, FPW91-SL, FPW91-SL, HE-4, HL-4, HT30-M1, HT30-M1-CU, HT60-M3, HT60-M3-CU, PRESTO A30, PRESTO A40, PRESTO A45, PRESTO A45t, PRESTO A80, PRESTO A80t, PRESTO A85, PRESTO A85t, PRESTO W40, PRESTO W50, PRESTO W50t, PRESTO W80, PRESTO W80t, PRESTO W85, PRESTO W85t, PRESTO W91, PRESTO W91tt, PRESTO W91x, PRESTO W92, PRESTO W92tt, PRESTO W92ttt, PRESTO W92x, SE-12, SE-26, SE-6, SE-Z, SL-12, SL-26, SL-6.

<u>CODE</u>	<u>Price</u>
JB-8900024	1,935.00



JB-ETHERNET-RS232-INTER-FACE-CONVERTER
JULABO, ETHERNET, RS232 INTERFACE CONVERTER

Ethernet / RS232 interface converter for temperature control instruments with RS232 interface.

<u>CODE</u>	<u>Price</u>
JB-8980031	2,108.00



JB-4-ETHERNET-RS232-CONVERTER
JULABO, 4 ETHERNET, RS232 CONVERTER

Connection of up to 4 JULABO instruments via RS232 interface cable (JB-8980074). Connection to an existing network via RJ45 cable (JB-8980071).

<u>CODE</u>	<u>Price</u>
JB-8980032	3,509.00



Connection of up to 8 JULABO instruments via RS232 interface cable (JB-8980074). Connection to an existing network via RJ45 cable (JB-8980071).

<u>CODE</u>	<u>Price</u>
JB-8980033	6,459.00

JB-8-ETHERNET-RS232-CONVERTER
JULABO, 8 ETHERNET, RS232 CONVERTER



Connection of 1 JULABO instrument via RS232 interface cable (JB-8980074). Connection to an existing network via WLAN.

<u>CODE</u>	<u>Price</u>
JB-8980034	2,189.00

JB-WLAN-RS232-CONVERTER
JULABO, WLAN, RS232 CONVERTER



Connection of up to 2 JULABO instruments via RS232 interface cable (JB-8980074). Connection to an existing network via WLAN.

<u>CODE</u>	<u>Price</u>
JB-8980035	2,972.00

JB-2-CHANNEL-WLAN-RS232-CONVERTER
JULABO, 2 CHANNEL WLAN, RS232 CONVERTER



Shut-off valve G 3/4" male/female. For use with 3 bar pump FL chillers: FL1203, FL1703, FLW1703, FL2503, FLW2503, FL4003, FLW4003.

<u>CODE</u>	<u>Price</u>
JB-8970454	311.00

JB-G-3/4-SHUT-OFF-VALVE
JULABO, G 3/4" SHUT-OFF VALVE



Shut-off valve G 1 1/4" male/female fittings. For use with 6 bar pump FL chillers: FL7006, FLW7006, FL11006, FLW11006, FL20006, FLW20006.

<u>CODE</u>	<u>Price</u>
JB-8970458	425.00

JB-G1-1/4-SHUT-OFF-VALVE
JULABO, G1 1/4" SHUT-OFF VALVE



Shut-off valve for loop circuit - 10°C...+100°C, M16x1 male/female fittings.

<u>CODE</u>	<u>Price</u>
JB-8970456	140.00

JB-M16-SHUT-OFF-VALVE
JULABO, M16 SHUT-OFF VALVE, -10°C...+100°C



Shut-off valve for loop circuit -
30°C...+200°C, M16x1
male/female fittings

<u>CODE</u>	<u>Price</u>
JB-8970457	378.00

**JB-M16-SHUT-OFF-
VALVE-1**

JULABO, M16 SHUT-
OFF VALVE, -30°C...
+200°C



Shut-off valve M16x1 male /
female (-60...+200°C)

<u>CODE</u>	<u>Price</u>
JB-8970850	440.00

**JB-M16-LOW-
TEMP-SHUT-OFF-
VALVE**

JULABO, M16 LOW
TEMP SHUT-OFF
VALVE



Shut-off valve M24x1.5 fe-
male/male, -60...+200°C.

<u>CODE</u>	<u>Price</u>
JB-8970851	448.00

**JB-M24-SHUT-OFF-
VALVE**

JULABO, M24 SHUT-
OFF VALVE



Shut-off valve M30x1.5 fe-
male to male (-60...+200°C)

<u>CODE</u>	<u>Price</u>
JB-8970852	682.00

**JB-M30-SHUT-OFF-
VALVE**

JULABO, M30 SHUT-
OFF VALVE



Shut-off valve M38x1.5 fe-
male to male (-60...+200°C)

<u>CODE</u>	<u>Price</u>
JB-8970853	1,864.00

**JB-M38-SHUT-OFF-
VALVE**

JULABO, M38 SHUT-
OFF VALVE



The hollow balls are intended
to cover open water baths, if
using a bath tank cover is not
feasible. The balls form a
floating lid thus reducing heat
loss, evaporation loss (up to
90%), oxygen input, odors,
and light. Made of Polypropy-
lene, diameter 20 mm, pack of
1000 pcs. For use only with
water up to 100°C.

<u>CODE</u>	<u>Price</u>
JB-8970853	1,864.00

**JB-HOLLOW-
BALLS**
JULABO, HOLLOW
BALLS





Drain tap (to +150°C) . For use with: CF30, CF31, CF40, CF41, HE-4, HL-4, SE-6, SL-6, SE-12, SL-12, SE-26, SL-26

<u>CODE</u>	<u>Price</u>
JB-8970452	180.00

JB-DRAIN-TAP-150C
JULABO, DRAIN TAP 150C



Drain tap, stainless steel to +200°C. For use with: CF30, CF31, CF40, CF41, HE-4, HL-4, SE-6, SL-6, SE-12, SL-12, SE-26, SL-26

<u>CODE</u>	<u>Price</u>
JB-8970450	398.00

JB-DRAIN-TAP-200C
JULABO, DRAIN TAP 200C



Drain tap with rubber tube 8 mm ID for PURA/SW water baths. Suitable for water baths PURA 4/10/14/22/30 and shaking water baths SW22, SW23.

<u>CODE</u>	<u>Price</u>
JB-8970453	168.00

JB-BATH-DRAIN-TAP
JULABO, BATH DRAIN TAP



Particle filter for cooling water cycle (for water-cooled models). For use with: FPW52-SL, FPW52-SL, FPW52-SL-150C, FPW55-SL, FPW55-SL, FPW55-SL-150C, FPW90-SL, FPW90-SL, FPW90-SL-150C, FPW91-SL, FPW91-SL, FW95-SL, PRESTO W40, PRESTO W50, PRESTO W50t, PRESTO W55, PRESTO W80, PRESTO W80t, PRESTO W85, PRESTO W85t, PRESTO W91, PRESTO W91tt, PRESTO W91x, PRESTO W92, PRESTO W92tt, PRESTO W92ttt, PRESTO W92x, FLW1701, FLW1703, FLW2503, FLW2506, FLW4003, FLW4006, FLW7006, FLW11006, FLW20006.

<u>CODE</u>	<u>Price</u>
JB-8920000	1,580.00

JB-PARTICLE-FILTER-FOR-COOLING-WATER-CYCLE
JULABO, PARTICLE FILTER FOR COOLING WATER CYCLE



JB-ADAPTERS
JULABO, ADAPTERS

JULABO, Adapters

A	B	Quantity	Options	CODE	Price
M10x1 m.	M16x1 m.	1	—	JB-8970444	70.00
M16x1 f.	M16x1 f.	2	—	JB-8890024	112.00
M16x1 f.	1/4" Tube	2	—	JB-8890011	139.00
M16x1 f.	3/8" Tube	2	—	JB-8890012	139.00
M16x1 f.	1/2" Tube	2	—	JB-8890013	139.00
M16x1 f.	NPT 1/4" f.	2	—	JB-8890005	CALL
M16x1 f.	NPT 1/2" f.	2	—	JB-8890009	CALL
M16x1 f.	NPT 3/4" f.	2	—	JB-8890007	CALL
M16x1 f.	NPT 1/4" m.	2	—	JB-8890004	CALL
M16x1 f.	NPT 3/8" m.	2	—	JB-8890006	CALL
M16x1 f.	NPT 1/2" m.	2	—	JB-8890008	CALL
M16x1 m.	1/2" BSP f.	1	Stainless Steel	JB-8891008	172.00
M16x1 m.	3/4" BSP f.	1	Stainless Steel	JB-8891009	205.00
M16x1 m.	M16x1 m.	1	—	JB-8890443	CALL
M16x1 m.	NPT 1/4" f.	2	—	JB-8890010	CALL
M24x1.5 f.	M24x1.5 f.	2	—	JB-8890067	328.00
M24x1.5 f.	M30x1.5 f.	2	—	JB-8890070	404.00
M24x1.5 f.	M16x1 m.	2	—	JB-8890052	CALL
M24x1.5 f.	M24x1.5 m.	2	Elbow Fitting 90°	JB-8890120	CALL
M24x1.5 f.	M30x1.5 m.	2	—	JB-8890068	331.00
M24x1.5 f.	2x M24x1.5 m.	1	Twin Distributing	JB-8890140	442.00
M24x1.5 f.	2x M24x1.5 m.	1	Twin Distributing, Insulated	JB-8890130	663.00
M24x1.5 f.	4x M24x1.5 m.	1	Quad Distributing	JB-8890141	837.00
M24x1.5 f.	4x M24x1.5 m.	1	Quad Distributing, Insulated	JB-8890131	1,202.00
M24x1.5 f.	NPT 1/4" f.	2	—	JB-8890053	222.00
M24x1.5 f.	NPT 3/8" f.	2	—	JB-8890054	305.00
M24x1.5 f.	NPT 1/2" f.	2	—	JB-8890055	CALL
M24x1.5 f.	NPT 3/4" f.	2	—	JB-8890056	CALL
M24x1.5 f.	NPT 1" f.	2	—	JB-8890057	391.00
M24x1.5 f.	NPT 1/4" m.	2	—	JB-8890058	205.00
M24x1.5 f.	NPT 3/8" m.	2	—	JB-8890059	216.00
M24x1.5 f.	NPT 1/2" m.	2	—	JB-8890060	CALL
M24x1.5 f.	NPT 3/4" m.	2	—	JB-8890061	CALL
M24x1.5 f.	NPT 1" m.	2	—	JB-8890062	305.00
M24x1.5 f.	1/4" Tube	2	—	JB-8890063	195.00
M24x1.5 f.	3/8" Tube	2	—	JB-8890064	195.00
M24x1.5 f.	1/2" Tube	2	—	JB-8890065	237.00
M24x1.5 f.	1" Tube	2	—	JB-8890066	303.00
M24x1.5 m.	Barbed Fitting 12 mm	2	—	JB-8890072	153.00
M24x1.5 m.	M16x1 f.	2	—	JB-8890071	331.00
M24x1.5 m.	M30x1.5 f.	2	—	JB-8890069	391.00
M24x1.5 m.	M24x1.5 m.	1	—	JB-8890110	CALL
M30x1.5 f.	M30x1.5 f.	2	—	JB-8890088	CALL
M30x1.5 f.	M38x1.5 f.	2	—	JB-8890082	412.00
M30x1.5 f.	M16x1 m.	2	Stainless Steel (with hollow nut)	JB-8890034	CALL
M30x1.5 f.	M30x1.5 m.	2	Elbow Fitting 90°	JB-8890121	CALL
M30x1.5 f.	M38x1.5 m.	2	—	JB-8890080	365.00
M30x1.5 f.	2x M30x1.5 m.	1	Twin Distributing	JB-8890142	525.00
M30x1.5 f.	2x M30x1.5 m.	1	Twin Distributing, Insulated	JB-8890132	697.00
M30x1.5 f.	4x M30x1.5 m.	1	Quad Distributing	JB-8890143	897.00
M30x1.5 f.	4x M30x1.5 m.	1	Quad Distributing, Insulated	JB-8890133	1,296.00
M30x1.5 f.	NPT 3/4" f.	2	—	JB-8890084	312.00
M30x1.5 f.	NPT 1" f.	2	—	JB-8890086	345.00
M30x1.5 f.	NPT 3/4" m.	2	—	JB-8890083	331.00
M30x1.5 f.	NPT 1" m.	2	—	JB-8890085	312.00
M30x1.5 f.	1" Tube	2	—	JB-8890087	282.00
M30x1.5 m.	M38x1.5 f.	2	—	JB-8890081	365.00
M30x1.5 m.	M30x1.5 m.	1	—	JB-8890111	CALL
M38x1.5 f.	M38x1.5 f.	2	—	JB-8890089	522.00
M38x1.5 f.	M38x1.5 m.	2	Elbow Fitting 90°	JB-8890122	522.00
M38x1.5 f.	2x M38x1.5 m.	1	Twin Distributing	JB-8890144	587.00
M38x1.5 f.	2x M38x1.5 m.	1	Twin Distributing, Isolated	JB-8890134	778.00
M38x1.5 f.	4x M38x1.5 m.	1	Quad Distributing	JB-8890145	996.00
M38x1.5 f.	4x M38x1.5 m.	1	Quad Distributing, Isolated	JB-8890135	1,480.00
M38x1.5 f.	NPT 1 f.	2	—	JB-8890101	379.00
M38x1.5 f.	NPT 1 1/4" f.	2	—	JB-8890103	379.00
M38x1.5 f.	NPT 1" m.	2	—	JB-8890100	379.00
M38x1.5 f.	NPT 1 1/4" m.	2	—	JB-8890102	379.00
M38x1.5 f.	1" Tube	2	—	JB-8890104	379.00
M38x1.5 m.	M38x1.5 m.	1	—	JB-8890112	CALL





JB-ADAPTERS
JULABO, ADAPTERS

JULABO, Adapters

A	B	Quantity	Options	CODE	Price
Barbed Fittings for Tubing 1/2" I.D.	NPT 3/4" f.	2	For SemiChill Recirculating Cooler Models	JB-8890036	127.00
Barbed Fittings for Tubing 5/8" I.D.	NPT 3/4" f.	2	For SemiChill Recirculating Cooler Models	JB-8890037	134.00
G3/4" f.	Barbed Fitting for Tubing 1/2" I.D.	2	—	JB-8890042	147.00
G3/4" f.	Barbed Fitting for Tubing 3/4" I.D.	2	—	JB-8890043	167.00
G3/4" f.	M16x1 m.	2	—	JB-8890040	168.00
G3/4" f.	NPT 1/2" m.	2	—	JB-8890047	166.00
G3/4" f.	NPT 3/4" m.	2	—	JB-8890048	216.00
G1 1/4" f.	Barbed Fitting for Tubing 1/2" I.D.	2	—	JB-8890044	248.00
G1 1/4" f.	Barbed Fitting for Tubing 3/4" I.D.	2	—	JB-8890045	248.00
G1 1/4" f.	Barbed Fitting for Tubing 1" I.D.	2	—	JB-8890046	248.00
G1 1/4" f.	M16x1 m.	2	—	JB-8890041	234.00
G1 1/4" f.	NPT 1/2" m.	2	—	JB-8890049	256.00
G1 1/4" f.	NPT 3/4" m.	2	—	JB-8890050	256.00
G1 1/4" f.	NPT 1" m.	2	—	JB-8890051	256.00
NPT 3/4" f.	M16x1 m.	2	For SemiChill Recirculating Cooler Models	JB-8890038	265.00



JB-COLLAR-NUTS
JULABO, COLLAR NUTS

2 Collar nuts with plug

A	CODE	Price
M24x1.5 f.	JB-8970495	93.00
M30x1.5 f.	JB-8970496	160.00
M38x1.5 f.	JB-8970497	186.00



JB-NUT-WITH-PLUG
JULABO, NUT WITH PLUG

2 Nuts M 16x1 female with plug

CODE	Price
JB-8970490	35.00



JB-NUT-FOR-PUMP-NOZZLE
JULABO, NUT FOR PUMP NOZZLE

1 Nut M10x1 male (for pump nozzles).

CODE	Price
JB-8970492	24.00





2 barbed fittings for tubing. For use with M16x1 fittings. Requires a female M16x1 cap nut.

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
8	JB-8970446	38.00
10	JB-8970447	44.00
12	JB-8970445	37.00

**JB-BARBED-FIT-
TING-FOR-TUB-
ING**
JULABO, BARBED
FITTING FOR TUBING



2 barbed fittings for tubing, M 10x1 male fitting. For use with F250 chiller.

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
8	JB-8970460	29.00
12	JB-8970468	79.00

**JB-BARBED-FIT-
TING-FOR-F250-
CHILLER**
JULABO, BARBED
FITTING FOR F250
CHILLER



2 Elbow fittings 90°, M16x1 male/female, side length 2 x 54mm / 2 x 120mm. For use with M16x1 male or female connections. Offset design enables tubing to be of equal length.

<u>CODE</u>	<u>Price</u>
JB-8970448	372.00

**JB-ELBOW-FIT-
TINGS-M16**
JULABO, ELBOW FIT-
TINGS, M16



2 Elbows 90°, M16 x 1 male / female fittings. For use with M16x1 male or female connections.

<u>CODE</u>	<u>Price</u>
JB-8970442	CALL

**JB-ELBOWS-
M16X1**
JULABO, ELBOWS,
M16X1



Twin distributing adapter with barbed fittings for tubing

<u>I.D. mm</u>	<u>CODE</u>	<u>Price</u>
8	JB-8970470	99.00
10	JB-8970472	99.00
12	JB-8970471	99.00

JB-T-ADAPTER
JULABO, T-ADAPTER



Twin distributing adapter with M16x1 female to 2 x M16x1 male. For use on circulators with M16x1 female fittings.

<u>CODE</u>	<u>Price</u>
JB-8970473	284.00

JB-M16-TWIN-ADAPTER
JULABO, M16 TWIN ADAPTER



Quad distributing adapter (2 pieces), M16x1, with barbed fittings for tubing 8 mm or 12 mm / 1/2" ID. For use with FC recirculating coolers.

<u>CODE</u>	<u>Price</u>
JB-8970474	781.00

JB-QUAD-FLOW-MANIFOLD
JULABO, QUAD FLOW MANIFOLD



2 Quad distributing adapters, M16x1, with barbed fittings for tubing 8 mm or 12 mm or 1/2" ID. Set of two circular quad manifolds with internal baffles for constant water pressure and temperature to all outlets. M16x1 screw thread fittings (which can be fitted with shut off valves), comes complete with all barbed fittings for both 8mm and 12mm/1/2" ID tubing. For use with F1000, F500, FL1201, FL1701, FL601 and FLW1701 chillers.

<u>Type</u>	<u>CODE</u>	<u>Price</u>
M16x1 mm	JB-8970520	749.00
G 3/4"	JB-8970522	1,570.00
G 1 1/4"	JB-8970524	2,276.00

JB-QUAD-ADAPTER
JULABO, QUAD ADAPTER



Twin distributing adapter female fitting with barbed fittings for tubing 3/4" ID. Suitable for use with 3 bar pump FL chillers: FL(W)4003, FL(W)2503.

<u>Type</u>	<u>CODE</u>	<u>Price</u>
G 3/4"	JB-8970476	332.00
G 1 1/4"	JB-8970477	568.00

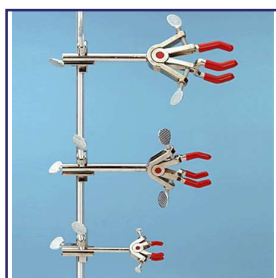
JB-TWIN-DISTRIBUTING-ADAPTER
JULABO, TWIN ADAPTER



UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

<u>Single Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	1.8 cm	16.6 cm	1.5 cm	-01	68.04
Medium	4.3 cm	23.0 cm	3.5 cm	-02	60.48
Large	5.9 cm	26.6 cm	4.7 cm	-03	59.40

PRG-1720
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT



UltraJaws™ are available in three sizes with maximum grip range of 10 cm. Supplied with both non slip vinyl and fiberglass prong covers. Fiberglass is recommended for temperatures above 100°C.

<u>Dual Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Small	2.8 cm	15.6 cm	1.4 cm	-01	59.40
Medium	6.5 cm	22.2 cm	3.4 cm	-02	60.48
Large	10.0 cm	26.1 cm	4.7 cm	-03	68.04

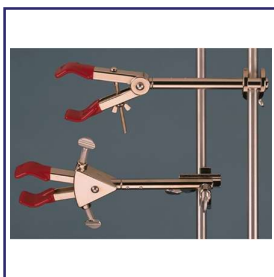
PRG-1722
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, DUAL AD-
JUSTMENT



LabJaws™ are available in three sizes. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	2.8 cm	14.8 cm	2.1 cm	-01	52.92
Single / Medium	6.2 cm	21.9 cm	3.4 cm	-02	56.16
Single / Large	8.4 cm	26.5 cm	4.9 cm	-03	58.32
Dual / Small	3.6 cm	16.7 cm	2.1 cm	-11	52.92
Dual / Medium	5.8 cm	22.9 cm	3.5 cm	-12	56.16
Dual / Large	9.3 cm	27.0 cm	4.8 cm	-13	58.32

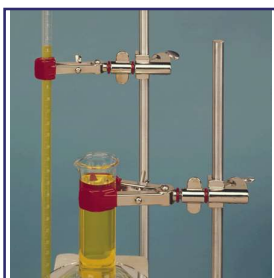
PRG-1725
LABJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, SINGLE OR
DUAL ADJUSTMENT



PRG-1730
LABJAWS™ By
TROEMNER, 2-
PRONG EXTENSION
CLAMPS, SINGLE AD-
JUSTMENT

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary.

<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	6.5 cm	21.5 cm	2.4 cm	-01	43.20
Single / Large	8.0 cm	23.3 cm	2.4 cm	-02	46.44
Dual / Small	6.5 cm	22.5 cm	2.4 cm	-11	43.20
Dual / Large	8.6 cm	25.0 cm	2.4 cm	-12	46.44



PRG-1735
LABJAWS™ By
TROEMNER, SWIVEL
CLAMPS

LabJaws™ are available in three sizes; small, medium and large. Single adjustment clamps are great for applications where limited jaw adjustment is required. One prong or finger is adjustable while the other prong remains stationary. Swivel clamps are used to hold apparatus near the frame. The swivel clamps have an integral holder for attaching to a lattice frame or other apparatus. The holding angle of swivel clamps is fully adjustable through 360° of rotation and can be locked in place once desired position is achieved.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	12.6 cm	2.4 cm	-01	43.20
2-Prong Large	8.0 cm	13.8 cm	2.5 cm	-02	45.36
3-Prong Medium	6.5 cm	14.3 cm	3.5 cm	-03	59.40



PRG-1738
LABJAWS™ By
TROEMNER, FIXED
POSITION CLAMPS

Fixed position clamps are used to hold apparatus near the frame where no adjustment is required after set up. Fixed position clamps have an integral holder but can not be rotated after attachment to a lab frame or other apparatus.

<u>Description</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
2-Prong Medium	6.5 cm	9.5 cm	2.4 cm	-01	41.04
3-Prong Medium	5.8 cm	10.7 cm	3.5 cm	-02	50.76



6.3 cm diameter knob with 3.1 cm slot in the center that will accept thumbscrews supplied with the UltraJaws™ and LabJaws™ multi-purpose clamps. Makes tightening of clamps easier on the hands and wrists.

<u>CODE</u>	<u>Price</u>
-01	42.64

PRG-1740
ULTRAJAWS™ By
TROEMNER, THUMB-
SCREW KNOB



Quick and secure slip-on chain connection with large easy-to-turn adjusting knob. Holds apparatus firmly but gently in place at any angle. Accommodates large round or irregular shaped objects. 14.2 cm extension arm.

<u>Size</u>	<u>Holding Ability</u>	<u>CODE</u>	<u>Price</u>
Small	up to 17 cm diameter	-01	72.36
Large	up to 28 cm diameter	-02	104.76

PRG-1742
LABJAWS™ By
TROEMNER, CHAIN
CLAMP



Ideal for large cylindrical glassware and similar objects. Stainless steel construction, available in four sizes. Holds 64 mm to 165 mm apparatus, with 18 cm extension arm.

<u>Range</u>	<u>CODE</u>	<u>Price</u>
64 - 89 mm	-01	84.24
95 - 114 mm	-02	86.40
121 - 140 mm	-03	87.48
140 - 165 mm	-04	87.48

PRG-1750
LABJAWS™ By
TROEMNER, COLUMN
CLAMP



5.8cm long. Self-tapping screw allows mounting directly to wall. Holds 5mm to 10 mm diameter thermometer or other glass apparatus.

<u>CODE</u>	<u>Price</u>
-01	38.88

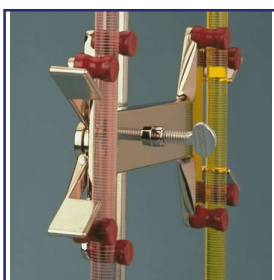
PRG-1752
LABJAWS™ By
TROEMNER, WALL
CLAMP



Heavy Duty 4-prong double adjustment clamps are designed to hold large vessels with ground glass joint necks. The small clamp can hold up to a size 24/40 joint. The large clamp can hold up to a size 34/45 joint. Extension length on both clamps is 22.8 cm.

<u>Size</u>	<u>Max Joint Size</u>	<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
Small	24/40	35.2 cm	-01	CALL
Large	34/45	38.0 cm	-02	CALL

PRG-1755
LABJAWS™ By
TROEMNER, HEAVY
DUTY TAPERED
CLAMP



Hold one or two burets from micro size to 100 ml. Scissor-like mechanism adjusts simply with a squeeze, yet grips firmly. Attached to standard support rod or frame with built-in hook connector.

<u>Max Grip Size</u>	<u>Jaw Type</u>	<u>CODE</u>	<u>Price</u>
100 ml	Spring	-01	75.60

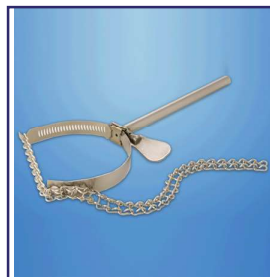
PRG-1757
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP



Buret clamp stand is a white porcelain base, 34 cm x 18 cm, support is 60 cm high aluminum rod.

<u>Description</u>	<u>CODE</u>	<u>Price</u>
Stand	-01	211.68
Clamp & Stand	-02	294.84

PRG-1760
LABJAWS™ By
TROEMNER, DOUBLE
BURET CLAMP &
STAND



Securely holds distillation columns and odd-shaped glassware. Holds 3.8 cm to 10.2 cm apparatus.

<u>CODE</u>	<u>Price</u>
-01	91.29

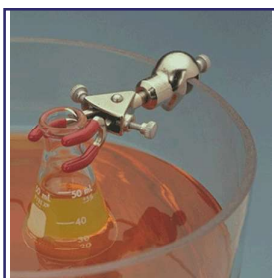
PRG-1765
LABJAWS™ By
TROEMNER, NESTER
EXTENSION CLAMP



Holds flask and cover together firmly. Three insulated spring-activated clamping arms. Stain-
less steel springs.

<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
1000 ml	-01	166.02
4000 ml	-02	168.40

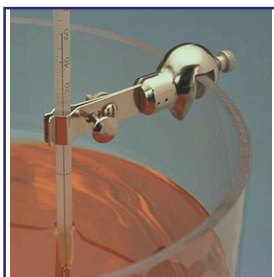
PRG-1767
LABJAWS™ By
TROEMNER, KETTLE
COVER CLAMP



Holds a variety of apparatus, including glass tubes and thermometers, on glass water bath
walls of varying thickness. For 5 mm to 9 mm bath walls. Holds irregular-shaped objects.

<u>Maximum Grip Size</u>	<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
3.3 cm	9.3 cm	-01	56.16

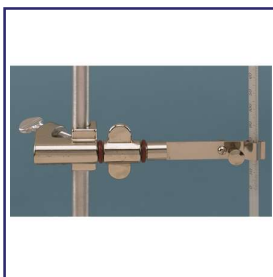
PRG-1770
LABJAWS™ By
TROEMNER, LARGE
WATER BATH CLAMP



For up to 9 mm glass water bath walls. Knurled thumbscrew tightens jaws to hold objects
firmly. Holds 6 mm to 13 mm diameter thermometer.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
6.4 cm	-01	37.80

PRG-1771
LABJAWS™ By
TROEMNER, SMALL
WATER BATH CLAMP



PRG-1772
LABJAWS™ By
TROEMNER, THER-
MOMETER SWIVEL
CLAMP

Adjust to any angle. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

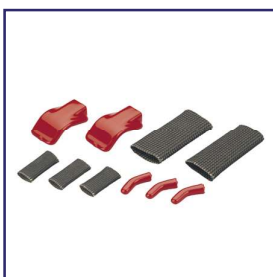
<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
12.2 cm	-01	50.76



PRG-1775
LABJAWS™ By
TROEMNER, THER-
MOMETER EXTEN-
SION CLAMP

Extension length is 12.5 cm. Knurled thumbscrew tightens jaws to hold objects firmly. Holds 6 mm to 13 mm diameter thermometer or other glass apparatus.

<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
21 cm	-01	34.36



PRG-1777
LABJAWS™ By
TROEMNER, RE-
PLACEMENT
SLEEVES FOR
CLAMP

Available in Vinyl or in Fiberglass.

<u>Clamp Size / Style</u>	<u>Sleeve Material</u>	<u>Pack Size</u>	<u>CODE</u>	<u>Price</u>
Medium 2-Prong	Vinyl	2 / Pack	-01	14.04
Large 2-Prong	Vinyl	2 / Pack	-02	14.04
Medium 2-Prong	Fiberglass	2 / Pack	-03	14.04
Large 2-Prong	Fiberglass	2 / Pack	-04	14.04
Small 3-Prong	Vinyl	3 / Pack	-05	14.04
Medium 3-Prong	Vinyl	3 / Pack	-06	14.04
Large 3-Prong	Vinyl	3 / Pack	-07	14.04
Small 3-Prong	Fiberglass	3 / Pack	-08	14.04
Medium 3-Prong	Fiberglass	3 / Pack	-09	14.04
Large 3-Prong	Fiberglass	2 / Pack	-10	14.04



PRG-1780
LABJAWS™ By
TROEMNER, ELEC-
TRODE SUPPORT
CLAMP

Permits suspension of electrodes at any angle. Designed with an integral holder which accepts up to 2.1 cm diameter.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
14.7 cm	-01	79.92



PRG-1782
LABJAWS™ By
TROEMNER, SUSPEN-
SION CLAMP

Holds thermometers, potash bulbs, drying tubes and other apparatus. Designed with an integral holder which accepts up to 2.1 cm diameter rod.

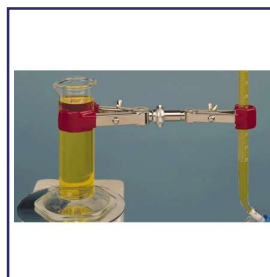
<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	38.88



Supports tubing and other apparatus. Designed with an integral holder which accepts up to 21.1 cm diameter rod.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
10 cm	-01	102.60

PRG-1785
LABJAWS™ By
TROEMNER, SUP-
PORT CLAMP



Locks securely in desired position. Holds two different sized objects: 6.5 cm maximum grip on small two prong and 8.0 cm maximum grip on large two prong. 360° swivel.

<u>Swivels</u>	<u>CODE</u>	<u>Price</u>
360°	-01	54.00

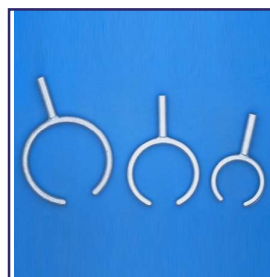
PRG-1787
LABJAWS™ By
TROEMNER, DOUBLE
JAW UTILITY CLAMP



For supporting beakers, mantles and petri dishes. 15.5 cm diameter. Aluminum support plate.

<u>CODE</u>	<u>Price</u>
-01	90.72

PRG-1790
LABJAWS™ By
TROEMNER, SUP-
PORT PLATE



For supporting funnels and boiling flask, open rings allow items easily to pass in and out of support. Arm length is 5.7 cm. Holds 7.6 cm to 12.7 cm apparatus. Rod arm is 1.27 cm diameter.

<u>Diameter</u>	<u>CODE</u>	<u>Price</u>
7.6 cm	-01	37.80
10.2 cm	-02	48.60
12.7 cm	-03	66.96

PRG-1792
LABJAWS™ By
TROEMNER, OPEN
RINGS





Corrosion-resistant frames and rods. Individual rods are available in standard lengths from 4 cm to 244 cm. May be mounted vertically or horizontally. Combined with LabJaws™ accessories, these frames and rods can be adjusted to fit any need. 1.3 cm diameter rods with chamfered ends for easy location and smooth fit. Available in aluminum, fiberglass, or stainless steel.



**PRG-1800
LABJAWS™ By
TROEMNER, LAB
FRAME RODS, ALUMI-
NUM, FIBERGLASS,
OR STAINLESS
STEEL**

Aluminum		
<u>Length</u>	<u>CODE</u>	<u>Price</u>
4 cm - 1 5/8"	-01	8.64
5 cm - 2"	-02	11.88
15 cm - 6"	-03	14.04
31 cm - 12"	-04	20.52
46 cm - 18"	-05	21.60

61 cm - 24"	-06	27.00
91 cm - 36"	-07	29.16
122 cm - 48"	-08	45.36
153 cm - 60"	-09	51.84
183 cm - 72"	-10	57.24
244 cm - 96"	-11	72.36

Fiberglass		
<u>Length</u>	<u>CODE</u>	<u>Price</u>
4 cm - 1 5/8"	-21	CALL
5 cm - 2"	-22	CALL
15 cm - 6"	-23	CALL
31 cm - 12"	-24	CALL
46 cm - 18"	-25	CALL

61 cm - 24"	-26	CALL
91 cm - 36"	-27	CALL
122 cm - 48"	-28	CALL
153 cm - 60"	-29	CALL
183 cm - 72"	-30	CALL
244 cm - 96"	-31	CALL

Stainless Steel		
<u>Length</u>	<u>CODE</u>	<u>Price</u>
4 cm - 1 5/8"	-41	12.96
5 cm - 2"	-42	12.96
15 cm - 6"	-43	16.20
31 cm - 12"	-44	27.00
46 cm - 18"	-45	35.64
61 cm - 24"	-46	44.28
91 cm - 36"	-47	60.48
122 cm - 48"	-48	76.68
153 cm - 60"	-49	89.64
183 cm - 72"	-50	106.92
244 cm - 96"	-51	139.32



PRG-1810
LABJAWS™ By
TROEMNER, CHAN-
NEL CONNECTOR

Special connector fastens lab frame rod to steel connector. Loosen the connector or slide up or down for easy adjustment of rod position.

CODE	Price
-01	28.08



PRG-1812
LABJAWS™ By
TROEMNER, LAB
FRAME FOOT

For mounting rods to counter-tops, floors, walls. Low profile design. Supplied with 3 screws.

CODE	Price
-01	30.24



PRG-1815
LABJAWS™ By
TROEMNER, HORI-
ZONTAL MOUNTING
BARS - WITH COU-
PLER

Threaded end for direct installation into channels. Comes with spring couple for use in steel 41 mm (1.61") channel. Locking nut included. Use with steel channel frames.

Length	CODE	Price
5.1 cm - 2"	-01	34.56
10.2 cm - 4"	-02	37.80
15.2 cm - 6"	-03	41.04
20.3 cm - 8"	-04	44.28



PRG-1817
LABJAWS™ By
TROEMNER, SMALL
LAB FRAME, 24 x 24

Ideal for small setups where space is limited. Frame measures 61 cm x 61 cm (24" x 24"). Frame consists of eight 5 cm rods, two 46 cm rods, eight 61 cm rods, eighteen "S" connectors, four rod end connectors, and four lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	545.40
Fiberglass	-02	CALL
Stainless Steel	-03	928.80



PRG-1820
LABJAWS™ By
TROEMNER, MEDIUM
LAB FRAME, 24 x 48

Convenient for distillation and general setups. Frame measures 61 cm x 122 cm (24" x 48"). Frame consists of eight 5 cm rods, two 46 cm rods, five 61 cm rods, two 91 cm rods, four 122 cm rods, twenty-four "S" connectors, four rod end connectors, and four lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	685.80
Fiberglass	-02	CALL
Stainless Steel	-03	1,317.60



PRG-1822
LABJAWS™ By
TROEMNER, LARGE
LAB FRAME, 48 x 48

Complex glassware setups easily accommodated. Can be mounted on the floor. Frame measures 122 cm x 122 cm (48" x 48"). Frame consists of ten 5 cm rods, three 46 cm rods, two 91 cm rods, ten 122 cm rods, thirty-eight "S" connectors, four rod end connectors, and six lab frame feet. Available in aluminum, fiberglass, or stainless steel.

Material	CODE	Price
Aluminum	-01	1,058.40
Fiberglass	-02	CALL
Stainless Steel	-03	1,852.20





PRG-1825
LABJAWS™ By
TROEMNER, EXTRA
LARGE LAB FRAME,
48 x 72

For greatest versatility in most demanding setups. Frame measures 122 cm x 183 cm (48" x 72"). Frame consists of six 5 cm rods, six 3 cm rods, two 61 cm rods, seven 122 cm rods, five 183 cm rods, forty-five "S" connectors, four rod end connectors, and eight lab frame feet. Available in aluminum, fiberglass, or stainless steel.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
Aluminum	-01	1,463.40
Fiberglass	-02	CALL
Stainless Steel	-03	2,035.80



PRG-1827
LABJAWS™ By
TROEMNER, HEAVY
DUTY LAB FRAME, 72
x 78

Strong, but lightweight frame for stable floor mounted applications. Free standing unit is specifically designed for heavy duty work such as pilot plant set-ups or temporary lab space. Frame measures 183 cm x 198 cm (72" x 78"). Frame consists of an outside frame assembly made of lightweight but strong channel steel. Also contains fifteen "S" connectors, sixteen channel connectors, five 122 cm rods, and three 183 cm rods for constructing internal lab frame lattice. Available in aluminum, fiberglass, or stainless steel.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
Aluminum	-01	2,116.80
Fiberglass	-02	CALL
Stainless Steel	-03	3,952.80



PRG-1830
LABJAWS™ By
TROEMNER, CHRO-
MATOGRAPHY LAB
FRAME, 24 x 24 x 48

Specifically for chromatography applications. Designed for use with chromatography cabinets frame measures 61 cm wide x 61 cm long, 122 cm height (24" x 24" x 48"). Frame consists of eight 61 cm rods, one end to end connector, two "S" connectors, four rod end connectors, and four lab frame feet.

<u>CODE</u>	<u>Price</u>
-01	257.04



PRG-1832
LABJAWS™ By
TROEMNER, REGU-
LAR HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. Used wherever clamping at 90° is required. Holds clamps, lab frames and rods up to 1.6 cm diameter.

<u>CODE</u>	<u>Price</u>
-01	28.08



PRG-1835
LABJAWS™ By
TROEMNER, JUMBO
HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. For heavy duty applications. Quality aluminum construction for maximum grip strength. Holds up to 2.2 cm rods.

<u>CODE</u>	<u>Price</u>
-01	41.04



PRG-1837
LABJAWS™ By
TROEMNER, MULTI-
ROD CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Maximum adjustment capability with one connector for rods and clamps up to 1.27 cm diameter. Holds rods at 90° in both horizontal and/or vertical configurations.

<u>CODE</u>	<u>Price</u>
-01	44.28



PRG-1840
LABJAWS™ By
TROEMNER, SWIVEL
HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. Allows tilting of clamp at any angle in parallel planes. May be reversed for inner or outer adjustment screw orientation. Holds clamps and rods up to 2.1 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	37.80



PRG-1842
LABJAWS™ By
TROEMNER, ALL PO-
SITION HOLDER

Corrosion resistant, ensures precise fit and powerful holding ability. Permits adjustment at any angle, in any plane. Surpasses standard holder capabilities. Holds rods up to 2.1 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	73.44



PRG-1845
LABJAWS™ By
TROEMNER, END-TO-
END CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Allows length extension of clamps and rods. Sturdy construction. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	29.16





PRG-1847
LABJAWS™ By
TROEMNER, HOOK
CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Easy to use. Allows one handed adjustment of rods.

<u>CODE</u>	<u>Price</u>
-01	16.20



PRG-1850
LABJAWS™ By
TROEMNER, LATTICE
CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Low profile. Sturdy aluminum construction. Allows rods to be held in cross-connection or perpendicular fashion. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	249.48



PRG-1852
LABJAWS™ By
TROEMNER, END
ROD CONNECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Holds rods or clamps firmly at 90°. Used for semi-permanent installations. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	19.44



PRG-1855
LABJAWS™ By
TROEMNER, "S" CON-
NECTOR

Corrosion resistant, ensures precise fit and powerful holding ability. Ergonomic contouring for easy adjustment. Allows maximum gripping of lab frames. Holds rods up to 1.27 cm in diameter.

<u>CODE</u>	<u>Price</u>
-01	27.00



PRG-1857
LABJAWS™ By
TROEMNER, UNIVER-
SAL STIRRER
MOUNTING BRACKET

Corrosion resistant, ensures precise fit and powerful holding ability. Supports 2 kg or less. Mounts apparatus to lab frames.

<u>CODE</u>	<u>Price</u>
-01	12.96



PRG-1860
LABJAWS™ By
TROEMNER, WRENCH

Corrosion resistant. Adjusts all rod connectors. Sturdy construction.

<u>CODE</u>	<u>Price</u>
-01	63.72





Every flow control device resists corrosion and rust. Easy one-hand operation. Convex bearing surfaces and rounded edges protect tubing. Two sizes available; regular and heavy duty. Adjustment screw with over sized head for accurate regulation. Built in side lugs for foot mounting. Tubing retainer screw. Heavy duty hosecock has large handwheel for ease of flow adjustment. Unique design offers unparalleled control. Works well with heavy duty Nylon braided tubing.

Description	CODE	Price
Regular up to 1.7 cm Tubing	-01	30.24
Heavy Duty up to 2.8 cm Tubing	-02	CALL

PRG-1862
LABJAWS™ By
TROEMNER, HOSE-
COCK, REGULAR OR
HEAVY DUTY



Add this option to PRG-1862 for bench or table mounting.

CODE	Price
-01	10.80

PRG-1867
LABJAWS™ By
TROEMNER, HOSE-
COCK FOOT



Similar to a regular hosecock but with a 14.5 cm bottom mounted extension rod for attachment to rods.

CODE	Price
-01	49.78

PRG-1870
LABJAWS™ By
TROEMNER, HOSE-
COCK EXTENSION
CLAMP





Designed to quickly start and stop flow. Provides for complete closure without damaging tubing and operated with a simple squeeze. Accommodates up to 1.2 cm tubing.

Description

Regular: For routing stop/start flow operation

Variable: For precise flow adjustment and duplication of flow rates

Heavy Duty: Equipped with heavy duty spring for tough jobs, ensures complete closure

CODE Price

-01 CALL

-02 CALL

-03 31.32



PRG-1872
LABJAWS™ By
TROEMNER, PINCH-
COCKS



Heavy duty support, 43 cm by 33 cm. Supplied with one stainless steel mast, 19 mm diameter.

CODE Price

-01 355.32

PRG-1880
HEAVY DUTY SUP-
PORT



Aluminum bracket has 4.3 cm clamp opening, accepts 1.3 cm rods.

CODE	Price
-01	268.92

**PRG-1882
SHELF GRIP SUP-
PORT**



Convenient high load capacity with safety locks. Stainless steel top and bottom platform. Over-sized knobs for smooth adjustment. Level lifting action.

Platform Size	Vertical Lift	Maximum Load	CODE	Price
Mini: 8 x 8 cm	5 - 12 cm	8 kg	-01	221.70
Standard: 15 x 15 cm	7 - 25 cm	15 kg	-02	228.84
Large: 20 x 20 cm	7 - 31 cm	20 kg	-03	308.22
Jumbo: 31 x 31 cm	13 - 50 cm	65 kg	-04	334.30

**PRG-1885
LAB LIFTS**



**OH-110
SUPPORT STAND
WITH ROD**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

Options	Length	CODE	Price
Complete	23"	OH-30400030	334.00
Complete	28"	OH-30400031	351.00
Complete	36"	OH-30400032	403.00
Complete	40"	OH-30400033	425.00
Complete	48"	OH-30400034	448.00
Complete	60"	OH-30400035	496.00

Options	Length	CODE	Price
Support Rod Only	18"	OH-30400036	112.00
Support Rod Only	23"	OH-30400037	123.00
Support Rod Only	28"	OH-30400038	136.00
Support Rod Only	36"	OH-30400039	172.00
Support Rod Only	40"	OH-30400040	197.00
Support Rod Only	48"	OH-30400041	217.00
Support Rod Only	60"	OH-30400042	CALL



**OH-110B
STANDARD SUPPORT
STAND CLAMP**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>CODE</u>	<u>Price</u>
OH-30400043	81.00



**OH-110C
STABILIZER KNOBS,
SUPPORT STAND**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Quantity</u>	<u>CODE</u>	<u>Price</u>
2	OH-30400044	68.00



**OH-112
HEAVY DUTY CLAMP,
BF25**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>CODE</u>	<u>Price</u>
OH-30400045	106.00



**OH-915290
HEAVY DUTY CLAMP,
4 PRONG, DUAL AD-
JUST**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
24/40	OH-30392193	153.00
34/45	OH-30392194	153.00



OH-916049
CLAMP HOLDER

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

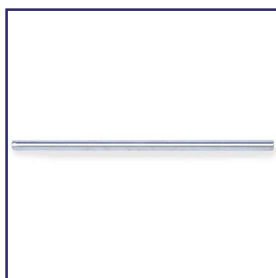
Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

<u>CODE</u>	<u>Price</u>
OH-30392195	24.00



OH-916203
LAB FRAME ROD,
ALUMINUM, 144"

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>CODE</u>	<u>Price</u>
OH-30392333	109.00



CLC-HOOKCS
LABJAWS™, CON-
NECTOR, THUMB-
SCREW

Type Connector
Material Stainless Steel
Grip Range 0 in — 0.51 in (0 mm — 13 mm)
Connection Angle Fixed 90°
Adjustment Type Thumb-screw

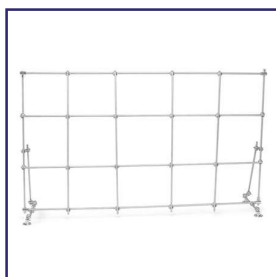
<u>CODE</u>	<u>Price</u>
OH-30392358	36.00



OH-916205
HOSECOCK, WITH
FOOT, ADJUSTABLE
CONTROL

LabJaws Clamps are designed to securely grip and position laboratory apparatus. Extension arm clamps with 360° rotation allow placement of apparatus at various distances from lab-frames and are easily secured with optional holders. Swivel, fixed position, and thermometer clamps easily hold apparatus near the lab-frame or stand, and have a built-in holder for simple attachment to lab-frames or apparatus. Flow control clamps available in 7 styles.

<u>CODE</u>	<u>Price</u>
OH-30392341	52.00



OH-916244
LAB FRAME, FUME
HOOD, STAINLESS
STEEL

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
36 x 12 x 38"	OH-30392329	1,100.00
36 x 12 x 50"	OH-30392330	1,195.00
36 x 12 x 62"	OH-30392331	1,285.00
36 x 12 x 86"	OH-30392332	1,470.00



OH-916249
REPLACEMENT
SLEEVES FOR
CLAMPS, 3 PRONG,
VINYL BLACK

LabJaws Clamps are designed to securely grip and position laboratory apparatus. Extension arm clamps with 360° rotation allow placement of apparatus at various distances from lab-frames and are easily secured with optional holders. Swivel, fixed position, and thermometer clamps easily hold apparatus near the lab-frame or stand, and have a built-in holder for simple attachment to lab-frames or apparatus. Flow control clamps available in 7 styles.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

An additional holder is required in order to attach clamps to lab-frames and other apparatus

Construction

Nickel-plated zinc or electro-polished stainless steel

Design Features

Non-slip vinyl sleeves, and fiberglass covers for temperatures above 100°C (included with all 2 and 3-prong clamps)

<u>Size</u>	<u>CODE</u>	<u>Price</u>
Small	OH-30400263	13.00
Medium	OH-30400264	13.00
Large	OH-30400265	13.00



OH-916299
SUPPORT PLATE

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Size</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Small	9.5 x 6.5"	OH-30392349	153.00
Large	12.75 x 9"	OH-30392350	245.00
Extra Large	15.75 x 12"	OH-30392351	306.00



OH-916310
FLEX SYSTEM

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Size</u>	<u>Options</u>	<u>CODE</u>	<u>Price</u>
12"	Support Base	OH-30400011	309.00
12"	Bench Clamp	OH-30400012	274.00
18"	Support Base	OH-30400014	371.00
18"	Bench Clamp	OH-30400015	326.00



OH-CLR-701
**LABJAWS, GAS CYL-
INDER SUPPORTS**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Support Type</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Floor Stand	Cast Aluminum	10.75" x 17.25" x 17.25"	OH-30400017	520.00





OH-CLR-703
LABJAWS, GAS CYLINDER SUPPORTS

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

<u>Support Type</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Floor Stand	Cast Aluminum	6" x 18.25"	OH-30400018	394.00



OH-CLR-704
LABJAWS, GAS CYLINDER SUPPORTS

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Support Type</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Floor Stand	Cast Aluminum	7.5" x 18.5"	OH-30400019	457.00



OH-CLR-711
LABJAWS, GAS CYLINDER SUPPORTS

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Style</u>	<u>Support Type</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Standard	Bench	Cast Aluminum	6.25" x 3.25" x 5.25"	OH-30400020	75.00
M	Bench	Cast Aluminum	6.25" x 3.25" x 5.25"	OH-30400021	88.00





OH-CLR-712
LABJAWS, GAS CYL-
INDER SUPPORTS,
HEAVY DUTY

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

<u>Style</u>	<u>Support Type</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Heavy Duty	Bench	Cast Aluminum	4.5" x 3.25" x 6"	OH-30400022	78.00



OH-CLR-713
LABJAWS, GAS CYL-
INDER SUPPORTS,
PORTABLE

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Support Type</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Floor Stand	Cast Aluminum	3" x 15.5"	OH-30400023	446.00



OH-CLR-715
LABJAWS, GAS CYL-
INDER SUPPORTS,
WALL

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Style</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Standard	Cast Aluminum	4.63" x 1.88" x 8.1"	OH-30400024	67.00
M	Cast Aluminum	4.63" x 1.88" x 8.1"	OH-30400025	81.00



OH-CLR-716
LABJAWS, GAS CYL-
INDER SUPPORTS,
CHAIN

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Style</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Standard	Cast Aluminum	6.5" x 3.25" x 5.25"	OH-30400026	81.00
M	Cast Aluminum	6.5" x 3.25" x 5.25"	OH-30400027	97.00



OH-CLR-717
LABJAWS, GAS CYL-
INDER SUPPORTS,
CHAIN

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Style</u>	<u>Material</u>	<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
Standard	Cast Aluminum	4.63" x 1.88" x 8.1"	OH-30400028	75.00
M	Cast Aluminum	4.63" x 1.88" x 8.1"	OH-30400029	92.00



OH-CLR-LBLFT
LABJAWS, LAB LIFTS

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Material</u>	<u>Height Range</u>	<u>Maximum Load</u>	<u>Platform Size</u>	<u>CODE</u>	<u>Price</u>
Stainless Steel	64 - 127 mm	100 lb (45.36 kg)	3 in x 3 in (76 mm x 76 mm)	OH-30400000	202.00
Stainless Steel	64 - 127 mm	100 lb (45.36 kg)	4 in x 4 in (102 mm x 102 mm)	OH-30400001	246.00
Stainless Steel	76 - 248 mm	133 lb (60.33 kg)	6 in x 6 in (152 mm x 152 mm)	OH-30400002	253.00
Stainless Steel	76 - 248 mm	227 lb (102.97 kg)	8 in x 8 in (203 mm x 203 mm)	OH-30400003	340.00
Stainless Steel	89 - 330 mm	247 lb (112.04 kg)	10 in x 10 in (254 mm x 254 mm)	OH-30400004	369.00
Stainless Steel	102 - 495 mm	100 lb (45.36 kg)	12 in x 12 in (305 mm x 305 mm)	OH-30400005	975.00
Stainless Steel	102 - 495 mm	100 lb (45.36 kg)	16 in x 16 in (406 mm x 406 mm)	OH-30400006	1,725.00
Aluminum	64 - 127 mm	66 lb (29.94 kg)	4 in x 4 in (102 mm x 102 mm)	OH-30400007	188.00
Aluminum	76 - 248 mm	132 lb (59.87 kg)	6 in x 6 in (152 mm x 152 mm)	OH-30400008	231.00
Aluminum	76 - 248 mm	176 lb (79.83 kg)	8 in x 8 in (203 mm x 203 mm)	OH-30400009	277.00
Aluminum	89 - 330 mm	186 lb (84.37 kg)	10 in x 10 in (254 mm x 254 mm)	OH-30400010	364.00



OH-CLR-RBASE
LABJAWS, SUPPORT
STAND BASE, CAST
IRON

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

Applications

Chromatography, Distillation, Titrations, Electrolysis, Chemistry, Research & Development, Quality Control, Ring Stands, Water Baths, Cleanroom Applications, Acid Fume Hood Applications

Operation

Lab-frame kits include all components necessary to build a lab-frame

Construction

Nickel-plated zinc, stainless steel, fiberglass, aluminum, cast aluminum, anodized aluminum (Stainless steel is autoclavable and corrosion-resistant. Aluminum is lightweight yet strong. Cast iron with black enamel finish is chemical-resistant.)

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
4 in x 6 in (102 mm x 152 mm)	OH-30392359	46.00
5 in x 8 in (127 mm x 203 mm)	OH-30392360	73.00
6 in x 9 in (152 mm x 229 mm)	OH-30392361	95.00
8 in x 10 in (203 mm x 254 mm)	OH-30392362	138.00



OH-CLR-TBASEC
LABJAWS, SUPPORT
TRIPOD STAND BASE,
CAST IRON

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
14.75 in (375 mm)	OH-30392363	88.00



OH-CLR-UBASEC
LABJAWS, SUPPORT
U STAND BASE, CAST
IRON

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Dimensions</u>	<u>CODE</u>	<u>Price</u>
7 in x 7 in (178 mm x 178 mm)	OH-30392364	46.00



**OH-CLS-FLEX
FLEX SYSTEM**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Material</u>	<u>Arm Length</u>	<u>CODE</u>	<u>Price</u>
Nickel Plated	12"	OH-30400013	238.00
Nickel Plated	18"	OH-30400016	284.00



**OH-CLS-KTLCL
FLEX SYSTEM**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Flask Size</u>	<u>CODE</u>	<u>Price</u>
500 ml, 1000 ml	OH-30392365	187.00
2000 ml, 3000 ml, 4000 ml	OH-30392366	189.00



**OH-CLS-NESTXS
NESTER CLAMP**

LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods, Support Stands & Connectors in the industry to safely hold labware. Whether you need a standard lab-frame or need to create a unique set-up, we have options to fit any space or application. Dependable connectors, secure rods, and clamps to meet your requirements. Five unique holders available in a variety of sizes and materials to accommodate different rods up to 24 mm in dia.

<u>Material</u>	<u>Arm Length</u>	<u>CODE</u>	<u>Price</u>
Stainless Steel	5.98"	OH-30392318	104.00



ADAPTERS

Adjustable Flow Control, Teflon.....	17
Beaded Pipe to ANSI Flange (316 S.S.).....	36, 619
Beaded Pipe to Hose Barb.....	39, 622
Beaded Pipe to Male NPT Thread (316 S.S.).....	36, 619
Beaded Pipe to NW or Sanitary Fitting (316 S.S.).....	37, 620
Beaded Pipe to Tube Stud.....	39, 622
Beaded Pipe to Tube Stud (316 S.S.).....	36, 619
Bushing.....	10
Bushing, Teflon.....	10
Caps with Holes.....	11, 12, 15, 24, 265
Claissen.....	10, 12
Claissen, Distillation.....	11, 12, 13
Claissen, Modified.....	11, 12, 13
Claissen, Take-Off.....	13
Clips, Keck.....	23, 77, 257, 703
Combination.....	10
Connecting.....	13, 14, 26, 27, 28
Connecting, 3-Way.....	13
COWIE®, PTFE Jointware, Flask Stoppers.....	41, 624, 763
COWIE®, PTFE Jointware, Joint Clamps.....	43, 626, 765
COWIE®, PTFE Jointware, Rigid Joint Sleeves.....	43, 626, 765
COWIE®, PTFE Jointware, Self Releasing Stoppers.....	41, 624, 763
COWIE®, PTFE Jointware, Standard Taper Compression Fittings.....	42, 625, 764
Cyclone By-Pass, Heavy Wall.....	225
Cyclone By-Pass, Heavy Wall, SVL/Ball Joint.....	225
Distillation, Bent, 105° Jacketed.....	25
Distilling.....	14, 15
Distilling, 75° Angle.....	14
Distilling, Thermometer.....	14
Distilling Trap.....	16, 143
Distilling Trap, Kjeldahl.....	15
Double "L", Heavy Wall.....	225
Drain Valve Adapters, High Volume, Teflon Stopcocks.....	303, 480
Drain Valve Adapters, Teflon Stopcocks.....	302, 479
Drying, Fritted.....	150
Enlarging.....	8
Enlarging or Reducing.....	9
Enlarging or Reducing, Straight.....	26
Filter By-Pass, Heavy Wall.....	226
Flow Control, 90°.....	16
Flow Control, 90°, Teflon.....	17
Flow Control Adapter, Standard Taper Joint.....	69
Flow Control, Adjustable, Teflon.....	17
Flow Control, Straight.....	16
Flow Control, Straight, Teflon.....	17
Inert Gas, Dual Inline Hose Barbs.....	21
Inert Gas, Standard Taper Joint x "Dual" Tube Studs, 90°.....	21
Inlet, 200mm Extended Tube Below Side 3/8" Hose Barb.....	21
Inlet, Inner Joint.....	26
Inlet, Outer Joint.....	26
Inlet, Outlet, 90° Bend Hose Connection.....	19
Inlet, Outlet, Spherical Joint, With 3/8" Hose Barb.....	18
Inlet, Outlet, Spherical Joint, With 3/8" Hose Barb, 90°.....	20
Inlet, Outlet, Spherical Joint, With Tube Stud.....	18
Inlet, Outlet, Spherical Joint, With Tube Stud, 90°.....	20
Inlet, Outlet, Standard Taper Joint, With 3/8" Hose Barb.....	18
Inlet, With Side 3/8" Hose Barb.....	21
Internal Thread to Beaded Pipe.....	40, 623
Isolation, Pilot Plant.....	121, 603
J-Kem® Scientific, Thermocouple.....	254, 641, 821
J-Kem® Scientific, Thermocouple Probes.....	254, 641, 821
J-Kem® Scientific, Thermocouple Probes, O-Ring.....	254, 641, 821
Keck Clips.....	23, 77, 257, 703
Micro, 75° Bend.....	29, 31, 416, 418
Micro, 105° Bend.....	28, 29, 415, 416

ADAPTERS (Continued)

Micro, 105° Bend, Drip Tip.....	29, 416
Micro, 105° Bend, Vacuum, Inner Drip Tip, Standard Taper Joint.....	35, 422
Micro, 105° Bend, Vacuum, Sealed-In Delivery Tube, Standard Taper Joint.....	36, 422
Micro, Addition or Distributing.....	31, 35, 418, 422
Micro, Bushing.....	29, 416
Micro, Claissen.....	30, 416
Micro, Claissen, 75° Side Arm.....	31, 417
Micro, Claissen, Three-Way.....	30, 416
Micro, Connecting.....	32, 419
Micro, Connecting, 75° Side Arm.....	31, 417
Micro, Distilling.....	31, 418
Micro, Distilling Head.....	32, 419
Micro, Distributing or Addition.....	31, 418
Micro, Filtration, Vacuum.....	32, 418
Micro, Inlet, 90° Bend With Hose Connection and 2mm TFE Stopcock.....	34, 420
Micro, Inlet, 90° Bend With Hose Connection and Glass Stopcock.....	34, 420
Micro, Inlet, 90° Bend With Hose Connection, Standard Taper Joint.....	33, 419
Micro, Inlet, Extended, 90° Bend With Hose Connection, Standard Taper Joint.....	33, 420
Micro, Inlet, Standard Taper Joint, With Hose Barb Connection.....	33, 419
Micro, Kjeldahl Trap.....	32, 33, 419
Micro, Offset.....	29, 416
Micro, Outlet, 90° Bend With Hose Connection, Standard Taper Joint.....	33, 420
Micro, Outlet, Standard Taper Joint, With Hose Barb Connection.....	33, 419
Micro, Reducing and Enlarging Types.....	29, 415
Micro, Straight.....	28, 415
Micro, Straight, 90mm.....	28, 415
Micro, Straight, Vacuum, Sealed In Inner Delivery Tube, Standard Taper Joint.....	35, 422
Micro, Straight, Vacuum, Standard Taper Joint.....	35, 422
Micro, Straight, Vacuum, Inner Drip Tip, Standard Taper Joint.....	35, 422
Micro, Thermometer, Straight, Standard Taper.....	34, 420
Micro, Threaded, Bushing Style, Standard Taper.....	35, 421
Micro, Threaded, Standard Taper.....	34, 421
Micro, Three-Way.....	30, 32, 416, 418
Micro, Three-Way, 75° Side Tube.....	30, 417
Micro, Vacuum, Distilling.....	32, 419
Micro-Filtration Adapter, 47 mm, Solvent Pickup.....	154
Offset.....	22
Pilot Plant, Adapter, Isolation.....	121, 603
Pilot Plant, Beaded Pipe to ANSI Flange (316 S.S.).....	36, 619
Pilot Plant, Beaded Pipe to Hose Barb.....	39, 622
Pilot Plant, Beaded Pipe to Male NPT Thread (316 S.S.).....	36, 619
Pilot Plant, Beaded Pipe to NW or Sanitary Fitting (316 S.S.).....	37, 620
Pilot Plant, Beaded Pipe to Tube Stud (316 S.S.).....	36, 619
Pilot Plant, Beaded Pipe to Tube Stud.....	39, 622
Pilot Plant, COWIE®, PTFE Jointware, Flask Stoppers.....	41, 624, 763
Pilot Plant, COWIE®, PTFE Jointware, Joint Clamps.....	43, 626, 765
Pilot Plant, COWIE®, PTFE Jointware, Rigid Joint Sleeves.....	43, 626, 765
Pilot Plant, COWIE®, PTFE Jointware, Self Releasing Stoppers.....	41, 624, 763
Pilot Plant, COWIE®, PTFE Jointware, Standard Taper Compression Fittings.....	42, 625, 764
Pilot Plant, Internal Thread to Beaded Pipe.....	40, 623
Pilot Plant, Spherical Joint to Beaded Pipe, 45° Angle.....	38, 621
Pilot Plant, Spherical Joint to Beaded Pipe, Straight.....	38, 621
Pilot Plant, Tapered Joint to Beaded Pipe, 45° Angle.....	37, 620





ADAPTERS (Continued)

Pilot Plant, Tapered Joint to Beaded Pipe, Straight.....	37, 620
Pressure/Vacuum Stopcock, Inner.....	27
Pressure/Vacuum Stopcock, Inner, 90°.....	27
Pressure/Vacuum Stopcock, Outer.....	27
Pressure/Vacuum Stopcock, Outer, 90°.....	27
PTFE Jointware, Flask Stoppers, COWIE®.....	41, 624, 763
PTFE Jointware, Joint Clamps, COWIE®.....	43, 626, 765
PTFE Jointware, Rigid Joint Sleeves, COWIE®.....	43, 626, 765
PTFE Jointware, Self Releasing Stoppers, COWIE®.....	41, 624, 763
PTFE Jointware, Standard Taper Compression Fittings, COWIE®.....	42, 625, 764
Reducing.....	8
Reducing or Enlarging.....	9
Sampling.....	22
Shaft, Universal Adapter.....	351, 679
Silicone Sealing Rings, GL Sizes.....	11, 12, 15, 24, 266
Spherical Joint to Beaded Pipe, 45° Angle.....	38, 621
Spherical Joint to Beaded Pipe, Straight.....	38, 621
Straight.....	9
Straight, Enlarging or Reducing.....	26
Straight, Inner.....	8
Straight, Outer.....	9
Standard Taper to Tube Stud, 90°.....	20
Standard Taper to Tube Stud, Straight.....	19
Stopcock, Teflon.....	17, 276, 378
Sublimator.....	23
Syringe.....	22
Syringe, Addition.....	22
Tapered Joint to Beaded Pipe, 45° Angle.....	37, 620
Tapered Joint to Beaded Pipe, Straight.....	37, 620
Thermocouple, Teflon.....	23
Thermometer.....	24, 25
Thermometer, Offset.....	24
Thermometer, Side Hose Connection.....	24
Thermometer, Teflon Transfer.....	25, 28
Vacuum.....	19
Vacuum, 105°.....	25
Vacuum, 105°, Extended.....	25
Vacuum, Filtration, Large.....	26, 157
Vacuum, Filtration, Small.....	25, 257
Vacuum, Straight.....	25

AIRLESS APPARATUS

Addition Funnel.....	48
Bubbler, 0-4mm Gas Control Valve.....	44, 56
Bubbler, Mineral Oil.....	44, 56, 239, 590
Bubbler, Mineral Oil, Micro.....	49, 57, 423
Bubbler, Mineral Oil, With Check Valve.....	44, 56, 239, 590
Bubbler, Nitrogen, Improved.....	44, 56, 239, 590
Drying Ampul, Flat Bottom, 10mm Top Stem.....	48
Drying Ampul, Round Bottom, 10mm Top Stem.....	48
Filter Funnel, 0-4mm Valve.....	49
Filter Tube.....	49
Funnel, Addition.....	48
Micro, Bubbler, Mineral Oil.....	49, 57, 423
Nitrogen Bubbler, Improved.....	44, 56, 239, 590
Stopper.....	49
Stopper, Cap Style.....	49
Storage/Reaction Flask.....	45, 46, 47, 48
Storage/Reaction Flask, 3/8" O.D. Side Arm.....	45
Storage/Reaction Flask, Syringe Sampling Side Port.....	47
Storage/Reaction Tube.....	46, 47
Storage/Reaction Tube, 3/8" O.D. Side Arm.....	45

ARSINE GENERATOR

Arsine Generator.....	50
-----------------------	----

BEAKERS

Jacketed.....	51
Low Form.....	51

BOTTLES

Extraction, TCLP - PVC Coated.....	55
Extraction, TCLP - PVC Coated, Dual 100/400 Capped End.....	55
Filter, Carboy.....	53, 155, 593
Filter, Carboy, With Drain Valve.....	53, 155, 593
Gas Washing, Dreschel, Tall Form.....	236
Gas Washing, Fritted Cylinder.....	237
Gas Washing, Fritted Disc.....	237
Gas Washing, Large Volume.....	238, 589
Media Storage, Duron®.....	58
Pilot Plant, Filter, Carboy.....	53, 155, 593
Pilot Plant, Filter, Carboy, With Drain Valve.....	53, 155, 593
Single Neck, Full Length.....	52
Single Neck, Full Length, With Drain Valve.....	53
Single Neck, Full Length, With Hose Barb.....	54
Stopper, Full Length, Glass.....	52, 545, 380
Stopper, Full Length, Teflon.....	52, 545, 380
Three-Neck, Full Length.....	52
Three-Neck, Full Length, 0-4 mm Valve.....	54
Three-Neck, Full Length, With Hose Barb.....	55

BUBBLERS

0-4mm Gas Control Valve.....	44, 56
Clamp, Pinch, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Micro, Mineral Oil.....	49, 57, 423
Mineral Oil.....	44, 56, 239, 590
Mineral Oil, Micro.....	49, 57, 423
Mineral Oil, With Check Valve.....	44, 56, 239, 590
Nitrogen, Improved.....	44, 56, 239, 590
Pinch Clamp, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Radon.....	57

CAFRAMO LAB SOLUTIONS®

Anchor Paddle, 2x2".....	348, 676, 748
Anchor Paddle, 4x4".....	347, 675, 747
Anchor Paddle, 5x5".....	349, 677, 749
Anchor Paddle, 5x10".....	349, 677, 749
Anchor Paddle and Sweep Blade, 4x4".....	348, 676, 748
C-Clamp Set.....	734
Chuck Guard.....	334, 662, 730
Chuck Key.....	335, 663, 732, 733
Chuck Set.....	335, 663, 732, 733
Chuck Shaft Guard.....	731
Collapsible Blade Impeller.....	337, 665, 736
Compact Square Blade.....	337, 665, 736
Compact Stand With Base.....	331, 332, 659, 660, 726, 728
Compact Straight Blade.....	339, 667, 738
Crossed Blade Impeller.....	338, 666, 737
Dispersion Blade Only.....	340, 668, 739
Fastening Clamp.....	333, 661, 729
High Speed Collet Set.....	333, 661, 729
Impeller Set.....	334, 662, 730
Impeller and Shaft.....	336, 664, 735
Impeller and Shaft, Shaft.....	346, 674, 746
Manual Heavy Duty Stand.....	727
Overhead Stirrer, Compact Digital, 100-240V.....	329, 657, 724
Overhead Stirrer, Crossover 1540, 115V.....	324, 652, 719
Overhead Stirrer, Petite Digital, 100-240V.....	330, 658, 725
Overhead Stirrer, Reversing Digital With Countdown Timer.....	328, 656, 723



**CAFRAMO LAB SOLUTIONS® (Continued)**

Overhead Stirrer, Ultra Speed, 115V.....	327, 655, 722
Overhead Stirrer, Ultra Torque, 115V.....	325, 653, 720
Overhead Stirrer, Universal, 115V.....	326, 654, 721
Pitched 4 Blade Only.....	344, 672, 744
Pitched Blade Only.....	340, 668, 739
Pitched Blade Propeller Only.....	341, 342, 343, 669, 670, 671, 741, 742, 743
Pivoting Blade Impeller.....	338, 666, 737
Plate Mount.....	734
Propeller and Shaft.....	336, 664, 735, 740
Propeller and Shaft, 5.9" Diameter.....	740
PTFE 4 Blade Pitched Propeller.....	345, 673, 745
PTFE Anchor Paddle.....	345, 673, 745
PTFE Collapsible Impeller.....	344, 672, 744
Safety Stand With Base.....	331, 659, 726
Screen Protector.....	731
Square Blade Impeller.....	337, 665, 736
Stands and Clamps, Accessory Rod.....	332, 660, 728
Straight Blade Impeller.....	338, 666, 737
Straight Blade Only.....	339, 667, 738
Sweep Blade.....	347, 675, 747
Turbine 3 Blade Propeller Only.....	341, 669, 741

CELL CULTURE

Bio-Reactor Vessel, Carboy.....	63
Bio-Reactor Vessel, Carboy, Jacketed.....	63
Bio-Reactor Vessel, Flanged.....	63
Bio-Reactor Vessel, Flanged, Jacketed.....	64
Bottles, Media Storage, Duron®.....	58
Caps, Solid, For GL Threads with PTFE Protected Seals.....	58, 265
Flask, Erlenmeyer, With GL-45 Threaded Screw Cap.....	58
Flask, Fernbach.....	60
Flask, Fernbach, With Triple Baffles.....	60, 61
Flask, Nephelo.....	59
Flask, Nephelo, With Triple Baffles.....	59
Flask, Shaker, With Triple Baffles.....	59
Flask, Spinner.....	61
Flask, Spinner, Jacketed.....	62
Flask, Spinner, Replacement Impeller.....	62
Media Storage Bottle, Duron®.....	58
Solid Caps for GL Threads with PTFE Protected Seals.....	58, 265

CHROMATOGRAPHY

Column, Coarse Fritted Disc.....	75
Column, Plain.....	75
Column, Plain, With Reservoir.....	75
Column, Teflon Stopcock.....	65
Column, Teflon Stopcock, Coarse Fritted Disc.....	66
Column, Teflon Stopcock, Socket Joint.....	71
Column, Teflon Stopcock, Socket Joint, Coarse Fritted Disc.....	72
Column, Teflon Stopcock, Standard Taper Joint.....	67
Column, Teflon Stopcock, Standard Taper Joint, Fritted Disc.....	68
Column, With Reservoir, Teflon Stopcock, Socket Joint.....	73
Column, With Reservoir, Teflon Stopcock, Socket Joint, With Coarse Fritted Disc.....	73
Column, With Reservoir, Teflon Stopcock, Standard Taper Joint.....	70
Column, With Reservoir, Teflon Stopcock, Standard Taper Joint, With Fritted Disc.....	70
Flow Control Adapter, Socket Joint.....	74
Flow Control Adapter, Standard Taper Joint.....	69
Reservoir for Columns, Socket Joint.....	74
Reservoir for Columns, Standard Taper Joint.....	69
TLC Developing Chamber.....	74

CLAMPS

2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
--	-------------------

CLAMPS (Continued)

3-Prong Extension Clamps, Dual Adjustment.....	79, 383, 704, 940
3-Prong Extension Clamps, Single Adjustment.....	79, 383, 704, 940
3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 705, 940
Beaded Pipe Coupling.....	76, 290, 309, 490, 617, 702
Chain Clamp.....	81, 385, 706, 942
Column Clamp.....	81, 385, 707, 942
COWIE®, PTFE Jointware, Joint Clamps.....	43, 626, 765
Double Buret Clamp.....	82, 386, 707, 943
Double Buret Clamp & Stand.....	82, 386, 708, 943
Double Jaw Utility Clamp.....	85, 389, 710, 946
Electrode Support Clamps.....	84, 388, 710, 945
Filter Clamp.....	227
Fixed Position Clamps.....	80, 384, 706, 941
Flange Clamp, For Reaction Vessels.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Heavy Duty Tapered Clamp.....	82, 386, 707, 943
Joint Clips, Keck.....	23, 77, 257, 703
Kettle Cover Clamp.....	83, 387, 708, 944
KF Coupling.....	76, 310, 491, 702
KF PTFE Gasket.....	76, 310, 491, 702
LabJaws™ By Troemner, 2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
LabJaws™ By Troemner, 3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 705, 940
LabJaws™ By Troemner, Chain Clamp.....	81, 385, 706, 942
LabJaws™ By Troemner, Column Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Double Buret Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Double Buret Clamp & Stand.....	82, 386, 708, 943
LabJaws™ By Troemner, Double Jaw Utility Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Electrode Support Clamp.....	84, 388, 710, 945
LabJaws™ By Troemner, Fixed Position Clamps.....	80, 384, 706, 941
LabJaws™ By Troemner, Heavy Duty Tapered Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Kettle Cover Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Large Water Bath Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Nester Extension Clamp.....	82, 386, 708, 943
LabJaws™ By Troemner, Open Rings.....	85, 389, 710, 946
LabJaws™ By Troemner, Replacement Sleeves For Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Small Water Bath Clamp.....	83, 387, 709, 944
LabJaws™ By Troemner, Support Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Support Plate.....	85, 389, 710, 946
LabJaws™ By Troemner, Suspension Clamp.....	84, 388, 710, 945
LabJaws™ By Troemner, Swivel Clamp.....	80, 384, 705, 941
LabJaws™ By Troemner, Thermometer Extension Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Thermometer Swivel Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Wall Clamp.....	81, 385, 707, 942
Large Water Bath Clamp.....	83, 387, 708, 944
McCarter.....	78, 257, 264
Nester Extension Clamp.....	82, 386, 708, 943
Open Rings.....	85, 389, 710, 946
Pinch Clamp, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Pinch Clamp, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
PTFE Jointware, Joint Clamps, COWIE®.....	43, 626, 765
Reaction Flask.....	78, 257, 264, 704
Reaction Vessel Support.....	78, 257, 264, 704
Replacement Sleeves For Clamp.....	84, 388, 709, 945
Small Water Bath Clamp.....	83, 387, 709, 944
Springs, Stainless Steel.....	77, 257, 703
Support Clamp.....	85, 389, 710, 946





CLAMPS (Continued)

Support Plate.....	85, 389, 710, 946
Suspension Clamp.....	84, 388, 710, 945
Swivel Clamps.....	80, 384, 705, 941
Thermometer Extension Clamp.....	84, 388, 709, 945
Thermometer Swivel Clamp.....	84, 388, 709, 945
Thumbscrew Knob.....	81, 385, 706, 942
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Dual Adjust-ment.....	79, 383, 704, 940
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Single Adjust-ment.....	79, 383, 704, 940
UltraJaws™ By Troemner, Thumbscrew Knob.....	81, 385, 706, 942
Wall Clamp.....	81, 385, 707, 942
Water Bath Clamp, Large.....	83, 387, 708, 944
Water Bath Clamp, Small.....	83, 387, 709, 944

CONDENSERS

Allihn.....	86, 578
Allihn, Chimney Top.....	87, 579
Allihn, Detachable Hose Barbs.....	86, 578
Allihn, Reflux.....	87, 145
Coil.....	89, 580
Coil, Detachable Hose Barbs.....	90, 580
Coil, High Efficiency, Industrial Equipment.....	100, 588
Coil, Jacketed.....	90, 580
Coil, Jacketed, Beaded Pipe.....	94, 582
Coil, Jacketed, Beaded Pipe, Detachable Hose Barbs.....	94, 582
Coil, Jacketed, Detachable Hose Barbs.....	90, 581
Coil, Spiral.....	93
Cold Finger.....	92
Concentrator.....	88, 145
Dewar.....	92, 93, 407
Dewar, Twin Chamber.....	93, 407
Friedrichs, Drip Tip, Standard Taper Joint.....	88, 146
Friedrichs, Exit Tube, Standard Taper Joint.....	88
Friedrichs, Socket Joint.....	88
Friedrichs, Standard Taper Joint.....	87
Graham.....	89, 579
Graham, Detachable Hose Barbs.....	89, 579
High Speed.....	95, 583
High Speed, Detachable Hose Barb.....	96, 584
Large Capacity, Pilot Plant.....	97, 585
Large Capacity, Pilot Plant, Detachable Hose Barb.....	98, 586
Liebig.....	91, 581
Liebig, Full Jacket.....	91, 581
Micro, Allihn, Drip Tip.....	100, 424
Micro, Cold Finger, Drip Tip.....	100, 424
Micro, Dewar.....	101, 424
Micro, Double Cooling.....	101, 425
Micro, Liebig.....	101, 425
Micro, Liebig, No Hold-Up.....	101, 425
Micro, Reflux, Coil Type.....	102, 425
Micro, West.....	102, 426
Micro, West, Jacketed.....	102, 426
Pilot Plant, Large Capacity, Detachable Hose Barb.....	98, 586
Rotary Evaporator.....	143
Solvent Recovery.....	93, 146
Squat, High Efficiency, Quad-Coil, Detachable Hose Barb.....	99, 587
Spiral Coil.....	93
West.....	91
West, Open Thru.....	92

COWIE®

Adjustable Rotors, 4 Blade Angled Type 45°.....	362, 690, 752
Adjustable Rotors, Flat.....	363, 691, 753
Adjustable Turbine.....	364, 692, 754
Anchor.....	365, 693, 755

COWIE® (Continued)

Centrifugal.....	366, 694, 756
High Performance Shaft Guide.....	372, 700, 761
High Performance Shaft Guide with NPT Thread.....	370, 698, 759
PTFE Jointware, Flask Stoppers.....	41, 624, 763
PTFE Jointware, Joint Clamps.....	43, 626, 765
PTFE Jointware, Rigid Joint Sleeves.....	43, 626, 765
PTFE Jointware, Self Releasing Stoppers.....	41, 624, 763
PTFE Jointware, Standard Taper Compression Fittings.....	42, 625, 764
PTFE Reactor Lids and Fittings, Blanking Nuts for NPT Ports.....	488, 768
PTFE Reactor Lids and Fittings, Extension Adapters.....	488, 768
PTFE Reactor Lids and Fittings, Lids For Self Assembly with Remov-able Ports.....	486, 766
PTFE Reactor Lids and Fittings, NPT Compression Screw Fittings.....	488, 489, 768, 769
PTFE Reactor Lids and Fittings, Preassembled Lids with Removable Ports.....	487, 767
PTFE Reactor Lids and Fittings, PTFE Plugs.....	771
PTFE Reactor Lids and Fittings, Replacement Parts.....	488, 489, 768, 769
PTFE Reactor Lids and Fittings, Rod Baffles.....	769
PTFE Reactor Lids and Fittings, Standard Taper Joints For NPT Ports.....	770
PTFE Shaft Stirring, Shafts For Blades.....	355, 683, 750
PTFE Shaft Stirring, Stirrer Blades.....	358, 686, 751
PTFE Temperature Probes, Platinum Resistance, Baffle Probes.....	775
PTFE Temperature Probes, Platinum Resistance.....	772
PTFE Temperature Probes, Thermocouple Baffle Probes.....	774
PTFE Temperature Probes, Thermocouple Probes, Type K.....	773
PTFE Temperature Probes, Total Immersion.....	771
Retreat Curve.....	368, 696, 758
Screw Propeller.....	367, 695, 757
Universal Stirrer Guide.....	373, 701, 762
Universal Stirrer Guide with NPT Thread.....	371, 699, 760

DISSOLUTION

Vessel.....	103
Vessel, Graduated.....	103
Vessel, Bathless.....	103

DISTILLATION APPARATUS

Adapter, Isolation.....	121, 603
Adapter, Isolation, Pilot Plant.....	121, 603
Ammonia Distillation Unit.....	137
Apparatus, Micro.....	128, 427
Apparatus, Solvent Repurification.....	140
Apparatus, Solvent Repurification, Freon Recovery.....	140
Apparatus, Vacuum, Teflon Stopcocks, Micro.....	128, 427
Bulb, Kugelrohr, Micro.....	129, 428
Column, Hemple.....	104
Column, Hemple, Vacuum Jacketed.....	105
Column, Hemple, Vacuum Jacketed, Silvered.....	105
Column, Honeycomb.....	104
Column, Non-Jacketed With Beaded Pipe Connection and Internal Ring For Support Plate.....	107, 597
Column, Oldershaw, Perforated Plate.....	109, 599
Column, Oldershaw, Perforated Plate, Beaded Pipe Connection.....	111, 601
Column, Oldershaw, Perforated Plate, Vacuum Jacketed and Silvered, Beaded Pipe Connection.....	111, 601
Column, Oldershaw, Vacuum Jacketed and Silvered.....	110, 600
Column, Jacketed, Micro.....	130, 429
Column, Plain, Micro.....	129, 428
Column, Vacuum Jacketed, Expansion Bellows.....	105, 106
Column, Vacuum Jacketed, Expansion Bellows, Silvered.....	106





DISTILLATION APPARATUS (Continued)

Column, Vacuum Jacketed, Silvered, Beaded Pipe Connection and Internal Ring For Support Plate.....	107, 597
Column, Vigreux.....	104
Column, Vigreux, Micro.....	129, 428
Cyanide Distillation Unit.....	139
Cyanide Distillation Unit, Midi-Vap.....	138
Cyanide Scrubber Apparatus.....	139
Electro-Magnet Coil.....	124, 606
Feed Column Insert, Pilot Plant.....	122, 603
Feed Column Insert, Pilot Plant, Vacuum Jacketed and Silvered.....	122, 604
Flask, Distilling, With 19/38 Side Arm.....	177
Flask, Evaporation, Large Scale, Flanged.....	112, 596
Flouride Distillation Unit.....	137
Head.....	112, 113, 114
Head, Automatic Liquid Dividing, Shell Design, Silvered and Evacuated.....	117
Head, Claisen, Jacketed, Micro.....	131, 430
Head, Claisen-Vigreux, Micro.....	130, 429
Head, Claisen-Vigreux, Jacketed, Micro.....	131, 429
Head, Claisen-Vigreux, With Condenser, Jacketed, Micro.....	132, 430
Head, Claisen-Vigreux, With Condenser, Micro.....	132, 431
Head, Dewar.....	115
Head, Micro.....	132, 133, 431
Head, Pilot Plant.....	121, 602
Head, Pilot Plant, Modified.....	121, 602
Head, Pilot Plant, Reflux/Divider.....	123, 124, 604, 605
Head, Pilot Plant, Reflux/Divider, 45°.....	123, 605
Head, Pilot Plant, Reflux/Divider, Automatic.....	124, 605
Head, Separable.....	114
Head, Separable, Teflon.....	114, 115
Head, Short Path, Macro.....	113
Head, Short Path, Vacuum Jacketed.....	113
Head, Short Path, Vacuum Jacketed, Micro.....	134, 433
Head, Solvent Still.....	117
Head, Variable Reflux.....	115, 116
Head, Variable Reflux, Micro.....	133, 432
Head, Variable Reflux, Teflon, Micro.....	133, 134, 432
Head, Vigreux.....	113
Head, Vigreux, Micro.....	131, 430
Head, Vigreux, Vacuum Jacketed.....	113, 114
Head, Vigreux, Vacuum Jacketed, Micro.....	134, 433
Hydrogen Distillation Unit.....	137
Liquid Divider System.....	127, 608
Micro, Apparatus.....	128, 427
Micro, Apparatus, Vacuum, Teflon Stopcocks.....	128, 427
Micro, Bulb, Kugelrohr.....	129, 428
Micro, Column, Jacketed.....	130, 429
Micro, Column, Plain.....	129, 428
Micro, Column, Vigreux.....	129, 428
Micro, Head.....	132, 133, 431
Micro, Head, Claisen, Jacketed.....	131, 430
Micro, Head, Claisen-Vigreux.....	130, 429
Micro, Head, Claisen-Vigreux, Jacketed.....	131, 429
Micro, Head, Claisen-Vigreux, With Condenser.....	132, 431
Micro, Head, Claisen-Vigreux, With Condenser, Jacketed.....	132, 430
Micro, Head, Short Path, Vacuum Jacketed.....	134, 433
Micro, Head, Variable Reflux.....	133, 432
Micro, Head, Variable Reflux, Teflon.....	133, 134, 432
Micro, Head, Vigreux.....	131, 430
Micro, Head, Vigreux, Vacuum Jacketed.....	134, 433
Micro, Receiver.....	134, 135, 136, 433, 434
Micro, Receiver, Graduated.....	136, 434, 435
Micro, Receiver, Graduated, Glass Stopcock.....	136
Micro, Receiver, With Adapter.....	135, 433
Micro, Receiver, With Adapter, 105°.....	135, 434

DISTILLATION APPARATUS (Continued)

Mid-Vap Cyanide Distillation Unit.....	138
Packing Beads.....	108, 598
Packing Rings, Raschig.....	108, 598
Pilot Plant, Adapter, Isolation.....	121, 603
Pilot Plant, Column, Non-Jacketed With Beaded Pipe Connection and Internal Ring For Support Plate.....	107, 597
Pilot Plant, Column, Oldershaw, Perforated Plate.....	109, 599
Pilot Plant, Column, Oldershaw, Perforated Plate, Beaded Pipe Connection.....	111, 601
Pilot Plant, Column, Oldershaw, Perforated Plate, Vacuum Jacketed and Silvered, Beaded Pipe Connection.....	111, 601
Pilot Plant, Distillation, Column, Oldershaw, Vacuum Jacketed and Silvered.....	110, 600
Pilot Plant, Column, Vacuum Jacketed, Silvered, Beaded Pipe Connection and Internal Ring For Support Plate.....	107, 597
Pilot Plant, Electro-Magnet Coil.....	124, 606
Pilot Plant, Feed Column Insert.....	122, 603
Pilot Plant, Feed Column Insert, Vacuum Jacketed and Silvered.....	122, 604
Pilot Plant, Flask, Evaporation, Large Scale, Flanged.....	112, 596
Pilot Plant, Head.....	121, 602
Pilot Plant, Head, Modified.....	121, 602
Pilot Plant, Head, Reflux/Divider.....	123, 124, 604, 605
Pilot Plant, Head, Reflux/Divider, 45°.....	123, 605
Pilot Plant, Head, Reflux/Divider, Automatic.....	124, 605
Pilot Plant, Liquid Divider System.....	127, 608
Pilot Plant, Reflux System.....	126, 607
Pilot Plant, Receiver, Moisture Test.....	122, 603
Pilot Plant, Support Platform.....	107, 597
Pilot Plant, Timer, Intervalometer.....	125, 606
Receiver.....	120
Receiver, Distributor.....	119
Receiver, Distributor, 105°.....	120
Receiver, Graduated, Glass Stopcock, Micro.....	136
Receiver, Graduated, Micro.....	136, 434, 435
Receiver, Micro.....	134, 135, 136, 433, 434
Receiver, With Adapter, Micro.....	135, 433
Receiver, With Adapter, 105°, Micro.....	135, 434
Receiver, Moisture Test.....	119
Receiver, Moisture Test, Bidwell-Sterling.....	118
Receiver, Moisture Test, Dean-Stark.....	118
Receiver, Moisture Test, Pilot Plant.....	122, 603
Reflux System.....	126, 607
Sulfite Determination Unit.....	138
Support Platform.....	107, 597
Timer, Intervalometer, Pilot Plant.....	125, 606

ENVIRONMENTAL, EXTRACTION, EVAPORATIVE

Adapter, Distilling Trap.....	16, 143
Adapter, Drying, Fritted.....	150
Ammonia Distillation Unit.....	137
Bottle, Carboy.....	155
Concentrator Tube, Graduated, 1ml Reservoir Tip, With Hooks, 19/22 Outer Joint.....	141
Concentrator Tube, Graduated, 1ml Reservoir Tip, Without Hooks, 19/22 Outer Joint.....	141
Concentrator Tube, Thermo-Jacketed, 1ml Reservoir Tip, With Hooks.....	141
Concentrator Tube, Thermo-Jacketed, 1ml Reservoir Tip, Without Hooks.....	141
Condenser, Allihn, Reflux.....	87, 145
Condenser, Concentrator.....	88, 145
Condenser, Friedrichs, Drip Tip, Standard Taper Joint.....	88, 146
Condenser, Rotary Evaporator.....	143





ENVIRONMENTAL, EXTRACTION, EVAPORATIVE (Continued)

Condenser, Solvent Recovery.....	93, 146
Cyanide Distillation Unit.....	139
Cyanide Distillation Unit, Midi-Vap.....	138
Cyanide Scrubber Apparatus.....	139
Distillation Apparatus, Solvent Repurification.....	140
Distillation Apparatus, Solvent Repurification, Freon Recovery.....	140
Drying Adapter, Fritted.....	150
Evaporative Concentrator, Micro Snyder, Without Hooks.....	144
Evaporative Concentrator, With Hooks.....	144
Extraction Apparatus, Soxhlet/Dean Stark, Modified.....	147
Extraction Apparatus, Pesticide.....	149
Extraction Thimble, Glass.....	148
Extraction Tube.....	144
Extraction Tube, Turbo Tube, Modified.....	145
Extractor, Liquid-Liquid, Continuous.....	148
Extractor, Liquid-Liquid, Continuous, Heavier Than Water.....	150
Extractor, Liquid-Liquid, Teflon Stopcock.....	148
Extractor, Soxhlet.....	146, 147
Extractor, Soxhlet, Continuous.....	149
Extractor, Soxhlet, Jacketed.....	147
Bottle, Carboy.....	155
Flask, Kuderna-Danish, With Hooks, 24/40 Top Joint, 19/22 Lower Joint.....	141
Flask, Kuderna-Danish, Without Hooks, 24/40 Top Joint, 19/22 Lower Joint.....	141
Fluoride Distillation Unit.....	137
Hydrogen Distillation Unit.....	137
Mid-Vap Cyanide Distillation Unit.....	138
Rotary Evaporator, Condenser.....	143
Rotary Evaporator Trap.....	142
Rotary Evaporator Trap, Modified.....	142
Rotary Evaporator Trap, Modified, With Drain Holes.....	142
Rotary Evaporator Trap, Self Washing.....	143
Snyder Column, 24/40 Lower Joint, With Vent Top.....	140
Snyder Column, 24/40 Top Joint, Solvent Recovery.....	140
Sparge Tube, Fritless.....	152
Sparge Tube, Fritted.....	150
Sparge Tube, Fritted, EPA 603.....	151
Sparge Tube, Fritted, Modified.....	151
Sparge Tube, Test Tube.....	152
Sparger Needle.....	151
Sulfite Determination Unit.....	138

FILTRATION

Adapter, Filter By-Pass, Heavy Wall.....	226
Adapter, Vacuum Filtration, Large.....	26, 157
Adapter, Vacuum Filtration, Small.....	25, 157
Apparatus, Large Volume, Pilot Plant.....	156, 592
Bottle, Carboy.....	53, 155, 593
Bottle, Carboy, With Drain Valve.....	53, 155, 593
Filter By-Pass Adapter, Heavy Wall.....	226
Filter Clamp.....	227
Filter Disc, Glass Frit, Coarse Porosity.....	227
Filter Disc, Teflon.....	227
Filter Funnel, Buchner.....	158, 163, 204, 205, 591, 594
Filter Funnel, Buchner, Jacketed.....	159
Filter Funnel, Buchner, Single Piece.....	164, 206, 595
Filter Funnel, Buchner, with Vacuum Adapter.....	159
Filter Funnel, Buchner, with Vacuum Adapter Control.....	160
Filter Funnel, Heavy Duty.....	164, 206, 595
Filter Funnel, Hirsch.....	157
Filter Funnel, Pressure.....	157
Filter Funnel, Cylindrical, Teflon.....	160

FILTRATION (Continued)

Filter Supports, Heavy Wall.....	226
Filter Supports, Heavy Wall, 4".....	226
Filter Tube.....	49
Filter Tube, Allihn.....	161
Filter Tube, Reduced Ends.....	162
Filter Tube, Straight.....	161
Flask, Filtering, Heavy Wall.....	179, 180
Funnel, 0-4mm Valve.....	49
Micro-Filtration Apparatus, 47 mm.....	153
Micro-Filtration Apparatus, 47 mm, All Glass.....	154
Micro-Filtration Apparatus, 47 mm, Removable.....	153
Micro-Filtration Adapter, 47 mm, Solvent Pickup.....	154
Micro-Filtration Apparatus, 90 mm, Removable.....	153
Paper Discs, 260 mm.....	162, 205, 595
Pilot Plant, Apparatus, Large Volume.....	156, 592
Pilot Plant, Bottle, Carboy.....	53, 155, 593
Pilot Plant, Bottle, Carboy, With Drain Valve.....	53, 155, 593
Pilot Plant, Funnel, Buchner.....	158, 163, 204, 205, 591, 594
Pilot Plant, Filter Funnel, Buchner, Single Piece.....	164, 206, 595
Pilot Plant, Filter Funnel, Drum and Carboy.....	164, 206, 595
Pilot Plant, Filter Funnel, Heavy Duty.....	164, 206, 595
Pilot Plant, Paper Discs, 260 mm.....	162, 205, 595

FLASKS

Body Reaction, Cylindrical, Micro.....	190, 191, 314, 446
Body Reaction, Cylindrical, Stopcock, Micro.....	191, 314, 447
Clamp, Reaction Flask.....	78, 257, 264, 704
Conical Bottom, European Style, Five Neck, Two Joints Threaded.....	178
Conical Bottom, European Style, Four Neck, One Joint Threaded.....	177
Conical Bottom, European Style, Three Neck.....	177
Dewar, Cylindrical, Wide Mouth.....	181
Dewar, Cylindrical, Wide Mouth, Full Housing.....	181
Dewar, Spherical, Fiberglass Caddies.....	182
Dewar, Hemispherical, Low Form.....	180, 181
Dewar, Polyethylene Stopper.....	182
Dewar, Spherical, Narrow Neck.....	182
Dispenser, Tilting, Pipet Type.....	177
Distilling, With 19/38 Side Arm.....	177
Duron Flange Clamp.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Duron O-Ring.....	189, 263, 309, 312, 445, 490
Erlenmeyer, Socket Joint.....	178
Erlenmeyer, Standard Taper Joint.....	178
Erlenmeyer, Standard Taper Joint, Micro.....	187, 443
Erlenmeyer, Standard Taper Joint, Stopper.....	179
Erlenmeyer, With GL-45 Threaded Screw Cap.....	58
Evaporation, Large Scale, Flanged.....	112, 596
Fernbach.....	60
Fernbach, With Triple Baffles.....	60, 61
Fiberglass Caddies for Spherical Dewar Flasks.....	182
Filter, Heavy Wall, Standard Taper, Micro.....	188, 443
Filtering, Heavy Wall.....	154, 179, 593
Filtering, Heavy Wall, Standard Taper Joint.....	179, 180
Flange Clamp, For Reaction Vessels.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flat Bottom, Single Long Neck, Socket Taper.....	167
Flat Bottom, Single Long Neck, Standard Taper.....	167
Flat Bottom, Single Short Neck, Standard Taper.....	166
Flat Bottom, Single Short Neck, Standard Taper Inner Joint, Micro.....	192, 447
Iodine, Stopper, Standard Taper.....	180
Kjeldahl, Single Neck, Medium Wall.....	169
Kuderna-Danish, With Hooks, 24/40 Top Joint, 19/22 Lower Joint.....	141
Kuderna-Danish, Without Hooks, 24/40 Top Joint, 19/22 Lower Joint.....	141
Nephelo.....	59
Nephelo, With Triple Baffles.....	59





FLASKS (Continued)

O-Ring, Duron.....	189, 263, 309, 312, 445, 490
Pear Shaped, Short Neck, Standard Taper Joint, Micro.....	184, 439
Pear Shaped, Short Neck, Standard Taper Joint, Side Inlet Tube, Micro.....	185, 440
Pear Shaped, Single Neck, Medium Wall.....	169
Pear Shaped, Three Neck, Standard Taper Joint, Micro.....	186, 442
Pear Shaped, Two Neck, Standard Taper Joint, Micro.....	186, 441
Polyethylene Stopper for Dewar Flasks.....	182
Reaction Head, Four Neck, Micro.....	191, 314, 446
Reaction Vessel, Cylindrical, Jacketed, Micro.....	189, 312, 444
Reaction Vessel, Cylindrical, Micro.....	188, 311, 443
Reaction Vessel, Spherical, Jacketed, Micro.....	189, 312, 444
Reaction Vessel, Spherical, Micro.....	188, 311, 444
Reaction Vessel Cover, Four Neck, Micro.....	190, 313, 445
Reaction Vessel Cover, Three Neck, Micro.....	190, 313, 445
Recovery, Single Neck, Medium Wall.....	168
Round Bottom, Four Neck, Standard Taper Joint, Micro.....	186, 441
Round Bottom, Four Neck, Standard Taper Joint, Medium Wall.....	174
Round Bottom, Four Neck, Standard Taper Joint, Medium Wall, Angled.....	175
Round Bottom, Four Neck, Standard Taper Joint, Medium Wall, Morton Type.....	175
Round Bottom, Short Neck, Standard Taper Inner Joint, Micro.....	192, 447
Round Bottom, Short Neck, Side Inlet Tube, Standard Taper, Micro.....	184, 439
Round Bottom, Short Neck, Two Side Inlet Tubes, Standard Taper, Micro.....	184, 440
Round Bottom, Single Long Neck, Standard Taper, Micro.....	183, 438
Round Bottom, Single Neck, Medium Wall.....	168
Round Bottom, Single Neck, Spherical Joint, Threaded Side Arm.....	170
Round Bottom, Single Neck, Standard Taper, Morton Style, Micro.....	187, 442
Round Bottom, Single Neck, Standard Taper, Threaded Side Arm.....	169
Round Bottom, Single Short Neck, Socket Joint.....	168
Round Bottom, Single Short Neck, Standard Taper.....	167
Round Bottom, Single Short Neck, Standard Taper, Micro.....	182, 438
Round Bottom, Single Short Neck, Standard Taper, Micro, Improved.....	183, 439
Round Bottom, Single Short Neck, Standard Taper, Micro, With Hooks.....	183, 438
Round Bottom, Three Neck, Spherical Joint, Medium Wall.....	173
Round Bottom, Three Neck, Spherical Joint, Medium Wall, Angled.....	174
Round Bottom, Three Neck, Standard Taper Joint, Medium Wall.....	171, 172
Round Bottom, Three Neck, Standard Taper Joint, Medium Wall, Bottom Outlet.....	176
Round Bottom, Three Neck, Standard Taper Joint, Medium Wall, Jacketed.....	176
Round Bottom, Three Neck, Standard Taper Joint, Medium Wall, Morton Type.....	17
Round Bottom, Three Neck, Standard Taper Joint, Morton Type, Micro.....	187, 442
Round Bottom, Three Neck, Standard Taper Joint, Threaded Side Port.....	176
Round Bottom, Three Neck, Standard Taper Joint, Micro.....	185, 440
Round Bottom, Two Neck, Standard Taper Joint.....	170
Round Bottom, Two Neck, Standard Taper Joint, Micro.....	185, 440
Round Bottom, Two Neck, Standard Taper Joint, Medium Wall.....	170
Shaker, With Triple Baffles.....	59
Spinner.....	61
Spinner, Jacketed.....	62
Spinner, Replacement Impeller.....	62
Storage/Reaction Flask.....	45, 46, 47, 48
Storage/Reaction Flask, 3/8" O.D. Side Arm.....	45

FLASKS (Continued)

Storage/Reaction Flask, Syringe Sampling Side Port.....	47
Volumetric, Class "A", Standard Taper Stopper.....	165
Volumetric, Class "A", Standard Taper Stopper, Amber.....	165
Volumetric, Class "A", Type 1.....	166
Volumetric, Standard Taper, Micro.....	166

FUNNELS

Addition.....	48
Addition, Standard Taper, Glass Stopcock.....	193, 194
Addition, Standard Taper, Graduated, Glass Stopcock.....	194, 195
Addition, Standard Taper, Graduated, Teflon Stopcock.....	195
Addition, Standard Taper, Teflon Stopcock.....	193, 194
Addition, Standard Taper, Threaded Teflon Valve.....	193
Filter, 0-4mm Valve.....	49
Filter, Buchner.....	158, 163, 204, 205, 591, 594
Filter, Buchner, Single Piece.....	164, 206, 595
Filter, Drum and Carboy.....	164, 206, 595
Filter, Heavy Duty.....	164, 206, 595
Paper Discs, 260 mm.....	162, 205, 595
Pilot Plant, Addition, Large Capacity.....	203, 612
Pilot Plant, Filter, Buchner.....	158, 163, 204, 205, 591, 594
Pilot Plant, Filter, Buchner, Single Piece.....	164, 206, 595
Pilot Plant, Filter Funnel, Drum and Carboy.....	164, 206, 595
Pilot Plant, Filter Funnel, Heavy Duty.....	164, 206, 595
Pilot Plant, Paper Discs, 260 mm.....	162, 205, 595
Powder, Angled, Ball Joint.....	203
Powder, Angled, Standard Taper Inner Joint.....	203
Powder, Ball Joint.....	202
Powder, Micro.....	207, 448
Powder, Offset.....	203
Powder, Offset, Micro.....	207, 448
Powder, Standard Taper Inner Joint.....	202
Pressure Equalizing, Graduated, Micro.....	208, 209, 449, 450
Pressure Equalizing, Graduated, Teflon, Micro.....	208, 209, 449, 450
Pressure Equalizing, Micro.....	207, 448
Pressure Equalizing, Teflon, Micro.....	207, 448
Pressure Equalizing, Teflon Threaded Valve, Micro.....	208, 449
Separatory.....	199
Separatory, Cylindrical, Glass Stopcock.....	196
Separatory, Cylindrical, Graduated, Teflon Stopcock.....	197
Separatory, Cylindrical, Graduated, Standard Taper Stopper, Jacketed, Teflon Plug.....	198
Separatory, Cylindrical, Graduated, Standard Taper Stopper, Jacketed, Teflon Stopcock.....	198
Separatory, Cylindrical, Graduated, Glass Stopcock.....	197
Separatory, Cylindrical, Graduated, Micro.....	210, 451
Separatory, Cylindrical, Graduated, Teflon Stopcock.....	197
Separatory, Cylindrical, Graduated, Teflon, Micro.....	210, 451
Separatory, Cylindrical, Jacketed.....	196
Separatory, Cylindrical, Micro.....	209, 450
Separatory, Cylindrical, Teflon, Micro.....	210, 451
Separatory, Globe Shape, Long Stem, Standard Taper Glass Stopcock.....	199
Separatory, Globe Shape, Long Stem, Standard Taper Teflon Stopcock.....	199
Separatory, Jacketed.....	198
Separatory, Squibb, Funnel Only.....	201
Separatory, Squibb, Micro.....	211, 452
Separatory, Squibb, Standard Taper, Glass Stopcock.....	201
Separatory, Squibb, Standard Taper, Teflon Stopcock.....	202
Separatory, Squibb, Standard Taper Stopper Top, Glass Stopcock.....	200
Separatory, Squibb, Standard Taper Stopper Top, Teflon Stopcock.....	201
Separatory, Squibb, Teflon Plug, Micro.....	211, 452
Separatory, Sure-Grip.....	200
Shaker.....	200





GAS APPARATUS

Adapter, Cyclone By-Pass, Heavy Wall.....	225
Adapter, Cyclone By-Pass, Heavy Wall, SVL/Ball Joint.....	225
Adapter, Double "L", Heavy Wall.....	225
Adapter, Filter By-Pass, Heavy Wall.....	226
Bottle, Gas Washing, Dreschel, Tall Form.....	236
Bottle, Gas Washing, Fritted Cylinder.....	237
Bottle, Gas Washing, Fritted Disc.....	237
Bottle, Gas Washing, Large Volume.....	238, 589
Bubbler, Midget, Medium Fritted Tip.....	224
Bubbler, Mineral Oil.....	44, 56, 239, 590
Bubbler, Mineral Oil, With Check Valve.....	44, 56, 239, 590
Bubbler, Nitrogen, Improved.....	44, 56, 239, 590
Bubbler, Sampling, Fritted Inlet Tip.....	224
Bubbler, Smog Sampling.....	225
Bubbler, Smog Sampling, With Capillary Tip.....	224
Clamp, Pinch, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Clamp, Pinch, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
Collections, Tube, Sampling Port.....	212
Collections, Tube, Sampling Port, Teflon Stopcock.....	212
Collections, Tube, Threaded Valve.....	212
Cyclone.....	228
Cyclone By-Pass Adapter, Heavy Wall.....	225
Cyclone By-Pass Adapter, Heavy Wall, SVL/Ball Joint.....	225
Double "L" Adapter, Heavy Wall.....	225
Filter Clamp.....	227
Filter Disc, Glass Frit, Coarse Porosity.....	227
Filter Disc, Teflon.....	227
Filter Supports, Heavy Wall.....	226
Filter By-Pass Adapter, Heavy Wall.....	226
Filter Supports, Heavy Wall.....	226
Filter Supports, Heavy Wall, 4".....	226
Gas Balloon, 0-4 Threaded Valve.....	212
Gas Washing Bottle, Fritted Cylinder.....	237
Gas Washing Bottle, Fritted Disc.....	237
Gas Washing Bottle, Dreschel, Tall Form.....	236
Gas Washing Bottle, Large Volume.....	238, 589
Impinger, Bottle, Midget.....	223
Impinger, Dust.....	222
Impinger, Greenberg-Smith, Non O-Ring.....	219
Impinger, Greenberg-Smith, "PGS" O-Ring.....	220
Impinger, Midget.....	222
Impinger, Midget, Graduated.....	222
Impinger, Midget, Graduated, O-Ring.....	223
Impinger, Midget, O-Ring.....	223
Impinger, Modified, Non O-Ring.....	219
Impinger, Modified, O-Ring, Hybrid.....	220
Impinger, Modified, "PGS" O-Ring.....	219
Impinger, Modified, SVL.....	220
Impinger Connector, Heavy Wall.....	226
Manifold, Glass.....	212
Manifold, Teflon.....	212
Method Five, Nozzles, Pyrex.....	229
Method Five, Nozzles, Quartz.....	229
Method Five, Nozzles, Stainless Steel.....	230
Method Five, Train, Heavy Wall.....	213
Method Five, Train, "PGS", Greaseless, Heavy Wall.....	214
Method Six, Midget Impinger Train, 12/5 Ball and Socket Joints.....	232
Method Six, Midget Impinger Train, Grease Free, SVL Threads.....	234
Method Six, "PGS" Midget Impinger Train, Grease Free, 12/5 Ball and Socket Joints.....	233
Method Twenty-Six, Midget Impinger Train.....	232
Method Twenty-Six, Midget Impinger Train, Grease Free, SVL Thread.....	234
Method Twenty-Six, "PGS" Midget Impinger Train, Grease Free.....	233

GAS APPARATUS (Continued)

Modified Method Five, Coil Condenser, XAD Trap, 28/15 Ball and Socket.....	218
Modified Method Five, Coil Condenser, XAD Trap, O-Ring Ball and Socket.....	218
Modified Method Five, Coil Condenser, XAD Trap, SVL Threads.....	218
Modified Method Five, Hybrid Riser-less System, Greaseless.....	217, 221
Modified Method Five, Hybrid Bottle.....	217, 221
Modified Method Five, "PGS" Riser-less System, Greaseless, Heavy Wall.....	215
Modified Method Five, SVL Riser-less System, Greaseless.....	216
Modified Method Five, XAD Trap.....	217, 221
Nitrogen Bubbler, Improved.....	44, 56, 239, 590
Nozzles, Method Five, Pyrex.....	229
Nozzles, Method Five, Quartz.....	229
Nozzles, Method Five, Stainless Steel.....	230
Orsat Gas Analyzer.....	231
Pinch Clamp, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Pinch Clamp, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
Probe Liner, 12/5 Ball Joint, Midget Impinger.....	236
Probe Liner, 28/12 Ball Joint.....	228
Probe Liner, 28/12 Ball Joint, O-Ring.....	228
Probe Liner, Combination, Quartz.....	230
Probe Liner, Straight Tube.....	229
Probe Liner, Straight Tube, With Nozzles.....	229
Probe Liner, Vost, 8mm O.D.....	236
Unions, Stainless Steel.....	230
Unions, Teflon.....	230
Vost Apparatus.....	235
Vost, Probe Liner, 8mm O.D.....	236

GLAS-COL

Beaker, Griffin, "O" Series.....	243, 630, 779
Beaker, Griffin, "TM" Series.....	244, 631, 780
Digital Thermometer.....	245, 632, 781
Extension Support, "M" Series.....	243, 630, 779
Extension Support, "O" Series.....	241, 628, 777
Heating/Insulating Jacket.....	256, 643, 784, 785
Heating/Insulating Tops.....	240, 627, 776
Hemispherical, "O" Series.....	240, 627, 776
Low Profile Controls.....	247, 634, 783
Reaction Kettle, "O" Series.....	244, 631, 780
Reaction Kettle, "TM" Series.....	244, 631, 780
Spherical, "M" Series.....	242, 629, 778
Spherical, "O" Series.....	241, 628, 777
Spherical, "TM" Series.....	242, 629, 778
Spherical, "TM" Series, Bottom Hole.....	256, 643, 784
Stir Combo Mantle, with Controller.....	242, 629, 778
Temperature Control, Digitrol II, Automatic.....	247, 634, 783
Temperature Control, Mantle, Minder II.....	247, 634, 783
Temperature Control, Minitrol.....	246, 633, 782
Temperature Control, Minitwin.....	246, 633, 782
Temperature Control, Powtrol.....	245, 632, 781
Temperature Control, Powrtwin.....	246, 633, 782
Thermocouples "J".....	245, 632, 781
Tripod Support, "M" Series.....	243, 630, 779
Tripod Support, "O" Series.....	241, 628, 777

HEATING MANTLES

Glas-Col, Beaker, Griffin, "O" Glas-Col, Series.....	243, 630, 779
Glas-Col, Beaker, Griffin, "TM" Series.....	244, 631, 780
Glas-Col, Digital Thermometer.....	245, 632, 781
Glas-Col, Extension Support, "M" Series.....	243, 630, 779
Glas-Col, Extension Support, "O" Series.....	241, 628, 777
Glas-Col, Heating/Insulating Jacket.....	256, 643, 784





HEATING MANTLES (Continued)

Glas-Col, Heating/Insulating Tops.....	240, 627, 776
Glas-Col, Hemispherical, "O" Series.....	240, 627, 776
Glas-Col, Low Profile Controls.....	247, 634, 783
Glas-Col, Reaction Kettle, "O" Series.....	244, 631, 780
Glas-Col, Reaction Kettle, "TM" Series.....	244, 631, 780
Glas-Col, Spherical, "M" Series.....	242, 629, 778
Glas-Col, Spherical, "O" Series.....	241, 628, 777
Glas-Col, Spherical, "TM" Series.....	242, 629, 778
Glas-Col, Spherical, "TM" Series, Bottom Hole.....	256, 643, 784
Glas-Col, Stir Combo Mantle, with Controller.....	242, 629, 778
Glas-Col, Temperature Control, Digitrol II, Automatic.....	247, 634, 783
Glas-Col, Temperature Control, Mantle, Minder II.....	247, 634, 783
Glas-Col, Temperature Control, Minicontrol.....	246, 633, 782
Glas-Col, Temperature Control, Minicontrol.....	246, 633, 782
Glas-Col, Temperature Control, Powtrol.....	245, 632, 781
Glas-Col, Temperature Control, Powtrol.....	246, 633, 782
Glas-Col, Thermocouples "J".....	245, 632, 781
Glas-Col, Tripod Support, "M" Series.....	243, 630, 779
Glas-Col, Tripod Support, "O" Series.....	241, 628, 777
J-Kem® Scientific, Temperature Controller, High Current, Controller Only.....	251, 638, 817
J-Kem® Scientific, Temperature Controller, Lab Safety.....	251, 638, 817
J-Kem® Scientific, Temperature Controller, Multi Channel, Dual Timer.....	250, 637, 816
J-Kem® Scientific, Temperature Controller, Multi Channel, Dual Timer, With Digital Timer On One Channel.....	250, 637, 816
J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade.....	248, 635, 814
J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade, With 100 Hour Digital Timer.....	248, 635, 814
J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade, with Both Heating and Cooling Outlets, With 100 Hour Digital Timer.....	249, 636, 815
J-Kem® Scientific, Temperature Controller, Single Channel, High Safety, Built in Backup Controller.....	249, 636, 815
J-Kem® Scientific, Temperature Controller, Single Channel, With Both Heating and Cooling Outlets.....	248, 635, 814
J-Kem® Scientific, Thermocouple, Adapter.....	254, 641, 821
J-Kem® Scientific, Thermocouple Cord, Coiled.....	255, 642, 822
J-Kem® Scientific, Thermocouple Cord, Straight.....	255, 642, 822
J-Kem® Scientific, Thermocouple Probes.....	252, 639, 819
J-Kem® Scientific, Thermocouple Probes, Adapter.....	254, 641, 821
J-Kem® Scientific, Thermocouple Probes, Adapter, O-Ring.....	254, 641, 821
J-Kem® Scientific, Thermocouple Probes, Dual Elements.....	253, 640, 820
J-Kem® Scientific, Water Flow Monitor.....	251, 638, 817

HEIDOLPH

Accessories, Clamp.....	809
Accessories, Concave Block Adapter.....	809
Accessories, Flexible Shaft.....	809
Accessories, Heating Bath.....	810
Accessories, Heating Bath, For Oil.....	810
Accessories, Holding Device.....	809
Accessories, PT1000 Clamping System.....	811
Accessories, PT1000 Temperature Sensor.....	811
Accessories, PT1000 Temperature Sensor.....	811
Accessories, RS232 Cable.....	811
Accessories, Shaft Guard.....	811
Accessories, Shaft Guard, Adapter Set.....	811
Accessories, Silicone Protective Cover 1.....	812
Accessories, Silicone Protective Cover 2.....	812
Accessories, Stand, Telescopic.....	809
Accessories, Stirrer Guide.....	811
Accessories, Stirring Bars, Cross Shape.....	812

HEIDOLPH (Continued)

Accessories, Stirring Bars, Cylindrical Shape.....	812
Accessories, Stirring Bars, Evaluation Kit.....	813
Accessories, Stirring Bars, Oval Shape.....	813
Heat-On, Block.....	804, 805, 806
Heat-On, Block, Lateral Cutouts.....	804
Heat-On, Block, Sidearm Cutouts.....	804
Heat-On, Boss Head.....	803
Heat-On, Flask Stand and Clamp Kit.....	803
Heat-On, Multi-Well, Holder.....	807
Heat-On, Multi-Well, Holder, For Temperature Sensor.....	808
Heat-On, Multi-Well, Insert.....	806, 807
Heat-On, Multi-Well, Package.....	808
Heat-On, Multi-Well, Package, Basic.....	807
Heat-On, Multi-Well, Retort Clamp.....	808
Heat-On, Multi-Well, Safety Lifting Handles.....	808
Magnetic Stirrer, HEI-Plate, Silver 1 Package.....	317, 645, 787
Magnetic Stirrer, HEI-Plate, Silver 2 Package.....	318, 646, 788
Magnetic Stirrer, MR HEI-Connect.....	318, 646, 788
Magnetic Stirrer, MR HEI-Mix L.....	320, 648, 790
Magnetic Stirrer, MR HEI-Mix S.....	319, 647, 789
Magnetic Stirrer, MR HEI-Standard.....	316, 644, 786
Magnetic Stirrer, MR HEI-Tec.....	317, 645, 787
Overhead Stirrer, MR HEI-Torque Core.....	321, 649, 791
Overhead Stirrer, MR HEI-Torque Precision.....	322, 650, 792
Overhead Stirrer, MR HEI-Torque Value.....	323, 651, 793
Starfish Workstation, 5-Way Clamp, Silicone Strap.....	794
Starfish Workstation, 5-Way Clamp, Velcro Strap.....	794
Starfish Workstation, Base Plate.....	802
Starfish Workstation, Gas/Vacuum Distribution Manifold.....	794
Starfish Workstation, Inserts, Flasks.....	795
Starfish Workstation, Monoblocks, Flasks.....	796
Starfish Workstation, Monoblocks, Reagent Vials.....	797, 798
Starfish Workstation, Monoblocks, Test Tubes.....	796, 797, 798
Starfish Workstation, Polyblocks, Flasks.....	798
Starfish Workstation, Polyblocks, Reagent Vials.....	798, 799, 800
Starfish Workstation, Polyblocks, Test Tubes.....	799, 800
Starfish Workstation, Replacement Adhesive Pads For Telescopic Arms.....	801
Starfish Workstation, Safety Handles.....	803
Starfish Workstation, Spare Silicone Straps.....	801
Starfish Workstation, Spare Velcro Straps.....	801
Starfish Workstation, Support Rod.....	802
Starfish Workstation, Support Rod, Divisible.....	802
Starfish Workstation, Water Distribution Manifold.....	803

J-KEM® SCIENTIFIC

Digital Vacuum Regulator.....	818
Temperature Controller, High Current, Controller Only.....	251, 638, 817
Temperature Controller, Lab Safety.....	251, 638, 817
Temperature Controller, Multi Channel, Dual Timer.....	250, 637, 816
Temperature Controller, Multi Channel, Dual Timer, With Digital Timer On One Channel.....	250, 637, 816
Temperature Controller, Single Channel, Compact, Research Grade.....	248, 635, 814
Temperature Controller, Single Channel, Compact, Research Grade, With 100 Hour Digital Timer.....	248, 635, 814
Temperature Controller, Single Channel, Compact, Research Grade, with Both Heating and Cooling Outlets, With 100 Hour Digital Timer.....	249, 636, 815
Temperature Controller, Single Channel, High Safety, Built in Backup Controller.....	249, 636, 815
Temperature Controller, Single Channel, With Both Heating and Cooling Outlets.....	248, 635, 814
Thermocouple, Adapter.....	254, 641, 821
Thermocouple Cord, Coiled.....	255, 642, 822
Thermocouple Cord, Straight.....	255, 642, 822





J-KEM® SCIENTIFIC (Continued)

Thermocouple Probes.....	252, 639, 819
Thermocouple Probes, Adapter.....	254, 641, 821
Thermocouple Probes, Adapter, O-Ring.....	254, 641, 821
Thermocouple Probes, Dual Elements.....	253, 640, 820
Water Flow Monitor.....	251, 638, 817

JOINTS

Bushing, Threaded Connector.....	268
Caps, Solid, For GL Threads with PTFE Protected Seals.....	58, 265
Caps, Solid, For SVL Threads with PTFE Protected Seals.....	267
Caps with Holes, GL Threads.....	11, 12, 15, 24, 265
Caps with Holes, SVL Threads.....	267
Clamp, McCarter.....	78, 257, 264
Clamp, Pinch, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Clamp, Pinch, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
Clamp, Reaction Flask.....	78, 257, 264, 704
Clamp, Springs, Stainless Steel.....	77, 257, 703
Clip, Keck.....	23, 77, 257, 703
Connector, Threaded, Glass.....	268
COWIE®, PTFE Jointware, Flask Stoppers.....	41, 624, 763
COWIE®, PTFE Jointware, Joint Clamps.....	43, 626, 765
COWIE®, PTFE Jointware, Rigid Joint Sleeves.....	43, 626, 765
COWIE®, PTFE Jointware, Self Releasing Stoppers.....	41, 624, 763
COWIE®, PTFE Jointware, Standard Taper Compression Fittings.....	42, 625, 764
Detachable Hose Connector, Internal Thread.....	5, 86, 94, 96, 98, 99, 268, 578, 582, 584, 586, 587
Direct Seal Hose Connections.....	5, 269
Disc, Fritted, Borosilicate.....	270
Duron Flange Clamp.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Duron O-Ring.....	189, 263, 309, 312, 445, 490
Duron Reaction Flange, With O-Ring Groove.....	263
Duron Reaction Flange, Flat Ground.....	263
Duron Reaction Kettle Lid.....	263
Flange, Buchi.....	265
Flange Clamp, Duron.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flange Clamp, For Reaction Vessels.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Fritted Disc, Borosilicate.....	270
Gas Dispersion Tube.....	270
Gas Dispersion Tube, 15° Angle.....	271
Gas Dispersion Tube, 90° Angle.....	271
Gas Dispersion Tube, Large Capacity.....	271
Gas Dispersion Tube, Micro.....	270
Gasket, Reaction Flask, TFE.....	264
Ground Stopper, Flask Length, Standard Taper.....	261
Inner, Drip Tip, Standard Taper.....	260
Inner, Full Length, Standard Taper.....	258
Inner, Luer.....	260
Inner, Medium Length, Standard Taper.....	258
Keck Clip.....	23, 77, 257, 703
McCarter Clamp.....	78, 257, 264
O-Ring Seal.....	261
O-Ring, Duron.....	189, 263, 309, 312, 445, 490
Outer, Dewar, Standard Taper.....	259
Outer, Full Length, Standard Taper.....	258
Outer, Medium Length, Standard Taper.....	258
Pinch Clamp, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Pinch Clamp, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
Plug, Screw Thread.....	267
PTFE Jointware, Flask Stoppers, COWIE®.....	41, 624, 763
PTFE Jointware, Joint Clamps, COWIE®.....	43, 626, 765

JOINTS (Continued)

PTFE Jointware, Rigid Joint Sleeves, COWIE®.....	43, 626, 765
PTFE Jointware, Self Releasing Stoppers, COWIE®.....	41, 624, 763
PTFE Jointware, Standard Taper Compression Fittings, COWIE®.....	42, 625, 764
Reaction Flask Clamp.....	78, 257, 264, 704
Reaction Flask, Gasket, TFE.....	264
Reaction Kettle, 120mm (4") I.D.....	78, 258, 264
Reaction Vessel Support.....	78, 257, 264, 704
Removable Hose Connection, GL Sizes.....	266
Replacement Plug, TFE Stem.....	279
Reverse Seal Hose Connections.....	5, 269
Screw Thread Tubes, GL Sizes.....	265
Screw Thread Tubes, SVL Sizes.....	266
Short Length, Standard Taper.....	259
Silicone Sealing Rings, GL Sizes.....	11, 12, 15, 24, 266
Solid Caps for GL Threads with PTFE Protected Seals.....	58, 265
Spherical Joint, Ball Member.....	260
Spherical Joint, Ball Member, O-Ring.....	261
Spherical Joint, Ball Member, O-Ring, Stainless Steel.....	262
Spherical Joint, Ball Member, Stainless Steel.....	262
Spherical Joint, Socket Member.....	260
Spherical Joint, Socket Member, Stainless Steel.....	262
Springs, Stainless Steel.....	77, 257, 703
Stopcock, 120° Bore, Teflon.....	276, 378
Stopcock, Double Oblique Bore.....	273, 375
Stopcock, Double Oblique Bore, Pressure.....	274, 376
Stopcock, Double Oblique Bore, Teflon.....	277, 379
Stopcock, Hollow Plug, 90° Angle, High Vacuum.....	275, 377
Stopcock, Hollow Plug, Double Oblique, High Vacuum.....	274, 376
Stopcock, Hollow Plug, Oblique, High Vacuum.....	274, 376
Stopcock, Hollow Plug, Offset, High Vacuum.....	275, 377
Stopcock, Single Oblique Bore.....	272, 374
Stopcock, Single Oblique Bore, Teflon.....	277, 379
Stopcock, Straight Bore, Glass.....	272, 374
Stopcock, Straight Bore, Metering Plug, Teflon.....	17, 276, 378
Stopcock, Straight Bore, Pressure.....	273, 375
Stopcock, Straight Bore, Teflon.....	275, 377
Stopcock, T-Bore, Glass.....	272, 374
Stopcock, T-Bore, Pressure.....	273, 375
Stopcock, T-Bore, Teflon.....	276, 378
SVL Sealing Rings.....	267
Teflon Sleeve, Standard Taper.....	259, 315
Valve, High Vacuum, Low Hold Up.....	278
Valve, High Vacuum, Right Angle.....	277
Valve, High Vacuum, "S" Type.....	278
Valve, High Vacuum, "T" Type.....	279
Valve, High Vacuum, Three Way.....	278

JULABO

Adapters.....	936, 937
Adapters, Barbed Fitting For F250 Chiller.....	938
Adapters, Barbed Fitting For Tubing.....	938
Adapters, Elbow Fitting, M16.....	938
Adapters, Elbow Fitting, M16X1.....	938
Adapters, Quad.....	939
Adapters, Quad Flow Manifold.....	939
Adapters, Twin, Distributing.....	939
Adapters, Twin, M16.....	939
Adapters, T-Adapter.....	939
Bath Covers, Condensation Trap, FP50/FP51.....	930
Bath Covers, Condensation Trap, FP89.....	930
Bath Covers, Condensation Trap, Ultra Low.....	930
Bath Covers, Flat For Pura.....	911
Bath Covers, Heat Exchanger Lid, 4L/6L.....	912
Bath Covers, Heat Exchanger Lid, 12L.....	912
Bath Covers, Lift-Up Plastic Cover.....	911





JULABO (Continued)

Bath Covers, Transparent, 1001F.....	911
Bath Fluids, Thermal, C2.....	913
Bath Fluids, Thermal, C5.....	913
Bath Fluids, Thermal, C10.....	914
Bath Fluids, Thermal, C20S.....	914
Bath Fluids, Thermal, C50S.....	915
Bath Fluids, Thermal, EG.....	912
Bath Fluids, Thermal, H350.....	916
Bath Fluids, Thermal, P60.....	915
Bath Fluids, Thermal, P90.....	916
Bath Tank, B5.....	910
Bath Tank, B13.....	910
Bath Tank, B17.....	910
Bath Tank, B19.....	910
Bath Tank, B27.....	910
Bath Tank, B33.....	911
Bath Tank, B39.....	911
Bath Tank, BT5.....	909
Bath Tank, BT9.....	909
Bath Tank, BT19.....	909
Bath Tank, BT27.....	910
Booster Heater, HST.....	926
Booster Pump, HSP.....	927
Booster Pump, Presto.....	927
Castor Platform, F250.....	930
Chillers, F Series, F250.....	496, 823
Chillers, F Series, F500.....	497, 824
Chillers, F Series, F1000.....	498, 825
Chillers, FL Series, FL300.....	499, 826
Chillers, FL Series, FL601.....	500, 827
Chillers, FL Series, FL1201.....	501, 828
Chillers, FL Series, FL1203.....	502, 829
Chillers, FL Series, FL1701.....	503, 830
Chillers, FL Series, FL1703.....	504, 831
Chillers, FL Series, FL2503.....	505, 832
Chillers, FL Series, FL2506.....	506, 833
Chillers, FL Series, FL4003.....	507, 834
Chillers, FL Series, FL4006.....	508, 835
Chillers, FL Series, FL7006.....	509, 836
Chillers, FL Series, FL11006.....	510, 837
Chillers, FL Series, FL20006.....	511, 838
Circulators, Corio™, CD-200F.....	512, 839
Circulators, Corio™, CD-300F.....	513, 840
Circulators, Corio™, CD-600F.....	514, 841
Circulators, Corio™, CD-601F.....	515, 842
Circulators, Corio™, CD-900F.....	516, 843
Circulators, Corio™, CD-1000F.....	517, 844
Circulators, Corio™, CD-BC4.....	518, 845
Circulators, Corio™, CD-BC6.....	519, 846
Circulators, Corio™, CD-BC12.....	520, 847
Circulators, Corio™, CP.....	521, 848
Circulators, Corio™, CP-200F.....	522, 849
Circulators, Corio™, CP-201F.....	523, 850
Circulators, Corio™, CP-300F.....	524, 851
Circulators, Corio™, CP-600F.....	525, 852
Circulators, Corio™, CP-601F.....	526, 853
Circulators, Corio™, CP-900F.....	527, 854
Circulators, Corio™, CP-1000F.....	528, 855
Circulators, Corio™, CP-1001F.....	529, 856
Circulators, Corio™, CP-BC4.....	530, 857
Circulators, Corio™, CP-BC6.....	531, 858
Circulators, Corio™, CP-BC12.....	532, 859
Circulators, Corio™, CP-BC26.....	533, 860
Circulators, Dyneo™, DD-200F.....	534, 861
Circulators, Dyneo™, DD-300F.....	535, 862
Circulators, Dyneo™, DD-600F.....	536, 863

JULABO (Continued)

Circulators, Dyneo™, DD-601F.....	537, 864
Circulators, Dyneo™, DD-900F.....	538, 865
Circulators, Dyneo™, DD-1000F.....	539, 866
Circulators, Dyneo™, DD-BC4.....	540, 867
Circulators, Dyneo™, DD-BC6.....	541, 868
Circulators, Dyneo™, DD-BC12.....	542, 869
Circulators, Dyneo™, DD-BC26.....	543, 870
Circulators, HighTech, CF31.....	544, 871
Circulators, HighTech, CF41.....	545, 872
Circulators, HighTech, FP51-SL.....	546, 873
Circulators, HighTech, FP52-SL.....	547, 874
Circulators, HighTech, FP55-SL.....	548, 875
Circulators, HighTech, FP89-HL.....	549, 876
Circulators, HighTech, FP90-SL.....	550, 877
Circulators, HighTech, FPW91-SL.....	551, 878
Circulators, HighTech, HE-4.....	552, 879
Circulators, HighTech, HL-4.....	553, 880
Circulators, HighTech, SE-6.....	554, 881
Circulators, HighTech, SE-12.....	555, 882
Circulators, HighTech, SL-6.....	556, 883
Circulators, HighTech, SL-12.....	557, 884
Collar Nuts.....	937
Cooling Coil, Bath Lid.....	927
Cooling Coil, Installation.....	928
Cooling Coil, PURA.....	928
Digital, EasyTemp Professional Control Software.....	931
Digital, Electronic Module, Analog Connections.....	917
Digital, Electronic Module, Presto.....	917
Digital, Electronic Module, Presto, Pt100.....	917
Digital, Ethernet, RS232 Interface Converter.....	932
Digital, Ethernet, RS232 Interface Converter, 4 Channel.....	932
Digital, Ethernet, RS232 Interface Converter, 8 Channel.....	933
Digital, WLAN, RS232 Converter.....	933
Digital, WLAN, RS232 Converter, 2 Channel.....	933
Digital, PB-5 Option.....	931
Digital, RJ45 Cable.....	931
Digital, RS32 Cable, SW Baths.....	931
Digital, RS32 Interface Cable.....	932
Digital, RS485 Interface.....	931
Digital, USB 2.0 Repeater.....	917
Digital, USB Cable.....	917
Digital, USB to Serial RS-232 DB9 Adapter Cable.....	931
Drain Tap, 150C.....	935
Drain Tap, 200C.....	935
Drain Tap, Bath.....	935
Expansion Vessel, 3L.....	928
Filters, A30 Mat.....	929
Filters, A40 Mat.....	929
Filters, A45 Mat.....	929
Filters, A80 Mat.....	929
Filters, Particle, For Cooling Water Cycle.....	935
Flow Meters, Corio DN.....	922
Flow Meters, Mid DN.....	921
Fluid By-Pass, Presto.....	922
Fluid By-Pass, Presto, Connection Kit.....	923
Fluid By-Pass, Presto, Connection Kit, Factory Installation.....	923
Hollow Balls.....	934
HST Booster Heater.....	926
HSP Booster Pump.....	927
Insulation, Icing Protection Sleeve, For Pump Connectors.....	926
Insulation, M16 Insulation Set.....	926
Nut For Pump Nozzle.....	937
Nut With Plugs.....	937
Plugs, Alarm, 5 Pole.....	921
Plugs, External Pt100 Connector.....	920
Plugs, Reg EPROG, 6 Pole.....	921





JULABO (Continued)

Plugs, Stakei.....	921
Plugs, Standby, 3 Pole.....	921
SCB Converter Box.....	929
Sensors, Extension Cable, Pt100.....	920
Sensors, External, Pt100.....	919
Sensors, M+R In-line, Pt100, M16.....	919
Sensors, M+R In-line, Pt100, M24.....	919
Sensors, M+R In-line, Pt100, M30.....	920
Sensors, M+R In-line, Pt100, M38.....	920
Sensors, Pressure Sensors, Presto.....	920
Sensors, PTFE, Pt100, 200mm.....	918
Sensors, PTFE, Pt100, 300mm.....	918
Sensors, PTFE, Pt100, 600mm.....	918
Sensors, PTFE, Pt100, 900mm.....	919
Sensors, PTFE, Pt100, 1200mm.....	919
Sensors, Stainless Steel, Pt100, 20mm.....	918
Sensors, Stainless Steel, Pt100, 200mm.....	918
Sensors, Stainless Steel, Pt100, 300mm.....	918
Shut-Off Valve, G1 1/4".....	933
Shut-Off Valve, G 3/4".....	933
Shut-Off Valve, M16, -10C° ...+100°C.....	933
Shut-Off Valve, M16, -30C° ...+200°C.....	934
Shut-Off Valve, M16, Low Temp.....	934
Shut-Off Valve, M24.....	934
Shut-Off Valve, M30.....	934
Shut-Off Valve, M38.....	934
Solenoid Valves, M16.....	930
Spring Clamps, Basic Tray.....	909
Spring Clamps, For Erlenmeyer Flasks.....	908
Spring Clamps, Set.....	909
Spring Clamps, Universal Tray.....	909
Temperature Control, Presto®, A30.....	558, 885
Temperature Control, Presto®, A40.....	559, 886
Temperature Control, Presto®, A45.....	560, 887
Temperature Control, Presto®, A80.....	561, 888
Temperature Control, Presto®, A85.....	562, 889
Temperature Control, Presto®, W40.....	563, 890
Temperature Control, Presto®, W50.....	564, 891
Temperature Control, Presto®, W55.....	565, 892
Temperature Control, Presto®, W56.....	566, 893
Temperature Control, Presto®, W80.....	567, 894
Temperature Control, Presto®, W85.....	568, 895
Temperature Control, Presto®, W91.....	569, 896
Temperature Control, Presto®, W92.....	570, 897
Test Tube Racks, 21 Tubes.....	905
Test Tube Racks, 60 Tubes.....	905
Test Tube Racks, 90 Tubes.....	905
Test Tube Racks, Basic Tray.....	908
Test Tube Racks, Bottle Baskets, 1001F.....	907
Test Tube Racks, Carrier Tray 4X.....	907
Test Tube Racks, Carrier Tray For Erlenmeyer Flasks.....	908
Test Tube Racks, F25.....	906
Test Tube Racks, Immersion Height Platform.....	907
Test Tube Racks, Stainless Steel.....	906
Test Tube Racks, TT Rack, SW22 SW23.....	906
Tubing, Clamps.....	926
Tubing, CR.....	923
Tubing, Flexible Braided, 1 Straight Fitting, 1 Elbow Fitting, G 3/4".....	925
Tubing, Flexible Braided, Straight Fittings, G 3/4".....	925
Tubing, Insulation.....	925
Tubing, Metal, Insulated, M16X1F.....	924
Tubing, Metal, Triple Insulated, Flexible.....	924
Tubing, Metal, Triple Insulated, M16X1F.....	924
Tubing, PTFE.....	924
Tubing, Silicone.....	923
Tubing, Textile, Reinforced.....	925

JULABO (Continued)

Tubing, Viton.....	923
Valves, HL/SL Cooling Water Solenoid.....	928
Water Baths, Pura 4.....	571, 898
Water Baths, Pura 4, Lift Up Cover.....	571, 898
Water Baths, Pura 10.....	572, 899
Water Baths, Pura 10, Lift Up Cover.....	572, 899
Water Baths, Pura 14.....	573, 900
Water Baths, Pura 14, Lift Up Cover.....	573, 900
Water Baths, Pura 22.....	574, 901
Water Baths, Pura 22, Lift Up Cover.....	574, 901
Water Baths, Pura 30.....	575, 902
Water Baths, Pura 30, Lift Up Cover.....	575, 902
Water Baths, SW22.....	576, 903
Water Baths, SW23.....	577, 904

MICRO APPARATUS

Adapter, 75° Bend, Standard Taper.....	29, 416
Adapter, 90° Inlet, Standard Taper, Hose Connection.....	33, 419
Adapter, 90° Inlet, Glass Stopcock, Hose Barb.....	34, 420
Adapter, 90° Inlet, TFE Stopcock, Hose Barb.....	34, 420
Adapter, 90° Outlet, Standard Taper, Hose Barb.....	33, 420
Adapter, 90° Outlet, Standard Taper, Hose Barb, With Extension.....	33, 420
Adapter, 105° Bend, Standard Taper.....	28, 29, 415, 416
Adapter, 105° Bend, Standard Taper, Vacuum.....	35, 422
Adapter, 105° Vacuum, Standard Taper, Inner Drip Tip.....	35, 422
Adapter, 105° Vacuum, Standard Taper, Sealed-In Delivery Tube.....	36, 422
Adapter, Addition or Distributing.....	31, 35, 418, 422
Adapter, Bushing.....	29, 416
Adapter, Claisen, Standard Taper.....	30, 31, 416, 417
Adapter, Connecting, Standard Taper.....	32, 419
Adapter, Connecting, 75° Angle Side Arm.....	31, 417
Adapter, Distilling.....	31, 418
Adapter, Distilling, Vacuum.....	32, 419
Adapter, Distilling Head.....	32, 419
Adapter, Filtration, Vacuum.....	32, 418
Adapter, Inlet, Standard Taper, Hose Barb.....	33, 419
Adapter, Kjeldahl Trap.....	32, 33, 419
Adapter, Offset, Standard Taper.....	29, 416
Adapter, Outlet, Standard Taper, Hose Connection.....	33, 419
Adapter, Standard Taper, Reducing or Enlarging Types.....	29, 415
Adapter, Straight, Standard Taper.....	28, 415
Adapter, Straight, Standard Taper, 90mm.....	28, 415
Adapter, Straight, Standard Taper, Vacuum.....	35, 422
Adapter, Straight, Vacuum, Standard Taper.....	35, 422
Adapter, Straight, Vacuum, Standard Taper, Inner Drip Tip.....	35, 422
Adapter, Straight, Vacuum, Standard Taper, Sealed-In Delivery Tube.....	35, 422
Adapter, Thermometer, Bushing Style, Standard Taper.....	35, 421
Adapter, Thermometer, Straight, Standard Taper.....	34, 420
Adapter, Thermometer, Teflon.....	401, 421, 460
Adapter, Threaded, Standard Taper.....	34, 421
Adapter, Three-Way.....	32, 416, 418
Adapter, Three-Way, 75° Side Arm.....	31, 417, 418
Adapter, Three-Way, 75° Side Arm With Thermometer Joint.....	31, 418
Adapter, Three-Way, Claisen, Standard Taper.....	30, 416
Adapter, Three-Way, Standard Taper.....	30, 416, 417
Adapter, Vacuum, Distilling.....	32, 419
Body Reaction, Cylindrical.....	190, 191, 313, 314, 446
Body Reaction, Cylindrical, Stopcock, Micro.....	191, 314, 447
Bubbler, Mineral Oil.....	49, 57, 423
Condenser, Allihn, Drip Tip.....	100, 424
Condenser, Cold Finger, Drip Tip.....	100, 424
Condenser, Dewar.....	101, 424
Condenser, Double Cooling.....	101, 425





MICRO APPARATUS (Continued)

Condenser, Liebig.....	101, 425
Condenser, Liebig, No Hold-Up.....	101, 425
Condenser, Reflux, Coil Type.....	102, 425
Condenser, West.....	102, 426
Condenser, West, Jacketed.....	102, 426
Distilling, Apparatus.....	128, 427
Distilling, Apparatus, Vacuum, Teflon Stopcocks.....	128, 427
Distilling, Bulb, Kugelrohr.....	129, 428
Distilling, Column, Jacketed.....	130, 429
Distilling, Column, Plain.....	129, 428
Distilling, Column, Vigreux.....	129, 428
Distilling, Head.....	132, 133, 431
Distilling, Head, Claisen, Jacketed.....	131, 430
Distilling, Head, Claisen-Vigreux.....	130, 429
Distilling, Head, Claisen-Vigreux, Jacketed.....	131, 429
Distilling, Head, Claisen-Vigreux, With Condenser.....	132, 431
Distilling, Head, Short Path, Vacuum Jacketed.....	134, 433
Distilling, Head, Variable Reflux.....	133, 432
Distilling, Head, Variable Reflux, Teflon.....	133, 134, 432
Distilling, Head, Vigreux.....	131, 430
Distilling, Head, Vigreux, Vacuum Jacketed.....	134, 433
Distilling, Receiver.....	134, 135, 136, 433, 434
Distilling, Receiver, Graduated.....	136, 434, 435
Distilling, Receiver, Graduated, Glass Stopcock.....	136
Distilling, Receiver, With Adapter.....	135, 433
Distilling, Receiver, With Adapter, 105°.....	135, 434
Duron O-Ring.....	189, 263, 309, 312, 445, 490
Extraction Apparatus, Liquid-Liquid.....	436
Extraction Apparatus, Soxhlet.....	436
Extraction Thimble, With Fritted Disc.....	436
Filter Crucible.....	436
Filter Funnel, Buchner, With Vacuum Adapter.....	437
Filter Tube.....	436
Flange Clamp, Duron.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flange Clamp, For Reaction Vessels.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flask, Body Reaction, Cylindrical, Micro.....	190, 313, 446
Flask, Filter, Heavy Wall, Standard Taper.....	188, 443
Flask, Flat Bottom, Single Short Neck, Standard Taper.....	447
Flask, Erlenmeyer, Standard Taper.....	187, 443
Flask, Pear Shaped, Short Neck, Standard Taper.....	184, 439
Flask, Pear Shaped, Short Neck, Standard Taper, Side Inlet Tube.....	185, 440
Flask, Pear Shaped, Three Neck, Standard Taper.....	186, 442
Flask, Pear Shaped, Two Neck, Standard Taper.....	186, 441
Flask, Round Bottom, Four Neck, Standard Taper.....	186, 441
Flask, Round Bottom, Single Long Neck, Standard Taper.....	183, 438
Flask, Round Bottom, Single Neck, Standard Taper, Morton Style.....	187, 442
Flask, Round Bottom, Single Short Neck, Standard Taper.....	182, 438, 447
Flask, Round Bottom, Single Short Neck, Standard Taper, Improved....	183, 439
Flask, Round Bottom, Single Short Neck, Standard Taper, Side Inlet Tube.....	184, 439
Flask, Round Bottom, Single Short Neck, Standard Taper, Two Side Inlet Tubes.....	184, 440
Flask, Round Bottom, Single Short Neck, Standard Taper, With Hooks.....	183, 438
Flask, Round Bottom, Three Neck, Standard Taper.....	185, 441
Flask, Round Bottom, Three Neck, Standard Taper, Morton Style.....	187, 442
Flask, Round Bottom, Two Neck, Standard Taper.....	185, 440
Funnel, Pressure Equalizing, Graduated.....	208, 209, 449, 450
Funnel, Pressure Equalizing, Graduated, Teflon.....	208, 209, 449, 450

MICRO APPARATUS (Continued)

Funnel, Powder.....	207, 448
Funnel, Powder, Offset.....	207, 448
Funnel, Pressure Equalizing.....	207, 448
Funnel, Pressure Equalizing, Graduated.....	208, 209, 449, 450
Funnel, Pressure Equalizing, Graduated, Teflon.....	208, 209, 449, 450
Funnel, Pressure Equalizing, Teflon.....	207, 448
Funnel, Pressure Equalizing, Teflon Threaded Valve.....	208, 449
Funnel, Separatory, Cylindrical.....	209, 450
Funnel, Separatory, Cylindrical, Graduated.....	210, 451
Funnel, Separatory, Cylindrical, Graduated, Teflon.....	210, 451
Funnel, Separatory, Cylindrical, Teflon.....	210, 451
Funnel, Separatory, Squibb.....	211, 452
Funnel, Separatory, Squibb, Teflon Plug.....	211, 452
Gas Apparatus, Gas Washing Bottle.....	453
Gas Apparatus, Hydrogenation Apparatus.....	453
O-Ring, Duron.....	189, 263, 309, 312, 445, 490
Reaction Head, Four Neck, Micro.....	191, 314, 446
Reaction Vessel, Cylindrical.....	188, 311, 443
Reaction Vessel, Cylindrical, Jacketed.....	188, 311, 444
Reaction Vessel, Spherical.....	188, 311, 444
Reaction Vessel, Spherical, Jacketed.....	188, 311, 444
Reaction Vessel Cover, Four Neck, Micro.....	190, 313, 445
Reaction Vessel Cover, Three Neck, Micro.....	190, 313, 445
Stirrer, Bearing, Glass.....	455
Stirrer, Bearing, Precision.....	455
Stirrer, Bearing, Precision, Glass Sleeve.....	455
Stirrer, Blade, Teflon.....	456
Stirrer, Chesapeake, For Atmosphere, Pressure or Vacuum.....	454
Stirrer, Shaft Adapter With Universal Joint.....	454
Stirrer, Shaft, Glass Rod.....	454
Stirrer, Shaft, Safety Retainer.....	454
Stirrer, Shaft, Stainless Steel Rod.....	455
Stirrer, Teflon Washer.....	454
Stopper, Cap, Standard Taper Full Length.....	457
Stopper, Hollow, Cylindrical, Standard Taper Full Length.....	457
Stopper, Hollow, Pennyhead, Standard Taper Full Length.....	457
Stopper, Teflon, Standard Taper Full Length.....	457
Sublimation Apparatus, Vacuum.....	458
Thermometer, Adapter, Teflon.....	401, 421, 460
Thermometer, Centigrade, Partial Immersion, 10/18 Standard Taper....	400, 459
Thermometer, Centigrade, 7/12 Standard Taper.....	400, 459
Thermometer, Short, Celsius.....	400, 459
Trap, Vacuum, Dewar.....	461
Tube, Drying, Bent.....	462
Tube, Drying, Straight.....	462

O-RINGS

Duron.....	189, 263, 309, 312, 445, 490
Kalrez.....	282
Silicone.....	281
Silicone Sealing Rings, GL Sizes.....	11, 12, 15, 24, 266
SVL Sealing Rings.....	267
Teflon.....	284
Teflon-Encapsulated.....	283
Viton.....	280

OHAUS

2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
3-Prong Extension Clamps, Dual Adjustment.....	79, 383, 704, 940
3-Prong Extension Clamps, Single Adjustment.....	79, 383, 704, 940
3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 705, 940
All-Position Holder.....	393, 714, 950
Chain Clamp.....	81, 385, 706, 942
Channel Connector.....	391, 712, 948





OHAUS (Continued)

Chromatography Lab Frame, 24x24x48.....	392, 713, 949
Clamp Holder.....	956
Column Clamp.....	81, 385, 707, 942
Double Buret Clamp.....	82, 386, 707, 943
Double Buret Clamp & Stand.....	82, 386, 708, 943
Double Jaw Utility Clamp.....	85, 389, 710, 946
Electrode Support Clamps.....	84, 388, 710, 945
End Rod Connector.....	394, 715, 951
End-To-End Connector.....	393, 714, 950
Extra Large Lab Frame, 48x72.....	392, 713, 949
Fixed Position Clamps.....	80, 384, 706, 941
Flex System.....	958, 963
Heavy Duty Clamp, 4 Prong, Dual Adjust.....	955
Heavy Duty Clamp, BF25.....	955
Heavy Duty Lab Frame, 72x78.....	392, 713, 949
Heavy Duty Support.....	396, 717, 953
Heavy Duty Tapered Clamp.....	82, 386, 707, 943
Hook Connector.....	394, 715, 951
Horizontal Mounting Bars With Coupler.....	391, 712, 948
Hosecock, Regular or Heavy Duty.....	395, 716, 952
Hosecock Extension Clamp.....	395, 716, 952
Hosecock Foot.....	395, 716, 952
Hosecock With Foot, Adjustable Control.....	956
Jumbo Holder.....	393, 714, 950
Kettle Cover Clamp.....	83, 387, 708, 944
Kettle Clamp.....	963
Lab Frame, Fume Hood, Stainless Steel.....	957
Lab Frame Foot.....	391, 712, 948
Lab Frame Rod, Aluminum, 144".....	956
Lab Frame Rods, Aluminum, Fiberglass, or Stainless Steel.....	390, 711, 947
LabJaws™ By Troemner, 2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
LabJaws™ By Troemner, 3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 705, 940
LabJaws™ By Troemner, All-Position Holder.....	393, 714, 950
LabJaws™ By Troemner, Chain Clamp.....	81, 385, 706, 942
LabJaws™ By Troemner, Channel Connector.....	391, 712, 948
LabJaws™ By Troemner, Chromatography Lab Frame, 24x24x48.....	392, 713, 949
LabJaws™ By Troemner, Column Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Connector, Thumbscrew.....	956
LabJaws™ By Troemner, Double Buret Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Double Buret Clamp & Stand.....	82, 386, 708, 943
LabJaws™ By Troemner, Double Jaw Utility Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Electrode Support Clamps.....	84, 388, 710, 945
LabJaws™ By Troemner, End Rod Connector.....	394, 715, 951
LabJaws™ By Troemner, End-To-End Connector.....	393, 714, 950
LabJaws™ By Troemner, Extra Large Lab Frame, 48x72.....	392, 713, 949
LabJaws™ By Troemner, Fixed Position Clamps.....	80, 384, 706, 941
LabJaws™ By Troemner, Gas Cylinder Supports.....	958, 959
LabJaws™ By Troemner, Gas Cylinder Supports, Chain.....	961
LabJaws™ By Troemner, Gas Cylinder Supports, Heavy Duty.....	960
LabJaws™ By Troemner, Gas Cylinder Supports, Portable.....	960
LabJaws™ By Troemner, Gas Cylinder Supports, Wall.....	960
LabJaws™ By Troemner, Heavy Duty Lab Frame, 72x78.....	392, 713, 949
LabJaws™ By Troemner, Heavy Duty Tapered Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Hook Connector.....	394, 715, 951
LabJaws™ By Troemner, Horizontal Mounting Bars With Coupler.....	391, 712, 948
LabJaws™ By Troemner, Hosecock, Regular or Heavy Duty.....	395, 716, 952

OHAUS (Continued)

LabJaws™ By Troemner, Hosecock Extension Clamp.....	395, 716, 952
LabJaws™ By Troemner, Hosecock Foot.....	395, 716, 952
LabJaws™ By Troemner, Jumbo Holder.....	393, 714, 950
LabJaws™ By Troemner, Kettle Cover Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Lab Frame Foot.....	391, 712, 948
LabJaws™ By Troemner, Lab Frame Rods, Aluminum, Fiberglass, or Stainless Steel.....	390, 711, 947
LabJaws™ By Troemner, Lab Lifts.....	961
LabJaws™ By Troemner, Large Lab Frame, 48x48.....	391, 712, 948
LabJaws™ By Troemner, Large Water Bath Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Lattice Connector.....	394, 715, 951
LabJaws™ By Troemner, Medium Lab Frame, 24x48.....	391, 712, 948
LabJaws™ By Troemner, Multi-Rod Connector.....	393, 714, 950
LabJaws™ By Troemner, Nester Extension Clamp.....	82, 386, 708, 943
LabJaws™ By Troemner, Open Rings.....	85, 389, 710, 946
LabJaws™ By Troemner, Pinchcocks.....	396, 717, 953
LabJaws™ By Troemner, Regular Holder.....	393, 714, 950
LabJaws™ By Troemner, Replacement Sleeves For Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, "S" Connector.....	394, 715, 951
LabJaws™ By Troemner, Small Lab Frame, 24x24.....	391, 712, 948
LabJaws™ By Troemner, Small Water Bath Clamp.....	83, 387, 709, 944
LabJaws™ By Troemner, Support Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Support Plate.....	85, 389, 710, 946
LabJaws™ By Troemner, Support Stand Base, Cast Iron.....	962
LabJaws™ By Troemner, Support Stand Base, Cast Iron, Tripod.....	962
LabJaws™ By Troemner, Support Stand Base, Cast Iron, U.....	962
LabJaws™ By Troemner, Suspension Clamp.....	84, 388, 710, 945
LabJaws™ By Troemner, Swivel Clamps.....	80, 384, 705, 941
LabJaws™ By Troemner, Swivel Holder.....	393, 714, 950
LabJaws™ By Troemner, Thermometer Extension Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Thermometer Swivel Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Universal Stirrer Mounting Bracket.....	394, 715, 951
LabJaws™ By Troemner, Wall Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Wrench.....	394, 715, 951
Lab Lifts.....	397, 718, 954
Large Lab Frame, 48x48.....	391, 712, 948
Large Water Bath Clamp.....	83, 387, 708, 944
Lattice Connector.....	394, 715, 951
Medium Lab Frame, 24x48.....	391, 712, 948
Multi-Rod Connector.....	393, 714, 950
Nester Extension Clamp.....	82, 386, 708, 943
Nester Clamp.....	963
Open Rings.....	85, 389, 710, 946
Pinchcocks.....	396, 717, 953
Regular Holder.....	393, 714, 950
Replacement Sleeves For Clamp.....	84, 388, 709, 945
Replacement Sleeves For Clamp, 3 Prong, Vinyl Black.....	957
"S" Connector.....	394, 715, 951
Shelf Grip Support.....	397, 718, 954
Small Lab Frame, 24x24.....	391, 712, 948
Small Water Bath Clamp.....	83, 387, 709, 944
Support Clamp.....	85, 389, 710, 946
Support Plate.....	85, 389, 710, 946, 958
Support Stand, Clamp, Standard.....	955
Support Stand, Stabilizer Knobs.....	955
Support Stand, With Rod.....	954
Suspension Clamp.....	84, 388, 710, 945
Swivel Clamps.....	80, 384, 705, 941
Swivel Holder.....	393, 714, 950
Thermometer Extension Clamp.....	84, 388, 709, 945
Thermometer Swivel Clamp.....	84, 388, 709, 945
Thumbscrew Knob.....	81, 385, 706, 942





OHAUS (Continued)

UltraJaws™ By Troemner, 3-Prong Extension Clamps, Dual Adjustment.....	79, 383, 704, 940
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Single Adjustment.....	79, 383, 704, 940
UltraJaws™ By Troemner, Thumbscrew Knob.....	81, 385, 706, 942
Universal Stirrer Mounting Bracket.....	394, 715, 951
Wall Clamp.....	81, 385, 707, 942
Water Bath Clamp, Large.....	83, 387, 708, 944
Water Bath Clamp, Small.....	83, 387, 709, 944
Wrench.....	394, 715, 951

PILOT PLANT

Adapter, Isolation.....	121, 603
Adapter, Beaded Pipe to ANSI Flange (316 S.S.).....	36, 619
Adapter, Beaded Pipe to Hose Barb.....	39, 622
Adapter, Beaded Pipe to Male NPT Thread (316 S.S.).....	36, 619
Adapter, Beaded Pipe to NW or Sanitary Fitting (316 S.S.).....	37, 620
Adapter, Beaded Pipe to Tube Stud.....	39, 622
Adapter, Beaded Pipe to Tube Stud (316 S.S.).....	36, 619
Adapter, COWIE®, PTFE Jointware, Flask Stoppers.....	41, 624, 763
Adapter, COWIE®, PTFE Jointware, Joint Clamps.....	43, 626, 765
Adapter, COWIE®, PTFE Jointware, Rigid Joint Sleeves.....	43, 626, 765
Adapter, COWIE®, PTFE Jointware, Self Releasing Stoppers.....	41, 624, 763
Adapter, COWIE®, PTFE Jointware, Standard Taper Compression Fittings.....	42, 625, 764
Adapter, Internal Thread to Beaded Pipe.....	40, 623
Adapter, Spherical Joint to Beaded Pipe, 45° Angle.....	38, 621
Adapter, Spherical Joint to Beaded Pipe, Straight.....	38, 621
Adapter, Tapered Joint to Beaded Pipe, 45° Angle.....	37, 620
Adapter, Tapered Joint to Beaded Pipe, Straight.....	37, 620
Addition Funnel, Large Capacity.....	203, 612
Beaded Pipe Coupling.....	76, 290, 309, 490, 617, 702
Bearing, Glass, 10 mm.....	350, 678
Bearing, Glass, Heavy Duty, 19 mm.....	351, 679
Bearing, Glass, Jacketed.....	350, 678
Bearing, Glass, With Cup.....	350, 678
Bearing, Teflon, 10 mm.....	350, 678
Bearing, Teflon, Heavy Duty, 19 mm.....	350, 678
Bottle, Carboy.....	53, 155, 593
Bottle, Carboy, With Drain Valve.....	53, 155, 593
Bottle, Gas Washing, Large Volume.....	238, 589
Bubbler, Mineral Oil.....	44, 56, 239, 590
Bubbler, Mineral Oil, With Check Valve.....	44, 56, 239, 590
Bubbler, Nitrogen, Improved.....	44, 56, 239, 590
Chillers, Julabo, F Series, F250.....	496, 823
Chillers, Julabo, F Series, F500.....	497, 824
Chillers, Julabo, F Series, F1000.....	498, 825
Chillers, Julabo, FL Series, FL300.....	499, 826
Chillers, Julabo, FL Series, FL601.....	500, 827
Chillers, Julabo, FL Series, FL1201.....	501, 828
Chillers, Julabo, FL Series, FL1203.....	502, 829
Chillers, Julabo, FL Series, FL1701.....	503, 830
Chillers, Julabo, FL Series, FL1703.....	504, 831
Chillers, Julabo, FL Series, FL2503.....	505, 832
Chillers, Julabo, FL Series, FL2506.....	506, 833
Chillers, Julabo, FL Series, FL4003.....	507, 834
Chillers, Julabo, FL Series, FL4006.....	508, 835
Chillers, Julabo, FL Series, FL7006.....	509, 836
Chillers, Julabo, FL Series, FL11006.....	510, 837
Chillers, Julabo, FL Series, FL20006.....	511, 838
Circulators, Julabo, Corio™, CD-200F.....	512, 839
Circulators, Julabo, Corio™, CD-300F.....	513, 840
Circulators, Julabo, Corio™, CD-600F.....	514, 841
Circulators, Julabo, Corio™, CD-601F.....	515, 842
Circulators, Julabo, Corio™, CD-900F.....	516, 843

PILOT PLANT (Continued)

Circulators, Julabo, Corio™, CD-1000F.....	517, 844
Circulators, Julabo, Corio™, CD-BC4.....	518, 845
Circulators, Julabo, Corio™, CD-BC6.....	519, 846
Circulators, Julabo, Corio™, CD-BC12.....	520, 847
Circulators, Julabo, Corio™, CP.....	521, 848
Circulators, Julabo, Corio™, CP-200F.....	522, 849
Circulators, Julabo, Corio™, CP-201F.....	523, 850
Circulators, Julabo, Corio™, CP-300F.....	524, 851
Circulators, Julabo, Corio™, CP-600F.....	525, 852
Circulators, Julabo, Corio™, CP-601F.....	526, 853
Circulators, Julabo, Corio™, CP-900F.....	527, 854
Circulators, Julabo, Corio™, CP-1000F.....	528, 855
Circulators, Julabo, Corio™, CP-1001F.....	529, 856
Circulators, Julabo, Corio™, CP-BC4.....	530, 857
Circulators, Julabo, Corio™, CP-BC6.....	531, 858
Circulators, Julabo, Corio™, CP-BC12.....	532, 859
Circulators, Julabo, Corio™, CP-BC26.....	533, 860
Circulators, Julabo, Dyneo™, DD-200F.....	534, 861
Circulators, Julabo, Dyneo™, DD-300F.....	535, 862
Circulators, Julabo, Dyneo™, DD-600F.....	536, 863
Circulators, Julabo, Dyneo™, DD-601F.....	537, 864
Circulators, Julabo, Dyneo™, DD-900F.....	538, 865
Circulators, Julabo, Dyneo™, DD-1000F.....	539, 866
Circulators, Julabo, Dyneo™, DD-BC4.....	540, 867
Circulators, Julabo, Dyneo™, DD-BC6.....	541, 868
Circulators, Julabo, Dyneo™, DD-BC12.....	542, 869
Circulators, Julabo, Dyneo™, DD-BC26.....	543, 870
Circulators, Julabo, HighTech, CF31.....	544, 871
Circulators, Julabo, HighTech, CF41.....	545, 872
Circulators, Julabo, HighTech, FP51-SL.....	546, 873
Circulators, Julabo, HighTech, FP52-SL.....	547, 874
Circulators, Julabo, HighTech, FP55-SL.....	548, 875
Circulators, Julabo, HighTech, FP89-HL.....	549, 876
Circulators, Julabo, HighTech, FP90-SL.....	550, 877
Circulators, Julabo, HighTech, FPW91-SL.....	551, 878
Circulators, Julabo, HighTech, HE-4.....	552, 879
Circulators, Julabo, HighTech, HL-4.....	553, 880
Circulators, Julabo, HighTech, SE-6.....	554, 881
Circulators, Julabo, HighTech, SE-12.....	555, 882
Circulators, Julabo, HighTech, SL-6.....	556, 883
Circulators, Julabo, HighTech, SL-12.....	557, 884
Clamp, Large Water Bath.....	83, 387, 708, 944
Clamp, Nester Extension.....	82, 386, 708, 943
Clamp, Open Rings.....	85, 389, 710, 946
Clamp, Pinch, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Clamp, Pinch, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
Clamp, Reaction Flask.....	78, 257, 264, 704
Clamp, Replacement Sleeves.....	84, 388, 709, 945
Clamp, Springs, Stainless Steel.....	77, 257, 703
Clamp, Support.....	85, 389, 710, 946
Clamp, Support Plate.....	85, 389, 710, 946
Clamp, Suspension.....	84, 388, 710, 945
Clamp, Swivel.....	80, 384, 705, 941
Clamp, Thermometer Extension.....	84, 388, 709, 945
Clamp, Thermometer Swivel.....	84, 388, 709, 945
Clamp, Thumbscrew Knob.....	81, 385, 706, 942
Clamp, Wall.....	81, 385, 707, 942
Clamp, Water Bath, Large.....	83, 387, 708, 944
Clamp, Water Bath, Small.....	83, 387, 709, 944
Condenser, Allihn.....	86, 578
Condenser, Allihn, Chimney Top.....	87, 579
Condenser, Allihn, Detachable Hose Barbs.....	86, 578
Condenser, Coil.....	89, 580
Condenser, Coil, Detachable Hose Barbs.....	90, 580





PILOT PLANT (Continued)

Condenser, Coil, High Efficiency, Industrial Equipment.....	100, 588
Condenser, Coil, Jacketed.....	90, 580
Condenser, Coil, Jacketed, Beaded Pipe.....	94, 582
Condenser, Coil, Jacketed, Beaded Pipe, Detachable Hose Barbs.....	94, 582
Condenser, Coil, Jacketed, Detachable Hose Barbs.....	90, 581
Condenser, Graham.....	89, 579
Condenser, Graham, Detachable Hose Barbs.....	89, 579
Condenser, High Speed.....	95, 583
Condenser, High Speed, Detachable Hose Barb.....	96, 584
Condenser, Large Capacity.....	97, 585
Condenser, Large Capacity, Detachable Hose Barb.....	98, 586
Condenser, Liebig.....	91, 581
Condenser, Liebig, Full Jacket.....	91, 581
Condenser, Squat, High Efficiency, Quad-Coil, Detachable Hose Barb.....	99, 587
Cowie®, Adjustable Rotors, 4 Blade Angled Type 45°.....	362, 690, 752
Cowie®, Adjustable Rotors, Flat.....	363, 691, 753
Cowie®, Adjustable Turbine.....	364, 692, 754
Cowie®, Anchor.....	365, 693, 755
Cowie®, Centrifugal.....	366, 694, 756
Cowie®, PTFE Jointware, Flask Stoppers.....	41, 624, 763
Cowie®, PTFE Jointware, Joint Clamps.....	43, 626, 765
Cowie®, PTFE Jointware, Rigid Joint Sleeves.....	43, 626, 765
Cowie®, PTFE Jointware, Self Releasing Stoppers.....	41, 624, 763
Cowie®, PTFE Jointware, Standard Taper Compression Fittings.....	42, 625, 764
Cowie®, PTFE Reactor Lids and Fittings, Blanking Nuts for NPT Ports.....	488, 768
Cowie®, PTFE Reactor Lids and Fittings, Extension Adapters.....	488, 768
Cowie®, PTFE Reactor Lids and Fittings, Lids For Self Assembly with Removable Ports.....	486, 766
Cowie®, PTFE Reactor Lids and Fittings, NPT Compression Screw Fittings.....	488, 489, 768, 769
Cowie®, PTFE Reactor Lids and Fittings, Preassembled Lids with Removable Ports.....	487, 767
Cowie®, PTFE Reactor Lids and Fittings, Replacement Parts.....	488, 489, 768, 769
Cowie®, PTFE Shaft Stirring, Shafts For Blades.....	355, 683, 750
Cowie®, PTFE Shaft Stirring, Stirrer Blades.....	358, 686, 751
Distillation, Adapter, Isolation.....	121, 603
Distillation, Column, Non-Jacketed With Beaded Pipe Connection and Internal Ring For Support Plate.....	107, 597
Distillation, Column, Oldershaw, Perforated Plate.....	109, 599
Distillation, Column, Oldershaw, Perforated Plate, Beaded Pipe Connection.....	111, 601
Distillation, Column, Oldershaw, Perforated Plate, Vacuum Jacketed and Silvered, Beaded Pipe Connection.....	111, 601
Distillation, Column, Oldershaw, Vacuum Jacketed and Silvered.....	110, 600
Distillation, Column, Vacuum Jacketed, Silvered, Beaded Pipe Connection and Internal Ring For Support Plate.....	107, 597
Distillation, Electro-Magnet Coil.....	124, 606
Distillation, Feed Column Insert.....	122, 603
Distillation, Feed Column Insert, Vacuum Jacketed and Silvered.....	122, 604
Distillation, Flask, Evaporation, Large Scale, Flanged.....	112, 596
Distillation, Head.....	121, 602
Distillation, Head, Modified.....	121, 602
Distillation, Head, Reflux/Divider.....	123, 124, 604, 605
Distillation, Head, Reflux/Divider, 45°.....	123, 605
Distillation, Head, Reflux/Divider, Automatic.....	124, 605
Distillation, Liquid Divider System.....	127, 608
Distillation, Packing Beads.....	108, 598
Distillation, Packing Rings, Raschig.....	108, 598

PILOT PLANT (Continued)

Distillation, Receiver, Moisture Test.....	122, 603
Distillation, Reflux System.....	126, 607
Distillation, Support Platform.....	107, 597
Distillation, Timer, Intervalometer.....	125, 606
Double Buret Clamp.....	82, 386, 707, 943
Double Buret Clamp & Stand.....	82, 386, 708, 943
Double Jaw Utility Clamp.....	85, 389, 710, 946
Duron O-Ring.....	189, 263, 309, 312, 445, 490
Electrode Support Clamps.....	84, 388, 710, 945
Filtration Apparatus, Large Volume.....	156, 592
Filtration, Funnel, Buchner.....	158, 163, 204, 205, 591, 594
Filtration, Funnel, Buchner, Single Piece.....	164, 206, 595
Filtration, Funnel, Drum and Carboy.....	164, 206, 595
Filtration, Funnel, Heavy Duty.....	164, 206, 595
Filtration, Paper Discs, 260 mm.....	162, 205, 595
Fixed Position Clamps.....	80, 384, 706, 941
Flange Clamp, Duron.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flange Clamp, For Reaction Vessels.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flask, Filtering, Heavy Wall.....	154, 179, 593
Funnel, Addition, Large Capacity.....	203, 612
Gas Washing Bottle, Large Volume.....	238, 589
Heating Mantle, Glas-Col, Beaker, Griffin, "O" Series.....	243, 630, 779
Heating Mantle, Glas-Col, Beaker, Griffin, "TM" Series.....	244, 631, 780
Heating Mantle, Glas-Col, Digital Thermometer.....	245, 632, 781
Heating Mantle, Glas-Col, Extension Support, "M" Series.....	243, 630, 779
Heating Mantle, Glas-Col, Extension Support, "O" Series.....	241, 628, 777
Heating Mantle, Glas-Col, Heating/Insulating Jacket.....	256, 643, 784
Heating Mantle, Glas-Col, Heating/Insulating Tops.....	240, 627, 776
Heating Mantle, Glas-Col, Hemispherical, "O" Series.....	240, 627, 776
Heating Mantle, Glas-Col, Low Profile Controls.....	247, 634, 783
Heating Mantle, Glas-Col, Reaction Kettle, "O" Series.....	244, 631, 780
Heating Mantle, Glas-Col, Reaction Kettle, "TM" Series.....	244, 631, 780
Heating Mantle, Glas-Col, Spherical, "M" Series.....	242, 629, 778
Heating Mantle, Glas-Col, Spherical, "O" Series.....	241, 628, 777
Heating Mantle, Glas-Col, Spherical, "TM" Series.....	242, 629, 778
Heating Mantle, Glas-Col, Spherical, "TM" Series, Bottom Hole.....	256, 643, 784
Heating Mantle, Glas-Col, Stir Combo Mantle, with Controller.....	242, 629, 778
Heating Mantle, Glas-Col, Temperature Control, Digitrol II, Automatic.....	247, 634, 783
Heating Mantle, Glas-Col, Temperature Control, Mantle, Minder II.....	247, 634, 783
Heating Mantle, Glas-Col, Temperature Control, Minitrol.....	246, 633, 782
Heating Mantle, Glas-Col, Temperature Control, Minitwin.....	246, 633, 782
Heating Mantle, Glas-Col, Temperature Control, Powtrol.....	245, 632, 781
Heating Mantle, Glas-Col, Temperature Control, Heating Mantle, Powrtwin.....	246, 633, 782
Heating Mantle, Glas-Col, Thermocouples "J".....	245, 632, 781
Heating Mantle, Glas-Col, Tripod Support, "M" Series.....	243, 630, 779
Heating Mantle, Glas-Col, Tripod Support, "O" Series.....	241, 628, 777
Heating Mantle, J-Kem® Scientific, Temperature Controller, High Current, Controller Only.....	251, 638, 817
Heating Mantle, J-Kem® Scientific, Temperature Controller, Lab Safety.....	251, 638, 817
Heating Mantle, J-Kem® Scientific, Temperature Controller, Multi Channel, Dual Timer.....	250, 637, 816
Heating Mantle, J-Kem® Scientific, Temperature Controller, Multi Channel, Dual Timer, With Digital Timer On One Channel.....	250, 637, 816





PILOT PLANT (Continued)

Heating Mantle, J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade.....	248, 635, 814
Heating Mantle, J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade, With 100 Hour Digital Timer.....	248, 635, 814
Heating Mantle, J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade, with Both Heating and Cooling Outlets, With 100 Hour Digital Timer.....	249, 636, 815
Heating Mantle, J-Kem® Scientific, Temperature Controller, Single Channel, High Safety, Built in Backup Controller.....	249, 636, 815
Heating Mantle, J-Kem® Scientific, Temperature Controller, Single Channel, With Both Heating and Cooling Outlets.....	248, 635, 814
Heating Mantle, J-Kem® Scientific, Thermocouple, Adapter.....	254, 641, 821
Heating Mantle, J-Kem® Scientific, Thermocouple Cord, Coiled.....	255, 642, 822
Heating Mantle, J-Kem® Scientific, Thermocouple Cord, Straight.....	255, 642, 822
Heating Mantle, J-Kem® Scientific, Thermocouple Probes.....	252, 639, 819
Heating Mantle, J-Kem® Scientific, Thermocouple Probes, Adapter.....	254, 641, 821
Heating Mantle, J-Kem® Scientific, Thermocouple Probes, Adapter, O-Ring.....	254, 641, 821
Heating Mantle, J-Kem® Scientific, Thermocouple Probes, Dual Elements.....	253, 640, 820
Heating Mantle, J-Kem® Scientific, Water Flow Monitor.....	251, 638, 817
Heavy Duty Support.....	396, 717, 953
Heavy Duty Tapered Clamp.....	82, 386, 707, 943
Heidolph, Magnetic Stirrer, HEI-Plate, Silver 1 Package.....	317, 645, 787
Heidolph, Magnetic Stirrer, HEI-Plate, Silver 2 Package.....	318, 646, 788
Heidolph, Magnetic Stirrer, MR HEI-Connect.....	318, 646, 788
Heidolph, Magnetic Stirrer, MR HEI-Mix L.....	320, 648, 790
Heidolph, Magnetic Stirrer, MR HEI-Mix S.....	319, 647, 789
Heidolph, Magnetic Stirrer, MR HEI-Standard.....	316, 644, 786
Heidolph, Magnetic Stirrer, MR HEI-Tec.....	317, 645, 787
Heidolph, Overhead Stirrer, MR HEI-Torque Core.....	321, 649, 791
Heidolph, Overhead Stirrer, MR HEI-Torque Precision.....	322, 650, 792
Heidolph, Overhead Stirrer, MR HEI-Torque Value.....	323, 651, 793
Immersion Apparatus, Adapter, For Cooling/Heating Coil.....	612
Immersion Apparatus, Adapter, Thermocouple.....	609
Immersion Apparatus, Adapter, Thermocouple, Tapered Joint.....	610
Immersion Apparatus, Coil, Cooling/Heating.....	612
Immersion Apparatus, Dip Tube.....	610
Immersion Apparatus, Funnel, Addition, Threaded Teflon Valve.....	612
Immersion Apparatus, Sparge Tube, Bulb.....	611
Immersion Apparatus, Sparge Tube, Bulb, Fritted, Beaded Pipe.....	611
Immersion Apparatus, Sparge Tube, Bulb, Taper Joint.....	611
Immersion Apparatus, Sparge Tube, Fritted, Beaded Pipe.....	611
Immersion Apparatus, Sparge Tube, Fritted, Taper Joint.....	612
Immersion Apparatus, Thermometer Immersion Well.....	609
J-Kem® Scientific, Temperature Controller, High Current, Controller Only.....	251, 638, 817
J-Kem® Scientific, Temperature Controller, Lab Safety.....	251, 638, 817
J-Kem® Scientific, Temperature Controller, Multi Channel, Dual Timer.....	250, 637, 816
J-Kem® Scientific, Temperature Controller, Multi Channel, Dual Timer, With Digital Timer On One Channel.....	250, 637, 816
J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade.....	248, 635, 814
J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade, With 100 Hour Digital Timer.....	248, 635, 814
J-Kem® Scientific, Temperature Controller, Single Channel, Compact, Research Grade, with Both Heating and Cooling Outlets, With 100 Hour Digital Timer.....	249, 636, 815

PILOT PLANT (Continued)

J-Kem® Scientific, Temperature Controller, Single Channel, High Safety, Built in Backup Controller.....	249, 636, 815
J-Kem® Scientific, Temperature Controller, Single Channel, With Both Heating and Cooling Outlets.....	248, 635, 814
J-Kem® Scientific, Thermocouple, Adapter.....	254, 641, 821
J-Kem® Scientific, Thermocouple Cord, Coiled.....	255, 642, 822
J-Kem® Scientific, Thermocouple Cord, Straight.....	255, 642, 822
J-Kem® Scientific, Thermocouple Probes.....	252, 639, 819
J-Kem® Scientific, Thermocouple Probes, Adapter.....	254, 641, 821
J-Kem® Scientific, Thermocouple Probes, Adapter, O-Ring.....	254, 641, 821
J-Kem® Scientific, Thermocouple Probes, Dual Elements.....	253, 640, 820
J-Kem® Scientific, Water Flow Monitor.....	251, 638, 817
Julabo, Chillers, F Series, F250.....	496, 823
Julabo, Chillers, F Series, F500.....	497, 824
Julabo, Chillers, F Series, F1000.....	498, 825
Julabo, Chillers, FL Series, FL300.....	499, 826
Julabo, Chillers, FL Series, FL601.....	500, 827
Julabo, Chillers, FL Series, FL1201.....	501, 828
Julabo, Chillers, FL Series, FL1203.....	502, 829
Julabo, Chillers, FL Series, FL1701.....	503, 830
Julabo, Chillers, FL Series, FL1703.....	504, 831
Julabo, Chillers, FL Series, FL2503.....	505, 832
Julabo, Chillers, FL Series, FL2506.....	506, 833
Julabo, Chillers, FL Series, FL4003.....	507, 834
Julabo, Chillers, FL Series, FL4006.....	508, 835
Julabo, Chillers, FL Series, FL7006.....	509, 836
Julabo, Chillers, FL Series, FL11006.....	510, 837
Julabo, Chillers, FL Series, FL20006.....	511, 838
Julabo, Circulators, Corio™, CD-200F.....	512, 839
Julabo, Circulators, Corio™, CD-300F.....	513, 840
Julabo, Circulators, Corio™, CD-600F.....	514, 841
Julabo, Circulators, Corio™, CD-601F.....	515, 842
Julabo, Circulators, Corio™, CD-900F.....	516, 843
Julabo, Circulators, Corio™, CD-1000F.....	517, 844
Julabo, Circulators, Corio™, CD-BC4.....	518, 845
Julabo, Circulators, Corio™, CD-BC6.....	519, 846
Julabo, Circulators, Corio™, CD-BC12.....	520, 847
Julabo, Circulators, Corio™, CP.....	521, 848
Julabo, Circulators, Corio™, CP-200F.....	522, 849
Julabo, Circulators, Corio™, CP-201F.....	523, 850
Julabo, Circulators, Corio™, CP-300F.....	524, 851
Julabo, Circulators, Corio™, CP-600F.....	525, 852
Julabo, Circulators, Corio™, CP-601F.....	526, 853
Julabo, Circulators, Corio™, CP-900F.....	527, 854
Julabo, Circulators, Corio™, CP-1000F.....	528, 855
Julabo, Circulators, Corio™, CP-1001F.....	529, 856
Julabo, Circulators, Corio™, CP-BC4.....	530, 857
Julabo, Circulators, Corio™, CP-BC6.....	531, 858
Julabo, Circulators, Corio™, CP-BC12.....	532, 859
Julabo, Circulators, Corio™, CP-BC26.....	533, 860
Julabo, Circulators, Dyneo™, DD-200F.....	534, 861
Julabo, Circulators, Dyneo™, DD-300F.....	535, 862
Julabo, Circulators, Dyneo™, DD-600F.....	536, 863
Julabo, Circulators, Dyneo™, DD-601F.....	537, 864
Julabo, Circulators, Dyneo™, DD-900F.....	538, 865
Julabo, Circulators, Dyneo™, DD-1000F.....	539, 866
Julabo, Circulators, Dyneo™, DD-BC4.....	540, 867
Julabo, Circulators, Dyneo™, DD-BC6.....	541, 868
Julabo, Circulators, Dyneo™, DD-BC12.....	542, 869
Julabo, Circulators, Dyneo™, DD-BC26.....	543, 870
Julabo, Circulators, HighTech, CF31.....	544, 871
Julabo, Circulators, HighTech, CF41.....	545, 872
Julabo, Circulators, HighTech, FP51-SL.....	546, 873
Julabo, Circulators, HighTech, FP52-SL.....	547, 874





PILOT PLANT (Continued)

Julabo, Circulators, HighTech, FP55-SL.....	548, 875
Julabo, Circulators, HighTech, FP89-HL.....	549, 876
Julabo, Circulators, HighTech, FP90-SL.....	550, 877
Julabo, Circulators, HighTech, FPW91-SL.....	551, 878
Julabo, Circulators, HighTech, HE-4.....	552, 879
Julabo, Circulators, HighTech, HL-4.....	553, 880
Julabo, Circulators, HighTech, SE-6.....	554, 881
Julabo, Circulators, HighTech, SE-12.....	555, 882
Julabo, Circulators, HighTech, SL-6.....	556, 883
Julabo, Circulators, HighTech, SL-12.....	557, 884
Julabo, Temperature Control, Presto®, A30.....	558, 885
Julabo, Temperature Control, Presto®, A40.....	559, 886
Julabo, Temperature Control, Presto®, A45.....	560, 887
Julabo, Temperature Control, Presto®, A80.....	561, 888
Julabo, Temperature Control, Presto®, A85.....	562, 889
Julabo, Temperature Control, Presto®, W40.....	563, 890
Julabo, Temperature Control, Presto®, W50.....	564, 891
Julabo, Temperature Control, Presto®, W55.....	565, 892
Julabo, Temperature Control, Presto®, W56.....	566, 893
Julabo, Temperature Control, Presto®, W80.....	567, 894
Julabo, Temperature Control, Presto®, W85.....	568, 895
Julabo, Temperature Control, Presto®, W91.....	569, 896
Julabo, Temperature Control, Presto®, W92.....	570, 897
Julabo, Water Baths, Pura 4.....	571, 898
Julabo, Water Baths, Pura 4, Lift Up Cover.....	571, 898
Julabo, Water Baths, Pura 10.....	572, 899
Julabo, Water Baths, Pura 10, Lift Up Cover.....	572, 899
Julabo, Water Baths, Pura 14.....	573, 900
Julabo, Water Baths, Pura 14, Lift Up Cover.....	573, 900
Julabo, Water Baths, Pura 22.....	574, 901
Julabo, Water Baths, Pura 22, Lift Up Cover.....	574, 901
Julabo, Water Baths, Pura 30.....	575, 902
Julabo, Water Baths, Pura 30, Lift Up Cover.....	575, 902
Julabo, Water Baths, SW22.....	576, 903
Julabo, Water Baths, SW23.....	577, 904
Kettle Cover Clamp.....	83, 387, 708, 944
KF Coupling.....	76, 310, 491, 702
KF PTFE Gasket.....	76, 310, 491, 702
LabJaws™ By Troemner, 2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
LabJaws™ By Troemner, 3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 705, 940
LabJaws™ By Troemner, All-Position Holder.....	393, 714, 950
LabJaws™ By Troemner, Chain Clamp.....	81, 385, 706, 942
LabJaws™ By Troemner, Channel Connector.....	391, 712, 948
LabJaws™ By Troemner, Chromatography Lab Frame, 24x24x48.....	392, 713, 949
LabJaws™ By Troemner, Column Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Double Buret Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Double Buret Clamp & Stand.....	82, 386, 708, 943
LabJaws™ By Troemner, Double Jaw Utility Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Electrode Support Clamps.....	84, 388, 710, 945
LabJaws™ By Troemner, End Rod Connector.....	394, 715, 951
LabJaws™ By Troemner, End-To-End Connector.....	393, 714, 950
LabJaws™ By Troemner, Extra Large Lab Frame, 48x72.....	392, 713, 949
LabJaws™ By Troemner, Fixed Position Clamps.....	80, 384, 706, 941
LabJaws™ By Troemner, Heavy Duty Lab Frame, 72x78.....	392, 713, 949
LabJaws™ By Troemner, Heavy Duty Tapered Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Hook Connector.....	394, 715, 951
LabJaws™ By Troemner, Horizontal Mounting Bars With Coupler.....	391, 712, 948

PILOT PLANT (Continued)

LabJaws™ By Troemner, Hosecock, Regular or Heavy Duty.....	395, 716, 952
LabJaws™ By Troemner, Hosecock Extension Clamp.....	395, 716, 952
LabJaws™ By Troemner, Hosecock Foot.....	395, 716, 952
LabJaws™ By Troemner, Jumbo Holder.....	393, 714, 950
LabJaws™ By Troemner, Kettle Cover Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Lab Frame Foot.....	391, 712, 948
LabJaws™ By Troemner, Lab Frame Rods, Aluminum, Fiberglass, or Stainless Steel.....	390, 711, 947
LabJaws™ By Troemner, Large Lab Frame, 48x48.....	391, 712, 948
LabJaws™ By Troemner, Large Water Bath Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Lattice Connector.....	394, 715, 951
LabJaws™ By Troemner, Medium Lab Frame, 24x48.....	391, 712, 948
LabJaws™ By Troemner, Multi-Rod Connector.....	393, 714, 950
LabJaws™ By Troemner, Nester Extension Clamp.....	82, 386, 708, 943
LabJaws™ By Troemner, Open Rings.....	85, 389, 710, 946
LabJaws™ By Troemner, Pinchcocks.....	396, 717, 953
LabJaws™ By Troemner, Regular Holder.....	393, 714, 950
LabJaws™ By Troemner, Replacement Sleeves For Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, "S" Connector.....	394, 715, 951
LabJaws™ By Troemner, Small Lab Frame, 24x24.....	391, 712, 948
LabJaws™ By Troemner, Small Water Bath Clamp.....	83, 387, 709, 944
LabJaws™ By Troemner, Support Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Support Plate.....	85, 389, 710, 946
LabJaws™ By Troemner, Suspension Clamp.....	84, 388, 710, 945
LabJaws™ By Troemner, Swivel Clamps.....	80, 384, 705, 941
LabJaws™ By Troemner, Swivel Holder.....	393, 714, 950
LabJaws™ By Troemner, Thermometer Extension Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Thermometer Swivel Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Universal Stirrer Mounting Bracket.....	394, 715, 951
LabJaws™ By Troemner, Wall Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Wrench.....	394, 715, 951
Lab Lifts.....	397, 718, 954
Large Water Bath Clamp.....	83, 387, 708, 944
Mobile Support Systems.....	465, 467, 492, 493
Nester Extension Clamp.....	82, 386, 708, 943
Nitrogen Bubbler, Improved.....	44, 56, 239, 590
O-Ring, Duron.....	189, 263, 309, 312, 445, 490
Open Rings.....	85, 389, 710, 946
Pinch Clamp, Stainless Steel, For Use With Ball/Socket Joints.....	57, 77, 221, 257, 703
Pinch Clamp, Stainless Steel, Standard Taper Joints.....	77, 221, 257, 703
Plate, Support.....	85, 389, 710, 946
Process Pipe, Beaded Pipe.....	286, 613
Process Pipe, Beaded Pipe Coupling.....	76, 290, 309, 490, 617, 702
Process Pipe, Elbow, 90° Mitered.....	288, 615
Process Pipe, Elbow, 90° Short Radius.....	288, 615
Process Pipe, Elbow, Reducer.....	287, 614
Process Pipe, Elbow, Sweep.....	287, 614
Process Pipe, End Cap.....	290, 617
Process Pipe, End Plug.....	290, 617
Process Pipe, Padded Pipe Hanger, With Mounting Foot.....	291, 618
Process Pipe, Padded Pipe Hanger, Without Mounting Foot.....	291, 618
Process Pipe, Reducing "T" (Branch).....	289, 616
Process Pipe, Reducer, Straight.....	289, 616
Process Pipe, Straight "T".....	288, 615
Process Pipe, "U" Bend, Annealed.....	290, 617
Reaction Flask Clamp.....	78, 257, 264, 704
Reaction Vessel, Adapter, Drain Valve, High Volume, Teflon Stopcocks.....	303, 480
Reaction Vessel, Adapters, Drain Valve, Teflon Stopcocks.....	302, 479





PILOT PLANT (Continued)

Reaction Vessel, Beaded Pipe Coupling.....	76, 290, 309, 490, 617, 702
Reaction Vessel, Circulatory Manifold.....	465, 467, 492, 493
Reaction Vessel, Cylindrical.....	292, 469
Reaction Vessel, Cylindrical, Drain Valve.....	293, 294, 470, 471
Reaction Vessel, Cylindrical, Drain Valve, Jacketed.....	296, 473
Reaction Vessel, Cylindrical, Drain Valve, Jacketed, With Indents.....	296, 473
Reaction Vessel, Cylindrical, Indented.....	293, 470
Reaction Vessel, Cylindrical, Jacketed.....	295, 472
Reaction Vessel, Cylindrical, Jacketed, Drain Valve, With Indents.....	296, 473
Reaction Vessel, Cylindrical, Jacketed, Morton Indents.....	295, 472
Reaction Vessel, Cylindrical, Lower Drain Port.....	294, 471
Reaction Vessel, Drain Valve Adapters, High Volume, Teflon Stopcocks.....	303, 480
Reaction Vessel, Drain Valve Adapters, Teflon Stopcocks.....	302, 479
Reaction Vessel, Flanged Top, Three Tapered Joint Side Ports, Drain Valve.....	301, 478
Reaction Vessel, Flanged Top, Three Tapered Joint Side Ports, Open Drain Port.....	301, 478
Reaction Vessel, Flask.....	297, 474
Reaction Vessel, Flask, Charge Port and Drain Port.....	302, 479
Reaction Vessel, Flask, Drain Port.....	299, 476
Reaction Vessel, Flask, Side Port.....	297, 474
Reaction Vessel, Flush Mount Drain Valve.....	308, 485
Reaction Vessel, Jacketed, Drain Valve.....	296, 473
Reaction Vessel, KF Coupling.....	76, 310, 491, 702
Reaction Vessel, KF PTFE Gasket.....	76, 310, 491, 702
Reaction Vessel, Lid, Five Neck.....	306, 483
Reaction Vessel, Lid, Five Neck, "BP-Taper" Connections.....	306, 483
Reaction Vessel, Lid, Five Port.....	307, 484
Reaction Vessel, Lid, Five Port, "BP-Taper" Joints.....	307, 484
Reaction Vessel, Lid, Four Neck.....	304, 481
Reaction Vessel, Lid, Four Neck, 90° Thermometer Joint.....	305, 482
Reaction Vessel, Lid, Four Neck, 90° Thermometer Joint, "BP-Taper" Connections.....	305, 482
Reaction Vessel, Lid, Four Neck, "BP-Taper" Connections.....	304, 481
Reaction Vessel, Lid, Seven Port.....	308, 485
Reaction Vessel, Lid, Six Port.....	307, 484
Reaction Vessel, Lid, Six Port, "BP-Taper" Joint.....	308, 485
Reaction Vessel, Lid, Three Neck.....	303, 480
Reaction Vessel, Lid, Three Neck, 90° Thermometer Joint.....	305, 482
Reaction Vessel, Lid, Three Neck, 90° Thermometer Joint With #7 Internal Thread, "BP-Taper" Connections.....	306, 483
Reaction Vessel, Lid, Three Neck, "BP-Taper" Connections.....	304, 481
Reaction Vessel, Lids and Fittings, Blanking Nuts for NPT Ports, Cowie®.....	488, 768
Reaction Vessel, Lids and Fittings, Extension Adapters, Cowie®.....	488, 768
Reaction Vessel, Lids and Fittings, Lids For Self Assembly with Removable Ports, Cowie®.....	486, 766
Reaction Vessel, Lids and Fittings, NPT Compression Screw Fittings, Cowie®.....	488, 489, 768, 769
Reaction Vessel, Lids and Fittings, Preassembled Lids with Removable Ports, Cowie®.....	487, 767
Reaction Vessel, Lids and Fittings, Replacement Parts, Cowie®.....	488, 489, 768, 769
Reaction Vessel, Mobile Support Systems.....	465, 467, 492, 493
Reaction Vessel, Spherical, Drain Port.....	300, 477
Reaction Vessel, Spherical, Full Jacketed.....	298, 475
Reaction Vessel, Spherical, Full Jacketed, Flush Mount Drain Valve.....	299, 476
Reaction Vessel, Spherical, Half Jacketed.....	298, 475
Reaction Vessel, Spherical, Half Jacketed, Flush Mount Drain Valve.....	299, 476
Reaction Vessel, Spherical, Morton Indents.....	298, 475

PILOT PLANT (Continued)

Reaction Vessel, Spherical, Open Drain Port.....	300, 477
Reaction Vessel, Spherical, Round Bottom.....	297, 474
Reaction Vessel, Systems.....	465, 467, 492, 493
Reaction Vessel Support.....	78, 257, 264, 704
Replacement Sleeves For Clamp.....	84, 388, 709, 945
Shelf Grip Support.....	397, 718, 954
Springs, Stainless Steel.....	77, 257, 703
Stirrers, Bearing, Glass, 10 mm.....	350, 678
Stirrers, Bearing, Glass, Heavy Duty, 19 mm.....	351, 679
Stirrers, Bearing, Glass, Jacketed.....	350, 678
Stirrers, Bearing, Glass, With Cup.....	350, 678
Stirrers, Bearing, Pilot Plant, "Big Bear".....	359, 687
Stirrers, Bearing, Teflon, 10 mm.....	350, 678
Stirrers, Bearing, Teflon, Heavy Duty, 19 mm.....	350, 678
Stirrers, Blade, Teflon, 10 mm.....	356, 684
Stirrers, Blade, Teflon, Banana Shaped, 19 mm.....	357, 685
Stirrers, Blade, Teflon, Banana Shaped, 19 mm, With Perforations.....	357, 685
Stirrers, Blade, Teflon, Heavy Duty, 19 mm.....	357, 685
Stirrers, Caframo Lab Solutions®, Caframo Lab Solutions®, Anchor Paddle, 2x2".....	348, 676, 748
Stirrers, Caframo Lab Solutions®, Anchor Paddle, 4x4".....	347, 675, 747
Stirrers, Caframo Lab Solutions®, Anchor Paddle, 5x5".....	349, 677, 749
Stirrers, Caframo Lab Solutions®, Anchor Paddle, 5x10".....	349, 677, 749
Stirrers, Caframo Lab Solutions®, Anchor Paddle and Sweep Blade, 4x4".....	348, 676, 748
Stirrers, Caframo Lab Solutions®, Chuck Guard.....	334, 662, 730
Stirrers, Caframo Lab Solutions®, Chuck Key.....	335, 663, 732
Stirrers, Caframo Lab Solutions®, Chuck Set.....	335, 663, 732
Stirrers, Caframo Lab Solutions®, Collapsible Blade Impeller.....	337, 665, 736
Stirrers, Caframo Lab Solutions®, Compact Square Blade.....	337, 665, 736
Stirrers, Caframo Lab Solutions®, Compact Stand With Base.....	331, 332, 659, 660, 726, 728
Stirrers, Caframo Lab Solutions®, Compact Straight Blade.....	339, 667, 738
Stirrers, Caframo Lab Solutions®, Crossed Blade Impeller.....	338, 666, 737
Stirrers, Caframo Lab Solutions®, Dispersion Blade Only.....	340, 668, 739
Stirrers, Caframo Lab Solutions®, Fastening Clamp.....	333, 661, 729
Stirrers, Caframo Lab Solutions®, High Speed Collet Set.....	333, 661, 729
Stirrers, Caframo Lab Solutions®, Impeller Set.....	334, 662, 730
Stirrers, Caframo Lab Solutions®, Impeller and Shaft.....	336, 664, 735
Stirrers, Caframo Lab Solutions®, Impeller and Shaft, Shaft.....	346, 674, 746
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Compact Digital, 100-240V.....	329, 657, 724
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Crossover 1540, 115V.....	324, 652, 719
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Petite Digital, 100-240V.....	330, 658, 725
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Reversing Digital With Countdown Timer.....	328, 656, 723
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Ultra Speed, 115V.....	327, 655, 722
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Ultra Torque, 115V.....	325, 653, 720
Stirrers, Caframo Lab Solutions®, Overhead Stirrer, Universal, 115V.....	326, 654, 721
Stirrers, Caframo Lab Solutions®, Pitched 4 Blade Only.....	344, 672, 744
Stirrers, Caframo Lab Solutions®, Pitched Blade Only.....	340, 668, 739
Stirrers, Caframo Lab Solutions®, Pitched Blade Propeller Only.....	341, 342, 343, 669, 670, 671, 741, 742, 743





PILOT PLANT (Continued)

Stirrers, Caframo Lab Solutions®, Pivoting Blade Impeller.....	338, 666, 737
Stirrers, Caframo Lab Solutions®, Propeller and Shaft.....	336, 664, 735
Stirrers, Caframo Lab Solutions®, PTFE 4 Blade Pitched Propeller.....	345, 673, 745
Stirrers, Caframo Lab Solutions®, PTFE Anchor Paddle.....	345, 673, 745
Stirrers, Caframo Lab Solutions®, PTFE Collapsible Impeller.....	344, 672, 744
Stirrers, Caframo Lab Solutions®, Safety Stand With Base.....	331, 659, 726
Stirrers, Caframo Lab Solutions®, Square Blade Impeller.....	337, 665, 736
Stirrers, Caframo Lab Solutions®, Stands and Clamps, Accessory Rod.....	332, 660, 728
Stirrers, Caframo Lab Solutions®, Straight Blade Impeller.....	338, 666, 737
Stirrers, Caframo Lab Solutions®, Straight Blade Only.....	339, 667, 738
Stirrers, Caframo Lab Solutions®, Sweep Blade.....	347, 675, 747
Stirrers, Caframo Lab Solutions®, Turbine 3 Blade Propeller Only.....	341, 669, 741
Stirrers, Cowie®, Adjustable Rotors, 4 Blade Angled Type 45°.....	362, 690, 752
Stirrers, Cowie®, Adjustable Rotors, Flat.....	363, 691, 753
Stirrers, Cowie®, Adjustable Turbine.....	364, 692, 754
Stirrers, Cowie®, Anchor.....	365, 693, 755
Stirrers, Cowie®, Centrifugal.....	366, 694, 756
Stirrers, Cowie®, High Performance Shaft Guide.....	372, 700, 761
Stirrers, Cowie®, High Performance Shaft Guide with NPT Thread.....	370, 698, 759
Stirrers, Cowie®, PTFE Shaft Stirring, Shafts For Blades.....	355, 683, 750
Stirrers, Cowie®, PTFE Shaft Stirring, Stirrer Blades.....	358, 686, 751
Stirrers, Cowie®, Retreat Curve.....	368, 696, 758
Stirrers, Cowie®, Screw Propeller.....	367, 695, 757
Stirrers, Cowie®, Universal Stirrer Guide.....	373, 701, 762
Stirrers, Cowie®, Universal Stirrer Guide with NPT Thread.....	371, 699, 760
Stirrers, Heidolph, Magnetic Stirrer, HEI-Plate, Silver 1 Package.....	317, 645, 787
Stirrers, Heidolph, Magnetic Stirrer, HEI-Plate, Silver 2 Package.....	318, 646, 788
Stirrers, Heidolph, Magnetic Stirrer, MR HEI-Connect.....	318, 646, 788
Stirrers, Heidolph, Magnetic Stirrer, MR HEI-Mix L.....	320, 648, 790
Stirrers, Heidolph, Magnetic Stirrer, MR HEI-Mix S.....	319, 647, 789
Stirrers, Heidolph, Magnetic Stirrer, MR HEI-Standard.....	316, 644, 786
Stirrers, Heidolph, Magnetic Stirrer, MR HEI-Tec.....	317, 645, 787
Stirrers, Heidolph, Overhead Stirrer, MR HEI-Torque Core.....	321, 649, 791
Stirrers, Heidolph, Overhead Stirrer, MR HEI-Torque Precision.....	322, 650, 792
Stirrers, Heidolph, Overhead Stirrer, MR HEI-Torque Value.....	323, 651, 793
Stirrers, Motor, 1/3 HP, Electric.....	359, 493, 687
Stirrers, Paddle, 1 1/4" Shaft, Used With Stabilizer Pin.....	360, 688
Stirrers, Paddle, Adjustable, 1 1/4" Shaft, 4-Blades.....	361, 689
Stirrers, Paddle, Adjustable, 19 mm.....	356, 684
Stirrers, Shaft, 1 1/4".....	359, 360, 687, 688
Stirrers, Shaft, 3-Blade, 10 mm, Ground and Polished.....	352, 680
Stirrers, Shaft, 3-Blade, 19 mm, Ground and Polished.....	353, 681
Stirrers, Shaft, 4-Blade, 10 mm, Ground and Polished.....	351, 679
Stirrers, Shaft, 4-Blade, 19 mm, Ground and Polished.....	352, 680
Stirrers, Shaft, 10 mm O.D., Ground and Polished.....	352, 680
Stirrers, Shaft, 10 mm O.D., Ground Glass.....	354, 682
Stirrers, Shaft, 10 mm O.D., Stainless Steel Rod.....	354, 682
Stirrers, Shaft, 19 mm O.D., Ground and Polished.....	353, 681
Stirrers, Shaft, 19 mm O.D., Ground Glass.....	354, 682

PILOT PLANT (Continued)

Stirrers, Shaft, Safety Retainer, 1 1/4".....	370, 698
Stirrers, Shaft, Universal Adapter.....	351, 679
Stirrers, Shaft, Universal Adapter, 1 1/4".....	370, 698
Stirrers, Shaft Agitator, All Glass, 1 1/4", Ground and Polished.....	369, 697
Stirrers, Shaft Agitator, All Glass, Heavy Duty, 1 1/4".....	369, 697
Stirrers, Turbine, Adjustable, 1 1/4" Shaft, 4-Blades.....	361, 689
Stirrers, Turbine, Adjustable, 1 1/4" Shaft, 8-Blades.....	360, 688
Stirrers, Turbine, Adjustable, 19 mm.....	356, 684
Support Clamp.....	85, 389, 710, 946
Support Plate.....	85, 389, 710, 946
Suspension Clamp.....	84, 388, 710, 945
Swivel Clamps.....	80, 384, 705, 941
Systems.....	465, 467, 492, 493
Systems, Benchtop.....	495
Temperature Control, Julabo, Presto®, A30.....	558, 885
Temperature Control, Julabo, Presto®, A40.....	559, 886
Temperature Control, Julabo, Presto®, A45.....	560, 887
Temperature Control, Julabo, Presto®, A80.....	561, 888
Temperature Control, Julabo, Presto®, A85.....	562, 889
Temperature Control, Julabo, Presto®, W40.....	563, 890
Temperature Control, Julabo, Presto®, W50.....	564, 891
Temperature Control, Julabo, Presto®, W55.....	565, 892
Temperature Control, Julabo, Presto®, W56.....	566, 893
Temperature Control, Julabo, Presto®, W80.....	567, 894
Temperature Control, Julabo, Presto®, W85.....	568, 895
Temperature Control, Julabo, Presto®, W91.....	569, 896
Temperature Control, Julabo, Presto®, W92.....	570, 897
Thermometer Extension Clamp.....	84, 388, 709, 945
Thermometer Swivel Clamp.....	84, 388, 709, 945
Thumbscrew Knob.....	81, 385, 706, 942
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Dual Adjust-ment.....	79, 383, 704, 940
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Single Adjust-ment.....	79, 383, 704, 940
UltraJaws™ By Troemner, Thumbscrew Knob.....	81, 385, 706, 942
Water Bath Clamp, Large.....	83, 387, 708, 944
Water Bath Clamp, Small.....	83, 387, 709, 944
Water Baths, Julabo, Pura 4.....	571, 898
Water Baths, Julabo, Pura 4, Lift Up Cover.....	571, 898
Water Baths, Julabo, Pura 10.....	572, 899
Water Baths, Julabo, Pura 10, Lift Up Cover.....	572, 899
Water Baths, Julabo, Pura 14.....	573, 900
Water Baths, Julabo, Pura 14, Lift Up Cover.....	573, 900
Water Baths, Julabo, Pura 22.....	574, 901
Water Baths, Julabo, Pura 22, Lift Up Cover.....	574, 901
Water Baths, Julabo, Pura 30.....	575, 902
Water Baths, Julabo, Pura 30, Lift Up Cover.....	575, 902
Water Baths, Julabo, SW22.....	576, 903
Water Baths, Julabo, SW23.....	577, 904

PIPETS

Mohr.....	285
Serological.....	285
Volumetric.....	285

PROCESS PIPE

Beaded Pipe.....	286, 613
Beaded Pipe Coupling.....	76, 290, 309, 490, 617, 702
Elbow, 90° Mitered.....	288, 615
Elbow, 90° Short Radius.....	288, 615
Elbow, Reducer.....	287, 614
Elbow, Sweep.....	287, 614
End Cap.....	290, 617
End Plug.....	290, 617





PROCESS PIPE (Continued)

Padded Pipe Hanger, With Mounting Foot.....	291, 618
Padded Pipe Hanger, Without Mounting Foot.....	291, 618
Reducing "T" (Branch).....	289, 616
Reducer, Straight.....	289, 616
Straight "T".....	288, 615
"U" Bend, Annealed.....	290, 617

QUARTZ

Cover Slip.....	414
Disc, Ground.....	412
Disc, Ground and Polished.....	413
Method Five, Nozzles.....	229
Microscope Slides, Ground and Polished.....	414
Nozzles, Method Five.....	229
Plate, Square, Ground.....	410
Plate, Square, Ground and Polished.....	411
Probe Liner, 12/5 Ball Joint, Midget Impinger.....	236
Probe Liner, 28/12 Ball Joint.....	228
Probe Liner, 28/12 Ball Joint, O-Ring.....	228
Probe Liner, Combination.....	230
Probe Liner, Straight Tube.....	229
Probe Liner, Straight Tube, With Nozzles.....	229
Probe Liner, Vost, 8mm O.D.....	236
Rod, GE 214.....	408
Tube, GE 214.....	408
Tube, GE 214 LD.....	409
Vost, Probe Liner, 8mm O.D.....	236

REACTION

Adapters, Drain Valve, High Volume, Teflon Stopcocks.....	303, 480
Adapters, Drain Valve, Teflon Stopcocks.....	302, 479
Beaded Pipe Coupling.....	76, 290, 309, 490, 617, 702
Bio-Reactor Vessel, Carboy.....	63
Bio-Reactor Vessel, Carboy, Jacketed.....	63
Bio-Reactor Vessel, Flanged.....	63
Bio-Reactor Vessel, Flanged, Jacketed.....	64
Body Reaction, Cylindrical, Micro.....	190, 191, 313, 314, 446
Body Reaction, Cylindrical, Stopcock, Micro.....	191, 314, 447
Clamp, Reaction Flask.....	78, 257, 264, 704
Dispensing, Tilting, Pipet Type.....	311
Drain Valve Adapters, High Volume, Teflon Stopcocks.....	303, 480
Drain Valve Adapters, Teflon Stopcocks.....	302, 479
Duron O-Ring.....	189, 263, 309, 312, 445, 490
Flange Clamp, Duron.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flange Clamp, For Reaction Vessels.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
Flush Mount Drain Valve, Pilot Plant.....	308, 485
Head, Four Neck, Micro.....	191, 314, 446
KF Coupling.....	76, 310, 491, 702
KF Coupling Assembly.....	310, 491
KF PTFE Gasket.....	76, 310, 491, 702
Lid, Five Neck.....	306, 483
Lid, Five Neck, "BP-Taper" Connections.....	306, 483
Lid, Five Port, Pilot Plant.....	307, 484
Lid, Five Port, Pilot Plant, "BP-Taper" Joints.....	307, 484
Lid, Four Neck.....	304, 481
Lid, Four Neck, 90° Thermometer Joint.....	305, 482
Lid, Four Neck, 90° Thermometer Joint, "BP-Taper" Connections.....	305, 482
Lid, Four Neck, "BP-Taper" Connections.....	304, 481
Lid, Seven Port, Pilot Plant.....	308, 485
Lid, Six Port, Pilot Plant.....	307, 484
Lid, Six Port, Pilot Plant, "BP-Taper" Joints.....	307, 485
Lid, Three Neck.....	303, 480
Lid, Three Neck, 90° Thermometer Joint.....	305, 482

REACTION (Continued)

Lid, Three Neck, 90° Thermometer Joint With #7 Internal Thread, "BP-Taper" Connections.....	306, 483
Lid, Three Neck, "BP-Taper" Connections.....	304, 481
O-Ring, Duron.....	189, 263, 309, 312, 445, 490
Reaction Head, Four Neck, Micro.....	191, 314, 446
Reaction Flask Clamp.....	78, 257, 264, 704
Stir Motor, 1/3 HP, Electric.....	359, 493, 687
Vessel, Drain Valve Adapters, High Volume, Teflon Stopcocks.....	303, 480
Vessel, Drain Valve Adapters, Teflon Stopcocks.....	302, 479
Vessel, Cylindrical.....	292, 469
Vessel, Cylindrical, Drain Valve.....	293, 470
Vessel, Cylindrical, Drain Valve, Jacketed.....	296, 473
Vessel, Cylindrical, Drain Valve, Jacketed, With Indents.....	296, 473
Vessel, Cylindrical, Drain Valve, Pilot Plant.....	294, 471
Vessel, Cylindrical, Indented.....	293, 470
Vessel, Cylindrical, Jacketed.....	295, 472
Vessel, Cylindrical, Jacketed, Drain Valve.....	296, 473
Vessel, Cylindrical, Jacketed, Drain Valve, With Indents.....	296, 473
Vessel, Cylindrical, Jacketed, Micro.....	189, 312, 444
Vessel, Cylindrical, Jacketed, Morton Indents.....	295, 472
Vessel, Cylindrical, Lower Drain Port, Pilot Plant.....	294, 471
Vessel, Cylindrical, Micro.....	188, 311, 443
Vessel, Cylindrical, Pilot Plant.....	292, 469
Vessel, Flanged Top, Three Tapered Joint Side Ports, Drain Valve.....	301, 478
Vessel, Flanged Top, Three Tapered Joint Side Ports, Open Drain Port.....	301, 478
Vessel, Flask, Drain Port, Pilot Plant.....	299, 476
Vessel, Flask, Pilot Plant.....	297, 474
Vessel, Flask, Charge Port and Drain Port, Pilot Plant.....	302, 479
Vessel, Flask, Side Port, Pilot Plant.....	297, 474
Vessel, Flush Mount Drain Valve, Pilot Plant.....	308, 485
Vessel, Jacketed, Drain Valve, Pilot Plant.....	296, 473
Vessel, Lid, Five Neck.....	306, 483
Vessel, Lid, Five Neck, "BP-Taper" Connections.....	306, 483
Vessel, Lid, Five Port, Pilot Plant.....	307, 484
Vessel, Lid, Five Port, Pilot Plant, "BP-Taper" Joints.....	307, 484
Vessel, Lid, Four Neck.....	304, 481
Vessel, Lid, Four Neck, 90° Thermometer Joint.....	305, 482
Vessel, Lid, Four Neck, 90° Thermometer Joint, "BP-Taper" Connections.....	305, 482
Vessel, Lid, Four Neck, "BP-Taper" Connections.....	304, 481
Vessel, Lid, Seven Port, Pilot Plant.....	308, 485
Vessel, Lid, Six Port, Pilot Plant.....	307, 484
Vessel, Lid, Six Port, Pilot Plant, "BP-Taper" Joints.....	307, 485
Vessel, Lid, Three Neck.....	303, 480
Vessel, Lid, Three Neck, 90° Thermometer Joint.....	305, 482
Vessel, Lid, Three Neck, 90° Thermometer Joint With #7 Internal Thread, "BP-Taper" Connections.....	306, 483
Vessel, Lid, Three Neck, "BP-Taper" Connections.....	304, 481
Vessel, Pilot Plant, Cylindrical.....	292, 469
Vessel, Pilot Plant, Cylindrical, Drain Valve.....	294, 471
Vessel, Pilot Plant, Cylindrical, Lower Drain Port.....	294, 471
Vessel, Pilot Plant, Flask.....	297, 474
Vessel, Pilot Plant, Flask, Charge Port and Drain Port.....	302, 479
Vessel, Pilot Plant, Flask, Drain Port.....	299, 476
Vessel, Pilot Plant, Flask, Side Port.....	297, 474
Vessel, Pilot Plant, Jacketed, Drain Valve.....	296, 473
Vessel, Pilot Plant, Lid, Five Port.....	307, 484
Vessel, Pilot Plant, Lid, Five Port, "BP-Taper" Joints.....	307, 484
Vessel, Pilot Plant, Lid, Six Port.....	307, 484
Vessel, Pilot Plant, Lid, Seven Port.....	308, 485
Vessel, Pilot Plant, Lid, Six Port, "BP-Taper" Joint.....	308, 485
Vessel, Spherical, Drain Port.....	300, 477
Vessel, Spherical, Full Jacketed.....	298, 475





REACTION (Continued)

Vessel, Spherical, Full Jacketed, Flush Mount Drain Valve.....	299, 476
Vessel, Spherical, Half Jacketed.....	298, 475
Vessel, Spherical, Half Jacketed, Flush Mount Drain Valve.....	299, 476
Vessel, Spherical, Jacketed, Micro.....	189, 312, 444
Vessel, Spherical, Micro.....	188, 311, 444
Vessel, Spherical, Morton Indents.....	298, 475
Vessel, Spherical, Open Drain Port.....	300, 477
Vessel, Spherical, Round Bottom.....	297, 474
Vessel Cover, Four Neck, Micro.....	190, 313, 445
Vessel Cover, Three Neck, Micro.....	190, 313, 445

SLEEVES

Teflon, Standard Taper.....	259, 315
-----------------------------	----------

STIRRERS

Adjustable Rotors, 4 Blade Angled Type 45°, Cowie®.....	362, 690, 752
Adjustable Rotors, Flat, Cowie®.....	363, 691, 753
Adjustable Turbine, Cowie®.....	364, 692, 754
Anchor, Cowie®.....	365, 693, 755
Anchor Paddle, 2x2", Caframo Lab Solutions®.....	348, 676, 748
Anchor Paddle, 4x4", Caframo Lab Solutions®.....	347, 675, 747
Anchor Paddle, 5x5", Caframo Lab Solutions®.....	349, 677, 749
Anchor Paddle, 5x10", Caframo Lab Solutions®.....	349, 677, 749
Anchor Paddle and Sweep Blade, 4x4", Caframo Lab Solutions®.....	348, 676, 748
Bearing, Glass, 10 mm.....	350, 678
Bearing, Glass, Heavy Duty, 19 mm.....	351, 679
Bearing, Glass, Jacketed.....	350, 678
Bearing, Glass, With Cup.....	350, 678
Bearing, Pilot Plant, "Big Bear".....	359, 687
Bearing, Teflon, 10 mm.....	350, 678
Bearing, Teflon, Heavy Duty, 19 mm.....	350, 678
Blade, Teflon, 10 mm.....	356, 684
Blade, Teflon, Banana Shaped, 19 mm.....	357, 685
Blade, Teflon, Banana Shaped, 19 mm, With Perforations.....	357, 685
Blade, Teflon, Heavy Duty, 19 mm.....	357, 685
Caframo Lab Solutions®, Anchor Paddle, 2x2".....	348, 676, 748
Caframo Lab Solutions®, Anchor Paddle, 4x4".....	347, 675, 747
Caframo Lab Solutions®, Anchor Paddle, 5x5".....	349, 677, 749
Caframo Lab Solutions®, Anchor Paddle, 5x10".....	349, 677, 749
Caframo Lab Solutions®, Anchor Paddle and Sweep Blade, 4x4".....	348, 676, 748
Caframo Lab Solutions®, Chuck Guard.....	334, 662, 730
Caframo Lab Solutions®, Chuck Key.....	335, 663, 732
Caframo Lab Solutions®, Chuck Set.....	335, 663, 732
Caframo Lab Solutions®, Collapsible Blade Impeller.....	337, 665, 736
Caframo Lab Solutions®, Compact Square Blade.....	337, 665, 736
Caframo Lab Solutions®, Compact Stand With Base.....	331, 332, 659, 660, 726, 728
Caframo Lab Solutions®, Compact Straight Blade.....	339, 667, 738
Caframo Lab Solutions®, Crossed Blade Impeller.....	338, 666, 737
Caframo Lab Solutions®, Dispersion Blade Only.....	340, 668, 739
Caframo Lab Solutions®, Fastening Clamp.....	333, 661, 729
Caframo Lab Solutions®, High Speed Collet Set.....	333, 661, 729
Caframo Lab Solutions®, Impeller Set.....	334, 662, 730
Caframo Lab Solutions®, Impeller and Shaft.....	336, 664, 735
Caframo Lab Solutions®, Impeller and Shaft, Shaft.....	346, 674, 746
Caframo Lab Solutions®, Overhead Stirrer, Compact Digital, 100-240V.....	329, 657, 724
Caframo Lab Solutions®, Overhead Stirrer, Crossover 1540, 115V.....	324, 652, 719
Caframo Lab Solutions®, Overhead Stirrer, Petite Digital, 100-240V.....	330, 658, 725
Caframo Lab Solutions®, Overhead Stirrer, Reversing Digital With Countdown Timer.....	328, 656, 723

STIRRERS (Continued)

Caframo Lab Solutions®, Overhead Stirrer, Ultra Speed, 115V.....	327, 655, 722
Caframo Lab Solutions®, Overhead Stirrer, Ultra Torque, 115V.....	325, 653, 720
Caframo Lab Solutions®, Overhead Stirrer, Universal, 115V.....	326, 654, 721
Caframo Lab Solutions®, Pitched 4 Blade Only.....	344, 672, 744
Caframo Lab Solutions®, Pitched Blade Only.....	340, 668, 739
Caframo Lab Solutions®, Pitched Blade Propeller Only.....	341, 342, 343, 669, 670, 671, 741, 742, 743
Caframo Lab Solutions®, Pivoting Blade Impeller.....	338, 666, 737
Caframo Lab Solutions®, Propeller and Shaft.....	336, 664, 735
Caframo Lab Solutions®, PTFE 4 Blade Pitched Propeller.....	345, 673, 745
Caframo Lab Solutions®, PTFE Anchor Paddle.....	345, 673, 745
Caframo Lab Solutions®, PTFE Collapsible Impeller.....	344, 672, 744
Caframo Lab Solutions®, Safety Stand With Base.....	331, 659, 726
Caframo Lab Solutions®, Square Blade Impeller.....	337, 665, 736
Caframo Lab Solutions®, Stands and Clamps, Accessory Rod.....	332, 660, 728
Caframo Lab Solutions®, Straight Blade Impeller.....	338, 666, 737
Caframo Lab Solutions®, Straight Blade Only.....	339, 667, 738
Caframo Lab Solutions®, Sweep Blade.....	347, 675, 747
Caframo Lab Solutions®, Turbine 3 Blade Propeller Only.....	341, 669, 741
Centrifugal, Cowie®.....	366, 694, 756
Chuck Guard, Caframo Lab Solutions®.....	334, 662, 730
Chuck Key, Caframo Lab Solutions®.....	335, 663, 732
Chuck Set, Caframo Lab Solutions®.....	335, 663, 732
Collapsible Blade Impeller, Caframo Lab Solutions®.....	337, 665, 736
Compact Square Blade, Caframo Lab Solutions®.....	337, 665, 736
Compact Stand With Base, Caframo Lab Solutions®.....	331, 332, 659, 660, 726, 728
Compact Straight Blade, Caframo Lab Solutions®.....	339, 667, 738
Cowie®, Adjustable Rotors, 4 Blade Angled Type 45°.....	362, 690, 752
Cowie®, Adjustable Rotors, Flat.....	363, 691, 753
Cowie®, Adjustable Turbine.....	364, 692, 754
Cowie®, Anchor.....	365, 693, 755
Cowie®, Centrifugal.....	366, 694, 756
Cowie®, High Performance Shaft Guide.....	372, 700, 761
Cowie®, High Performance Shaft Guide with NPT Thread.....	370, 698, 759
Cowie®, PTFE Shaft Stirring, Shafts For Blades.....	355, 683, 750
Cowie®, PTFE Shaft Stirring, Stirrer Blades.....	358, 686, 751
Cowie®, Retreat Curve.....	368, 696, 758
Cowie®, Screw Propeller.....	367, 695, 757
Cowie®, Universal Stirrer Guide.....	373, 701, 762
Cowie®, Universal Stirrer Guide with NPT Thread.....	371, 699, 760
Crossed Blade Impeller, Caframo Lab Solutions®.....	338, 666, 737
Dispersion Blade Only, Caframo Lab Solutions®.....	340, 668, 739
Fastening Clamp, Caframo Lab Solutions®.....	333, 661, 729
Heidolph, Magnetic Stirrer, HEI-Plate, Silver 1 Package.....	317, 645, 787
Heidolph, Magnetic Stirrer, HEI-Plate, Silver 2 Package.....	318, 646, 788
Heidolph, Magnetic Stirrer, MR HEI-Connect.....	318, 646, 788
Heidolph, Magnetic Stirrer, MR HEI-Mix L.....	320, 648, 790
Heidolph, Magnetic Stirrer, MR HEI-Mix S.....	319, 647, 789
Heidolph, Magnetic Stirrer, MR HEI-Standard.....	316, 644, 786
Heidolph, Magnetic Stirrer, MR HEI-Tec.....	317, 645, 787
Heidolph, Overhead Stirrer, MR HEI-Torque Core.....	321, 649, 791
Heidolph, Overhead Stirrer, MR HEI-Torque Precision.....	322, 650, 792
Heidolph, Overhead Stirrer, MR HEI-Torque Value.....	323, 651, 793
High Performance Shaft Guide, Cowie®.....	372, 700, 761
High Performance Shaft Guide with NPT Thread, Cowie®.....	370, 698, 759
High Speed Collet Set, Caframo Lab Solutions®.....	333, 661, 729
Impeller Set, Caframo Lab Solutions®.....	334, 662, 730





STIRRERS (Continued)

Impeller and Shaft, Caframo Lab Solutions®.....	336, 664, 735
Impeller and Shaft, Shaft, Caframo Lab Solutions®.....	346, 674, 746
Magnetic Stirrer, HEI-Plate, Silver 1 Package, Heidolph.....	317, 645, 787
Magnetic Stirrer, HEI-Plate, Silver 2 Package, Heidolph.....	318, 646, 788
Magnetic Stirrer, MR HEI-Connect, Heidolph.....	318, 646, 788
Magnetic Stirrer, MR HEI-Mix L, Heidolph.....	320, 648, 790
Magnetic Stirrer, MR HEI-Mix S, Heidolph.....	319, 647, 789
Magnetic Stirrer, MR HEI-Standard, Heidolph.....	316, 644, 786
Magnetic Stirrer, MR HEI-Tec, Heidolph.....	317, 645, 787
Motor, 1/3 HP, Electric.....	359, 493, 687
Overhead Stirrer, Compact Digital, 100-240V, Caframo Lab Solutions®.....	329, 657, 724
Overhead Stirrer, Crossover 1540, 115V, Caframo Lab Solutions®.....	324, 652, 719
Overhead Stirrer, MR HEI-Torque Core, Heidolph.....	321, 649, 791
Overhead Stirrer, MR HEI-Torque Precision, Heidolph.....	322, 650, 792
Overhead Stirrer, MR HEI-Torque Value, Heidolph.....	323, 651, 793
Overhead Stirrer, Petite Digital, 100-240V, Caframo Lab Solutions®.....	330, 658, 725
Overhead Stirrer, Reversing Digital With Countdown Timer, Caframo Lab Solutions®.....	328, 656, 723
Overhead Stirrer, Ultra Speed, 115V, Caframo Lab Solutions®.....	327, 655, 722
Overhead Stirrer, Ultra Torque, 115V, Caframo Lab Solutions®.....	325, 653, 720
Overhead Stirrer, Universal, 115V, Caframo Lab Solutions®.....	326, 654, 721
Paddle, 1 1/4" Shaft, Used With Stabilizer Pin.....	360, 688
Paddle, Adjustable, 1 1/4" Shaft, 4-Blades.....	361, 689
Paddle, Adjustable, 19 mm.....	356, 684
Pitched 4 Blade Only, Caframo Lab Solutions®.....	344, 672, 744
Pitched Blade Only, Caframo Lab Solutions®.....	340, 668, 739
Pitched Blade Propeller Only, Caframo Lab Solutions®.....	341, 342, 343, 669, 670, 671, 741, 742, 743
Pivoting Blade Impeller, Caframo Lab Solutions®.....	338, 666, 737
Propeller and Shaft, Caframo Lab Solutions®.....	336, 664, 735
PTFE 4 Blade Pitched Propeller, Caframo Lab Solutions®.....	345, 673, 745
PTFE Anchor Paddle, Caframo Lab Solutions®.....	345, 673, 745
PTFE Collapsible Impeller, Caframo Lab Solutions®.....	344, 672, 744
PTFE Shaft Stirring, Shafts For Blades, Cowie®.....	355, 683, 750
PTFE Shaft Stirring, Stirrer Blades, Cowie®.....	358, 686, 751
Retreat Curve, Cowie®.....	368, 696, 758
Safety Stand With Base, Caframo Lab Solutions®.....	331, 659, 726
Screw Propeller, Cowie®.....	367, 695, 757
Shaft, 1 1/4".....	359, 360, 687, 688
Shaft, 3-Blade, 10 mm, Ground and Polished.....	352, 680
Shaft, 3-Blade, 19 mm, Ground and Polished.....	353, 681
Shaft, 4-Blade, 10 mm, Ground and Polished.....	351, 679
Shaft, 4-Blade, 19 mm, Ground and Polished.....	352, 680
Shaft, 10 mm O.D., Ground and Polished.....	352, 680
Shaft, 10 mm O.D., Ground Glass.....	354, 682
Shaft, 10 mm O.D., Stainless Steel Rod.....	354, 682
Shaft, 19 mm O.D., Ground and Polished.....	353, 681
Shaft, 19 mm O.D., Ground Glass.....	354, 682
Shaft, Safety Retainer, 1 1/4".....	370, 698
Shaft, Universal Adapter.....	351, 679
Shaft, Universal Adapter, 1 1/4".....	370, 698
Shaft Agitator, All Glass, 1 1/4", Ground and Polished.....	369, 697
Shaft Agitator, All Glass, Heavy Duty, 1 1/4".....	369, 697
Square Blade Impeller, Caframo Lab Solutions®.....	337, 665, 736
Stands and Clamps, Accessory Rod, Caframo Lab Solutions®.....	332, 660, 728
Stir Motor, 1/3 HP, Electric.....	359, 493, 687
Straight Blade Impeller, Caframo Lab Solutions®.....	338, 666, 737
Straight Blade Only, Caframo Lab Solutions®.....	339, 667, 738

STIRRERS (Continued)

Sweep Blade, Caframo Lab Solutions®.....	347, 675, 747
Turbine 3 Blade Propeller Only, Caframo Lab Solutions®.....	341, 669, 741
Turbine, Adjustable, 1 1/4" Shaft, 4-Blades.....	361, 689
Turbine, Adjustable, 1 1/4" Shaft, 8-Blades.....	360, 688
Turbine, Adjustable, 19 mm.....	356, 684
Universal Stirrer Guide, Cowie®.....	373, 701, 762
Universal Stirrer Guide with NPT Thread, Cowie®.....	371, 699, 760

STOPCOCKS

120° Bore, Teflon.....	276, 378
Double Oblique Bore.....	273, 375
Double Oblique Bore, Pressure.....	274, 376
Double Oblique Bore, Teflon.....	277, 379
Hollow Plug, 90° Angle, High Vacuum.....	275, 377
Hollow Plug, Double Oblique, High Vacuum.....	274, 376
Hollow Plug, Oblique, High Vacuum.....	274, 376
Hollow Plug, Offset, High Vacuum.....	275, 377
Single Oblique Bore.....	272, 374
Single Oblique Bore, Teflon.....	277, 379
Straight Bore, Glass.....	272, 374
Straight Bore, Metering Plug, Teflon.....	17, 276, 378
Straight Bore, Pressure.....	273, 375
Straight Bore, Teflon.....	275, 377
T-Bore, Glass.....	272, 374
T-Bore, Pressure.....	273, 375
T-Bore, Teflon.....	276, 378

STOPPERS

Cap Style.....	49
COWIE®, PTFE Jointware, Flask.....	41, 624, 763
COWIE®, PTFE Jointware, Self Releasing.....	41, 624, 763
Full Length, Cap.....	380
Full Length, Glass.....	52, 54, 380
Full Length, Penny Head.....	380
Full Length, Teflon.....	52, 54, 380
Penny Head, Ball Joint.....	380
Penny Head, Full Length.....	380
Penny Head, Hollow.....	381
Plug, Teflon.....	381
Plug, Penny Head.....	381
Socket, Cap.....	380
Standard Taper, Full Length, Glass.....	52, 545, 380
Standard Taper, Full Length, Teflon.....	52, 545, 380
Stopper.....	49

SUBLIMATOR

Micro.....	382
Sublimator.....	382

SUPPORTS

2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
3-Prong Extension Clamps, Dual Adjustment.....	79, 383, 704, 940
3-Prong Extension Clamps, Single Adjustment.....	79, 383, 704, 940
3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 705, 940
All-Position Holder.....	393, 714, 950
Chain Clamp.....	81, 385, 706, 942
Channel Connector.....	391, 712, 948
Chromatography Lab Frame, 24x24x48.....	392, 713, 949
Column Clamp.....	81, 385, 707, 942
Double Buret Clamp.....	82, 386, 707, 943
Double Buret Clamp & Stand.....	82, 386, 708, 943
Double Jaw Utility Clamp.....	85, 389, 710, 946
Electrode Support Clamp.....	84, 388, 710, 945
End Rod Connector.....	394, 715, 951





SUPPORTS (Continued)

LabJaws™ By Troemner, Double Buret Clamp & Stand.....	82, 386, 708, 943
LabJaws™ By Troemner, Double Jaw Utility Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Electrode Support Clamp.....	84, 388, 710, 945
LabJaws™ By Troemner, End Rod Connector.....	394, 715, 951
LabJaws™ By Troemner, End-To-End Connector.....	393, 714, 950
LabJaws™ By Troemner, Extra Large Lab Frame, 48x72.....	392, 713, 949
LabJaws™ By Troemner, Fixed Position Clamps.....	80, 384, 706, 941
LabJaws™ By Troemner, Heavy Duty Lab Frame, 72x78.....	392, 713, 949
LabJaws™ By Troemner, Heavy Duty Tapered Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, Hook Connector.....	394, 715, 951
LabJaws™ By Troemner, Horizontal Mounting Bars With Coupler.....	391, 712, 948
LabJaws™ By Troemner, Hosecock, Regular or Heavy Duty.....	395, 716, 952
LabJaws™ By Troemner, Hosecock Extension Clamp.....	395, 716, 952
LabJaws™ By Troemner, Hosecock Foot.....	395, 716, 952
LabJaws™ By Troemner, Jumbo Holder.....	393, 714, 950
LabJaws™ By Troemner, Kettle Cover Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Lab Frame Foot.....	391, 712, 948
LabJaws™ By Troemner, Lab Frame Rods, Aluminum, Fiberglass, or Stainless Steel.....	390, 711, 947
LabJaws™ By Troemner, Large Lab Frame, 48x48.....	391, 712, 948
LabJaws™ By Troemner, Large Water Bath Clamp.....	83, 387, 708, 944
LabJaws™ By Troemner, Lattice Connector.....	394, 715, 951
LabJaws™ By Troemner, Medium Lab Frame, 24x48.....	391, 712, 948
LabJaws™ By Troemner, Multi-Rod Connector.....	393, 714, 950
LabJaws™ By Troemner, Nester Extension Clamp.....	82, 386, 708, 943
LabJaws™ By Troemner, Open Rings.....	85, 389, 710, 946
LabJaws™ By Troemner, Pinchcocks.....	396, 717, 953
LabJaws™ By Troemner, Regular Holder.....	393, 714, 950
LabJaws™ By Troemner, Replacement Sleeves For Clamp.....	84, 388, 709, 945
End-To-End Connector.....	393, 714, 950
Extra Large Lab Frame, 48x72.....	392, 713, 949
Fixed Position Clamps.....	80, 384, 706, 941
Heavy Duty Lab Frame, 72x78.....	392, 713, 949
Heavy Duty Support.....	396, 717, 953
Heavy Duty Tapered Clamp.....	82, 386, 707, 943
Hook Connector.....	394, 715, 951
Horizontal Mounting Bars With Coupler.....	391, 712, 948
Hosecock, Regular or Heavy Duty.....	395, 716, 952
Hosecock Extension Clamp.....	395, 716, 952
Hosecock Foot.....	395, 716, 952
Jumbo Holder.....	393, 714, 950
Kettle Cover Clamp.....	83, 387, 708, 944
Lab Frame Foot.....	391, 712, 948
Lab Frame Rods, Aluminum, Fiberglass, or Stainless Steel.....	390, 711, 947
LabJaws™ By Troemner, 2-Prong Extension Clamps, Single Adjustment.....	80, 384, 705, 941
LabJaws™ By Troemner, 3-Prong Extension Clamps, Single or Dual Adjustment.....	79, 383, 704, 940
LabJaws™ By Troemner, All-Position Holder.....	393, 714, 950
LabJaws™ By Troemner, Chain Clamp.....	81, 385, 706, 942
LabJaws™ By Troemner, Channel Connector.....	391, 712, 948
LabJaws™ By Troemner, Chromatography Lab Frame, 24x24x48.....	392, 713, 949
LabJaws™ By Troemner, Column Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Double Buret Clamp.....	82, 386, 707, 943
LabJaws™ By Troemner, "S" Connector.....	394, 715, 951
LabJaws™ By Troemner, Small Lab Frame, 24x24.....	391, 712, 948
LabJaws™ By Troemner, Small Water Bath Clamp.....	83, 387, 709, 944

SUPPORTS (Continued)

LabJaws™ By Troemner, Support Clamp.....	85, 389, 710, 946
LabJaws™ By Troemner, Support Plate.....	85, 389, 710, 946
LabJaws™ By Troemner, Suspension Clamp.....	84, 388, 710, 945
LabJaws™ By Troemner, Swivel Clamps.....	80, 384, 705, 941
LabJaws™ By Troemner, Swivel Holder.....	393, 714, 950
LabJaws™ By Troemner, Thermometer Extension Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Thermometer Swivel Clamp.....	84, 388, 709, 945
LabJaws™ By Troemner, Universal Stirrer Mounting Bracket.....	394, 715, 951
LabJaws™ By Troemner, Wall Clamp.....	81, 385, 707, 942
LabJaws™ By Troemner, Wrench.....	394, 715, 951
Lab Lifts.....	397, 718, 954
Large Lab Frame, 48x48.....	391, 712, 948
Large Water Bath Clamp.....	83, 387, 708, 944
Lattice Connector.....	394, 715, 951
Medium Lab Frame, 24x48.....	391, 712, 948
Multi-Rod Connector.....	393, 714, 950
Nester Extension Clamp.....	82, 386, 708, 943
Open Rings.....	85, 389, 710, 946
Pinchcocks.....	396, 717, 953
Regular Holder.....	393, 714, 950
Replacement Sleeves For Clamp.....	84, 388, 709, 945
"S" Connector.....	394, 715, 951
Shelf Grip Support.....	397, 718, 954
Small Lab Frame, 24x24.....	391, 712, 948
Small Water Bath Clamp.....	83, 387, 709, 944
Support Clamp.....	85, 389, 710, 946
Support Plate.....	85, 389, 710, 946
Suspension Clamp.....	84, 388, 710, 945
Swivel Clamps.....	80, 384, 705, 941
Swivel Holder.....	393, 714, 950
Thermometer Extension Clamp.....	84, 388, 709, 945
Thermometer Swivel Clamp.....	84, 388, 709, 945
Thumbscrew Knob.....	81, 385, 706, 942
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Dual Adjustment.....	79, 383, 704, 940
UltraJaws™ By Troemner, 3-Prong Extension Clamps, Single Adjustment.....	79, 383, 704, 940
UltraJaws™ By Troemner, Thumbscrew Knob.....	81, 385, 706, 942
Universal Stirrer Mounting Bracket.....	394, 715, 951
Wall Clamp.....	81, 385, 707, 942
Water Bath Clamp, Large.....	83, 387, 708, 944
Water Bath Clamp, Small.....	83, 387, 709, 944
Wrench.....	394, 715, 951

THERMOMETERS

Celsius, 76mm Immersion.....	398
Celsius, Short, Micro.....	400, 459
Celsius, Total Immersion.....	398
Centigrade, Partial Immersion, Standard Taper 10/18 Joint, Yellow Back, Micro.....	401, 421, 460
Centigrade, Standard Taper 7/12 Inner Member, Micro.....	400, 459
Digital Thermometer.....	245, 632, 781
Fahrenheit, 76mm Immersion.....	399
Fahrenheit, Total Immersion.....	399
Red Liquid, Celsius and Fahrenheit, Total Immersion.....	399
Yellow Back, Celsius, Standard Taper 10/30 Joint.....	398

VACUUM APPARTUS

Condenser, Dewar.....	92, 407
Condenser, Dewar, Twin Chamber.....	93, 407
Manifold, 4-Port, Single Body.....	402
Manifold, Double Oblique.....	404
Manifold, Double Teflon Valves.....	404



VACUUM APPARTUS (Continued)

Manifold, Gauge Adapter.....	403
Manifold, Oblique, Stopcock.....	402
Manifold, PTFE Valve.....	403
Manifold, PTFE Valve, Modified.....	403
Manifold, Teflon.....	402
Trap.....	404
Traps, Dewar.....	406
Traps, One Piece.....	405
Traps, One Piece, 90°.....	405
Traps, Two Piece.....	405
Traps, Two Piece, 90°.....	406
Traps, Two Piece, Serrated Hose Connections.....	406

VALVES

High Vacuum, Low Hold Up.....	278
High Vacuum, Right Angle.....	277
High Vacuum, "S" Type.....	278
High Vacuum, "T" Type.....	279
High Vacuum, Three Way.....	278

Catalog Number	Page
CLC-HOOKS.....	956
CLS-13CKEY.....	335, 663, 732
CLS-13CSET.....	335, 663, 732
CLS-1540.....	324, 652, 719
CLS-A016KEY.....	733
CLS-A016SET.....	733
CLS-A110.....	331, 659, 726
CLS-A118.....	727
CLS-A120.....	333, 661, 729
CLS-A128SET.....	734
CLS-A129.....	734
CLS-A130.....	338, 666, 737
CLS-A131.....	338, 666, 737
CLS-A140.....	338, 666, 737
CLS-A141.....	337, 665, 736
CLS-A150.....	337, 665, 736
CLS-A162.....	346, 674, 746
CLS-A163.....	339, 667, 738
CLS-A164.....	340, 668, 739
CLS-A165.....	340, 668, 739
CLS-A166.....	336, 664, 735
CLS-A190.....	336, 664, 735
CLS-A180.....	344, 672, 744
CLS-A183.....	345, 673, 745
CLS-A185.....	345, 673, 745
CLS-A210.....	331, 659, 726
CLS-A215.....	332, 660, 728
CLS-A231.....	339, 667, 738
CLS-A250.....	337, 665, 736
CLS-A300.....	332, 660, 728
CLS-A354.....	740
CLS-A356.....	740
CLS-A511.....	341, 669, 741
CLS-A521.....	342, 670, 742
CLS-A531.....	342, 670, 742
CLS-A533.....	343, 671, 743
CLS-A541.....	343, 671, 743
CLS-A551.....	341, 669, 741
CLS-A553.....	341, 669, 741
CLS-A561.....	344, 672, 744
CLS-A600SET.....	333, 661, 729
CLS-A712.....	746
CLS-A713.....	746
CLS-A722.....	746
CLS-A723.....	746

Catalog Number	Page
CLS-A733.....	746
CLS-A742.....	746
CLS-A743.....	746
CLS-A753.....	746
CLS-BDC250.....	330, 658, 725
CLS-BDC1850.....	325, 653, 720
CLS-BDC2002.....	329, 357, 724
CLS-BDC2010.....	328, 656, 723
CLS-BDC3030.....	326, 654, 721
CLS-BDC6015.....	327, 655, 722
CLS-CG1.....	334, 662, 730
CLS-CG5.....	334, 662, 730
CLS-CG6.....	731
CLS-ROD.....	332, 660, 728
CLS-S100.....	334, 662, 730
CLS-S200.....	731
CLS-SW4.....	347, 675, 747
CLS-U022.....	348, 676, 748
CLS-U044.....	347, 675, 747
CLS-U044SW.....	348, 676, 748
CLS-U055.....	349, 677, 749
CLS-U510.....	349, 677, 749
CW-002.....	358, 686, 751
CW-005.0.....	372, 700, 761
CW-005.1.....	373, 701, 762
CW-005.2.....	367, 695, 757
CW-005.3.....	365, 693, 755
CW-005.4.....	366, 694, 756
CW-005.5.....	355, 683, 750
CW-005.6.....	362, 690, 752
CW-005.7.....	363, 691, 753
CW-005.8.....	368, 696, 758
CW-005.9.....	364, 692, 754
CW-010.4.....	41, 624, 763
CW-010.11.....	41, 624, 763
CW-020.....	43, 626, 765
CW-030.....	43, 626, 765
CW-500.0.....	771
CW-500.1.....	772
CW-600.....	773
CW-PC701.....	488, 489, 768, 769
CW-PC702.....	488, 768
CW-PC703.....	771
CW-PC704.....	42, 625, 764
CW-PC705.....	486, 766
CW-PC707.5.....	775
CW-PC707.6.....	774
CW-PC708.....	769
CW-PC709.....	371, 699, 760
CW-PC710.....	370, 698, 759
CW-PC711.....	770
CW-PC713.....	488, 768
CW-PC715.....	487, 767
HEI-5-WAY-SILICONE-STRAP.....	794
HEI-5-WAY-VELCRO-STRAP.....	794
HEI-BOSS-HEAD.....	803
HEI-CLAMP.....	809
HEI-CONCAVE-BLOCK-ADAPTER.....	809
HEI-CONNECT.....	318, 646, 788
HEI-FLASK-STAND-&-CLAMP-KIT.....	803
HEI-FLEXIBLE-SHAFT.....	809
HEI-GAS-VACUUM-DISTRIBUTION-MANIFOLD.....	794
HEI-HEAT-ON-1-L-BLOCK.....	805
HEI-HEAT-ON-100-ML-BLOCK.....	804
HEI-HEAT-ON-2-L-BLOCK.....	805
HEI-HEAT-ON-250-ML-BLOCK.....	804



Catalog Number	Page
HEI-HEAT-ON-250-ML-BLOCK-WITH-CUTOFFS.....	804
HEI-HEAT-ON-3-L-BLOCK.....	805
HEI-HEAT-ON-4-L-BLOCK.....	805
HEI-HEAT-ON-5-L-BLOCK.....	806
HEI-HEAT-ON-500-ML-BLOCK.....	804
HEI-HEAT-ON-MULTI-WELL-10-ML-INSERT.....	806
HEI-HEAT-ON-MULTI-WELL-100-ML-INSERT.....	807
HEI-HEAT-ON-MULTI-WELL-150-ML-INSERT.....	807
HEI-HEAT-ON-MULTI-WELL-25-ML-INSERT.....	806
HEI-HEAT-ON-MULTI-WELL-50-ML-INSERT.....	806
HEI-HEAT-ON-MULTI-WELL-HOLDER.....	807
HEI-HEAT-ON-SAFETY-LIFTING-HANDLES.....	808
HEI-HEATING-BATH-1-L.....	810
HEI-HEATING-BATH-1-L-FOR-OIL.....	810
HEI-HEATING-BATH-2-L.....	810
HEI-HEATING-BATH-2-L-FOR-OIL.....	810
HEI-HEATING-BATH-4-L.....	810
HEI-HEATING-BATH-4-L-FOR-OIL.....	810
HEI-HOLDER-FOR-TEMPERATURE-SENSOR-FOR-LARGE-BLOCKS..	808
HEI-HOLDING-DEVICE.....	809
HEI-INSERT-FOR-5-ML-FLASKS.....	795
HEI-INSERT-FOR-10-ML-FLASKS.....	795
HEI-INSERT-FOR-25-ML-FLASKS.....	795
HEI-INSERT-FOR-50-ML-FLASKS.....	795
HEI-INSERT-FOR-100-ML-FLASKS.....	795
HEI-INSERT-FOR-150-ML-FLASKS.....	795
HEI-MIX-L.....	320, 648, 790
HEI-MIX-S.....	319, 647, 789
HEI-MONOBLOCK-FOR-5X250-ML-FLASKS.....	796
HEI-MONOBLOCK-FOR-16X24-MM-TEST-TUBES.....	796
HEI-MONOBLOCK-FOR-16X25-MM-TEST-TUBES.....	796
HEI-MONOBLOCK-FOR-16X28-MM-TEST-TUBES.....	796
HEI-MONOBLOCK-FOR-20X21-MM-REAGANT-VIALS.....	797
HEI-MONOBLOCK-FOR-40X12-MM-REAGANT-VIALS.....	797
HEI-MONOBLOCK-FOR-40X12-MM-TEST-TUBES.....	797
HEI-MONOBLOCK-FOR-40X15-MM-REAGANT-VIALS.....	797
HEI-MONOBLOCK-FOR-40X16-MM-TEST-TUBES.....	798
HEI-MONOBLOCK-FOR-40X17-MM-REAGANT-VIALS.....	798
HEI-PACKAGE-HEAT-ON-MULTI-WELL.....	808
HEI-PACKAGE-HEAT-ON-MULTI-WELL-BASIC.....	807
HEI-PLATE-SILVER-1.....	317, 645, 787
HEI-PLATE-SILVER-2.....	318, 646, 788
HEI-POLYBLOCK-FOR-1X250-ML-FLASK.....	798
HEI-POLYBLOCK-FOR-3X21-MM-REAGANT-VIALS.....	798
HEI-POLYBLOCK-FOR-3X24-MM-TEST-TUBES.....	799
HEI-POLYBLOCK-FOR-3X25-MM-TEST-TUBES.....	799
HEI-POLYBLOCK-FOR-3X28-MM-REAGANT-VIALS.....	799
HEI-POLYBLOCK-FOR-7X17-MM-REAGANT-VIALS.....	799
HEI-POLYBLOCK-FOR-9X12-MM-REAGANT-VIALS.....	800
HEI-POLYBLOCK-FOR-9X12-MM-TEST-TUBES.....	800
HEI-POLYBLOCK-FOR-9X15-MM-REAGANT-VIALS.....	800
HEI-POLYBLOCK-FOR-9X16-MM-TEST-TUBES.....	800
HEI-PT1000-CLAMPING-SYSTEM.....	811
HEI-PT1000-TEMPERATURE-SENSOR.....	811
HEI-REPLACEMENT-ADHESIVES-FOR-TELESCOPIC-ARMS.....	801
HEI-RETORT-CLAMP.....	808
HEI-RS-232-CABLE.....	811
HEI-SHAFT-GUARD.....	811
HEI-SHAFT-GUARD-ADAPTER-SET.....	811
HEI-SILICONE-PROTECTIVE-COVER-1.....	812
HEI-SILICONE-PROTECTIVE-COVER-2.....	812
HEI-SPARE-SILICONE-STRAPS.....	801
HEI-SPARE-VELCRO-STRAPS.....	801
HEI-STAND-S2-XXL.....	809
HEI-STANDARD.....	316, 644, 786

Catalog Number	Page
HEI-STARFISH-BASE-PLATE.....	802
HEI-STARFISH-DIVISIBLE-SUPPORT-ROD.....	802
HEI-STARFISH-SAFETY-HANDLES.....	803
HEI-STARFISH-SUPPORT-ROD.....	802
HEI-STIRRER-GUIDE.....	811
HEI-STIRRING-BARS-CROSS-SHAPED.....	812
HEI-STIRRING-BARS-CYLINDRICAL-SHAPED.....	812
HEI-STIRRING-BARS-EVALUATION-KIT.....	813
HEI-STIRRING-BARS-OVAL-SHAPED.....	813
HEI-TEC.....	317, 645, 787
HEI-TELESCOPIC-STAND.....	809
HEI-TOR-C.....	321, 649, 791
HEI-TOR-P.....	322, 650, 792
HEI-TOR-V.....	323, 651, 793
HEI-WATER-DISTRIBUTION-MANIFOLD.....	803
JB-2-CHANNEL-WLAN-RS232-CONVERTER.....	93
JB-4-ETHERNET-RS232-CONVERTER.....	932
JB-8-ETHERNET-RS232-CONVERTER.....	933
JB-8810007.....	926
JB-8810011.....	926
JB-8810012.....	926
JB-8810015.13.....	927
JB-8810015.13.CSA/UL.....	927
JB-8810020.33.....	927
JB-8890004.....	936
JB-8890005.....	936
JB-8890006.....	936
JB-8890007.....	936
JB-8890008.....	936
JB-8890009.....	936
JB-8890010.....	936
JB-8890011.....	936
JB-8890012.....	936
JB-8890013.....	936
JB-8890024.....	936
JB-8890034.....	936
JB-8890036.....	937
JB-8890037.....	937
JB-8890038.....	937
JB-8890040.....	937
JB-8890041.....	937
JB-8890042.....	937
JB-8890043.....	937
JB-8890044.....	937
JB-8890045.....	937
JB-8890046.....	937
JB-8890047.....	937
JB-8890048.....	937
JB-8890049.....	937
JB-8890050.....	937
JB-8890051.....	937
JB-8890052.....	936
JB-8890053.....	936
JB-8890054.....	936
JB-8890055.....	936
JB-8890056.....	936
JB-8890057.....	936
JB-8890058.....	936
JB-8890059.....	936
JB-8890060.....	936
JB-8890061.....	936
JB-8890062.....	936
JB-8890063.....	936
JB-8890064.....	936
JB-8890065.....	936
JB-8890066.....	936





Catalog Number	Page	Catalog Number	Page
JB-8890067.....	936	JB-8891414.....	916
JB-8890068.....	936	JB-8891415.....	916
JB-8890069.....	936	JB-8891415-1.....	916
JB-8890070.....	936	JB-8900005.....	931
JB-8890071.....	936	JB-8900024.....	932
JB-8890072.....	936	JB-8900100.....	917
JB-8890080.....	936	JB-8900105.....	917
JB-8890081.....	936	JB-8900106.....	917
JB-8890082.....	936	JB-8900110.....	931
JB-8890083.....	936	JB-8901105.....	931
JB-8890084.....	936	JB-8910045.....	930
JB-8890085.....	936	JB-8920000.....	935
JB-8890086.....	936	JB-8930006.....	923
JB-8890087.....	936	JB-8930008.....	923
JB-8890088.....	936	JB-8930010.....	923
JB-8890089.....	936	JB-8930012.....	923
JB-8890100.....	936	JB-8930108.....	923
JB-8890101.....	936	JB-8930110.....	923
JB-8890102.....	936	JB-8930112.....	923
JB-8890103.....	936	JB-8930120.....	923
JB-8890104.....	936	JB-8930122.....	923
JB-8890110.....	936	JB-8930140.....	924
JB-8890111.....	936	JB-8930142.....	924
JB-8890112.....	936	JB-8930209.....	924
JB-8890120.....	936	JB-8930210.....	924
JB-8890121.....	936	JB-8930211.....	924
JB-8890122.....	936	JB-8930214.....	924
JB-8890130.....	936	JB-8930220.....	924
JB-8890131.....	936	JB-8930221.....	924
JB-8890132.....	936	JB-8930222.....	924
JB-8890133.....	936	JB-8930223.....	924
JB-8890134.....	936	JB-8930214.....	924
JB-8890135.....	936	JB-8930261.....	924
JB-8890140.....	936	JB-8930262.....	924
JB-8890141.....	936	JB-8930263.....	924
JB-8890142.....	936	JB-8930264.....	924
JB-8890143.....	936	JB-8930271.....	924
JB-8890144.....	936	JB-8930272.....	924
JB-8890145.....	936	JB-8930273.....	924
JB-8890443.....	936	JB-8930274.....	924
JB-8891001.....	919	JB-8930275.....	924
JB-8891002.....	919	JB-8930282.....	924
JB-8891003.....	919	JB-8930283.....	924
JB-8891004.....	919	JB-8930284.....	924
JB-8891005.....	919	JB-8930285.....	924
JB-8891006.....	919	JB-8930308.....	925
JB-8891008.....	936	JB-8930312.....	925
JB-8891009.....	936	JB-8930319.....	925
JB-8891018.....	919	JB-8930325.....	925
JB-8891019.....	919	JB-8930331.....	925
JB-8891031.....	919	JB-8930332.....	925
JB-8891032.....	919	JB-8930341.....	925
JB-8891400.....	913	JB-8930342.....	925
JB-8891401.....	913	JB-8930410.....	925
JB-8891402.....	913	JB-8930412.....	925
JB-8891403.....	913	JB-8930413.....	925
JB-8891404.....	914	JB-8930419.....	925
JB-8891405.....	914	JB-8930425.....	925
JB-8891406.....	912	JB-8960440.....	907
JB-8891407.....	912	JB-8960441.....	907
JB-8891408.....	914	JB-8960442.....	907
JB-8891409.....	914	JB-8960443.....	907
JB-8891410.....	915	JB-8970010.....	934
JB-8891411.....	915	JB-8970240.....	927
JB-8891412.....	915	JB-8970242.....	927
JB-8891413.....	915	JB-8970243.....	927





Catalog Number	Page	Catalog Number	Page
JB-8970288.....	911	JB-8970700.....	930
JB-8970320.....	906	JB-8970702.....	930
JB-8970321.....	906	JB-8970703.2.....	928
JB-8970344.....	906	JB-8970703.3.....	928
JB-8970345.....	906	JB-8970705.....	930
JB-8970346.....	906	JB-8970750.....	926
JB-8970347.....	906	JB-8970751.....	926
JB-8970360.....	908	JB-8970832.....	928
JB-8970361.....	908	JB-8970833.....	928
JB-8970362.....	908	JB-8970850.....	934
JB-8970363.....	908	JB-8970851.....	934
JB-8970364.....	908	JB-8970852.....	934
JB-8970365.....	908	JB-8970853.....	934
JB-8970366.....	908	JB-8970920.....	929
JB-8970369.....	908	JB-8970921.....	929
JB-8970380.....	906	JB-8970922.....	929
JB-8970381.....	906	JB-8970923.....	929
JB-8970382.....	906	JB-8970924.....	929
JB-8970383.....	906	JB-8980031.....	932
JB-8970416.....	928	JB-8980032.....	932
JB-8970442.....	938	JB-8980033.....	933
JB-8970444.....	936	JB-8980034.....	933
JB-8970445.....	938	JB-8980035.....	933
JB-8970446.....	938	JB-8980071.....	931
JB-8970447.....	938	JB-8980073.....	931
JB-8970448.....	938	JB-8980074.....	931
JB-8970450.....	935	JB-8980075.....	931
JB-8970452.....	935	JB-8980131.....	920
JB-8970453.....	935	JB-8980133.....	921
JB-8970454.....	933	JB-8980135.....	921
JB-8970456.....	933	JB-8980136.....	921
JB-8970457.....	934	JB-8980137.....	921
JB-8970458.....	933	JB-8980701.2.....	930
JB-8970460.....	938	JB-8980701.3.....	930
JB-8970468.....	938	JB-8980731.....	921
JB-8970470.....	939	JB-8980732.....	921
JB-8970471.....	939	JB-8980735.....	922
JB-8970472.....	939	JB-8980736.....	922
JB-8970473.....	939	JB-8980737.....	922
JB-8970474.....	939	JB-8980771.....	920
JB-8970476.....	939	JB-8980772.....	920
JB-8970477.....	939	JB-8980773.....	920
JB-8970480.....	926	JB-8980780.....	922
JB-8970481.....	926	JB-8980781.....	923
JB-8970482.....	926	JB-8980783.....	923
JB-8970483.....	926	JB-8980784.....	923
JB-8970484.....	926	JB-8981003.....	918
JB-8970490.....	937	JB-8981006.....	918
JB-8970492.....	937	JB-8981010.....	918
JB-8970495.....	937	JB-8981013.....	918
JB-8970496.....	937	JB-8981014.....	919
JB-8970497.....	937	JB-8981015.....	918
JB-8970520.....	939	JB-8981016.....	919
JB-8970522.....	939	JB-8981017.....	918
JB-8970524.....	939	JB-8981020.....	919
JB-8970601.....	908	JB-8981021.....	919
JB-8970602.....	908	JB-8981022.....	920
JB-8970603.....	908	JB-8981023.....	920
JB-8970604.....	908	JB-8981103.....	920
JB-8970606.....	908	JB-9012504.....	518, 845
JB-8970607.....	908	JB-9012506.....	519, 846
JB-8970608.....	908	JB-9012512.....	520, 847
JB-8970609.....	908	JB-9012701.....	512, 839
JB-8970620.....	909	JB-9012703.....	513, 840
JB-8970630.....	909	JB-9012704.....	514, 841
JB-8970631.....	909	JB-9012705.....	515, 842





Catalog Number	Page	Catalog Number	Page
JB-9012706.....	516, 843	JB-9620050.....	497, 824
JB-9012707.....	517, 844	JB-9620100.....	498, 825
JB-9013000.....	521, 848	JB-9660003.....	499, 826
JB-9013405.....	530, 857	JB-9661006.....	500, 827
JB-9013504.....	530, 857	JB-9661012.....	501, 828
JB-9013506.....	531, 858	JB-9661017.....	503, 830
JB-9013512.....	532, 859	JB-9663012.....	502, 829
JB-9013526.....	533, 860	JB-9663017.....	504, 831
JB-9013701.....	522, 849	JB-9663025.....	505, 832
JB-9013702.....	523, 850	JB-9663040.....	507, 834
JB-9013703.....	524, 851	JB-9666025.....	506, 833
JB-9013704.....	525, 852	JB-9666040.....	508, 835
JB-9013705.....	526, 853	JB-9666070.....	509, 836
JB-9013706.....	527, 854	JB-9666110.....	510, 837
JB-9013707.....	528, 855	JB-9666200.....	511, 838
JB-9013708.....	529, 856	JB-9900110.....	917
JB-9021504.....	540, 867	JB-9900112.....	917
JB-9021506.....	541, 868	JB-9900114.....	917
JB-9021512.....	542, 869	JB-9901305.....	909
JB-9021526.....	543, 870	JB-9901309.....	909
JB-9021701.....	534, 861	JB-9901319.....	909
JB-9021703.....	535, 862	JB-9901327.....	910
JB-9021704.....	536, 863	JB-9903405.....	910
JB-9021705.....	537, 864	JB-9903413.....	910
JB-9021706.....	538, 865	JB-9903417.....	910
JB-9021707.....	539, 866	JB-9903419.....	910
JB-9212504.....	552, 879	JB-9903427.....	910
JB-9252506.....	554, 881	JB-9903433.....	911
JB-9252512.....	555, 882	JB-9903439.....	911
JB-9312504.....	553, 880	JB-9970240.....	912
JB-9312689.....	549, 876	JB-9970242.....	912
JB-9352506.....	556, 883	JB-9970247.....	911
JB-9352512.....	557, 884	JB-9970300.....	905
JB-9352751.....	546, 873	JB-9970301.....	905
JB-9352752.....	547, 874	JB-9970303.....	905
JB-9352755.....	548, 875	JB-9970320.....	906
JB-9352790.....	550, 877	JB-9970321.....	906
JB-9352793.....	551, 878	JB-9970322.....	906
JB-9400331.....	544, 871	JB-9970323.....	906
JB-9400341.....	545, 872	JB-9970337.....	907
JB-9420300.....	558, 885	JB-9970502.....	907
JB-9420401.....	559, 886	JB-9970503.....	907
JB-9420452.....	560, 887	JB-9970534.....	928
JB-9420801.....	561, 888	JB-9970536.....	928
JB-9420852.....	562, 889	JB-9970570.....	911
JB-9421401.....	563, 890	JB-9970571.....	911
JB-9421502.....	564, 891	JB-9970572.....	911
JB-9421552.....	565, 892	JB-9970573.....	911
JB-9421562.....	566, 893	JB-9970574.....	911
JB-9421801.....	567, 894	JB-9970575.....	911
JB-9421852.....	568, 895	JB-9970576.....	911
JB-9421912.....	569, 896	JB-9970577.....	911
JB-9421922.....	570, 897	JB-ADAPTERS.....	936, 937
JB-9550322.....	576, 903	JB-ALARM-PLUG-5-POLE.....	921
JB-9550323.....	577, 904	JB-BARBED-FITTING-FOR-F250-CHILLER.....	938
JB-9550504.....	571, 898	JB-BARBED-FITTING-FOR-TUBING.....	938
JB-9550510.....	572, 899	JB-BATH-COVER-FLAT-FOR-PURA.....	911
JB-9550514.....	573, 900	JB-BATH-COVER-HEAT-EXCHANGER-LID-4L-6L.....	912
JB-9550522.....	574, 901	JB-BATH-COVER-HEAT-EXCHANGER-LID-12L.....	912
JB-9550530.....	575, 902	JB-BATH-COVER-LIFT-UP.....	911
JB-9550580.....	571, 898	JB-BATH-COVER-TRANSPARENT-1001F.....	911
JB-9550581.....	572, 899	JB-BATH-DRAIN-TAP.....	935
JB-9550582.....	573, 900	JB-BATH-FLUIDS-THERMAL-C2.....	913
JB-9550583.....	574, 901	JB-BATH-FLUIDS-THERMAL-C5.....	913
JB-9550584.....	575, 902	JB-BATH-FLUIDS-THERMAL-C10.....	914
JB-9620025.....	496, 823	JB-BATH-FLUIDS-THERMAL-C20S.....	914



Catalog Number	Page	Catalog Number	Page
JB-BATH-FLUIDS-THERMAL-C50S.....	915	JB-ETHERNET-RS232-INTERFACE-CONVERTER.....	932
JB-BATH-FLUIDS-THERMAL-EG.....	912	JB-EXPANSION-VESSEL-3L.....	928
JB-BATH-FLUIDS-THERMAL-H350.....	916	JB-EXTERNAL-Pt100-CONNECTOR.....	920
JB-BATH-FLUIDS-THERMAL-P60.....	915	JB-F250.....	823
JB-BATH-FLUIDS-THERMAL-P90.....	916	JB-F500.....	824
JB-BATH-TANK-B5.....	910	JB-F1000.....	825
JB-BATH-TANK-B13.....	910	JB-FILTERS-A30-FILTER-MAT.....	929
JB-BATH-TANK-B17.....	910	JB-FILTERS-A40-FILTER-MAT.....	929
JB-BATH-TANK-B19.....	910	JB-FILTERS-A45-FILTER-MAT.....	929
JB-BATH-TANK-B27.....	910	JB-FILTERS-A80-FILTER-MAT.....	929
JB-BATH-TANK-B33.....	911	JB-FL300.....	826
JB-BATH-TANK-B39.....	911	JB-FL601.....	827
JB-BATH-TANK-BT5.....	909	JB-FL1201.....	828
JB-BATH-TANK-BT9.....	909	JB-FL1203.....	829
JB-BATH-TANK-BT19.....	909	JB-FL1701.....	830
JB-BATH-TANK-BT27.....	910	JB-FL1703.....	831
JB-BOOSTER-PUMP-PRESTO-UNITS.....	927	JB-FL2503.....	832
JB-CASTOR-PLATFORM-F250.....	930	JB-FL2506.....	833
JB-CD-200F.....	839	JB-FL4003.....	834
JB-CD-300F.....	840	JB-FL4006.....	835
JB-CD-600F.....	841	JB-FL7006.....	836
JB-CD-601F.....	842	JB-FL11006.....	837
JB-CD-900F.....	843	JB-FL20006.....	838
JB-CD-1000F.....	844	JB-FLOW-METER-CORIO-DN.....	922
JB-CD-BC4.....	845	JB-FLOW-METER-MID-DN.....	921
JB-CD-BC6.....	846	JB-FP51-SL.....	873
JB-CD-BC12.....	847	JB-FP-55-SL.....	875
JB-CF31.....	871	JB-FP89-HL.....	876
JB-CF41.....	872	JB-G-3/4-SHUT-OFF-VALVE.....	933
JB-COLLAR-NUTS.....	937	JB-G1-1/4-SHUT-OFF-VALVE.....	933
JB-CONDENSATION-TRAP-FP50-FP51.....	930	JB-HE-4.....	879
JB-CONDENSATION-TRAP-FP89.....	930	JB-HIGHTECH-FP52-SL.....	874
JB-COOLING-COIL-BATH-LID.....	927	JB-HIGHTECH-FP90-SL.....	877
JB-CORIO-CP.....	848	JB-HIGHTECH-FPW91-SL.....	878
JB-CORIO-CP-BC4.....	857	JB-HL-4.....	880
JB-CORIO-CP-BC6.....	858	JB-HOLLOW-BALLS.....	934
JB-CORIO-CP-BC12.....	859	JB-HSP-BOOSTER-PUMP.....	927
JB-CORIO-CP-BC26.....	860	JB-HST-BOOSTER-HEATER.....	926
JB-CP-200F.....	849	JB-ICING-PROTECTION.....	926
JB-CP-201F.....	850	JB-INSTALLATION-COOLING-COIL.....	928
JB-CP-300F.....	851	JB-LIFT-UP-BATH-COVER-PURA-4.....	898
JB-CP-600F.....	852	JB-LIFT-UP-BATH-COVER-PURA-10.....	899
JB-CP-601F.....	853	JB-LIFT-UP-BATH-COVER-PURA-14.....	900
JB-CP-900F.....	854	JB-LIFT-UP-BATH-COVER-PURA-22.....	901
JB-CP-1000F.....	855	JB-LIFT-UP-BATH-COVER-PURA30.....	902
JB-CP-1001F.....	856	JB-M16-INSULATION-SET.....	926
JB-DD-200F.....	861	JB-M16-LOW-TEMP-SHUT-OFF-VALVE.....	934
JB-DD-300F.....	862	JB-M16-SHUT-OFF-VALVE.....	933
JB-DD-600F.....	863	JB-M16-SHUT-OFF-VALVE-1.....	934
JB-DD-601F.....	864	JB-M16-SOLENOID-VALVES.....	930
JB-DD-900F.....	865	JB-M16-TWIN-ADAPTER.....	939
JB-DD-1000F.....	866	JB-M24-SHUT-OFF-VALVE.....	934
JB-DD-BC4.....	867	JB-M30-SHUT-OFF-VALVE.....	934
JB-DD-BC6.....	868	JB-M38-SHUT-OFF-VALVE.....	934
JB-DD-BC12.....	869	JB-NUT-FOR-PUMP-NOZZLE.....	937
JB-DD-BC26.....	870	JB-NUT-WITH-PLUG.....	937
JB-DIGITAL-ELECTRONIC-MODULE-ANALOG-CONNECTIONS.....	917	JB-PARTICLE-FILTER-FOR-COOLING-WATER-CYCLE.....	935
JB-DIGITAL-PRESTO-ELECTRONIC-MODULE.....	917	JB-PB-5-OPTION.....	931
JB-DIGITAL-PRESTO-Pt100-MODULE.....	917	JB-PRESTO-A30.....	885
JB-DIGITAL-USB-2.0-REPEATER.....	917	JB-PRESTO-A40.....	886
JB-DIGITAL-USB-CABLE.....	917	JB-PRESTO-A45.....	887
JB-DRAIN-TAP-150C.....	935	JB-PRESTO-A80.....	888
JB-DRAIN-TAP-200C.....	935	JB-PRESTO-A85.....	889
JB-EASYTEMP-PROFESSIONAL-CONTROL-SOFTWARE.....	931	JB-PRESTO-FLUID-BY-PASS.....	922
JB-ELBOW-FITTINGS-M16.....	938	JB-PRESTO-FLUID-BY-PASS-CONNECTION-KIT.....	923
JB-ELBOW-M16X1.....	938		

Catalog Number	Page
JB-PRESTO-FLUID-BY-PASS-CONNECTION-KIT-FACTORY-INSTALLATION.....	923
JB-PRESTO-PRESSURE-SENSORS.....	920
JB-PRESTO-W40.....	890
JB-PRESTO-W50.....	891
JB-PRESTO-W55.....	892
JB-PRESTO-W56.....	893
JB-PRESTO-W80.....	894
JB-PRESTO-W85.....	895
JB-PRESTO-W91.....	896
JB-PRESTO-W92.....	897
JB-PURA-4.....	898
JB-PURA-10.....	899
JB-PURA-14.....	900
JB-PURA-22.....	901
JB-PURA-30.....	902
JB-PURA-COOLING-COIL.....	928
JB-QUAD-ADAPTER.....	939
JB-QUAD-FLOW-MANIFOLD.....	939
JB-REG-EPROG-PLUG-6-POLE.....	921
JB-RJ45-CABLE.....	931
JB-RS232-INTERFACE-CABLE.....	931
JB-RS485-INTERFACE.....	932
JB-SCB-CONVERTER-BOX.....	929
JB-SE-6.....	881
JB-SE-12.....	882
JB-SENSORS-EXTERNAL-Pt100.....	919
JB-SENSORS-M+R-IN-LINE-Pt100-M16.....	919
JB-SENSORS-M+R-IN-LINE-Pt100-M24.....	919
JB-SENSORS-M+R-IN-LINE-Pt100-M30.....	920
JB-SENSORS-M+R-IN-LINE-Pt100-M38.....	920
JB-SENSORS-Pt100-EXTENSION-CABLE.....	920
JB-SENSORS-PTFE-Pt100-200mm.....	918
JB-SENSORS-PTFE-Pt100-300mm.....	918
JB-SENSORS-PTFE-Pt100-600mm.....	918
JB-SENSORS-PTFE-Pt100-900mm.....	919
JB-SENSORS-PTFE-Pt100-1200mm.....	919
JB-SENSORS-SS-Pt100-20mm.....	918
JB-SENSORS-SS-Pt100-200mm.....	918
JB-SENSORS-SS-Pt100-300mm.....	918
JB-SL-6.....	883
JB-SL-12.....	884
JB-SPRING-CLAMPS-BASIC-TRAY.....	909
JB-SPRING-CLAMPS-FOR-ERLENMEYER-FLASKS.....	908
JB-SPRING-CLAMPS-SET.....	909
JB-SPRING-CLAMPS-UNIVERSAL-TRAY.....	909
JB-STAKEI-PLUG.....	921
JB-STANDY-PLUG-3-POLE.....	921
JB-SW-BATHS-RS232-CABLE.....	931
JB-T-ADAPTER.....	939
JB-TEST-TUBE-RACKS-21.....	905
JB-TEST-TUBE-RACKS-60.....	905
JB-TEST-TUBE-RACKS-90.....	905
JB-TEST-TUBE-RACKS-BASIC-TRAYS.....	908
JB-TEST-TUBE-RACKS-BOTTLE-BASKETS-1001F.....	907
JB-TEST-TUBE-RACKS-CARRIER-TRAY-FOR-ERLENMEYER-FLASKS.....	908
JB-TEST-TUBE-RACKS-CARRIER-TRAY-4X.....	907
JB-TEST-TUBE-RACKS-IMMERSION-HEIGHT-PLATFORM.....	907
JB-TEST-TUBE-RACKS-F25.....	906
JB-TEST-TUBE-RACKS-STAINLESS-STEEL.....	906
JB-TEST-TUBE-TT-RACK-SW22-SW23.....	906
JB-TUBE-CLAMPS.....	926
JB-TUBING-CR.....	923
JB-TUBING-FLEXIBLE-BRAIDED-1-STRAIGHT-FITTING-1-ELBOW-FITTING.....	925

Catalog Number	Page
JB-TUBING-FLEXIBLE-BRAIDED-STRAIGHT-FITTINGS.....	925
JB-TUBING-FLEXIBLE-METAL-TRIPLE-INSULATED.....	924
JB-TUBING-INSULATION.....	925
JB-TUBING-METAL-INSULATED-M16X1F.....	924
JB-TUBING-METAL-TRIPLE-INSULATED-M16X1F.....	924
JB-TUBING-PTFE.....	924
JB-TUBING-SILICONE.....	923
JB-TUBING-TEXTILE-REINFORCED.....	925
JB-TUBING-VITON.....	923
JB-TWIN-DISTRIBUTING-ADAPTER.....	939
JB-ULTRA-LOW-CONDENSATION-TRAP.....	930
JB-USB-TO-SERIAL-RS-232-DB9-ADAPTER-CABLE.....	931
JB-VALVES-HL-SL-COOLING-WATER-SOLENOID.....	928
JB-WATER-BATH-SW22.....	903
JB-WATER-BATH-SW23.....	904
JB-WLAN-RS232-CONVERTER.....	933
JK-210.....	248, 635, 814
JK-210-TIMER.....	248, 635, 814
JK-250.....	248, 635, 814
JK-260-TIMER.....	249, 636, 815
JK-270.....	249, 636, 815
JK-APOLLO.....	250, 637, 816
JK-COILED CORD.....	255, 642, 822
JK-DVR.....	818
JK-GEMINI.....	250, 637, 816
JK-HCC.....	251, 638, 817
JK-LS-120.....	251, 638, 817
JK-STRAIGHTCORD.....	255, 642, 822
JK-TC270.....	253, 640, 820
JK-THERMOCOUPLEADAPTER.....	254, 641, 821
JK-THERMOCOUPLEPROBEADAPTER.....	254, 641, 821
JK-THERMOCOUPLEPROBEADAPTERORINGS.....	254, 641, 821
JK-THERMOCOUPLE-PROBES.....	252, 639, 819
JK-WATERFLOWMONITOR.....	251, 638, 817
OH-110.....	954
OH-110B.....	955
OH-110C.....	955
OH-112.....	955
OH-30392193.....	955
OH-30392194.....	955
OH-30392195.....	956
OH-30392318.....	963
OH-30392329.....	957
OH-30392330.....	957
OH-30392331.....	957
OH-30392332.....	957
OH-30392333.....	956
OH-30392341.....	956
OH-30392349.....	958
OH-30392350.....	958
OH-30392351.....	958
OH-30392358.....	956
OH-30392359.....	962
OH-30392360.....	962
OH-30392361.....	962
OH-30392362.....	962
OH-30392363.....	962
OH-30392364.....	962
OH-30392365.....	963
OH-30392366.....	963
OH-30400000.....	961
OH-30400001.....	961
OH-30400002.....	961
OH-30400003.....	961
OH-30400004.....	961
OH-30400005.....	961



Catalog Number	Page
OH-30400006	961
OH-30400007	961
OH-30400008	961
OH-30400009	961
OH-30400010	961
OH-30400011	958
OH-30400012	958
OH-30400013	963
OH-30400014	958
OH-30400015	958
OH-30400016	963
OH-30400017	958
OH-30400018	959
OH-30400019	959
OH-30400020	959
OH-30400021	959
OH-30400022	960
OH-30400023	960
OH-30400024	960
OH-30400025	960
OH-30400026	961
OH-30400027	961
OH-30400028	961
OH-30400029	961
OH-30400036	954
OH-30400037	954
OH-30400038	954
OH-30400039	954
OH-30400040	954
OH-30400041	954
OH-30400042	954
OH-30400043	955
OH-30400044	955
OH-30400045	955
OH-30400263	957
OH-30400264	957
OH-30400265	957
OH-915290	955
OH-916049	956
OH-916203	956
OH-916205	956
OH-916244	957
OH-916249	957
OH-916299	958
OH-916310	958
OH-CLR-701	958
OH-CLR-703	959
OH-CLR-704	959
OH-CLR-711	959
OH-CLR-712	960
OH-CLR-713	960
OH-CLR-715	960
OH-CLR-716	961
OH-CLR-717	961
OH-CLR-LBLFT	961
OH-CLR-RBASE	962
OH-CLR-TBASEC	962
OH-CLR-UBASEC	962
OH-CLS-FLEX	963
OH-CLS-KTLCL	963
OH-CLS-NESTXS	963
PG-9000	28, 415
PG-9002	28, 415
PG-9004	28, 415
PG-9006	29, 415
PG-9008	29, 416

Catalog Number	Page
PG-9010	29, 416
PG-9012	29, 416
PG-9014	29, 416
PG-9016	29, 416
PG-9018	30, 416
PG-9020	30, 416
PG-9022	30, 416
PG-9024	30, 417
PG-9026	31, 417
PG-9028	31, 417
PG-9030	31, 418
PG-9032	31, 418
PG-9034	31, 418
PG-9036	31, 418
PG-9038	32, 418
PG-9040	32, 418
PG-9042	32, 419
PG-9044	32, 419
PG-9046	32, 419
PG-9048	32, 419
PG-9050	33, 419
PG-9052	33, 419
PG-9054	33, 419
PG-9056	33, 419
PG-9058	33, 420
PG-9060	33, 420
PG-9062	34, 420
PG-9064	34, 420
PG-9066	34, 420
PG-9068	34, 421
PG-9070	35, 421
PG-9072	401, 421, 460
PG-9074	35, 422
PG-9076	35, 422
PG-9078	35, 422
PG-9080	35, 422
PG-9082	35, 422
PG-9084	36, 422
PG-9100	49, 57, 423
PG-9102	100, 424
PG-9104	100, 424
PG-9106	100, 424
PG-9108	101, 424
PG-9110	101, 425
PG-9112	101, 425
PG-9114	101, 425
PG-9116	102, 425
PG-9118	102, 425
PG-9120	102, 426
PG-9122	102, 426
PG-9123	461
PG-9124	128, 427
PG-9126	128, 427
PG-9128	128, 427
PG-9130	129, 428
PG-9132	129, 428
PG-9134	129, 428
PG-9136	130, 429
PG-9138	130, 429
PG-9140	130, 429
PG-9142	131, 429
PG-9144	131, 430
PG-9146	131, 430
PG-9148	132, 430
PG-9150	132, 431
PG-9152	132, 431





Catalog Number	Page
PG-9154	133, 431
PG-9156	133, 432
PG-9158	133, 432
PG-9160	134, 432
PG-9162	134, 433
PG-9164	134, 433
PG-9170	134, 433
PG-9172	135, 433
PG-9174	135, 434
PG-9176	135, 434
PG-9178	135, 434
PG-9180	136, 434
PG-9182	136, 434
PG-9184	136
PG-9186	136, 435
PG-9188	136, 435
PG-9190	436
PG-9192	436
PG-9194	436
PG-9196	436
PG-9198	436
PG-9200	437
PG-9202	182, 438
PG-9204	183, 438
PG-9206	183, 438
PG-9208	183, 439
PG-9210	184, 439
PG-9212	184, 439
PG-9214	184, 440
PG-9216	185, 440
PG-9218	185, 440
PG-9220	185, 441
PG-9222	186, 441
PG-9224	186, 441
PG-9226	186, 442
PG-9228	187, 442
PG-9230	187, 442
PG-9232	187, 443
PG-9234	188, 443
PG-9236	188, 311, 443
PG-9238	188, 311, 444
PG-9240	189, 312, 444
PG-9242	189, 312, 444
PG-9246	190, 313, 445
PG-9248	190, 313, 445
PG-9250	190, 313, 446
PG-9252	191, 314, 446
PG-9254	191, 314, 446
PG-9256	191, 314, 446
PG-9258	191, 314, 447
PG-9260	192, 447
PG-9262	192, 447
PG-9264	207, 448
PG-9266	207, 448
PG-9270	207, 448
PG-9272	207, 448
PG-9274	208, 449
PG-9276	208, 449
PG-9278	208, 449
PG-9280	209, 450
PG-9282	209, 450
PG-9284	209, 450
PG-9286	210, 451
PG-9288	210, 451
PG-9290	210, 451
PG-9292	211, 452

Catalog Number	Page
PG-9294	211, 452
PG-9296	211, 452
PG-9298	211, 452
PG-9300	453
PG-9302	453
PG-9310	454
PG-9312	454
PG-9314	454
PG-9316	454
PG-9318	454
PG-9320	455
PG-9322	455
PG-9324	455
PG-9326	455
PG-9328	456
PG-9330	457
PG-9332	457
PG-9334	457
PG-9336	457
PG-9338	458
PG-9340	400, 459
PG-9342	400, 459
PG-9344	400, 459
PG-9350	462
PG-9352	462
PG-9354	462
PG-9356	462
PQ-0100	408
PQ-0105	408
PQ-0107	409
PQ-1062	410
PQ-1062D	412
PQ-1125	410
PQ-1125D	412
PQ-1188	410
PQ-1188D	412
PQ-1250	410
PQ-1250D	412
PQ-1313	410
PQ-1313D	412
PQ-1375	410
PQ-1375D	412
PQ-2030	414
PQ-2040	414
PQ-2062	411
PQ-2062D	413
PQ-2125	411
PQ-2125D	413
PQ-2188	411
PQ-2188D	413
PQ-2250	411
PQ-2250D	413
PQ-2313	411
PQ-2313D	413
PQ-2375	411
PQ-2375D	413
PQ-2500D	413
PQ-2750D	413
PRG-100	258
PRG-105	258
PRG-110	258
PRG-115	258
PRG-120	259
PRG-125	259, 315
PRG-130	259
PRG-135	260





Catalog Number	Page
PRG-150.....	260
PRG-155.....	260
PRG-160.....	260
PRG-165.....	260
PRG-170.....	261
PRG-175.....	261
PRG-180.....	261
PRG-181.....	262
PRG-182.....	262
PRG-183.....	262
PRG-184.....	263
PRG-185.....	263
PRG-186.....	263
PRG-187.....	189, 263, 309, 312, 445, 490
PRG-188.....	76, 78, 189, 257, 264, 309, 312, 444, 490, 702
PRG-189.....	78, 257, 264, 704
PRG-190.....	78, 258, 264
PRG-197.....	78, 258, 264, 704
PRG-198.....	264
PRG-200.....	265
PRG-201.....	265
PRG-202.....	58, 265
PRG-203.....	11, 12, 15, 24, 265
PRG-204.....	11, 12, 15, 24, 266
PRG-204.5.....	266
PRG-205.....	266
PRG-210.....	267
PRG-215.....	267
PRG-216.....	267
PRG-217.....	267
PRG-218.....	268
PRG-219.....	268
PRG-220.....	5, 86, 94, 96, 98, 99, 268, 578, 582, 584, 586, 587
PRG-222.....	5, 269
PRG-225.....	270
PRG-235.....	270
PRG-240.....	270
PRG-245.....	270
PRG-247.....	271
PRG-250.....	271
PRG-252.....	271
PRG-255.....	272, 374
PRG-260.....	272, 374
PRG-265.....	272, 374
PRG-270.....	273, 375
PRG-275.....	273, 375
PRG-280.....	273, 375
PRG-285.....	274, 376
PRG-290.....	274, 376
PRG-295.....	274, 376
PRG-300.....	275, 377
PRG-305.....	275, 377
PRG-310.....	275, 377
PRG-315.....	17, 276, 378
PRG-320.....	276, 378
PRG-325.....	276, 378
PRG-330.....	277, 379
PRG-335.....	277, 379
PRG-340.....	277
PRG-345.....	278
PRG-350.....	278
PRG-355.....	278
PRG-360.....	279
PRG-361.....	280
PRG-362.....	281
PRG-363.....	282

Catalog Number	Page
PRG-364.....	283
PRG-365.....	284
PRG-366.....	279
PRG-553.....	5, 269
PRG-554.....	5, 269
PRG-1000.....	8
PRG-1005.....	8
PRG-1010.....	8
PRG-1015.....	9
PRG-1020.....	9
PRG-1025.....	9
PRG-1030.....	10
PRG-1035.....	10
PRG-1040.....	10
PRG-1045.....	10
PRG-1050.....	10
PRG-1055.....	11
PRG-1060.....	11
PRG-1065.....	12
PRG-1070.....	12
PRG-1075.....	12
PRG-1080.....	13
PRG-1085.....	13
PRG-1090.....	13
PRG-1091.....	123, 604
PRG-1095.....	13
PRG-1096.....	103
PRG-1097.....	103
PRG-1098.....	103
PRG-1100.....	13
PRG-1105.....	14
PRG-1110.....	14
PRG-1115.....	14
PRG-1120.....	14
PRG-1125.....	14
PRG-1130.....	15
PRG-1135.....	15
PRG-1140.....	15
PRG-1145.....	16, 143
PRG-1150.....	16
PRG-1155.....	16
PRG-1160.....	17
PRG-1165.....	17
PRG-1170.....	17
PRG-1175.....	18
PRG-1176.....	18
PRG-1180.....	18
PRG-1181.....	19
PRG-1182.....	19
PRG-1183.....	19
PRG-1184.....	20
PRG-1185.....	20
PRG-1186.....	20
PRG-1190.....	21
PRG-1191.....	21
PRG-1195.....	21
PRG-1200.....	21
PRG-1205.....	22
PRG-1210.....	22
PRG-1215.....	22
PRG-1220.....	22
PRG-1225.....	23
PRG-1230.....	23
PRG-1240.....	24
PRG-1245.....	24
PRG-1250.....	24





Catalog Number	Page
PRG-1260	25
PRG-1265	25
PRG-1270	25
PRG-1275	25
PRG-1280	25
PRG-1285	25
PRG-1290	25
PRG-1295	25, 157
PRG-1297	26, 157
PRG-1300	26
PRG-1305	26
PRG-1310	26
PRG-1320	26
PRG-1325	26
PRG-1330	27
PRG-1335	27
PRG-1340	27
PRG-1345	27
PRG-1350	27
PRG-1355	28
PRG-1360	28
PRG-1365	44, 56, 239, 590
PRG-1366	44, 56, 239, 590
PRG-1370	44, 56, 239, 590
PRG-1375	44, 56
PRG-1380	45
PRG-1385	45
PRG-1390	45
PRG-1395	46
PRG-1400	46
PRG-1405	46
PRG-1410	47
PRG-1415	47
PRG-1420	47
PRG-1425	48
PRG-1430	48
PRG-1435	48
PRG-1440	48
PRG-1445	49
PRG-1450	49
PRG-1455	49
PRG-1460	49
PRG-1475	50
PRG-1480	50
PRG-1490	51
PRG-1495	51
PRG-1500	52
PRG-1505	52
PRG-1510	53, 155, 593
PRG-1515	53, 155, 593
PRG-1520	53
PRG-1525	54
PRG-1530	54
PRG-1535	55
PRG-1540	55
PRG-1541	55
PRG-1542	57
PRG-1600	65
PRG-1605	66
PRG-1610	67
PRG-1615	68
PRG-1620	69
PRG-1625	69
PRG-1630	70
PRG-1635	70
PRG-1640	71

Catalog Number	Page
PRG-1645	72
PRG-1650	73
PRG-1655	73
PRG-1660	74
PRG-1665	74
PRG-1670	74
PRG-1675	75
PRG-1680	75
PRG-1685	75
PRG-1700	23, 77, 257, 703
PRG-1702	77, 221, 257, 703
PRG-1705	57, 77, 221, 257, 703
PRG-1710	77, 257, 703
PRG-1720	79, 383, 704, 940
PRG-1722	79, 383, 704, 940
PRG-1725	79, 383, 705, 940
PRG-1730	80, 384, 705, 941
PRG-1735	80, 384, 705, 941
PRG-1738	80, 384, 706, 941
PRG-1740	81, 385, 706, 942
PRG-1742	81, 385, 706, 942
PRG-1750	81, 385, 707, 942
PRG-1752	81, 385, 707, 942
PRG-1755	82, 386, 707, 943
PRG-1757	82, 386, 707, 943
PRG-1760	82, 386, 708, 943
PRG-1765	82, 386, 708, 943
PRG-1767	83, 387, 708, 944
PRG-1770	83, 387, 708, 944
PRG-1771	83, 387, 709, 944
PRG-1772	84, 388, 709, 945
PRG-1775	84, 388, 709, 945
PRG-1777	84, 388, 709, 945
PRG-1780	84, 388, 710, 945
PRG-1782	84, 388, 710, 945
PRG-1785	85, 389, 710, 946
PRG-1787	85, 389, 710, 946
PRG-1790	85, 389, 710, 946
PRG-1792	85, 389, 710, 946
PRG-1800	390, 711, 947
PRG-1810	391, 712, 948
PRG-1812	391, 712, 948
PRG-1815	391, 712, 948
PRG-1817	391, 712, 948
PRG-1820	391, 712, 948
PRG-1822	391, 712, 948
PRG-1825	392, 713, 949
PRG-1827	392, 713, 949
PRG-1830	392, 713, 949
PRG-1832	393, 714, 950
PRG-1835	393, 714, 950
PRG-1837	393, 714, 950
PRG-1840	393, 714, 950
PRG-1842	393, 714, 950
PRG-1845	393, 714, 950
PRG-1847	394, 715, 951
PRG-1850	394, 715, 951
PRG-1852	394, 715, 951
PRG-1855	394, 715, 951
PRG-1857	394, 715, 951
PRG-1860	394, 715, 951
PRG-1862	395, 716, 952
PRG-1867	395, 716, 952
PRG-1870	395, 716, 952
PRG-1872	396, 717, 953
PRG-1880	396, 717, 953





Catalog Number	Page
PRG-1882	397, 718, 954
PRG-1885	397, 718, 954
PRG-1900	86, 578
PRG-1901	86, 578
PRG-1905	87, 579
PRG-1910	87, 145
PRG-1915	87
PRG-1920	88, 145
PRG-1925	88
PRG-1930	88
PRG-1935	88, 146
PRG-1940	89, 579
PRG-1941	89, 579
PRG-1945	89, 580
PRG-1946	90, 580
PRG-1947	90, 580
PRG-1948	90, 581
PRG-1950	91, 581
PRG-1955	91, 581
PRG-1960	91
PRG-1965	91
PRG-1970	92
PRG-1975	92
PRG-1980	92, 407
PRG-1982	93, 407
PRG-1985	93
PRG-1990	93
PRG-1995	93, 146
PRG-2000	104
PRG-2005	104
PRG-2010	104
PRG-2020	105
PRG-2025	105
PRG-2030	105
PRG-2035	106
PRG-2040	106
PRG-2045	106
PRG-2050	112
PRG-2060	112, 596
PRG-2100	113
PRG-2105	113
PRG-2110	113
PRG-2115	113
PRG-2120	113
PRG-2125	114
PRG-2130	114
PRG-2135	114
PRG-2140	114
PRG-2145	115
PRG-2150	115
PRG-2155	115
PRG-2160	116
PRG-2165	116
PRG-2170	116
PRG-2175	117
PRG-2180	117
PRG-2185	117
PRG-2190	140
PRG-2195	140
PRG-2250	118
PRG-2255	118
PRG-2260	118
PRG-2265	119
PRG-2270	119
PRG-2275	119
PRG-2280	120

Catalog Number	Page
PRG-2285	120
PRG-2290	120
PRG-2438	126, 607
PRG-2440	127, 608
PRG-2500	137
PRG-2505	137
PRG-2510	137
PRG-2520	138
PRG-2525	139
PRG-2530	139
PRG-2575	138
PRG-3500	144
PRG-3505	144
PRG-3525	140
PRG-3530	140
PRG-3535	141
PRG-3536	141
PRG-3540	141
PRG-3541	141
PRG-3542	141
PRG-3543	141
PRG-3545	142
PRG-3546	143
PRG-3550	142
PRG-3555	142
PRG-3557	143
PRG-3560	144
PRG-3565	146
PRG-3570	147
PRG-3573	149
PRG-3575	147
PRG-3580	147
PRG-3583	149
PRG-3585	148
PRG-3590	148
PRG-3595	148
PRG-3610	150
PRG-3630	150
PRG-3631	151
PRG-3632	151
PRG-3633	151
PRG-3634	152
PRG-3635	152
PRG-3645	145
PRG-3700	153
PRG-3705	153
PRG-3710	153
PRG-3720	154
PRG-3725	154
PRG-3730	155
PRG-3735	156, 592
PRG-3750	157
PRG-3755	157
PRG-3760	158, 204, 591
PRG-3765	159
PRG-3770	159
PRG-3772	160
PRG-3775	160
PRG-3780	161
PRG-3785	161
PRG-3790	162
PRG-3791	162, 205, 594
PRG-3793	163, 205, 594
PRG-3795	164, 206, 595
PRG-3797	164, 206, 595
PRG-3799	164, 206, 595





Catalog Number	Page	Catalog Number	Page
PRG-4005	58	PRG-5225	293, 470
PRG-4010	58	PRG-5227	293, 470
PRG-4035	59	PRG-5230	295, 472
PRG-4040	59	PRG-5233	295, 472
PRG-4045	59	PRG-5235	296, 473
PRG-4050	60	PRG-5240	296, 473
PRG-4055	60	PRG-5245	297, 474
PRG-4057	60	PRG-5250	298, 475
PRG-4060	61	PRG-5255	298, 475
PRG-4065	61	PRG-5257	298, 475
PRG-4066	61	PRG-5260	299, 476
PRG-4068	62	PRG-5262	299, 476
PRG-4070	62	PRG-5265	300, 477
PRG-4071	62	PRG-5266	300, 477
PRG-4080	63	PRG-5267	301, 478
PRG-4085	63	PRG-5268	301, 478
PRG-4090	63	PRG-5269	302, 479
PRG-4095	64	PRG-5270	303, 480
PRG-5000	165	PRG-5275	303, 480
PRG-5001	165	PRG-5277	304, 481
PRG-5005	166	PRG-5280	304, 481
PRG-5010	166	PRG-5282	304, 481
PRG-5015	166	PRG-5285	305, 482
PRG-5020	167	PRG-5287	305, 482
PRG-5025	167	PRG-5290	305, 482
PRG-5030	167	PRG-5292	306, 483
PRG-5035	168	PRG-5295	306, 483
PRG-5040	168	PRG-5297	306, 483
PRG-5045	168	PRG-5385	311
PRG-5050	169	PRG-5400	240, 627, 776
PRG-5055	169	PRG-5401	240, 627, 776
PRG-5060	169	PRG-5402	241, 628, 777
PRG-5065	170	PRG-5404	241, 628, 777
PRG-5070	170	PRG-5406	241, 628, 777
PRG-5075	170	PRG-5408	242, 629, 778
PRG-5080	171	PRG-5410	242, 629, 778
PRG-5085	172	PRG-5412	242, 629, 778
PRG-5090	173	PRG-5414	243, 630, 779
PRG-5095	173	PRG-5416	243, 630, 779
PRG-5100	174	PRG-5418	243, 630, 779
PRG-5105	174	PRG-5420	244, 631, 780
PRG-5110	175	PRG-5422	244, 631, 780
PRG-5115	175	PRG-5424	244, 631, 780
PRG-5120	176	PRG-5430	245, 632, 781
PRG-5125	176	PRG-5432	245, 632, 781
PRG-5130	176	PRG-5434	246, 633, 782
PRG-5135	177	PRG-5436	246, 633, 782
PRG-5136	177	PRG-5438	246, 633, 782
PRG-5137	177	PRG-5440	247, 634, 783
PRG-5138	178	PRG-5444	247, 634, 783
PRG-5140	178	PRG-5449	245, 632, 781
PRG-5145	178	PRG-5460	285
PRG-5150	179	PRG-5465	285
PRG-5155	154, 179, 593	PRG-5470	285
PRG-5160	179	PRG-5500	193
PRG-5162	180	PRG-5505	193
PRG-5165	180	PRG-5510	193
PRG-5185	180	PRG-5515	194
PRG-5190	181	PRG-5520	194
PRG-5195	181	PRG-5525	194
PRG-5200	181	PRG-5530	195
PRG-5205	182	PRG-5535	195
PRG-5210	182	PRG-5540	195
PRG-5215	182	PRG-5545	196
PRG-5217	495	PRG-5555	196
PRG-5220	292, 469	PRG-5560	196





Catalog Number	Page
PRG-5565	197
PRG-5570	197
PRG-5575	197
PRG-5580	198
PRG-5585	198
PRG-5590	198
PRG-5592	199
PRG-5595	199
PRG-5600	199
PRG-5602	200
PRG-5605	200
PRG-5610	200
PRG-5615	201
PRG-5620	201
PRG-5625	201
PRG-5630	202
PRG-5650	202
PRG-5655	202
PRG-5660	202
PRG-5665	202
PRG-5670	203
PRG-5675	203
PRG-5680	203
PRG-5682	215
PRG-5684	217, 221
PRG-5686	216
PRG-5688	218
PRG-5690	218
PRG-5692	218
PRG-5700	212
PRG-5705	212
PRG-5710	212
PRG-5715	212
PRG-5720	212
PRG-5725	212
PRG-5727	213
PRG-5730	214
PRG-5732	220
PRG-5737	220
PRG-5740	219
PRG-5745	219
PRG-5750	219
PRG-5755	220
PRG-5760	222
PRG-5763	231
PRG-5765	222
PRG-5770	222
PRG-5775	222
PRG-5780	223
PRG-5785	223
PRG-5790	223
PRG-5795	224
PRG-5800	224
PRG-5805	224
PRG-5810	225
PRG-5815	225
PRG-5816	225
PRG-5817	225
PRG-5818	226
PRG-5820	226
PRG-5825	226
PRG-5830	226
PRG-5835	227
PRG-5840	227
PRG-5845	227
PRG-5850	228

Catalog Number	Page
PRG-5855	228
PRG-5856	228
PRG-5860	229
PRG-5870	230
PRG-5873	230
PRG-5875	229
PRG-5880	229
PRG-5885	230
PRG-5889	232
PRG-5890	232
PRG-5891	233
PRG-5892	233
PRG-5894	234
PRG-5895	234
PRG-5900	235
PRG-5905	236
PRG-5910	236
PRG-5950	247, 634, 783
PRG-5952	256, 643, 784
PRG-5954	256, 643, 784
PRG-5960	236
PRG-5965	237
PRG-5970	237
PRG-5975	237
PRG-5980	238, 589
PRG-6100	380
PRG-6105	52, 54, 380
PRG-6110	52, 54, 380
PRG-6115	380
PRG-6120	380
PRG-6125	380
PRG-6130	381
PRG-6135	381
PRG-6150	350, 678
PRG-6155	350, 678
PRG-6160	350, 678
PRG-6165	350, 678
PRG-6170	350, 678
PRG-6175	351, 679
PRG-6180	351, 679
PRG-6185	351, 679
PRG-6187	351, 679
PRG-6188	352, 680
PRG-6190	352, 680
PRG-6192	352, 680
PRG-6193	353, 681
PRG-6195	353, 681
PRG-6197	353, 681
PRG-6200	354, 682
PRG-6205	354, 682
PRG-6210	354, 682
PRG-6212	356, 684
PRG-6213	356, 684
PRG-6214	356, 684
PRG-6215	356, 684
PRG-6220	357, 685
PRG-6225	357, 685
PRG-6230	357, 685
PRG-6260	382
PRG-6265	382
PRG-6330	398
PRG-6335	398
PRG-6340	398
PRG-6345	399
PRG-6350	399
PRG-6355	399





Catalog Number	Page
PRG-6500	402
PRG-6505	402
PRG-6510	402
PRG-6515	403
PRG-6520	403
PRG-6525	403
PRG-6530	404
PRG-6535	404
PRG-6540	404
PRG-6545	405
PRG-6550	405
PRG-6555	405
PRG-6560	406
PRG-6565	406
PRG-6570	406
PRG-7000	292, 469
PRG-7005	294, 471
PRG-7010	294, 471
PRG-7012	296, 473
PRG-7014	297, 474
PRG-7016	299, 476
PRG-7018	297, 474
PRG-7020	302, 479
PRG-7025	308, 485
PRG-7027	308, 485
PRG-7050	307, 484
PRG-7055	307, 484
PRG-7056	308, 485
PRG-7060	307, 484
PRG-7065	308, 485
PRG-7070	76, 310, 491, 702
PRG-7072	76, 310, 491
PRG-7075	76, 310, 491, 702
PRG-7100	609
PRG-7102	609
PRG-7105	609
PRG-7107	610
PRG-7110	610
PRG-7115	610
PRG-7120	611
PRG-7125	611
PRG-7130	611
PRG-7135	612
PRG-7140	203, 612
PRG-7150	612
PRG-7155	612
PRG-7200	359, 687
PRG-7204	359, 687
PRG-7206	360, 688
PRG-7209	360, 688
PRG-7212	360, 688
PRG-7214	361, 689
PRG-7216	361, 689
PRG-7220	369, 697
PRG-7228	369, 697
PRG-7230	370, 698
PRG-7235	370, 698
PRG-7240	359, 493, 687
PRG-7310	107, 597
PRG-7312	107, 597
PRG-7314	107, 597
PRG-7315	108, 598
PRG-7316	108, 598
PRG-7318	109, 599
PRG-7320	110, 600
PRG-7322	111, 601

Catalog Number	Page
PRG-7324	111, 601
PRG-7326	121, 602
PRG-7328	121, 602
PRG-7330	121, 602
PRG-7332	121, 603
PRG-7334	122, 603
PRG-7340	122, 603
PRG-7342	122, 604
PRG-7348	123, 604
PRG-7352	123, 605
PRG-7354	124, 605
PRG-7358	124, 605
PRG-7360	124, 606
PRG-7362	125, 606
PRG-7400	94, 582
PRG-7405	94, 582
PRG-7410	95, 583
PRG-7415	96, 584
PRG-7420	97, 585
PRG-7425	98, 586
PRG-7448	99, 587
PRG-7450	100, 588
PRG-7451	39, 622
PRG-7453	39, 622
PRG-7500	465, 492, 493
PRG-7505	465
PRG-7510	465
PRG-7515	467
PRG-7520	467
PRG-8000	286, 613
PRG-8002	287, 614
PRG-8004	287, 614
PRG-8006	288, 615
PRG-8008	288, 615
PRG-8010	288, 615
PRG-8012	289, 616
PRG-8014	289, 616
PRG-8016	290, 617
PRG-8018	290, 617
PRG-8020	290, 617
PRG-8022	76, 290, 309, 490, 617, 702
PRG-8024	291, 618
PRG-8026	291, 618
PRG-8027	36, 619
PRG-8028	36, 619
PRG-8030	36, 619
PRG-8032	37, 620
PRG-8042	37, 620
PRG-8044	37, 620
PRG-8044-I	40, 623
PRG-8046	38, 621
PRG-8048	38, 621
PRG-R	785

