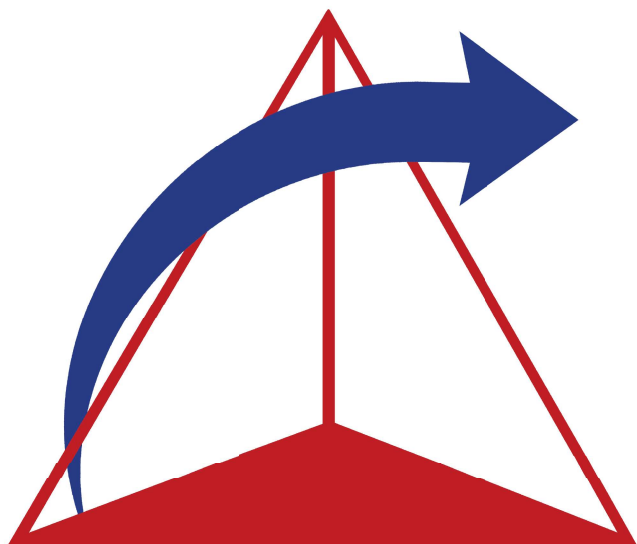


Prism Research Glass



Pilot Plant Catalog ~ 2022

Prism Research Glass



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www.prismresearchglass.com

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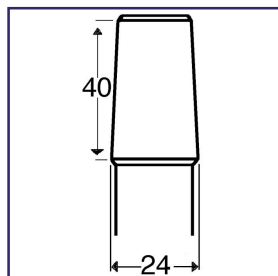
Prism Research Glass, Inc.'s
glassware is handcrafted in the
United States of America.

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.

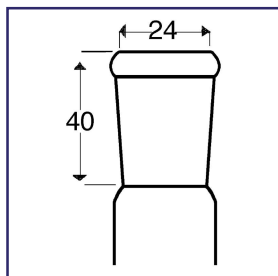
Catalog Code: PP07012022



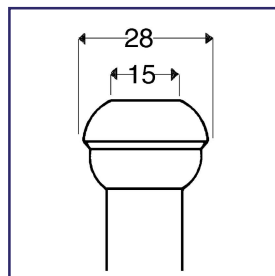
SYMBOLS



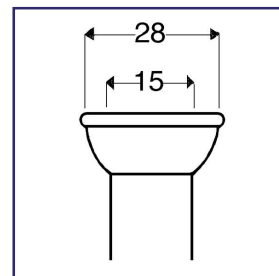
24/40
Inner Joint



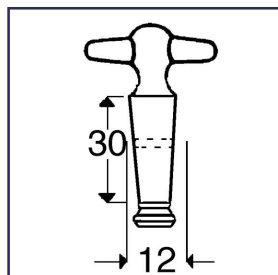
24/40
Outer Joint



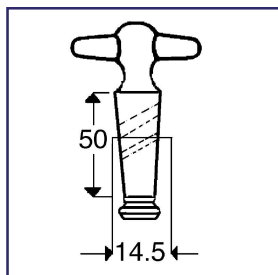
28/15
Ball Joint



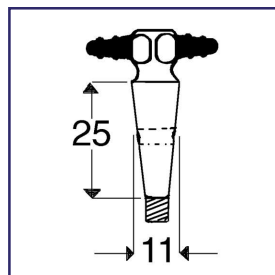
28/15
Socket Joint



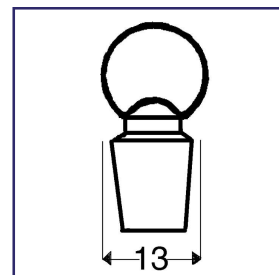
12/30
Stopcock Plug



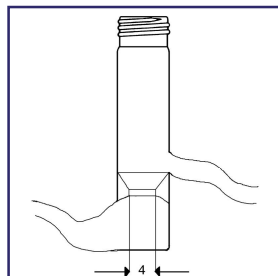
14.5/50
Stopcock Plug



11/25
Teflon® Stopcock Plug



#13
Stopper



0-4 mm
High Vacuum Valve

Standard Taper Joint

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

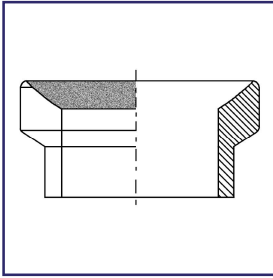
Product Standard

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



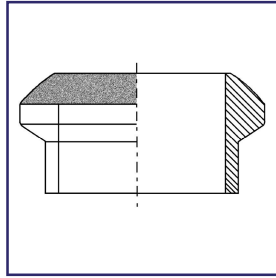


Schott Process Systems

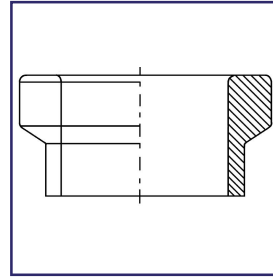


KF Socket

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.

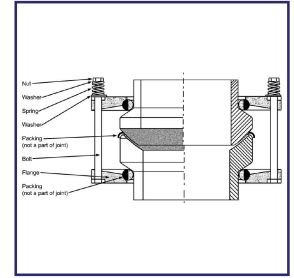


KF Ball



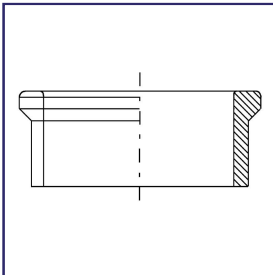
KF Plain

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



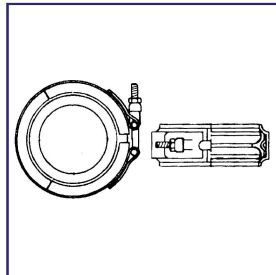
KF Coupling

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



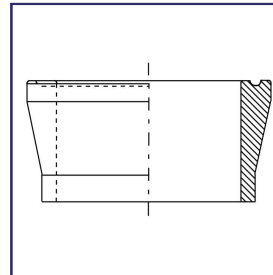
Beaded Pipe

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



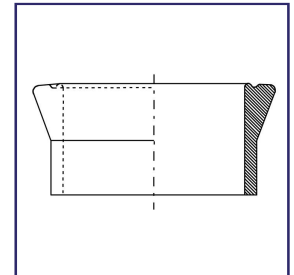
Beaded Pipe Coupling

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



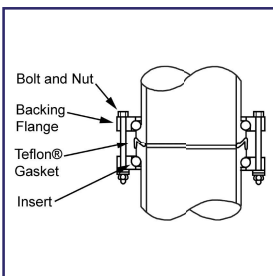
QVF Process Systems Conical Pipe (Domestic)

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
560°C	1215°C
510°C	1120°C
821°C	1683°C
1.473	1.4585
32.5	5.5
2.23	2.2
490°C (extreme)	
230°C (normal)	
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 amps

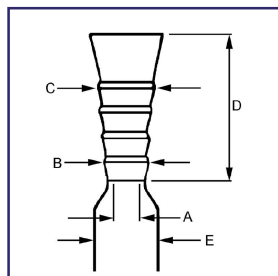
(volts)(amps) = watts
(120)(1.04) = 125

I²(R) = P
1.04²(115) = 125





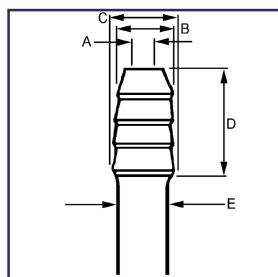
HOSE CONNECTIONS



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

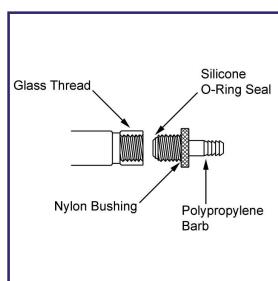
PRG-553
DIRECT SEAL HOSE
CONNECTIONS



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



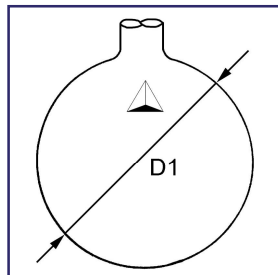
**GLASS FRIT POROSITIES**

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
Aluminum 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.





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 1/2hp 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 & 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" Dia. 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



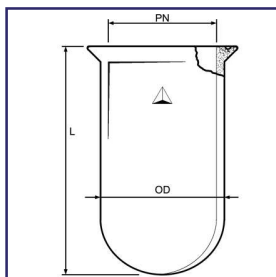


Custom Pilot Plant Systems



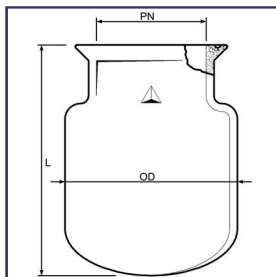
Prism Research Glass, Inc. has the capabilities to create custom Pilot Plant Systems for you.





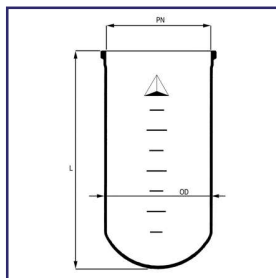
Cylindrical, reaction vessel has a flange tooled flat with an O-Ring groove and finely ground to prevent leaks. Flanges can either be sealed with an O-Ring or grease. For clamps see PRG-188, for O-Rings see PRG-187.

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

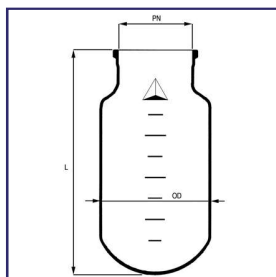
PRG-5220
CYLINDRICAL



Heavy duty vessels have a flat ground DN flange. Rated for full vacuum at nominal working pressures to 7psi.

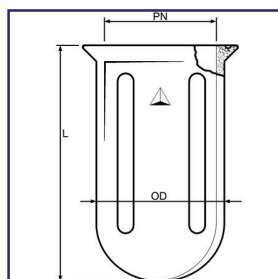
Volume L	PN mm	OD mm	L mm	Style	CODE	Price
10	200	215	490	A	-10	1,134.33
20	300	315	375	A	-01	1,596.51
30	300	315	520	A	-02	2,296.30
50	300	315	840	A	-03	2,906.60
75	300	315	1050	A	-11	3,215.80

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

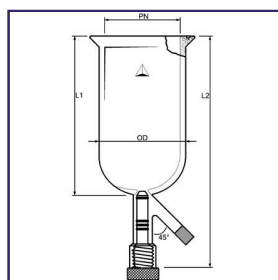




Cylindrical, reaction vessel has a flange tooled flat with an O-Ring groove and finely ground to prevent leaks. Flanges can either be sealed with an O-Ring or grease. Four Morton indents are added for improved mixing. For clamps see PRG-188, for O-Rings see PRG-187.

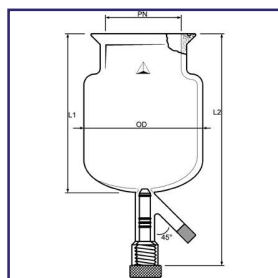
<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
500	100	105	135	-01	245.01
1,000	100	105	210	-02	265.50
2,000	150	160	205	-03	301.26
3,000	150	160	280	-04	369.33
4,000	150	160	355	-05	433.99
10,000	200	215	440	-06	1,086.44

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.

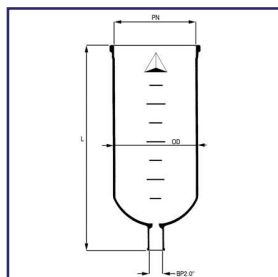
<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>Drain Valve Size</u>	<u>Style</u>	<u>CODE</u>	<u>Price</u>
500	100	105	135	270	0-12	A	-01	687.57
1,000	100	105	210	345	0-12	A	-02	709.69
2,000	150	160	205	400	0-12	A	-03	830.54
3,000	150	160	280	475	0-12	A	-04	861.17
4,000	150	160	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**

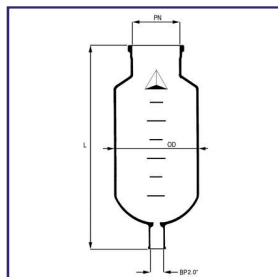
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>Drain Valve Size</u>	<u>Style</u>	<u>CODE</u>	<u>Price</u>
15	200	260	375	575	0-20	B	-07	1,837.68
20	200	260	485	685	0-20	B	-08	2,070.09
30	200	315	735	935	0-20	B	-09	2,514.78
50	200	315	935	1,135	0-20	B	-10	3,208.64
75	200	457	775	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





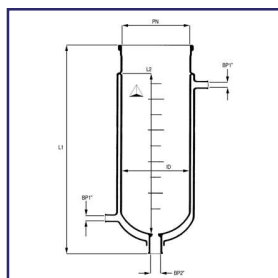
Heavy duty cylindrical vessels have a flat ground DN flange. Drain port connection is a 2.0" beaded pipe and has a 1.0" drain orifice. Drain valve PRG-7025 and PRG-7027 extended body are used with these vessels. Drain valve port will pass through a heat mantle with a bottom opening.

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

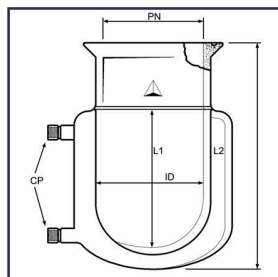


Vessel is jacketed for heating and cooling capacities. The vessel has a 200 or 300mm I.D. flat ground flange. The upper portion of the jacket is hard fused and the lower portion is sealed with an ultra durable Flouro-Silicone to allow for thermal transitions. The jacket ports are a 1.0" beaded pipe connection. 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



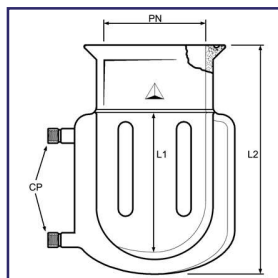


PRG-5230
CYLINDRICAL, JACK-
ETED

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

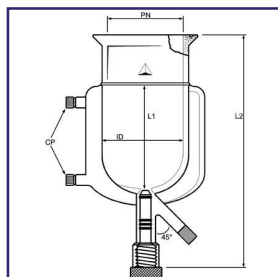


PRG-5233
CYLINDRICAL, JACK-
ETED, WITH MORTON
INDENTS

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



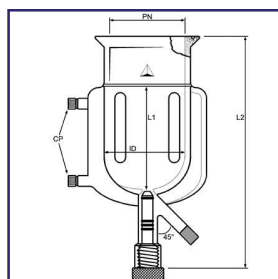


PRG-5235
**CYLINDRICAL, JACK-
ETED, DRAIN VALVE**

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

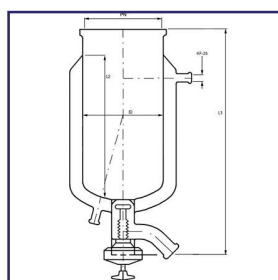
Volume L	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
10	200	200	435	635	#25	0-20	-06	3,950.41
15	200	200	550	795	#25	0-20	-07	6,379.52
20	200	200	660	860	#25	0-20	-08	CALL
30	200	300	590	790	BP 1"	0-20	-09	8,910.17
50	200	300	840	1,040	BP 1"	0-20	-10	9,618.12



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.

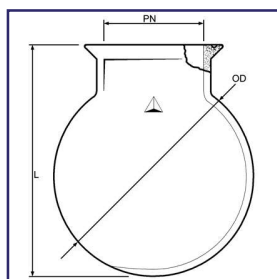
Volume ml	PN mm	ID mm	L1 mm	L2 mm	CP Size	Valve Bore	CODE	Price
250	TBD	TBD	TBD	TBD	TBD	TBD	-250	CALL
500	100	100	130	335	#11	0-12	-01	1,143.68
1,000	100	100	205	410	#11	0-12	-02	1,162.42
2,000	150	150	200	600	#15	0-12	-03	1,334.25
3,000	150	150	275	675	#15	0-12	-04	1,429.60
4,000	150	150	350	750	#15	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.

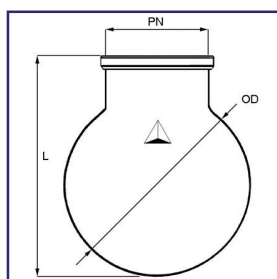
Volume L	Jacket Volume L	PN mm	L1 mm	L2 mm	CODE	Price
15	19	300	665	400	-01	4,819.50
30	25	300	875	560	-02	7,915.32
50	31	300	945	545	-03	9,525.60
100	38	300	1,305	905	-04	14,061.60



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.

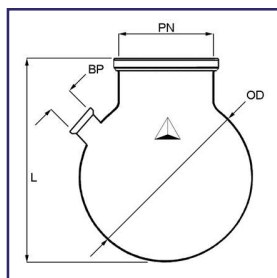
<u>Volume ml</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
2,000	100	161	200	-01	275.72
3,000	100	185	225	-02	304.63
5,000	150	221	270	-03	410.17
12,000	150	295	365	-04	549.73
22,000	150	350	420	-05	769.25
50,000	200	457	530	-06	2,163.26
72,000	200	520	590	-07	2,416.04
100,000	200	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.

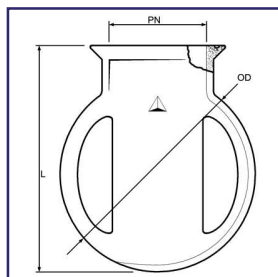
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
22	200	343	450	-11	781.17
50	200	457	580	-01	1,334.49
50	300	457	590	-02	1,822.71
72	200	520	670	-03	2,408.60
72	300	520	670	-04	2,896.81
100	300	610	735	-05	3,922.11
200	300	750	890	-06	8,918.31



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.

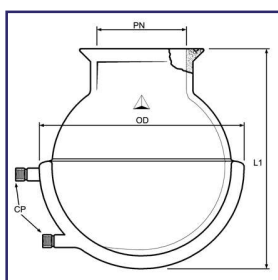
<u>Volume L</u>	<u>PN mm</u>	<u>OD mm</u>	<u>L mm</u>	<u>CODE</u>	<u>Price</u>
22	200	343	450	-11	989.47
50	200	457	580	-01	2,506.24
72	200	520	670	-02	3,075.83
100	300	610	760	-05	5,598.35
200	300	750	900	-06	11,571.01



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

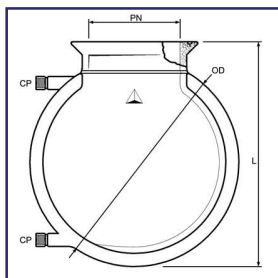
PRG-5250
SPHERICAL, MOTON
BAFFLE INDENTS



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

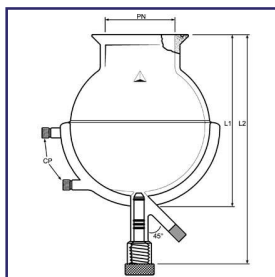
PRG-5255
SPHERICAL, HALF
JACKETED



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

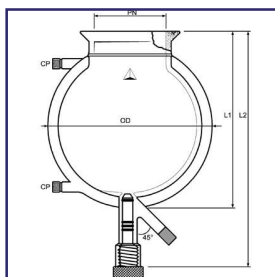
PRG-5257
SPHERICAL, FULL
JACKET



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.

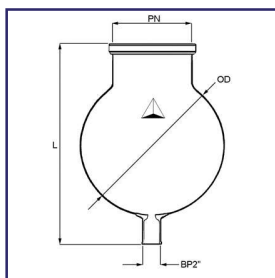
<u>Volume ml</u>	<u>PN mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>CP Size</u>	<u>Valve Bore</u>	<u>CODE</u>	<u>Price</u>
2,000	100	295	410	#11	0-12	-01	1,140.24
3,000	100	295	410	#11	0-12	-02	1,203.08
5,000	150	370	505	#15	0-12	-03	1,319.79
12,000	150	460	595	#15	0-20	-04	3,187.29



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 radius bottom. For clamps see PRG-188 and for O-Ring see PRG-187.

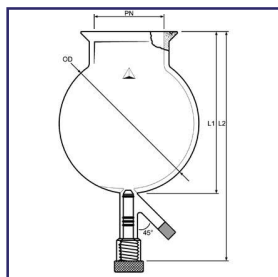
<u>Volume ml</u>	<u>PN mm</u>	<u>L1 mm</u>	<u>L2 mm</u>	<u>OD mm</u>	<u>CP Size</u>	<u>Valve Bore</u>	<u>CODE</u>	<u>Price</u>
2,000	100	295	360	221	#11	0-12	-01	1,310.08
3,000	100	295	360	221	#11	0-12	-02	1,428.90
5,000	150	370	550	295	#15	0-12	-03	1,980.59
12,000	150	460	640	350	#15	0-20	-04	4,084.84



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



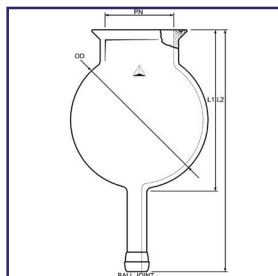
PRG-5265
SPHERICAL, DRAIN
PORT

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

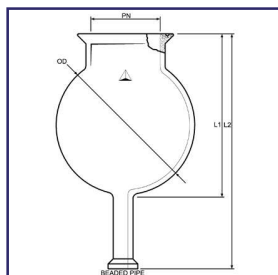
Vessels have a Duron® style O-Ring flange. Flanges can either be sealed with an O-Ring or grease. The open drain port is designed to fit through a heat mantle. Three options for outlet port, for drain valve options see PRG-5269 and PRG-5270. For couplings see PRG-1705, PRG-8022 & PRG-7070.



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	1,280.27
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.

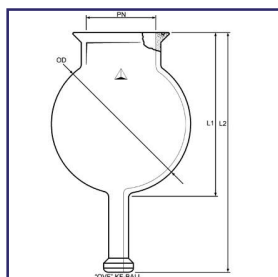


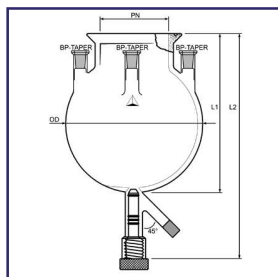
Beaded Pipe Connection

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.

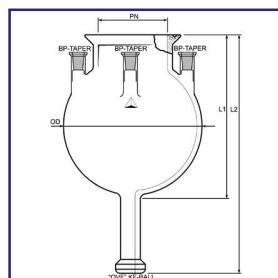
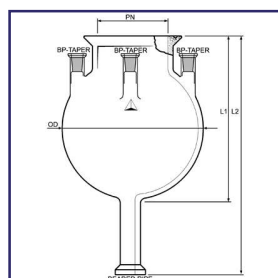
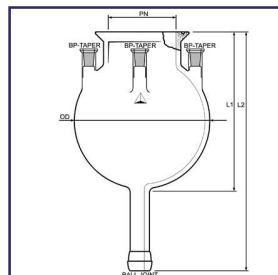
Beaded Pipe Connection

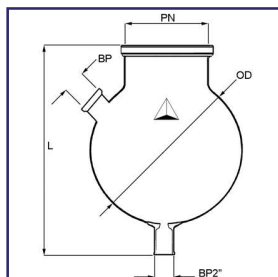
Volume L	PN mm	OD mm	L1 mm	L2 mm	Drain Port	CODE	Price
12	100	295	365	490	1.0"	-11	969.94
22	100	350	420	545	1.0"	-12	1349.13
50	150	457	530	655	1.5"	-13	2595.74
72	200	520	590	715	1.5"	-14	3274.39
100	200	610	720	685	2.0"	-15	5958.02
200	200	750	890	1,015	2.0"	-16	13344.92

"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

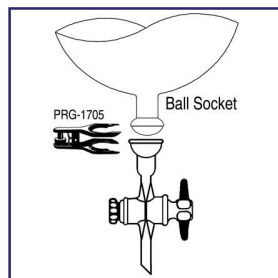
PRG-7020

PILOT PLANT, FLASK,
CHARGE PORT AND
DRAIN PORT

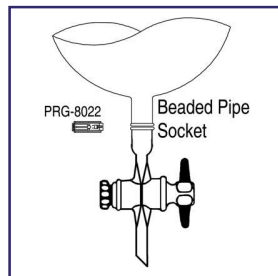
PRG-5269

DRAIN VALVE ADAPT-
ERS, TEFLON® STOP-
COCKS

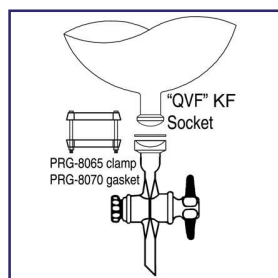
Stopcock adapter offer three connections, spherical ball joints, beaded pipe and "QVF" KF joints. Several options within each grouping for your selection to match mate with vessel connection. All style plugs have threaded nut retainer.



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



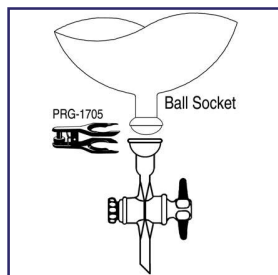
Beaded Pipe	Bore Size	Material	Plug Size	CODE	Price
1.0"	6	Glass	20 x 44	-21	166.32
1.0"	6	TFE	16 x 35	-22	166.32
1.0"	10	Glass	35 x 56	-23	228.68
1.0"	10	TFE	24 x 40	-24	228.68
1.5"	10	Glass	35 x 56	-25	236.96
1.5"	10	TFE	24 x 40	-26	266.77
2.0"	10	Glass	35 x 56	-27	279.28
2.0"	10	TFE	24 x 40	-28	279.28



"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



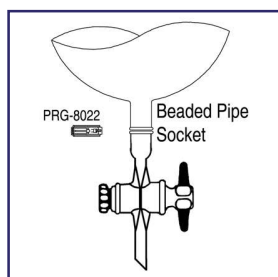
**PRG-5270
DRAIN VALVE ADAPT-
ERS, HIGH VOLUME,
TEFLON® STOP-
COCKS**



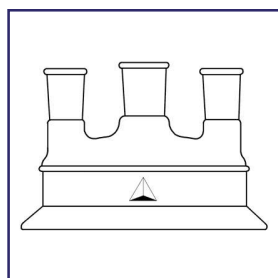
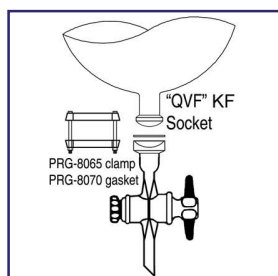
Valve have Teflon® covered O-Ring seals. Adapter offer three connections: spherical ball joints, beaded pipe and "QVF" KF joints. Several options within each grouping for your selection to match mate with vessel connection drain spout is a nominal standard size for use with a compression fitting. All 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



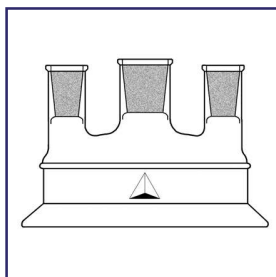
<u>"QVF" KF Socket</u>	<u>Bore Range</u>	<u>CODE</u>	<u>Price</u>
KF-25	0-12	-21	220.55
KF-50	0-20	-22	365.13
KF-50	0-20	-23	433.69



**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

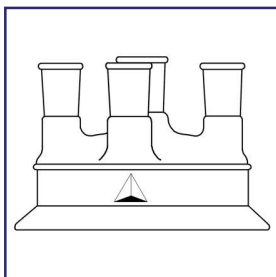


PRG-5277

**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

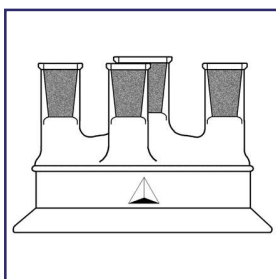


PRG-5280

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



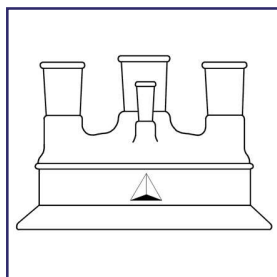
PRG-5282

**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

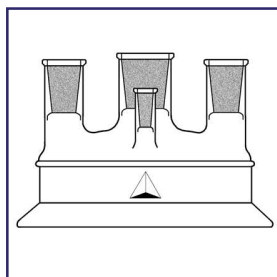




PRG-5285
LID, FOUR NECK, 90°
THERMOMETER
JOINT

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.

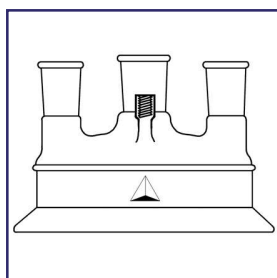
Flange I.D. mm	Center Neck	Side Neck	CODE	Price
100	24/40	24/40	-01	306.32
100	29/42	24/40	-02	313.18
150	24/40	24/40	-03	442.49
150	29/42	24/40	-04	449.31
150	29/42	29/42	-05	459.51
150	45/50	24/40	-06	464.63
200	45/50	24/40	-07	959.89
200	45/50	29/42	-08	963.29
200	45/50	45/50	-09	978.59



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

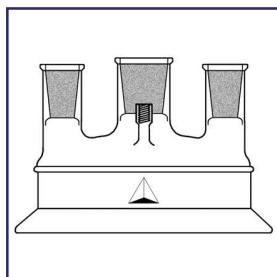


PRG-5290
LID, THREE NECK, 90°
THERMOMETER
PORT

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

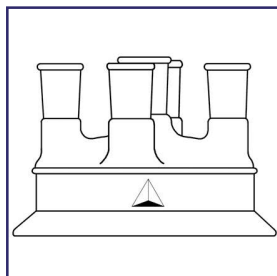




PRG-5292
LID, THREE NECK, 90°
THERMOMETER
JOINT WITH #7 INTER-
NAL THREAD, WITH
"BP-TAPER" CON-
NECTIONS

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.

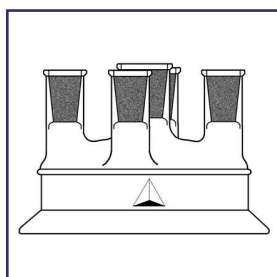
Flange I.D. mm	Center Neck x BP	Side Neck x BP	CODE	Price
100	24/40 x 1.0"	24/40 x 1.0"	-01	338.66
100	29/42 x 1.5"	24/40 x 1.0"	-02	344.94
150	24/40 x 1.0"	24/40 x 1.0"	-03	463.96
150	29/42 x 1.5"	24/40 x 1.0"	-04	470.21
150	29/42 x 1.5"	29/42 x 1.5"	-05	479.61
150	45/50 x 2.0"	24/40 x 1.0"	-06	484.32
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

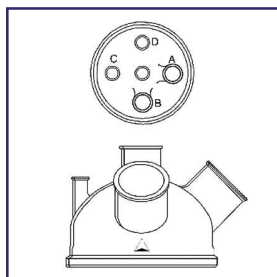


PRG-5297
LID, FIVE NECK, WITH
"BP-TAPER" CON-
NECTIONS

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

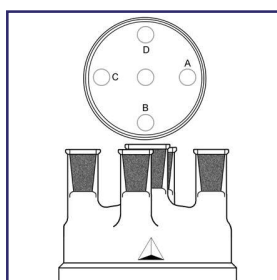




PRG-7050
PILOT PLANT, LID,
FIVE PORT

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°)

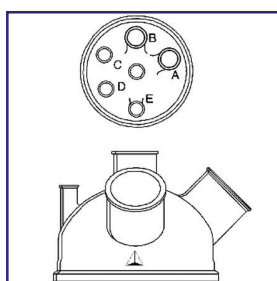
Flange I.D. mm	Center Neck	Side Necks				CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°		
200	1.5"	2.0"	2.0"	1.5"	1.5"	-01	1,964.30
300	2.0"	3.0"	2.0"	1.5"	1.5"	-02	2,245.84
300	2.0"	3.0"	3.0"	1.5"	1.5"	-03	2,294.68



PRG-7060
PILOT PLANT, LID,
BP-TAPER 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

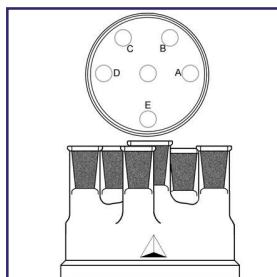


PRG-7055
PILOT PLANT, LID, SIX
PORT

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°. 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

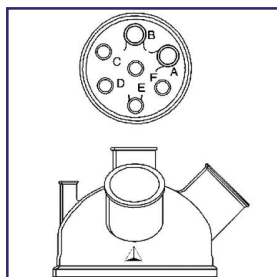




PRG-7065
PILOT PLANT, LID,
BP-TAPER JONTS,
SIX PORT

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.

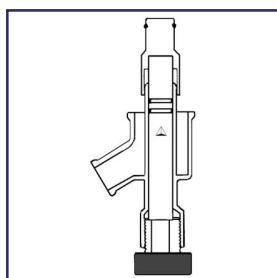
Flange I.D. mm	Center Neck	Side Necks					CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 90°		
200	2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	24/40 1.0"	24/40 1.0"	-01	2,197.03
300	2.0"	45/50 2.0"	45/50 2.0"	45/50 2.0"	29/42 1.5"	29/42 1.5"	-02	2,538.79



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°)

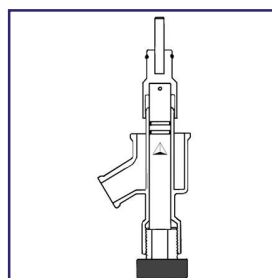
Flange I.D. mm	Center Neck	Side Necks						CODE	Price
		"A" 45°	"B" 45°	"C" 90°	"D" 90°	"E" 45°	"E" 90°		
200	1.5"	2.0"	2.0"	1.0"	1.0"	1.0"	1.0"	-01	2,416.75
300	2.0"	3.0"	2.0"	1.5"	1.5"	1.5"	1.5"	-02	2,847.98
300	2.0"	3.0"	3.0"	1.5"	1.5"	1.5"	1.5"	-03	3,134.60



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

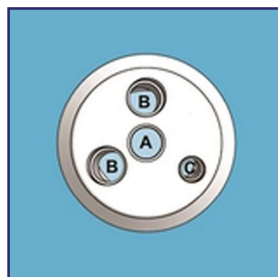


PRG-7027
PILOT PLANT, FLUSH
MOUNT DRAIN VALVE

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

<u>Flange mm</u>	<u>Port</u>	<u>Qty</u>	<u>NPT Thread</u>	<u>CODE</u>	<u>Price</u>
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**

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- 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.

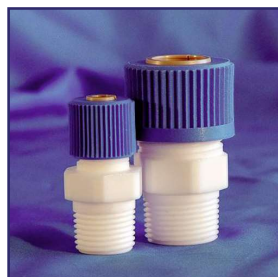
<u>Male NPT</u>	<u>Female NPT</u>	<u>Nominal Height</u>	<u>Max Shaft Ø</u>	<u>CODE</u>	<u>Price</u>
1/4"	1/2"	40 mm	8.5 mm	CW-PC713.025050.GF	33.11
1/2"	1/4"	36 mm	14 mm	CW-PC713.050025.GF	33.11
1/2"	1/2"	36 mm	14 mm	CW-PC713.050050.GF	33.11
1/2"	3/4"	46 mm	14 mm	CW-PC713.050075.GF	50.84
3/4"	3/4"	46 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

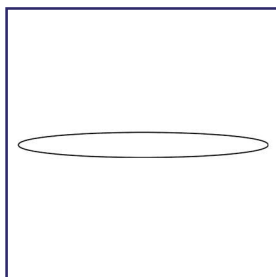


CW-PC701
COWIE®, PTFE REAC-
TOR LIDS AND FIT-
TINGS, NPT
COMPRESSION
SCREW FITTINGS

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.

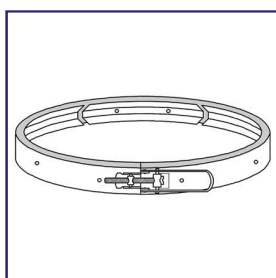
<u>NPT Thread</u>	<u>Bore</u>	<u>CODE</u>	<u>Price</u>	<u>NPT Thread</u>	<u>Bore</u>	<u>CODE</u>	<u>Price</u>
1/4"	1/8"	CW-PC701.025.125	23.59	3/4"	5/16"	CW-PC701.075.312	36.09
1/4"	1/4"	CW-PC701.025.250	21.23	3/4"	1/2"	CW-PC701.075.500	35.36
1/4"	3 mm	CW-PC701.025.03	22.54	3/4"	9/16"	CW-PC701.075.560	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.

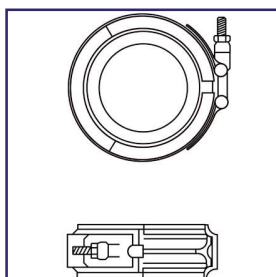
<u>Fits Flange I.D. mm</u>	<u>Material</u>	<u>CODE</u>	<u>Price</u>
60	Silicone	-01	14.49
60	FEP-Silicone	-21	27.22
100	Silicone	-02	24.15
100	FEP-Silicone	-22	40.82
120	Silicone	-03	34.39
120	FEP-Silicone	-23	46.49
150	Silicone	-04	45.98
150	FEP-Silicone	-24	58.97
200	Silicone	-05	59.48
200	FEP-Silicone	-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

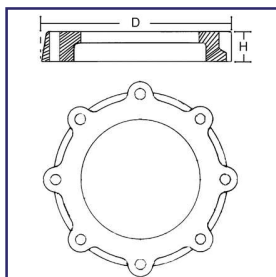


**PRG-8022
BEADED PIPE COU-
PLINGS**

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

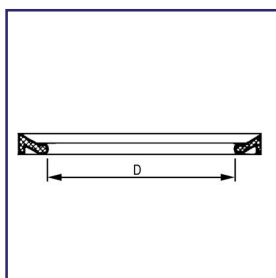




PRG-7070
PILOT PLANT COUPLING

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.

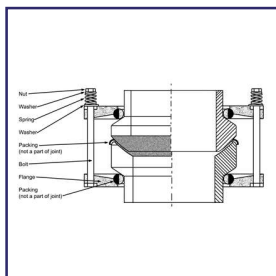
Flange Size	"D" mm	"H" mm	CODE	Price	Description	CODE	Price
200 mm	321	34	-01	455.69	200 mm Clamp Insert	-10	CALL
300 mm	428	36	-02	797.45	300 mm Clamp Insert	-11	CALL
400 mm	TBD	TBD	-03	1,401.22	Stainless Steel Nut and Bolt	-12	CALL
600 mm	TBD	TBD	-04	1,379.43	Compression Springs	-13	CALL
KF-25	TBD	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

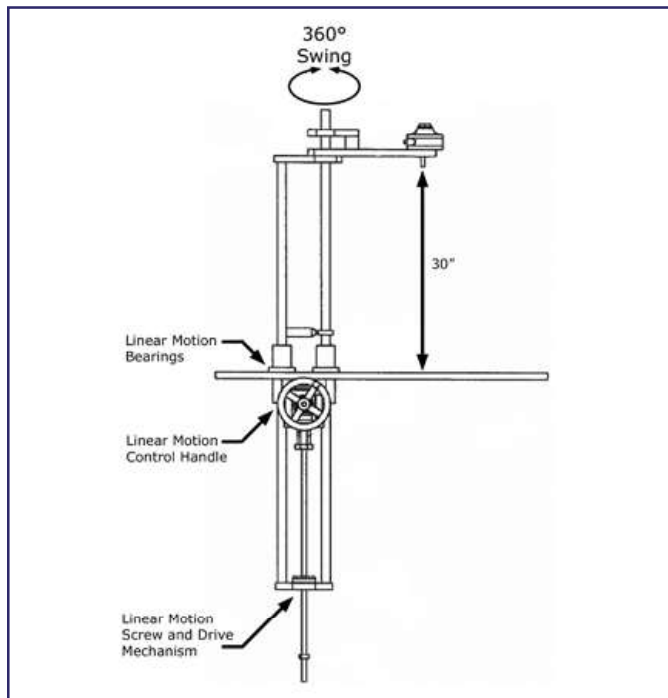
Coupling is constructed from a heavy gauge aluminum and is epoxy coated. The packing material is a 70 durometer silicone cord. The 15 and 25 sizes are phonolic plastic. Coupling is used with the ball and socket and flat ground connections.

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.

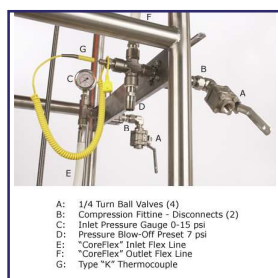
- Baldor Motor, 1/3 hp, 345 RPM, 3-Phase Rated Applications: Conveyors, packaging machines, machine tools and laboratory equipment requiring constant speed
- 5:1 Gear Reducer, smooth torque transmission, 55 lbs. TEFC
- Output shaft is 3/4" diameter
- NEMA 12 Junction Box, 14 gauge welded steel, oil resistant 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 (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)
- 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 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**

<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



**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

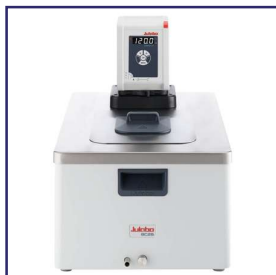


**JULABO
CORIO™,
CP-BC12**



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**



**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



**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





**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

Power Options	Additional Options	CODE	Price
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





**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



**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



**JULABO
DYNEO™,
DD-BC12**

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

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**

Power Options	Additional Options	CODE	Price
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).



**JULABO
HIGHTECH,
FP52-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	0.1 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

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

Power Options

230 V / 3 Ph. / 60 Hz, 400 V / 3 Ph. / 50 Hz
FP55-SL-N150

CODE

JB-9352755.16.N 39,253.00
JB-9352755.16.N150 42,994.00

Price





**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 °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	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



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- 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



**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

Model	CODE	Price
A80	JB-9420852.16	73,328.00
A80t	JB-9420852.16.T	79,238.00





**JULABO
PRESTO®, W40**

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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.



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- 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**

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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.

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- Wide working temperature ranges without changing fluids
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- 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





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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

<u>Power Options</u>	<u>CODE</u>	<u>Price</u>
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.

<u>CODE</u>	<u>Price</u>
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

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



**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

**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

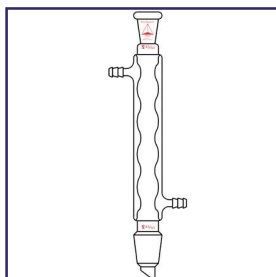
- MICROPROCESSOR technology with PID temperature control
- Bright MULTI-DISPLAY (LED)
- Seamless, splash-proof keypad
- Splash-proof mains switch
- Electronic timer for setting the running time (0:01 to 9:59 h:min)
- On-line communication via built-in RS232 interface
- Early warning system with high 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

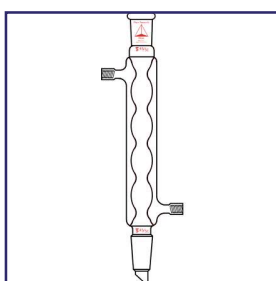




PRG-1900
ALLIHN

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

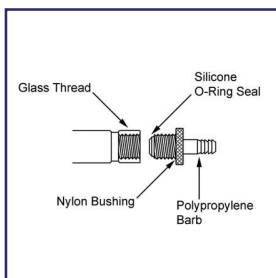
Jacket Length mm	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
200	-01	107.65	-02	111.82	—	—
250	-03	112.45	-04	116.85	—	—
300	-05	119.57	-06	124.01	-23	367.12
400	-07	124.01	-08	128.41	-24	427.27
500	-09	138.72	-10	140.55	-25	487.42
600	-11	147.91	-12	149.82	-26	549.13



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.

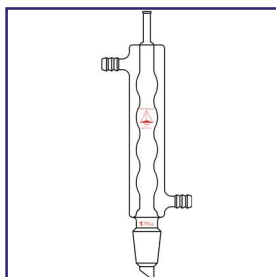
Jacket Length mm	24/40 Joint		29/42 Joint		45/50 Joint	
	CODE	Price	CODE	Price	CODE	Price
200	-01	127.64	-02	131.70	—	—
250	-03	132.32	-04	136.59	—	—
300	-05	140.03	-06	143.55	-23	390.25
400	-07	143.55	-08	147.81	-24	450.40
500	-09	157.82	-10	159.57	-25	510.57
600	-11	166.73	-12	168.60	-26	572.27



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

Flow rate @10lbs. H₂O

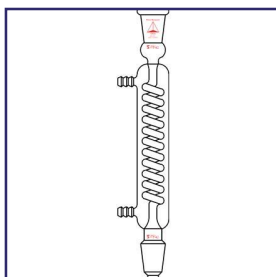
Thread Size	Fits Tube I.D.	Barb I.D.	Nominal Flow Rate Gal./Min.	CODE	Price
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"	.750"	53.3	-07	47.72



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

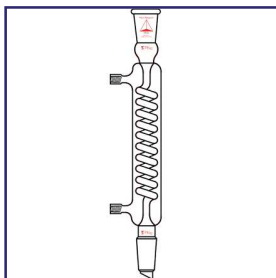
PRG-1905
ALLIHN, CHIMNEY
TOP



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

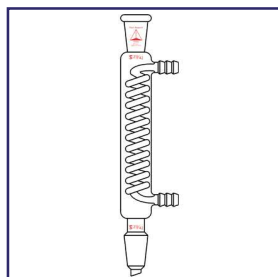


Graham condenser is fitted with detachable hose barbs. The polypropylene hose barb couples to the condenser using a #11 internal thread. It is a safer and easier means for connecting and disconnecting hosing. Hose barbs fit 3/8" I.D. hose.

<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

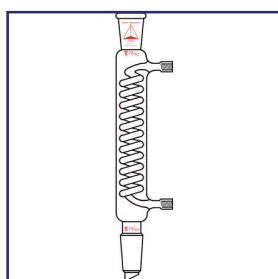




**PRG-1945
COIL**

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.

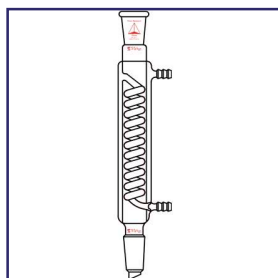
Jacket Length mm	\$ 24/40 Joint		\$ 29/42 Joint	
	CODE	Price	CODE	Price
200	-01	184.65	-02	191.14
300	-03	208.12	-04	214.39
400	-05	219.80	-06	226.24
500	-07	231.43	-08	237.89



**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

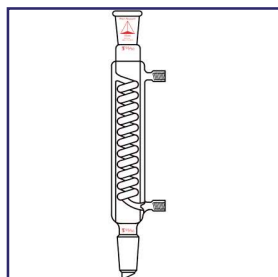


**PRG-1947
COIL, JACKETED**

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

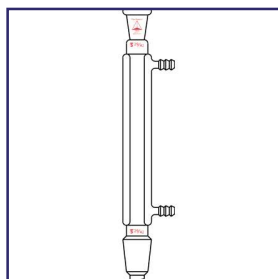




Jacketed coil condenser is fitted with detachable hose barbs. The polypropylene hose barbs couple to the condenser with internal threads. The 24/40 and 29/42 condenser have a #11 thread and fit 3/8" I.D. hose. The 45/50 and 55/50 have a #15 thread for 1/2" I.D. hose.

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

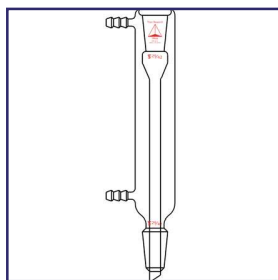
PRG-1948
COIL, JACKETED, DE-
TACHABLE HOSE
BARB



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

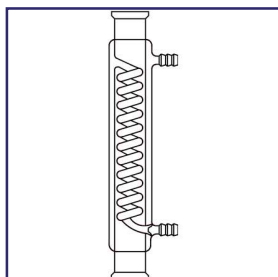


Both top outer and lower drip joint are the same size. The circulatory jacket is full length of condenser. Serrated barbs fit 3/8" I.D. tube.

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

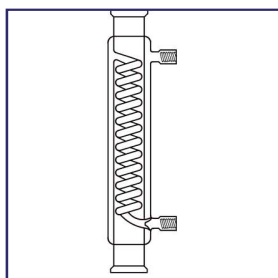




The double jacketed coil condenser has beaded pressure pipe connections. Beaded ends are compatible with beaded process pipe fittings. The water ports are 14mm hose barb measured at the middle serration.

<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

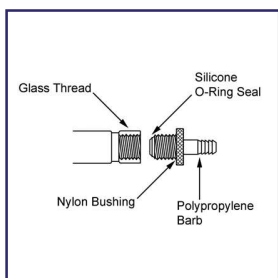
PRG-7400
JACKETED COIL,
BEADED PIPE



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.

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

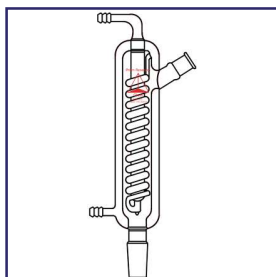


Flow rate @10lbs. H₂O

<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

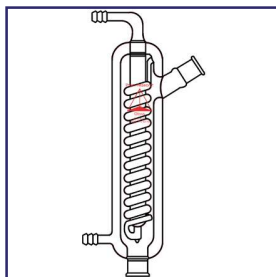
PRG-220
DETACHABLE HOSE
CONNECTOR, INTER-
NAL THREAD





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

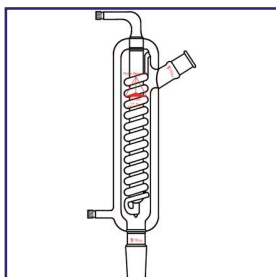
500	45/50	29/42	-21	1,066.98
600	45/50	29/42	-22	1,127.69
700	45/50	29/42	-23	1,183.20

<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

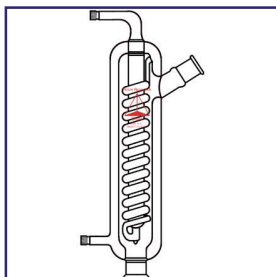
<u>Jacket Length mm</u>	<u>B.P. Lower Joint</u>	<u>B.P. Upper Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	1.0"	-41	1,119.04
600	1.5"	1.0"	-42	1,184.96
700	1.5"	1.0"	-43	1,250.88
500	2.0"	1.5"	-51	1,231.81
600	2.0"	1.5"	-52	1,299.47
700	2.0"	1.5"	-53	1,370.59





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.

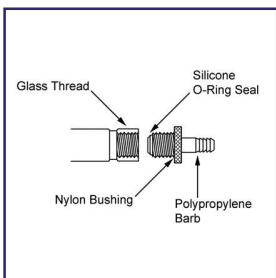
Jacket Length mm	Lower Joint	Upper Joint	CODE	Price
500	24/40	24/40	-01	1,011.48
600	24/40	24/40	-02	1,027.08
700	24/40	24/40	-03	1,040.94
500	29/42	24/40	-11	1,027.08
600	29/42	24/40	-12	1,051.37
700	29/42	24/40	-13	1,075.66
500	45/50	29/42	-21	1,092.99
600	45/50	29/42	-22	1,153.74
700	45/50	29/42	-23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



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

PRG-7415 HIGH SPEED, DE- TACHABLE HOSE BARBS

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

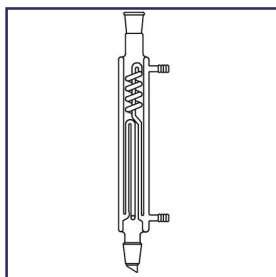


Flow rate @10lbs. H₂O

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

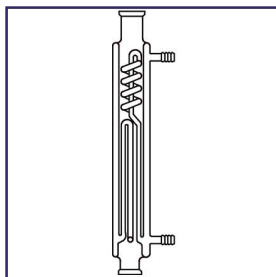
PRG-220 DETACHABLE HOSE CONNECTOR, INTER- NAL THREAD





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
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

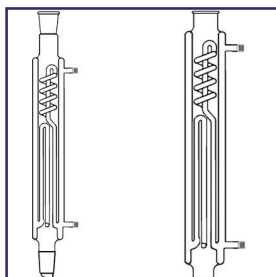
<u>Jacket Length mm</u>	<u>B.P. Joint</u>	<u>CODE</u>	<u>Price</u>
500	1.5"	-31	1,110.33
600	1.5"	-32	1,184.96
750	1.5"	-33	1,278.64
1,000	1.5"	-34	1,535.40

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
1,000	2.0"	-44	1,578.79



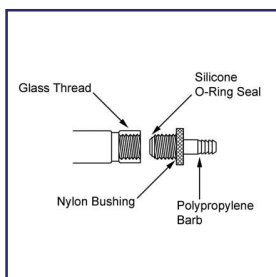

PRG-7425
**PILOT PLANT, LARGE
CAPACITY, DETACH-
ABLE HOSE BARBS**

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
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

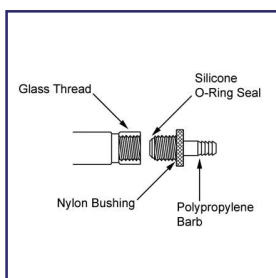
<u>Thread Size</u>	<u>Fits Tube I.D.</u>	<u>Barb I.D.</u>	<u>Nominal Flow Rate Gal./Min.</u>	<u>CODE</u>	<u>Price</u>
#7	1/4"	.125"	1.5	-01	13.25
#11	1/4"	.125"	1.5	-02	21.59
#11	3/8"	.187"	3.3	-03	21.59
#15	1/4"	.125"	1.5	-04	23.84
#15	1/2"	.375"	13.3	-05	24.73
#25	3/4"	.500"	23.6	-06	46.44
#25	1.0"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

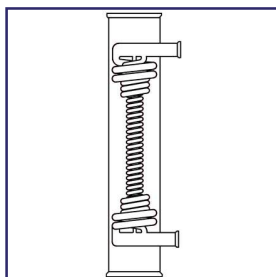
Overall Height	Coil Length	Cooling Surface	Pipe Connection	CODE	Price
18"	12"	760	1.5"	-01	1,844.42
18"	12"	760	2.0"	-02	1,875.42
18"	12"	766	3.0"	-03	1,906.41
24"	18"	1,150	2.0"	-11	2,286.14
24"	18"	1,150	3.0"	-12	2,309.41
24"	18"	1,150	4.0"	-13	2,340.41


PRG-220

DETACHABLE HOSE CONNECTOR, INTERNAL THREAD

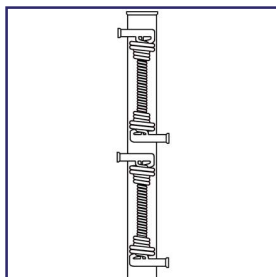
Flow rate @10lbs. H₂O

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.

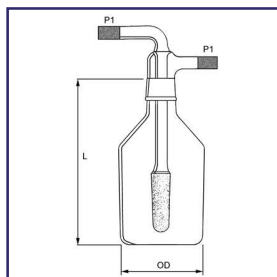
The condenser has beaded pressure pipe fitting tooled on glass piping. The fitting are compatible with pipe fittings on the market today. Conical ends are available upon request.



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-
CENCY, INDUSTRIAL
EQUIPMENT





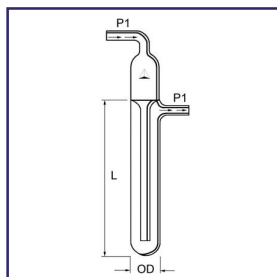
PRG-5980
GAS WASHING BOT-
TLE, LARGE VOLUME

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.

Description	P1 - 1/2"		P1 - 5/8"		P1 - 3/4"	
	CODE	Price	CODE	Price	CODE	Price
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

Description	O.D. mm	L mm	CODE	Price
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

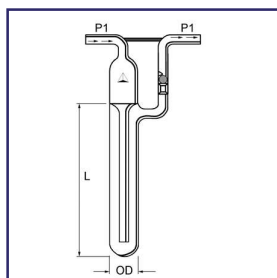




PRG-1365
BUBBLER, MINERAL
OIL

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

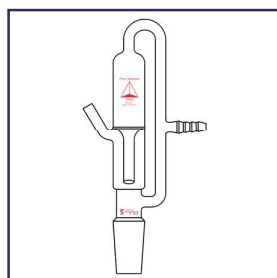
<u>Volume ml</u>	<u>P1 mm</u>	<u>L mm</u>	<u>OD mm</u>	<u>CODE</u>	<u>Price</u>
30	8	100	28	-01	46.21
60	12.7	125	35	-02	64.08



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

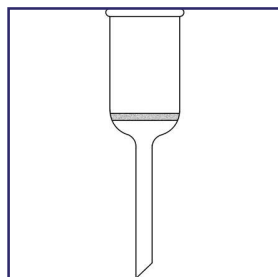


PRG-1370
NITROGEN BUBBLER,
IMPROVED

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





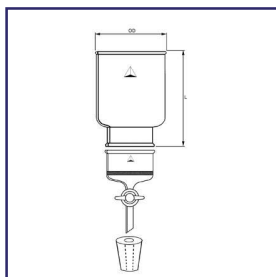
**PRG-3760
BUCHNER FUNNEL**

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
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

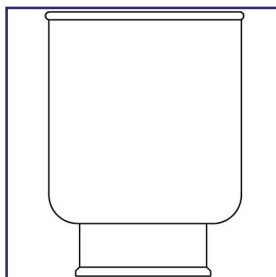




Filtration apparatus is used for large batch volumes. The lower base has a large bore 10mm Teflon® stopcock and connects to the reservoir with a beaded pipe coupling. The base is offered with or without a sealed in fritted disc. An extra coarse frit comes standard with fritted bases. The beaded pipe 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.

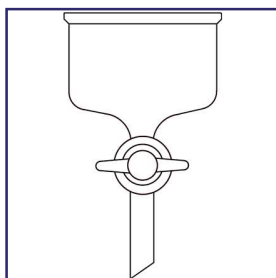
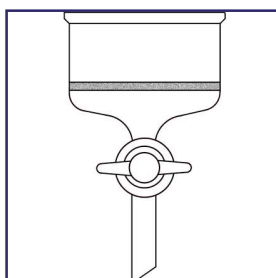
Complete Unit

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



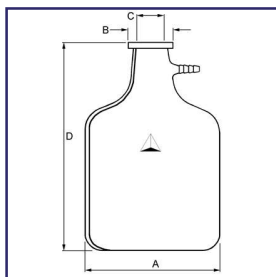
Individual Components

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

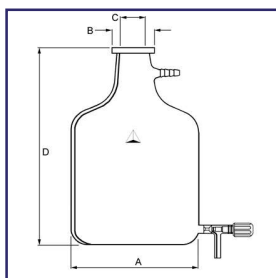




Large capacity bottles have a heavy duty tooled rim top and 1/2" O.D. serrated hose barb side port.

<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

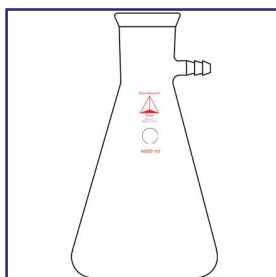
PRG-1510
BOTTLE, CARBOY



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

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
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

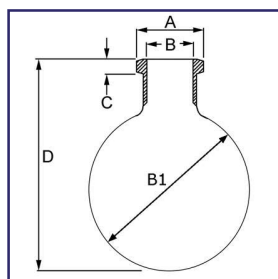


Heavy duty funnels are durable, versatile and available in assorted sizes. Sturdy, polypropylene funnels with ridges to prevent vapor lock. Highly recommended for continuous laboratory work. Steam autoclavable at 121°C.

<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





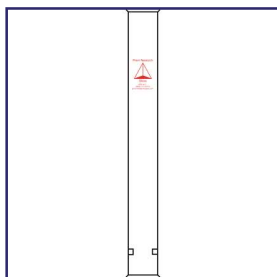
**PRG-2060
FLASK, EVAPORA-
TION, LARGE SCALE,
FLANGED**

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		

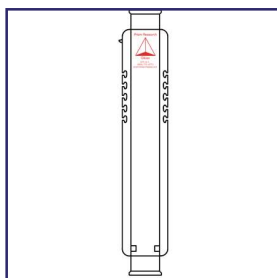


PRG-7310

**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



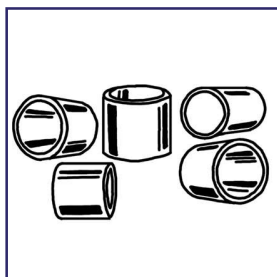
PRG-7314

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

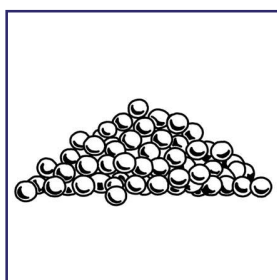




PRG-7315
PACKING RINGS,
RASCHIG

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

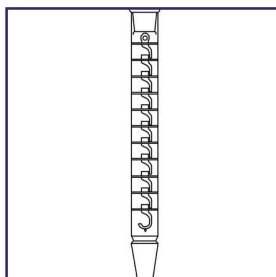


PRG-7316
PACKING BEADS

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



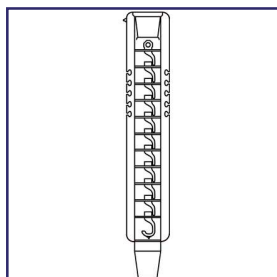


PRG-7318
COLUMN, OLDER-
SHAW, PERFORATED
PLATE, NON-JACK-
ETED

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



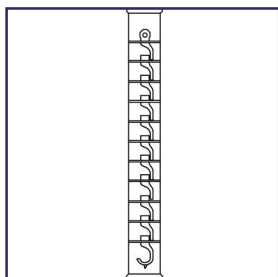


**PRG-7320
COLUMN, OLDER-
SHAW, VACUUM
JACKETED AND SIL-
VERED**

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

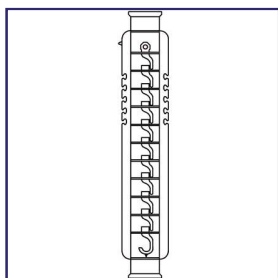




PRG-7322
COLUMN, OLDER-SHAW, PERFORATED PLATE, NON-JACKETED WITH BEADED PIPE CONNECTION

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

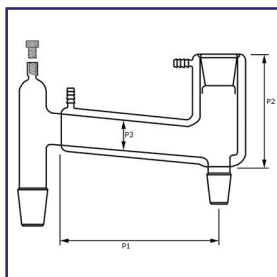


PRG-7324
COLUMN, OLDER-SHAW, VACUUM JACKETED AND SILVERED WITH BEADED PIPE CONNECTION

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

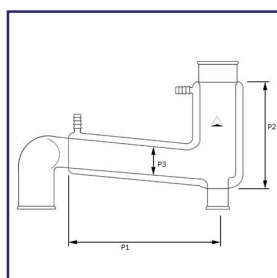




**PRG-7326
HEAD**

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.

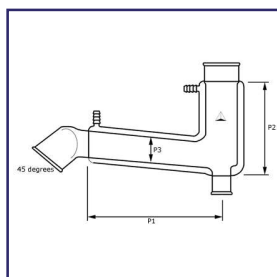
Joint Size	P1 mm	P2 mm	P3 mm	Fixed Hose Barb		Detachable Hose Barb	
				CODE	Price	CODE	Price
24/40	300	150	19	-01	664.00	-11	685.15
29/42	300	150	24	-02	696.53	-12	717.70
45/50	400	200	35	-03	774.65	-13	795.80



**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

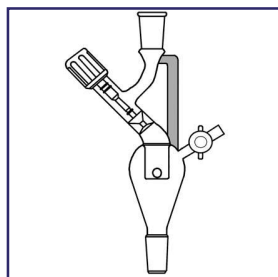


**PRG-7330
HEAD, MODIFIED
PILOT PLANT**

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

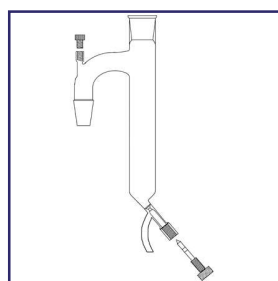




PRG-7332
ADAPTER, ISOLATION

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.

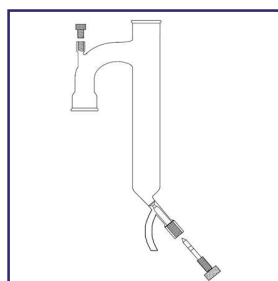
<u>Top Connection</u>	<u>Lower Joint Size</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
24/40	24/40	0-12	-01	318.79
29/42	29/42	0-12	-02	326.54
45/50	45/50	0-20	-03	520.11
1.0" b.p.	24/40	0-12	-11	330.11
1.0" b.p.	29/42	0-12	-12	339.05
1.0" b.p.	45/50	0-20	-13	529.07



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

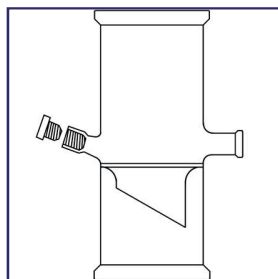
<u>Joint Size</u>	<u>Volume ml</u>	<u>Valve Size mm</u>	<u>CODE</u>	<u>Price</u>
24/40	250	0-6	-01	249.48
24/40	500	0-6	-02	265.63
29/42	250	0-6	-03	263.47
29/42	500	0-6	-04	274.97
45/50	500	0-12	-05	404.17
45/50	1,000	0-12	-06	428.32



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**

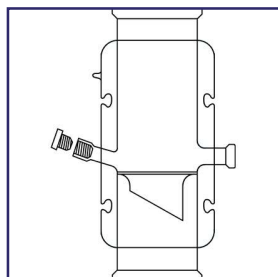


PRG-7340
**FEED COLUMN IN-
SERT**

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

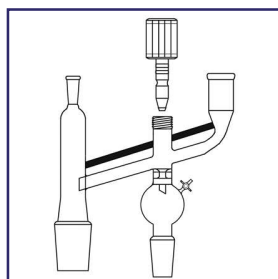




PRG-7342
FEED COLUMN IN-
SERT, VACUUM JACK-
ETED AND SILVERED

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.

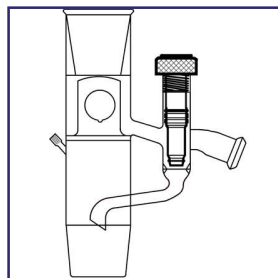
<u>Beaded Pipe</u>	<u>Approx. Height mm</u>	<u>CODE</u>	<u>Price</u>
1.0"	150	-01	1,082.23
1.5"	150	-02	1,135.95
2.0"	200	-03	1,240.10
3.0"	300	-04	1,451.67
4.0"	300	-05	1,521.64



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



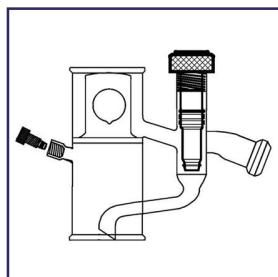
The head is positioned to allow the distillate to flow through the center chimney but the return condensate is diverted to the side valve. With the valve in an open position, condensate is refluxed back to the system. In a closed position, the condensate flows around the valve stem and out of the process. 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

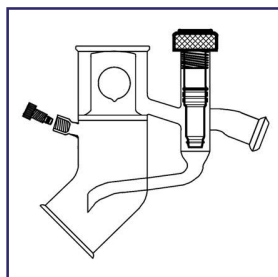
Beaded Pipe Connection

<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

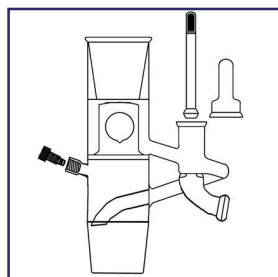




PRG-7352
REFLUX / DIVIDER
HEAD, 45° ANGLE

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



PRG-7354
REFLUX / DIVIDER
HEAD

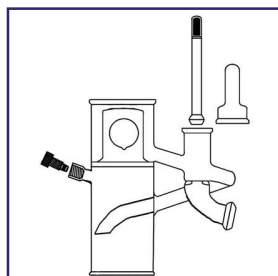
The distillation head uses a magnetic plunger valve and is activated by an electro-magnetic solenoid coil. With a reflux timer the plunger is activated automatically and with consistent repeatability. The apparatus is offered with standard tapered joints or beaded pipe connections. The #7 internal thread accepts a 6-7 mm diameter thermometer.

Tapered Joint Connection

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-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

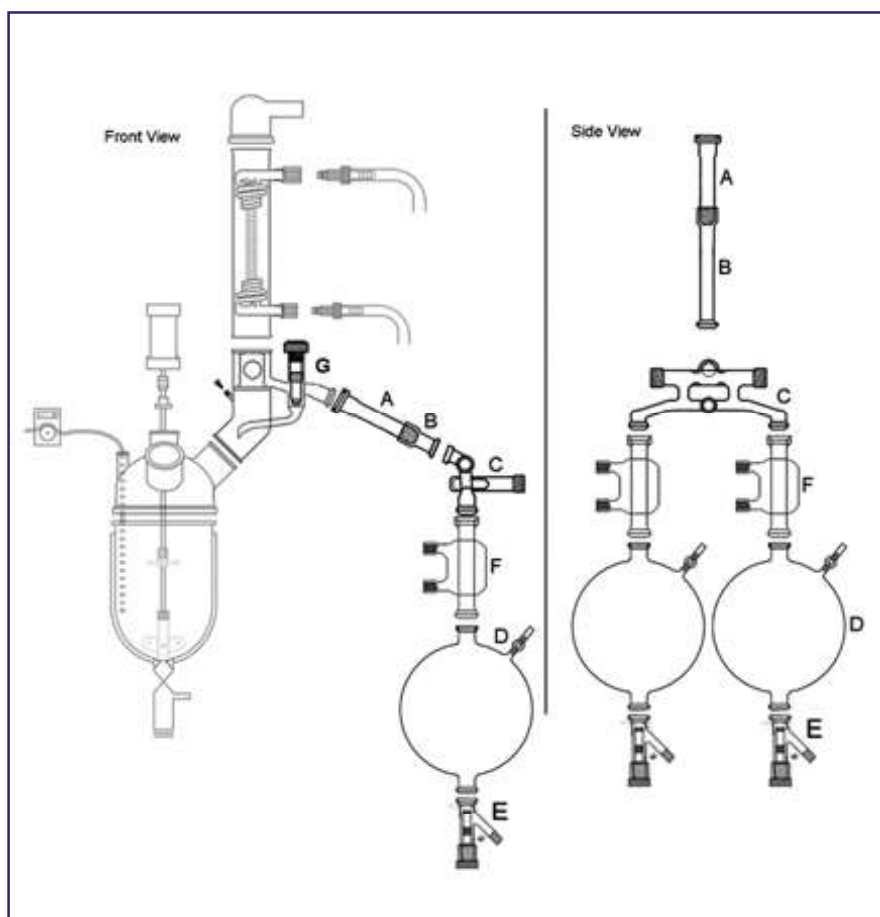
PRG-7360
ELECTRO-MAGNET
COIL



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.

<u>CODE</u>	<u>Price</u>
-01	842.40

PRG-7362
TIMER, INTERVALOM-
ETER

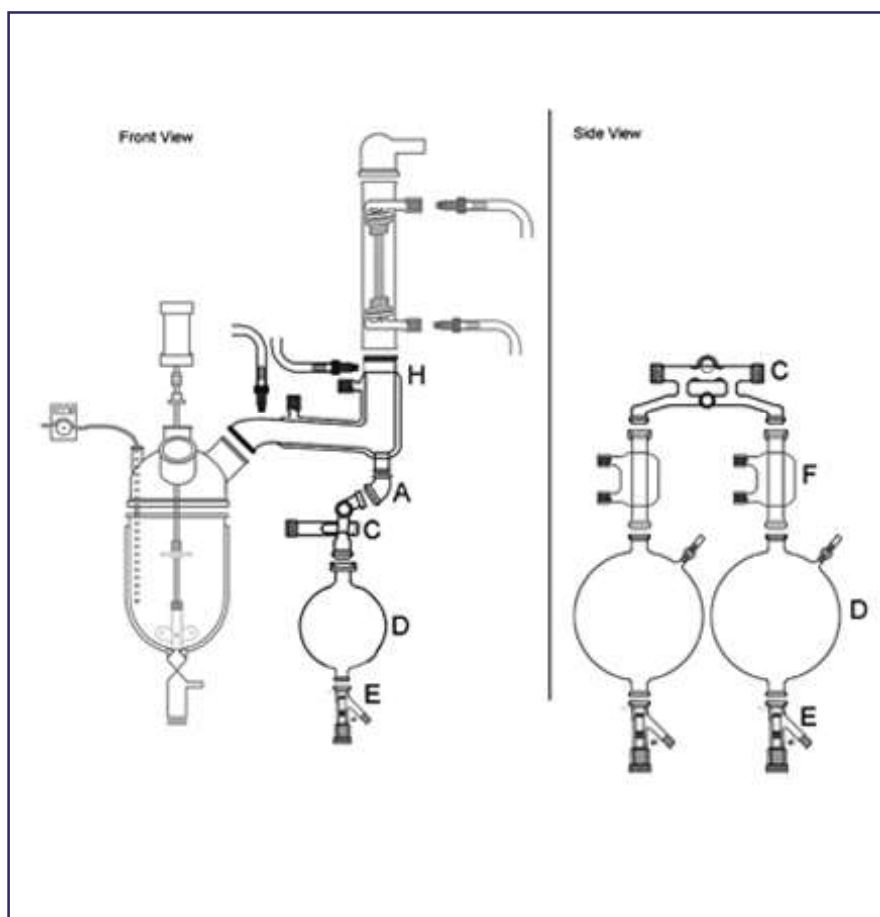


PRG-2438 DISTILLATION SYSTEM

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	



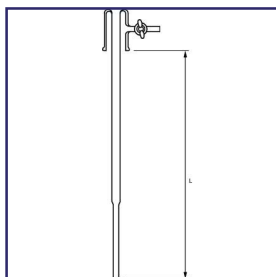


PRG-2440 DISTILLATION SYSTEM

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	

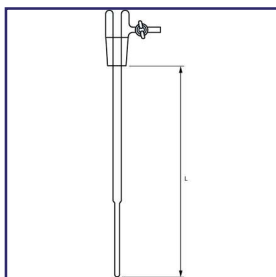




PRG-7100
THERMOMETER IM-
MERSION WELL

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.

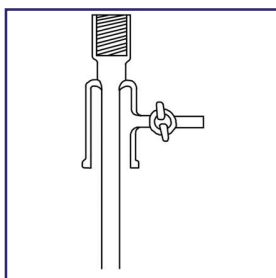
<u>CODE + "L"</u>	<u>Price</u>
PRG-7100-L	240.85



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

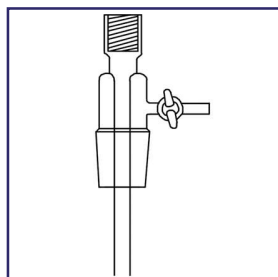


PRG-7105
ADAPTER, THERMO-
COUPLE

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

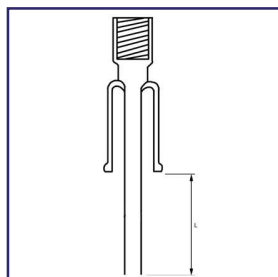




PRG-7107
ADAPTER, THERMO-
COUPLE, TAPERED
JOINT

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.

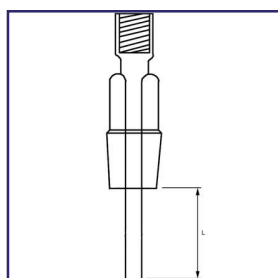
Accepts Tube O.D. mm	Thread Size	CODE	Price
6-7	#7	-01	208.30
9-10.5	#11	-02	214.81
12.5-14	#15	-03	219.70
16-17	#18	-04	226.21
6-7	#7	-11	221.35
9-10.5	#11	-12	232.72
12.5-14	#15	-13	242.48
16-17	#18	-14	248.99



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.

Accepts Tube O.D. mm	Thread Size	CODE + "L"	Price
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

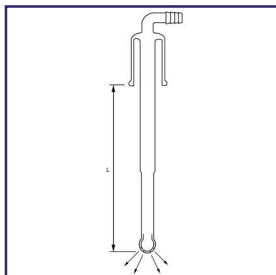


PRG-7115
DIP TUBE

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.

Accepts Tube O.D. mm	Thread Size	Joint Size	CODE + "L"	Price
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

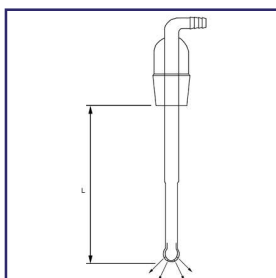




PRG-7120
SPARGE TUBE, BULB

Sparger is designed to introduce gases or liquids beneath the reaction surface. 1mm holes on the bottom half of the bulb give even dispersment 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.

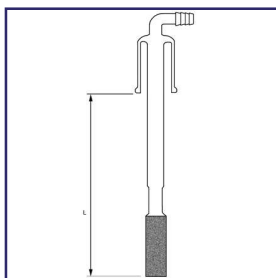
CODE + "L"	Price
-01-L	284.79



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 dispersment 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.

Joint Size	CODE + "L"	Price
29/42	-01-L	262.01
45/50	-02-L	291.31



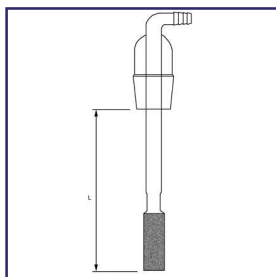
PRG-7130
SPARGE TUBE,
FRITTED, BEADED
PIPE

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

CODE + "L"	Price
-L	286.41



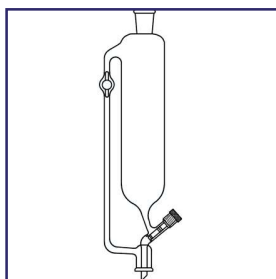


PRG-7135
SPARGE TUBE,
FRITTED, TAPER
JOINT

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

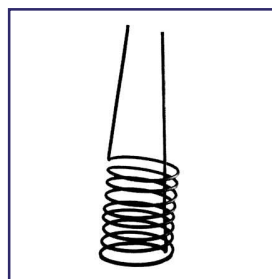
Joint Size	CODE + "L"	Price
29/42	-01-L	271.77
45/50	-02-L	284.79



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.

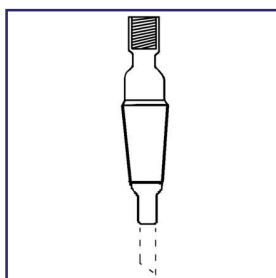
Capacity ml	CODE	Price
1,000	-01	345.02
2,000	-02	416.62
3,000	-03	501.26
5,000	-04	690.04



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.

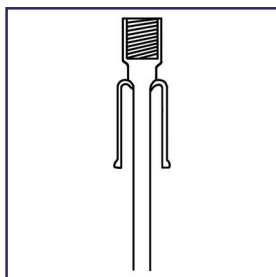
Reactor Capacity L	CODE	Price
20	-01	1,422.38
30	-02	1,672.42
50	-03	1,682.77
75	-04	1,871.55
100	-05	2,180.76



PRG-7155
ADAPTER, FOR
COOLING / HEATING,
COIL

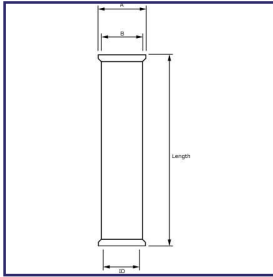
The coil adapter has a internal #15 thread with a compression O-Ring to connect to the 1/2" diameter coil. A variety of joint sizes and beaded pipe fittings are offered to suit your needs. Other sizes are available upon request.

Joint Size	CODE	Price
24/40	-01	54.36
29/42	-02	61.45
34/45	-03	65.01
45/50	-04	68.56



Beaded Pipe	CODE	Price
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						

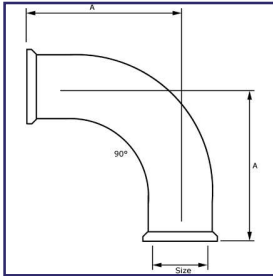
<u>3" I.D.</u>	<u>A=3 7/16"</u>	<u>B=3 11/16"</u>	<u>4" I.D.</u>	<u>A=4 9/16"</u>	<u>B=4 7/8"</u>	<u>6" I.D.</u>	<u>A=6 5/8"</u>	<u>B=7 1/8"</u>
<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
4"	-71	166.41	6"	-85	301.75	6"	-98	492.52
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						



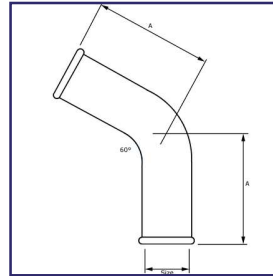


PRG-8002 SWEEP ELBOW

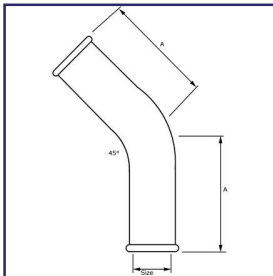
Beaded Pipe, Sweep Elbow



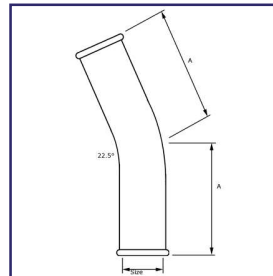
90°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-01	51.03
3/4"	2 1/2"	-02	60.12
1"	2 3/4"	-03	79.55
1 1/2"	5"	-04	83.78
2"	6"	-05	95.78
3"	7"	-06	177.26
4"	10"	-07	299.83
6"	12"	-08	780.16



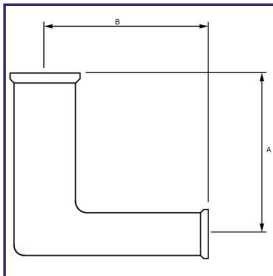
60°			
Size	A=Length	CODE	Price
1/2"	2 1/4"	-10	51.03
3/4"	2 1/2"	-11	60.12
1"	2 3/4"	-12	81.48
1 1/2"	5"	-13	83.78
2"	6"	-14	112.46
3"	7"	-15	177.26
4"	10"	-16	299.83
6"	12"	-17	780.16



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

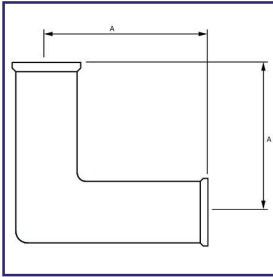


Beaded Pipe, Reducer Elbow

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

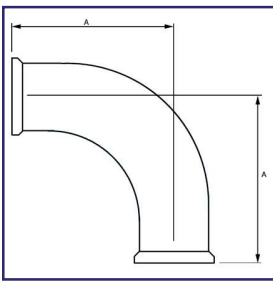




Beaded Pipe, 90° Mitered Elbow

<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

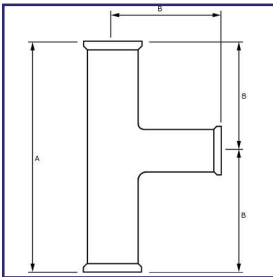
PRG-8006
90° MITERED ELBOW



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

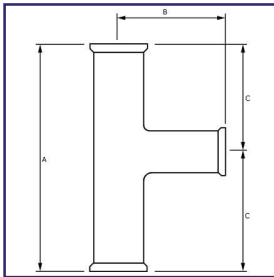


Beaded Pipe, Straight "T"

<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"

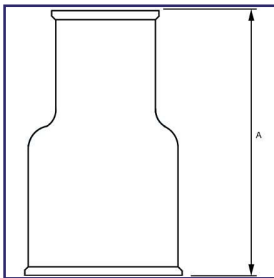




PRG-8012
REDUCING "T"
(BRANCH)

Beaded Pipe, 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

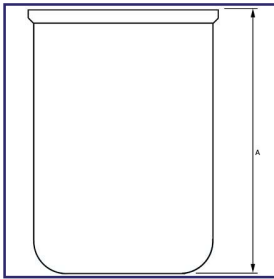


PRG-8014
REDUCER, STRAIGHT

Beaded Pipe, 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

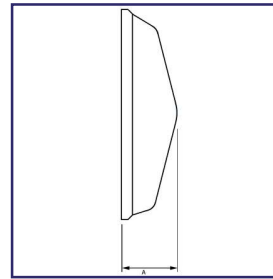




PRG-8016
END CAP

Beaded Pipe, End Cap

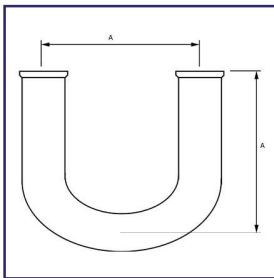
Size	A	CODE	Price
1/2"	2"	-01	28.29
3/4"	2"	-02	30.02
1"	2"	-03	50.28
1 1/2"	3"	-04	62.42
2"	4"	-05	73.93
3"	4 3/4"	-06	114.52
4"	6"	-07	212.89
6"	7"	-08	248.69



PRG-8018
END PLUG

Beaded Pipe, End Plug

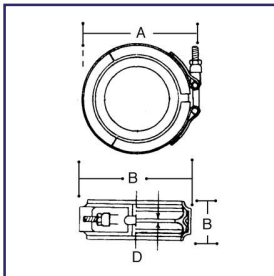
Size	A	CODE	Price
1 1/2"	7/8"	-01	30.53
2"	1"	-02	34.93
3"	1 1/8"	-03	46.86
4"	1 1/4"	-04	95.39
6"	1 1/2"	-05	130.75



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

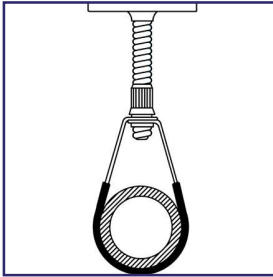


PRG-8022
COUPLINGS, BEAD TO BEAD

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

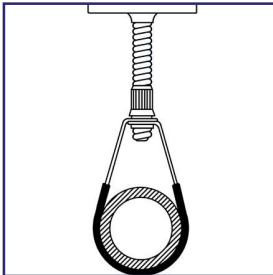




PRG-8024
PADDED PIPE
HANGER, WITH
MOUNTING FOOT

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

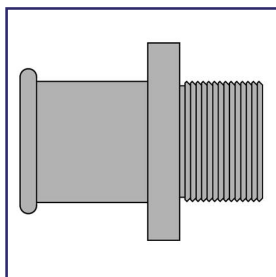


PRG-8026
PADDED PIPE
HANGER, WITHOUT
MOUNTING FOOT

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

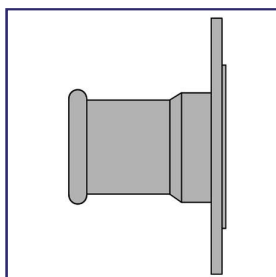




Both beaded pipe and thread are the same nominal size. Other sizes are available upon request.

<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

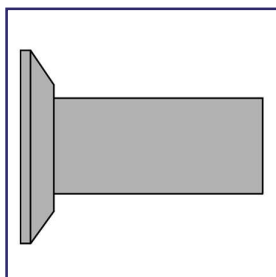
PRG-8027
BEADED PIPE TO
MALE NPT THREAD
(316 S.S.)



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

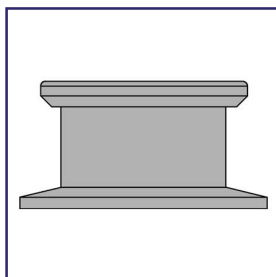
PRG-8028
BEADED PIPE TO
ANSI FLANGE (316
S.S.)



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

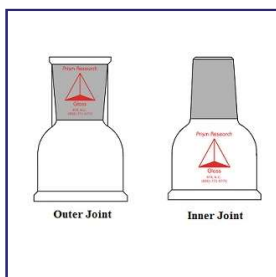
PRG-8030
BEADED PIPE TO
TUBE STUD (316 S.S.)



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

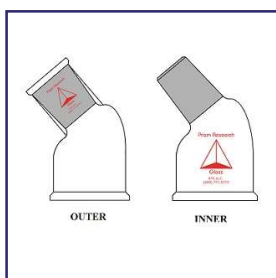
PRG-8032
BEADED PIPE TO NW
OR SANITARY FIT-
TING (316 S.S.)



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

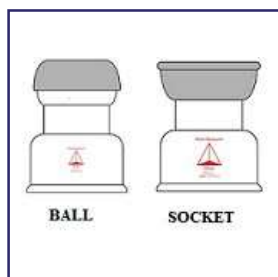


Adapter, Tapered Joint To Beaded Pipe, 45° Angle

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





Adapter, Tapered Joint To Beaded Pipe, Straight

PRG-8046

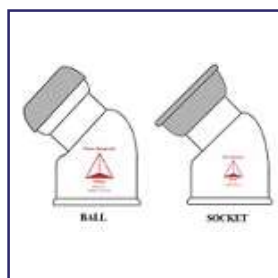
SPHERICAL JOINT TO
BEADED PIPE,
STRAIGHT

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



Adapter, Tapered Joint To Beaded Pipe, 45° Angle

PRG-8048

SPHERICAL JOINT TO
BEADED PIPE, 45°
ANGLE

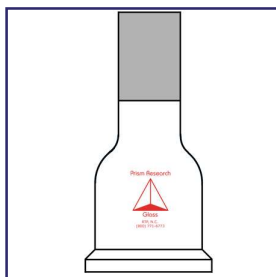
Socket Joint

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

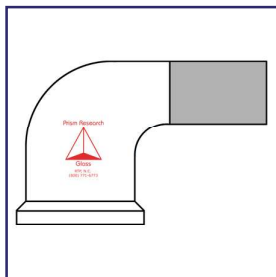
B.P. Size	ø 28/15 CODE	Price	ø 35/25 CODE	Price	ø 50/30 CODE	Price	ø 65/40 CODE	Price	ø 75/50 CODE	Price	ø 102/75 CODE	Price
1.0"	-41	53.42	-42	57.37	-43	95.54						
1.5"	-44	58.80	-45	61.25	-46	103.19	-53	127.73	-54	147.69	-55	166.18
2.0"	-47	67.29	-48	65.22	-49	110.28	-56	134.29	-57	155.21	-58	173.68
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



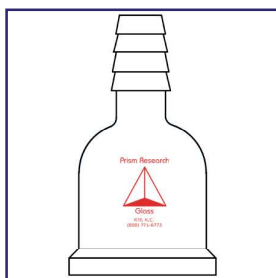


Transitions from a beaded pipe fitting to a heavy wall tube stud. Tube stud ends are nominal standard O.D. sizes to mate with compression fittings. Ends are etched for increased frictional grip. Offered straight or at 90°.

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

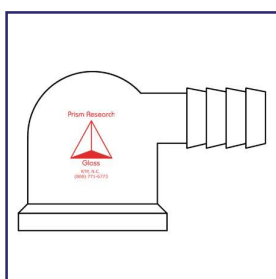


PRG-7451
ADAPTER, BEADED
PIPE TO TUBE STUD



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°

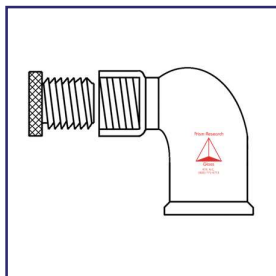
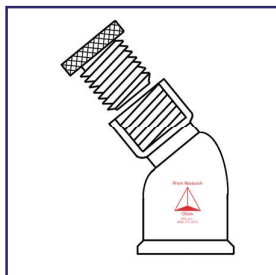
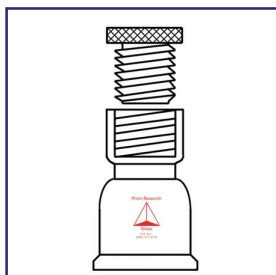
B.P. Size	#7		#11		#15		#18	
	CODE	Price	CODE	Price	CODE	Price	CODE	Price
1.0"	-40	52.02	-41	56.77	-42	68.43	-43	92.56
1.5"	-44	56.77	-45	63.36	-46	71.90	-47	98.13
2.0"	-48	65.94	-49	68.26	-50	79.64	-51	101.94
3.0"	-52	91.50	-53	92.56	-54	104.50	-55	120.71

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



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.

CW-PC704

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

- 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	152.25
100 ml	80	-02	169.05
250 ml	180	-03	186.90
500 ml	270	-04	208.95
1,000 ml	380	-05	234.15
2,000 ml	500	-06	256.20
3,000 ml	500	-07	284.55
5,000 ml	600	-08	346.50
12,000 ml	2-650	-09	703.50



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	182.70
Insulating	300 ml	86 mm	140	-02	182.70
Insulating	500 ml	101 mm	140	-03	197.40
Insulating	1,000 ml	137 mm	140	-04	220.50
Insulating	2,000 ml	170 mm	200	-05	235.20
Insulating	3,000 ml	183 mm	200	-06	211.84
Insulating	5,000 ml	220 mm	300	-07	323.40
Insulating	12,000 ml	293 mm	590	-08	495.60
Insulating	22,000 ml	347 mm	650	-09	562.80
Insulating	50,000 ml	456 mm	1,000	-10	910.35
Insulating	72,000 ml	522 mm	1,000	-11	1,064.70
Heating-115v	250 ml	83 mm	140	-21	207.90
Heating-115v	300 ml	86 mm	140	-22	243.60
Heating-115v	500 ml	101 mm	140	-23	257.25
Heating-115v	1,000 ml	137 mm	140	-24	286.65
Heating-115v	2,000 ml	170 mm	200	-25	297.15
Heating-115v	3,000 ml	183 mm	200	-26	327.60
Heating-115v	5,000 ml	220 mm	300	-27	414.75
Heating-115v	12,000 ml	293 mm	590	-28	691.95
Heating-115v	22,000 ml	347 mm	650	-29	746.55
Heating-115v	50,000 ml	456 mm	1,000	-30	1,159.20
Heating-230v	250 ml	83 mm	140	-40	257.25
Heating-230v	300 ml	86 mm	140	-41	257.25
Heating-230v	500 ml	101 mm	140	-42	264.60
Heating-230v	1,000 ml	137 mm	140	-43	317.10
Heating-230v	2,000 ml	170 mm	200	-44	318.15
Heating-230v	3,000 ml	183 mm	200	-45	342.30
Heating-230v	5,000 ml	220 mm	300	-46	426.30
Heating-230v	12,000 ml	293 mm	590	-47	706.65
Heating-230v	22,000 ml	347 mm	650	-48	762.30
Heating-230v	50,000 ml	456 mm	1,000	-49	1,176.00
Heating-230v	72,000 ml	522 mm	1,000	-50	1,336.65





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	319.20
100 ml	None	80	-02	322.35
250 ml	None	180	-03	331.80
500 ml	None	270	-04	380.10
1,000 ml	140	380	-05	636.30
2,000 ml	200	500	-06	665.70
3,000 ml	200	500	-07	699.30
5,000 ml	300	600	-08	830.55
12,000 ml	590	2-650	-09	1,500.45



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	218.40
12,000 ml	14"	-02	224.70



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.

<u>Flask Size</u>	<u>Wattage</u>	<u>Voltage</u>	<u>CODE</u>	<u>Price</u>
50 ml	60	115	-01	231.00
100 ml	80	115	-02	231.00
125 ml	80	115	-03	231.00
200 ml	100	115	-04	231.00
250 ml	180	115	-05	236.25
300 ml	180	115	-06	253.05
500 ml	270	115	-07	271.95
1,000 ml	380	115	-08	289.80
2,000 ml	500	115	-09	302.40
3,000 ml	500	115	-10	360.15
5,000 ml	600	115	-11	446.25
12,000 ml	2-650	115	-12	834.75
22,000 ml	2-770	115	-13	961.80
50,000 ml	3-1,000	115	-14	1,524.60
50,000 ml	3-1,000	230	-15	1,538.25
72,000 ml	2-2,000	230	-16	1,737.75



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.

<u>Flask Size</u>	<u>Complete</u>		<u>Mantle Only</u>	
	<u>CODE</u>	<u>Price</u>	<u>CODE</u>	<u>Price</u>
250 ml	-01	571.00	-11	520.80
500 ml	-02	588.00	-12	534.45
1,000 ml	-03	615.00	-13	560.70
2,000 ml	-04	1,294.00	-14	567.00
3,000 ml	-05	1,305.00	-15	578.55
5,000 ml	-06	1,397.00	-16	605.35



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.

<u>Flask Size</u>	<u>Wattage</u>	<u>Voltage</u>	<u>CODE</u>	<u>Price</u>
50 ml	60	115	-01	263.55
100 ml	80	115	-02	263.55
125 ml	80	115	-03	263.55
250 ml	180	115	-04	248.75
500 ml	270	115	-05	274.73
1,000 ml	380	115	-06	297.95
2,000 ml	500	115	-07	318.47
3,000 ml	500	115	-08	385.43
5,000 ml	600	115	-09	464.71
12,000 ml	2-650	115	-10	854.25
22,000 ml	2-770	115	-11	970.42
50,000 ml	3-1,000	115	-12	1,530.80
72,000 ml	2-2,000	230	-13	1,708.48



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	102.51	—	—	—
5,000 ml	14"	-02	106.62	—	—	—
12,000 ml	14"	-03	135.31	24-36"	-13	379.97
22,000 ml	14"	-04	177.69	24-36"	-14	400.46
50,000 ml	16"	-05	177.69	24-36"	-15	478.38
72,000 ml	18"	-06	225.52	24-36"	-16	492.03



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	72.43
250-500 ml	-02	77.91
1,000 ml	-03	80.64
2,000-3,000 ml	-04	86.10
5,000 ml	-05	88.85



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	205.02
100 ml	100	-02	218.68
150 ml	100	-03	222.78
250 ml	140	-04	226.88
400 ml	240	-05	236.46
600 ml	325	-06	267.89
800 ml	350	-07	274.73
1,000 ml	430	-08	308.89
2,000 ml	550	-09	326.66
3,000 ml	630	-10	337.59
4,000 ml	710	-11	363.57





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	254.22
800 ml	350	-02	258.32
1,000 ml	430	-03	267.89
2,000 ml	550	-04	302.06
3,000 ml	630	-05	323.93
4,000 ml	710	-06	340.33



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	328.03
1,000 ml	4 1/4"	5 1/4"	335	-02	340.33
2,000 ml	5 1/2"	6"	470	-03	354.00
3,000 ml	5 1/2"	9"	550	-04	377.23
4,000 ml	5 1/2"	11"	750	-05	386.79



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	306.16
1,000 ml	4 1/4"	5 1/4"	335	-02	319.81
2,000 ml	5 1/2"	6"	470	-03	328.03
3,000 ml	5 1/2"	9"	550	-04	369.04
4,000 ml	5 1/2"	11"	750	-05	401.83





**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	88.85
24 gauge iron-constantan, 1/8" O.D. 6" Teflon® coated stainless steel probe. 48" long Teflon® insulated duplex lead.		0-260° C	-02	143.51
<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	47.83
24 gauge iron-constantan, 36" long, fiberglass-insulated duplex lead wire with welded tip.		0-480° C	-04	36.90



**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	348.52



**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	191.35
PL-124	240	10	4 x 4 x 3 3/8" H	-02	300.69



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.

Number	Volts	Amps	Case Dimensions	CODE	Price
PL-1202	120	7	8 x 6 x 3 3/8" H	-01	300.69



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.

Number	Volts	Amps	CODE	Price
PL-312	120	12	-01	199.50
PL-324	240	10	-02	225.52



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.

Number	Volts	Amps	CODE	Price
PL-312	120	12	-01	287.03





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	867.90
PL-624	240	10	-02	990.92



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.

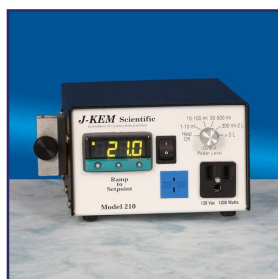
Number	Volts	Amps	CODE	Price
PL-512	120	10	-01	580.88
PL-524	240	5	-02	635.54



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 1,175.00
 JK-260-TIMER-J-S 1,270.00
 JK-260-TIMER-K 1,175.00
 JK-260-TIMER-K-S 1,270.00
 JK-260-TIMER-PT 1,175.00
 JK-260-TIMER-PT-S 1,330.00
 JK-260-TIMER-T 1,175.00
 JK-260-TIMER-T-S 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 1,570.00
 JK-270-J-S 1,720.00
 JK-270-K 1,570.00
 JK-270-K-S 1,720.00
 JK-270-T 1,570.00
 JK-270-T-S 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-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.

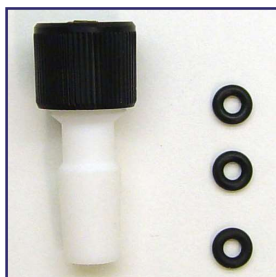
Teflon overcoating is PFA coating over stainless steel probe.

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	1,243.19
12	230	2@650	-21	1,273.31
22	115	2@770	-02	1,419.46
22	230	2@770	-22	1,454.16
50	115	3@1000	-03	2,138.26
50	230	3@1000	-23	2,171.40
72	230	2@2000	-24	2,478.81
100	230	3@1800	-25	4,552.28
200	230	4@2000	-26	4,482.96

<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	2,531.54
315 mm	230	2@650	-41	2,531.54
415 mm	115	2@770	-32	3,006.21
415 mm	230	2@770	-42	3,006.21
486 mm	230	2@2000	-43	5,153.53



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	1,380.31
315 mm	15"	115	2@900	-21	1,838.39
315 mm	30"	—	Insulating	-02	1,838.39
315 mm	30"	115	3@1200	-22	2,448.69
315 mm	40"	—	Insulating	-03	2,272.36
315 mm	40"	115	4@1200	-23	3,036.36
415/457 mm	30"	—	Insulating	-04	2,350.73
415/457 mm	30"	115	5@1050	-24	3,134.31
415/457 mm	40"	—	Insulating	-05	2,790.75
415/457 mm	40"	115	6@1150	-25	3,722.00



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

	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.

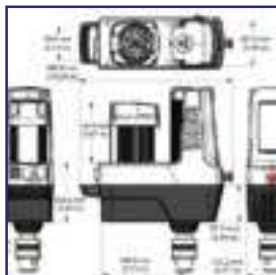
The Hei-TORQUE Value performs every stirring task with minimal noise thanks to the latest engine technology. This overhead stirrer is also very user-friendly in terms of operation and safety. The 2.4 inch display makes it very easy to set the application parameters and control the process (e.g. using 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



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.



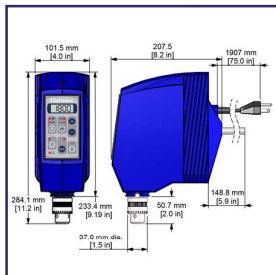
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



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.



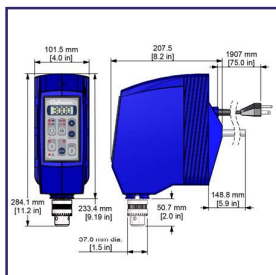
Caframo stirrers are quiet, dependable, maintenance free and ideal for continuous use. Included in each purchase: Overhead stirrer motor, chuck, chuck guard, chuck key, support rod, power cord, manual in four languages (English, French, Spanish and German), calibration certificate and three year warranty.



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.

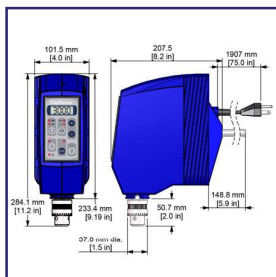


Speed	40-6000 rpm
Volume Maximum	25 L (6.5 US Gallons)
Viscosity Maximum	20 000 mPa·s (20 000 cps)
Torque Maximum	170 N·cm (15 in-lbs = 240 in-oz)
Output Power	150 Watts (1/5 hp)
Speed Display	Yes
Speed – Low Range	40-1200 rpm
Speed – High Range	1200-6000 rpm
Speed Accuracy	± 1 rpm
Torque Display	Yes
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

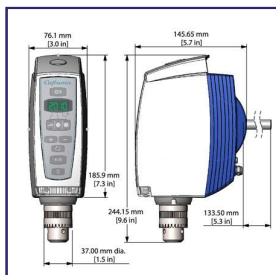
CODE Price
 CLS-BDC6015 1,540.20



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

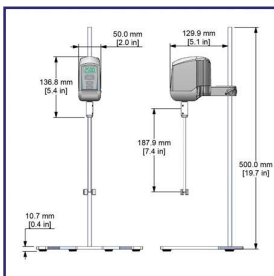
CLS-BDC2002
CAFRAMO LAB SO-
LUTIONS®, OVER-
HEAD STIRRER,
COMPACT DIGITAL,
100-240 VOLT

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

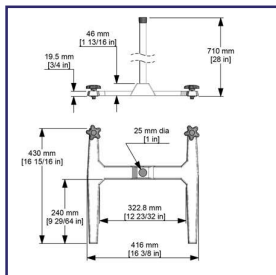
- Brushless DC motor
- Digital display
- Electronic digital control
- Auto Start
- Purchased as a complete package

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

<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.

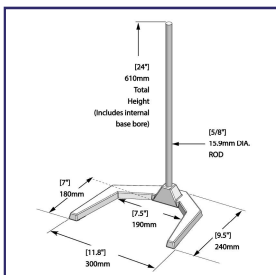
Features

- 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 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 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")

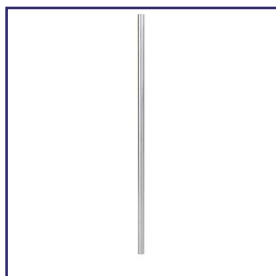
Features

- 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

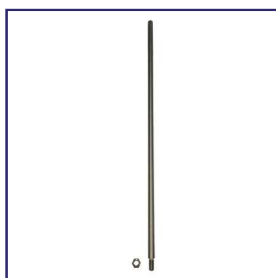
Features

- 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

CODE	Price
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

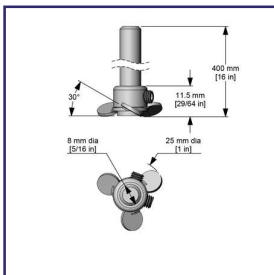
<u>CODE</u>	<u>Price</u>
CLS-13CKEY	25.50





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

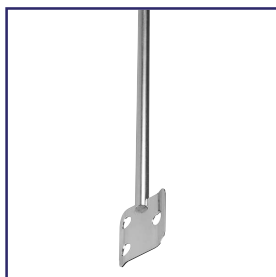
- Electropolished 316L stainless steel
- Pitched blade propeller

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)

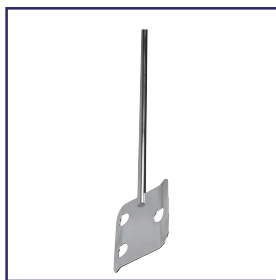
Features

- 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)

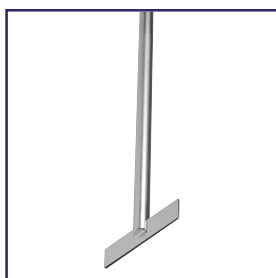
Features

- 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

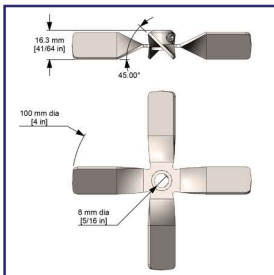
<u>CODE</u>	<u>Price</u>
CLS-A541	41.00





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

CODE	Price
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

CODE	Price
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)

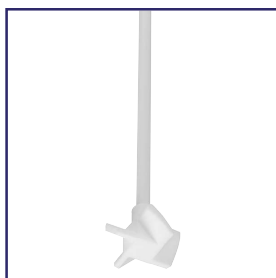
Features

- 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

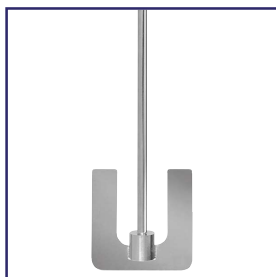
Benefits

- 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 SOLUTIONS®, IMPELLERS & 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)

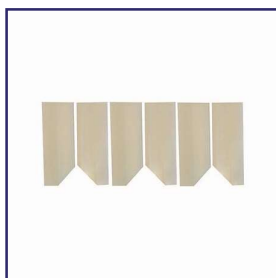
Features

- 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)

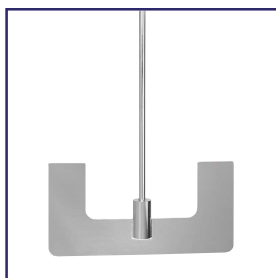
Features

- 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

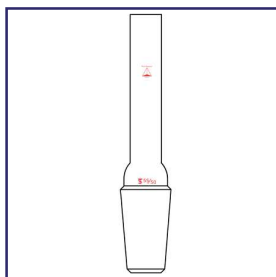
- Tangential flow
- Electropolished 316L stainless steel
- Welded to shaft

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

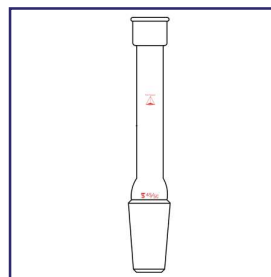




PRG-6150
BEARING, GLASS,
10 mm

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.

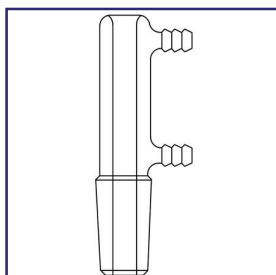
Joint Size	CODE	Price
19/38	-01	82.62
24/40	-02	88.97
29/42	-03	91.37
34/45	-04	92.64
45/50	-05	94.36
55/50	-06	88.17



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.

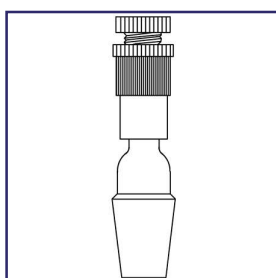
Joint Size	CODE	Price
19/38	-01	84.23
24/40	-02	90.56
29/42	-03	92.94
34/45	-04	94.22
45/50	-05	96.14
55/50	-06	109.32



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.

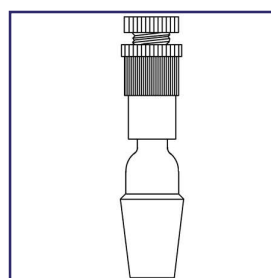
Joint Size	CODE	Price
24/40	-01	107.07
29/42	-02	110.02
45/50	-03	121.12



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

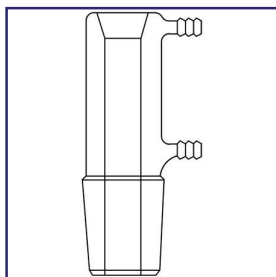


PRG-6170
BEARING, TEFLON®,
HEAVY DUTY, 19 mm

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

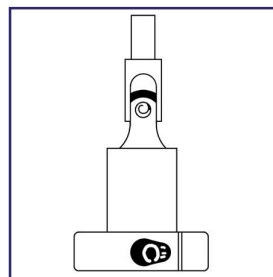




PRG-6175
BEARING, HEAVY
DUTY, GLASS, 19 mm

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.

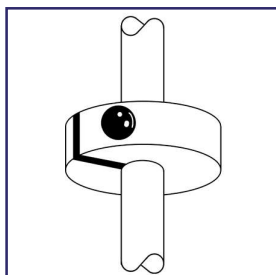
<u>Joint Size</u>	<u>CODE</u>	<u>Price</u>
45/50	-01	240.48
55/50	-02	247.04
71/60	-03	265.70



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.

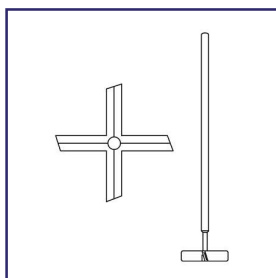
<u>Size</u>	<u>CODE</u>	<u>Price</u>
10 mm	-01	112.80
19 mm	-02	142.27



PRG-6185
SHAFT, SAFETY RE-
TAINER

Nylon collar prevents stirrer rod from slipping down and damaging the vessel especially in vacuum application.

<u>Size</u>	<u>CODE</u>	<u>Price</u>
10 mm	-01	20.82
19 mm	-02	39.05

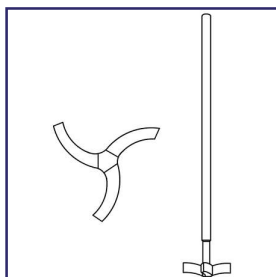


PRG-6187
SHAFT, 4-BLADE,
10 mm, GROUND AND
POLISHED

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.

<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

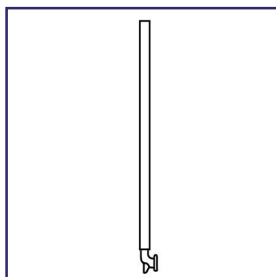




PRG-6188
SHAFT, 3-BLADE,
10 mm, GROUND AND
POLISHED

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.

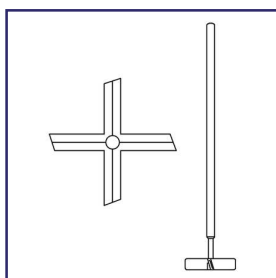
<u>Overall Length</u>	<u>Flask Capacity</u>	<u>Agitator O.D.</u>	<u>CODE</u>	<u>Price</u>
445 mm	1 - 3 Lt	40 mm	-01	154.00
515 mm	3 - 5 Lt	65 mm	-02	166.06
590 mm	12 - 22 Lt	65 mm	-03	170.03



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

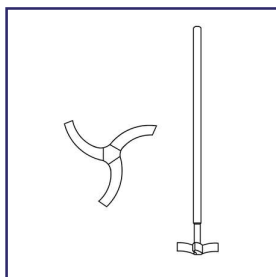


PRG-6192
SHAFT, 19 mm, 4-
BLADE, GROUND
AND POLISHED

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



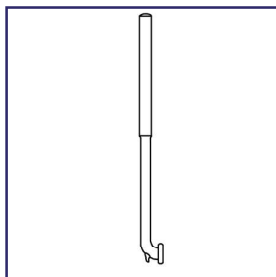


19 mm shafts are precision ground and polished. Three curved blades are fused on at 120° they have a retreat sweep curvature in a clock-wise rotation. Other designs are available upon request.

<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

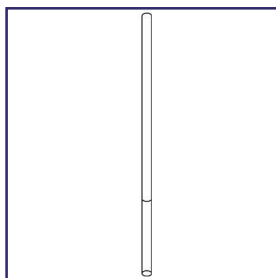


19 mm precision ground and polished. Low bottom is designed to work with banana blades PRG-6220, PRG-6225, and PRG-6230.

<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 POL-
ISHED



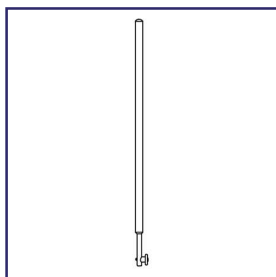
19 mm precision ground and polished. The straight lower portion is rough ground to secure on adjustable height compression fit impellers PRG-6212, PRG-6213, and PRG-6214.

<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 POL-
ISHED

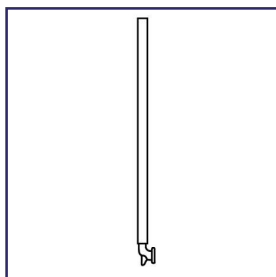




10 mm precision ground and polished finish 316 Stainless Steel. Lower button screws off and on to accommodate PRG-6215 banana blade.

<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

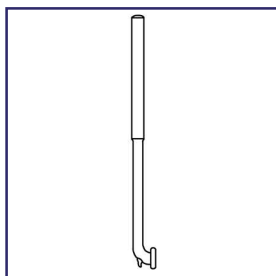
PRG-6200
SHAFT, 10 mm O.D.,
STAINLESS STEEL
ROD



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

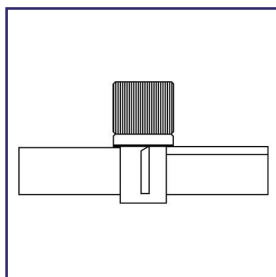
PTFE Shaft Stirring

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

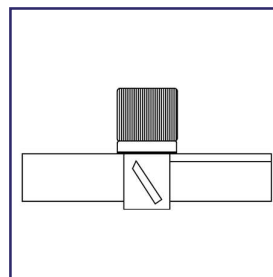
<u>Shaft Ø</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
6 mm	300 mm	CW-005.530.1	50.90
6 mm	400 mm	CW-005.540.1	51.87
6 mm	500 mm	CW-005.550.1	52.84
8 mm	300 mm	CW-005.530.8.1	66.09
8 mm	400 mm	CW-005.540.8.1	66.94
8 mm	500 mm	CW-005.550.8.1	68.23
9.5 mm	550 mm	CW-005.555.1	66.56
9.5 mm	650 mm	CW-005.565.1	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.

Diameter	CODE	Price
4"	-01	288.06
6"	-02	299.46

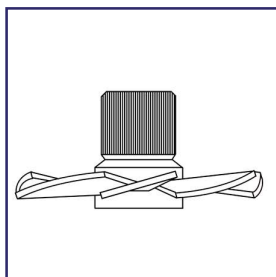
PRG-6212
PADDLE, ADJUSTABLE, 19 mm



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.

Diameter	CODE	Price
4"	-01	327.11
6"	-02	351.52

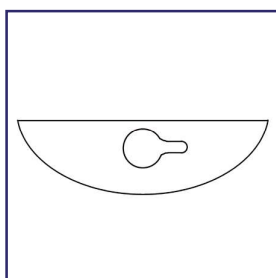
PRG-6213
PADDLE, ADJUSTABLE, 19 mm



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.

Diameter	CODE	Price
4"	-01	359.66
6"	-02	382.44

PRG-6214
TURBINE, ADJUSTABLE, 19 mm

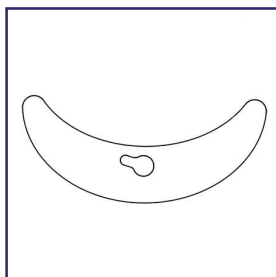


Made of 1/8" thick Teflon® material. Fits all 10 mm button style stirring shafts.

Width x Length mm	Flask Capacity	Minimum Clearance	CODE	Price
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

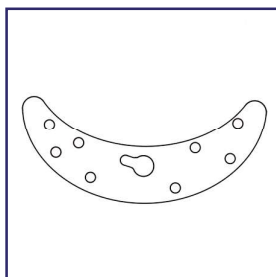




Banana style blade is 1/8" thick Teflon®. Shape follows the inside contour of the flask.

<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

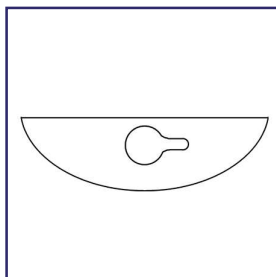
PRG-6220
BLADE, TEFLON®,
BANANA SHAPED,
19 mm



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

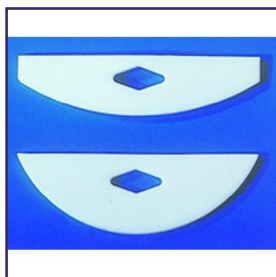
PRG-6225
BLADE, TEFLON®,
BANANA SHAPED,
19 mm, WITH PER-
FORATIONS



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

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- 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

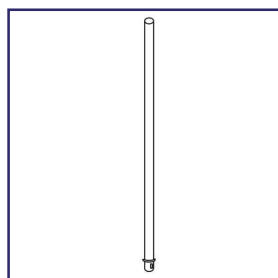


PRG-7200
STIR BEARING, PILOT
PLANT, "BIG BEAR"

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	

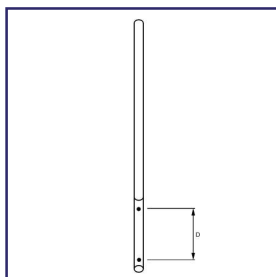


PRG-7204
STIR SHAFT, 1 1/4"

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

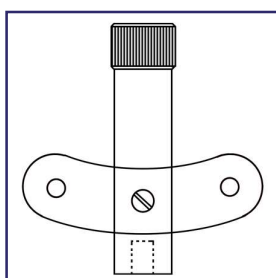
<u>Flask Size</u>	<u>Length</u>	<u>CODE</u>	<u>Price</u>
12 Lt	26"	-11	441.05
22 Lt	30"	-12	481.71
50 Lt	36"	-13	499.62
72 Lt	48"	-14	537.06
100 Lt	54"	-15	569.61
200 Lt	60"	-16	582.62



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.

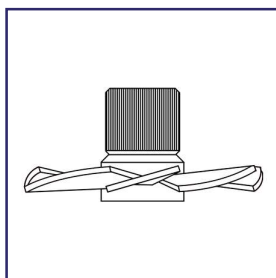
<u>Length</u>	<u>"D"</u>	<u>CODE</u>	<u>Price</u>
30"	8"	-01	494.73
36"	8"	-02	496.36
42"	10"	-03	520.78
48"	10"	-04	533.79
54"	12"	-05	550.08
60"	12"	-06	563.09



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

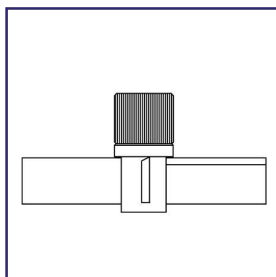


PRG-7212
TURBINE, ADJUSTABLE, 1 1/4" SHAFT,
8-BLADES

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

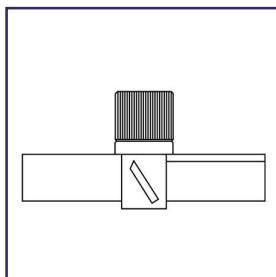




All Teflon® paddle has four blades vertically positioned. 1.25" compression fit to shaft and is fully adjustable along shaft.

<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

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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

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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

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- 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

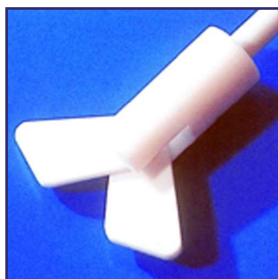
PTFE Shaft Stirring

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

<u>Shaft Ø mm</u>	<u>Length mm</u>	<u>Rotor Ø mm</u>	<u>CODE</u>	<u>Price</u>
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

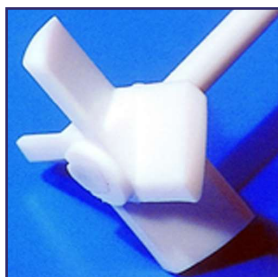
A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

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

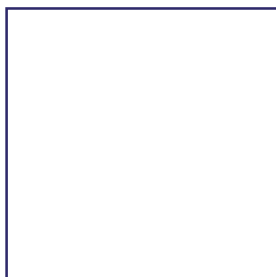
A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

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

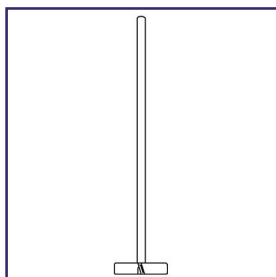
A complete range of High Performance Shaft Stirring Equipment to meet the needs of Laboratory, Pilot Plant, and Small Scale manufacture.

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

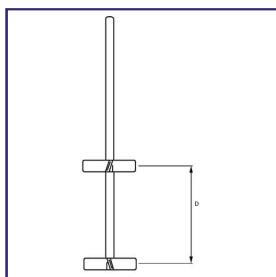




PRG-7220
SHAFT AGITATOR,
ALL GLASS, HEAVY
DUTY, 1 1/4"

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

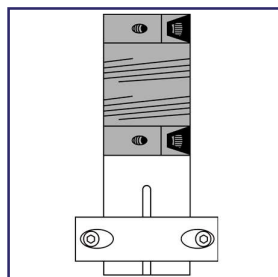


PRG-7228
SHAFT AGITATOR,
ALL GLASS, 1 1/4",
GROUND AND POL-
ISHED

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

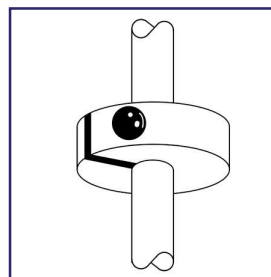




PRG-7230
SHAFT, UNIVERSAL
ADAPTER, 1 1/4"

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



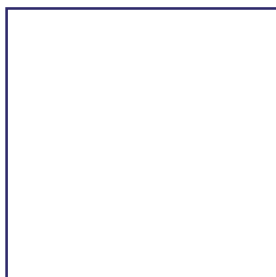
CW-PC710
COWIE®, HIGH PER-
FORMANCE SHAFT
GUIDE WITH NPT
THREAD

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

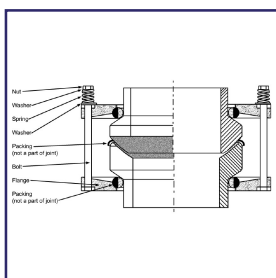




Duron® flange clamp is made of stainless steel with a quick release mechanism for easy safe handling. Clamp has three sections and screw adjustment for tension control.

<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

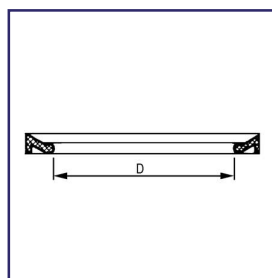
PRG-188
FLANGE CLAMP FOR
REACTION VESSELS



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

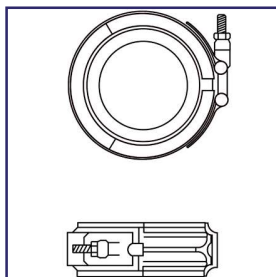
PRG-7070
KF COUPLINGS



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

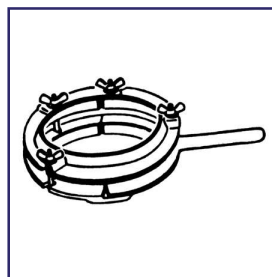




PRG-189
REACTION VESSEL
SUPPORT

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.

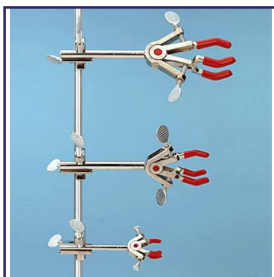
<u>Fits Flange I.D.</u>	<u>CODE</u>	<u>Price</u>
2"	-01	107.57
4"	-02	178.45



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

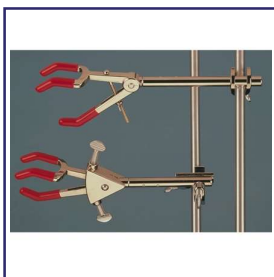


PRG-1722
ULTRAJAWS™ By
TROEMNER, 3-
PRONG EXTENSION
CLAMPS, DUAL AD-
JUSTMENT

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

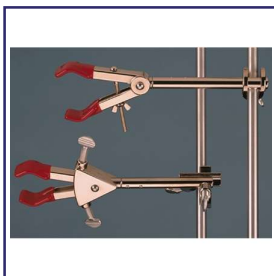


**PRG-1725**

**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.

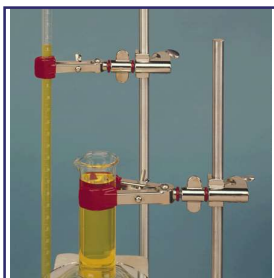
<u>Adjustment Size</u>	<u>Max Grip Size</u>	<u>Overall Length</u>	<u>Prong Height</u>	<u>CODE</u>	<u>Price</u>
Single / Small	2.8 cm	14.8 cm	2.1 cm	-01	52.92
Single / Medium	6.2 cm	21.9 cm	3.4 cm	-02	56.16
Single / Large	8.4 cm	26.5 cm	4.9 cm	-03	58.32
Dual / Small	3.6 cm	16.7 cm	2.1 cm	-11	52.92
Dual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

Description	Max Grip Size	Overall Length	Prong Height	CODE	Price
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.

CODE	Price
-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.

Size	Holding Ability	CODE	Price
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.

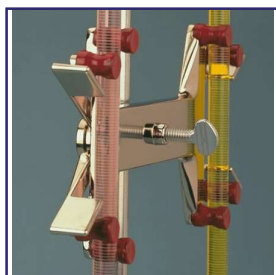
CODE	Price
-01	38.88



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

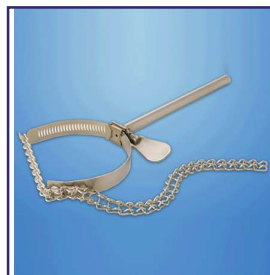




Buret clamp stand is a white porcelain base, 34 cm x 18 cm, support is 60 cm high aluminum rod.

Description	CODE	Price
Stand	-01	211.68
Clamp & Stand	-02	294.84

PRG-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.

CODE	Price
-01	91.29

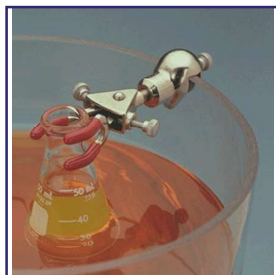
PRG-1765
LABJAWS™ By
TROEMNER, NESTER
EXTENSION CLAMP



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-1767
LABJAWS™ By
TROEMNER, KETTLE
COVER CLAMP

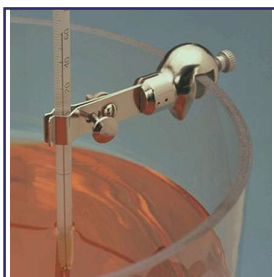


Holds a variety of apparatus, including glass tubes and thermometers, on glass water bath walls of varying thickness. For 5 mm to 9 mm bath walls. Holds irregular-shaped objects.

Maximum Grip Size	Overall Length	CODE	Price
3.3 cm	9.3 cm	-01	56.16

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

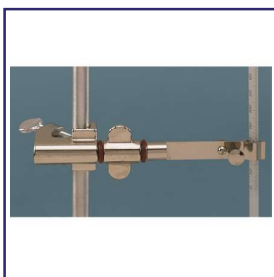




PRG-1771
LABJAWS™ By
TROEMNER, SMALL
WATER BATH CLAMP

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.

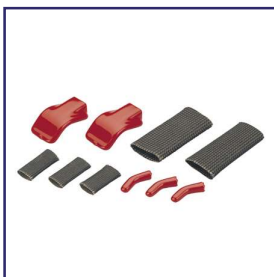
<u>Overall Length</u>	<u>CODE</u>	<u>Price</u>
12.2 cm	-01	50.76



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

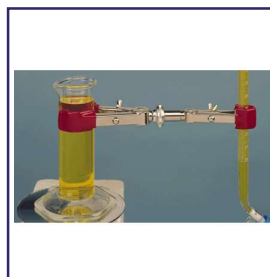
PRG-1782
LABJAWS™ By
TROEMNER, SUSPENSION CLAMP



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

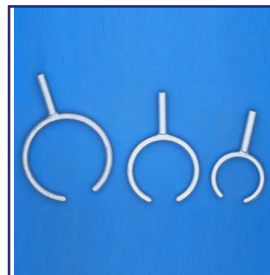
PRG-1787
LABJAWS™ By
TROEMNER, DOUBLE JAW UTILITY CLAMP



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.

<u>CODE</u>	<u>Price</u>
-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.

<u>CODE</u>	<u>Price</u>
-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.

<u>Length</u>	<u>CODE</u>	<u>Price</u>
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.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
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.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
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.

<u>Material</u>	<u>CODE</u>	<u>Price</u>
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.

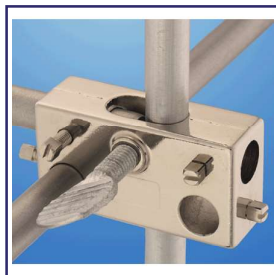
<u>CODE</u>	<u>Price</u>
-01	28.08



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





PRG-1862
LABJAWS™ By
TROEMNER, HOSE-
COCK, REGULAR OR
HEAVY DUTY

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.

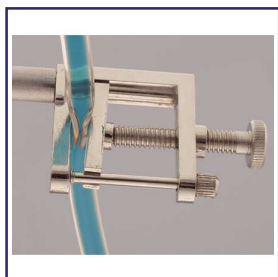
<u>Description</u>	<u>CODE</u>	<u>Price</u>
Regular up to 1.7 cm Tubing	-01	30.24
Heavy Duty up to 2.8 cm Tubing	-02	CALL



PRG-1867
LABJAWS™ By
TROEMNER, HOSE-
COCK FOOT

Add this option to PRG-1862 for bench or table mounting.

<u>CODE</u>	<u>Price</u>
-01	10.80



PRG-1870
LABJAWS™ By
TROEMNER, HOSE-
COCK EXTENSION
CLAMP

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





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
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