



# SERFILCO<sup>®</sup>, LTD.

Pumps | Filters | Systems | Purification Media | Accessories

[www.serfilco.com](http://www.serfilco.com) 800-323-5431

VOL  
28

*Your Guide to Liquid Processing and Purification for ...*

# 50

# years



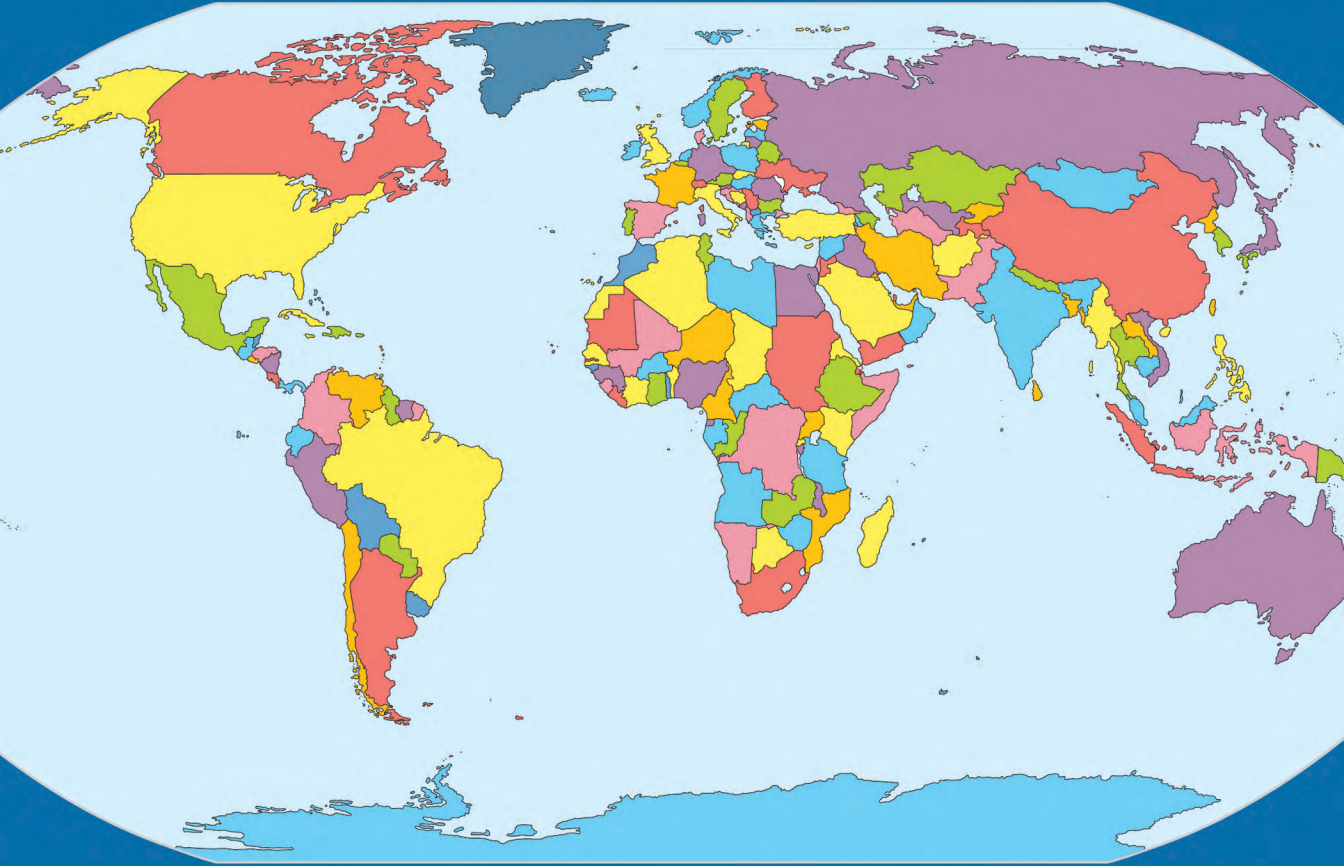


# SERFILCO®

SERVING INDUSTRY WORLDWIDE

*"SIR FILCO"  
Protector of Industry &  
Environment*

## *for over 50 years*



### **SERFILCO INTERNATIONAL**


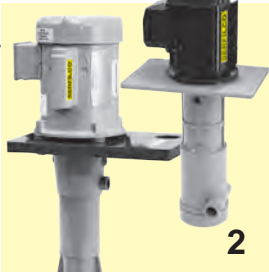

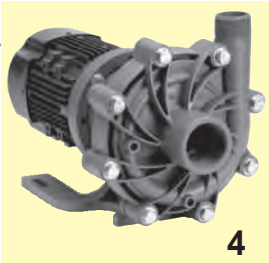
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### **SERVICE FILTRATION of CANADA, Ltd.**

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FAX: 905-820-4015  
e-mail: [sales@service-filtration.com](mailto:sales@service-filtration.com)  
[www.service-filtration.com](http://www.service-filtration.com)


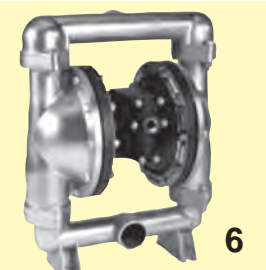




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Self-priming for safe transfer of acids, alkalis, solvents and various chemicals from drums, carboys, tanks, etc. Available in polypropylene, CPVC, PVDF or 316SS with choice of motors.		
<b>BATCH CONTROL SYSTEMS</b> – For dispensing preset volumes.		
<b>HIGH VISCOSITY DRUM PUMPS</b> – Worm screw design for industrial and sanitary applications.		
<b>HAND OPERATED</b> – Barrel and container pumps for chemicals and solvents.		
<b>VERTICAL PUMPS</b>	<b>33-67</b>	
Seal-less, bearing-free pumps constructed of CPVC, PVDF, ECTFE and polypropylene. Used for high temperature chemical service, fume scrubbers, plating, printed circuit board mfg. and waste solution transfer. Flow rates to 650 GPM (2050 l/min).		
<b>SUMP PUMPS</b> – Pumps constructed of CPVC, cast iron or 316SS in lengths to 12 ft. and flows to 370 GPM (1165 l/min) for pollution containment, waste treatment and chemical handling.		
<b>PUMP STATIONS</b> – Choice of tank size, flow rate, single or duplex operation, level controls and options.		
<b>HORIZONTAL PUMPS</b>	<b>68-96</b>	
Constructed of CPVC, PVDF, ECTFE, Noryl and polypropylene for non-metallic solution contact and outstanding chemical resistance. Also available in cast iron or 316SS construction. Pumps are long or close coupled with single or double mechanical seals. Flow rates to 1,200 GPM (3785 l/min).		
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Constructed of CPVC, PVDF, ECTFE, Noryl and polypropylene for non-metallic solution contact and outstanding chemical resistance. Also available in cast iron or 316SS construction. Pumps are long or close coupled with single or double mechanical seals. Flow rates to 1,200 GPM (3785 l/min).		



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<p>In-line housings constructed of plastic, rubber lined steel, stainless steel or carbon steel. Operating pressures to 300 PSI. ASME code design and custom models available. Designed for depth wound, high solids loading cartridges with capacities from 1 to 2600 cartridges or for use with discs, sleeves or bags. Chambers can be arranged in parallel to achieve higher capacities or in series for</p> <p><b>STEP DOWN FILTRATION.</b> An application may require coarse screening followed by multi-media (sand) filtration, followed by a cartridge filter and finally ultra filtration or reverse osmosis. Using this approach flow rates from laboratory pilot requirements to thousands of gallons per minute can be achieved.</p>		 8



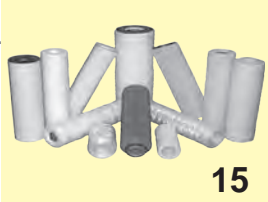
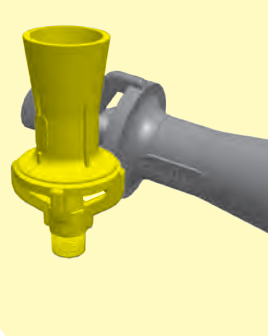


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Consist of a filter chamber or chambers with a horizontal pump mounted on a common base. Systems can be all plastic for non-metallic solution contact or all metallic and range in size from a single cartridge system to multi cartridge systems with flow rates to 21,000 GPH. Systems are available for use with cartridges, discs, sleeves or bags.		 9
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Automatic indexing of filter media permits uninterrupted flow of solution from process to filter thus providing efficient solids-liquid separation. Recommended for machine tool oils and coolants, waste water, cooling towers, fume scrubbers and other industrial process applications. 1.5 to 113 sq. ft. filter area. <b>FILTER PRESSES</b> – For dewatering wastes and municipal sludge, reclamation of solids, clarification and recovery of chemicals and costly solutions. Recessed polypropylene plates with hydraulic closure. Standard models to 50 cu. ft. with larger sizes available upon request.		 12



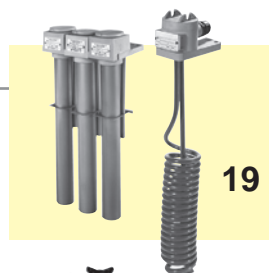
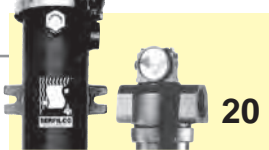



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## REGISTERED TRADEMARKS:

Cellosolve - Union Carbide; Corzan - B. F. Goodrich Co.; Dacron, Delrin, Freon, Orlon, Teflon, Tefzel - DuPont; Hypalon, Kalrez, Viton, Neoprene - DuPont Dow Elastomers; Derakane, Saran - Dow Chemical; Halar - Ausimont; Hastelloy - Haynes, International; Kynar - Atochem; Lexan, Noryl - General Electric; Norprene - Norton Co.; Pyrex - Corning, Inc.; Rulon - Dixon; Ryton - Phillips Chemical; Bakelite - Georgia Pacific Resins, Inc.; Santoprene - Advanced Elastomer Systems, L.P.; Fluorosint - DSM Engineering Plastics; Geolast - F. C. Witt Assoc., Inc.



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## Static Electricity is Blamed for Explosion

"User of hand pump is burned while transferring gasoline from a 55-gallon drum, which had been sloshing around in the back of a pickup truck. Explosion took place when the liquid entered the receiving tank. . . It is presumed that the potential static electricity in the receiving tank was different from that of the holding tank, which was aggravated due to an extremely dry climate. . ."



Flammable solvents are often purchased in bulk and transferred manually or with motor driven pumps. Care must be taken to neutralize static electricity which may rest as a potential in the storage tank, as well as that which may rest in the receiving tank. The potential of such would, of course, be greatly increased if

the liquid were allowed to splash around during movement of the container. Therefore both containers must be satisfactorily grounded, and then each of the containers must be bonded, that is connecting the ground wire from tank to tank so that the potential static electricity is now equalized.

## Sparks from Open Motor Cause Explosion

"User of pump is burned while transferring explosive liquids. Accident was caused by the use of an open motor. . . Explosion resulted and the employee was burned over many parts of his body."

In addition to the proper use of bonding and grounding cables, when motorized pumps are used to transfer flammables and combustibles, explosion-proof or air driven pumps should be used. Explosion-proof electric or air motors are often wired and/or enclosed in such a way that no sparks can be emitted from the motor casing - otherwise sparks from the motor could cause the flammable liquid to flash or explode.

## Splashing of Acid Causes Burns

"Improperly closed pressure vessel containing aggressive acids allowed liquid to escape and splash operator, causing skin burns when pump he energized created pressure in the vessel."

Operator should have checked the instruction manual and followed procedures as set forth by the manufacturer to ensure that the cover of the pressure vessel was securely tightened. Operator could also have prevented bodily injury if he was protected with adequate clothing, which is fabricated to resist such liquids.

Injuries due to splashing of aggressive liquids or explosion of flammables can be avoided by wearing proper clothing, which may include coveralls, apron, shoes, goggles, gloves, face mask and hat.

Each of the above operators could have avoided some bodily harm by wearing outer garments for protection from skin burns.



**CONSULT A DEALER IN YOUR AREA FOR THESE GARMENTS**





**Drums & Barrels**



**Large Storage Vessels**



**Small Storage Vessels**



**Laboratory**

## A COMPLETE PRODUCT LINE OF PUMPS FOR FAST, SAFE AND CONVENIENT TRANSFER AND DISPENSING OF LIQUIDS.

- Provides easy transfer of almost any liquid including viscous products.
- Choice of materials of construction for chemical compatibility.
- Choice of pump lengths depending on drum, barrel or storage vessel size.
- Choice of air or electric motor drives.
- Batch control for dispensing present volumes of liquid.
- Measure flow rate and volume with resettable totalizer.

### SERIES 'DP' DRUM PUMPS

For chemically aggressive liquids such as acids, alkalies and salt solutions as well as most solvents and organic acids.

### HIGH VISCOSITY DRUM PUMPS

- **SANITARY**  
For food processing, pharmaceutical, biotechnology and cosmetic industries
- **INDUSTRIAL**  
For polymers, paints, resins, adhesives and petroleum products

### SMART DRUM PUMP

Batch and flow control systems



# SERIES 'DP' DRUM PUMPS

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## FAST, SAFE AND CONVENIENT DISPENSING OF LIQUIDS.



- Superior quality materials and state-of-the-art manufacturing techniques with proven reliable design features.
- **PUMP TUBES**
  - Pump available in polypropylene, PPP high temperature polypro, CPVC, pure PVDF or 316 stainless steel.
  - Lengths of 27", 39", 47", 60" and 72".
  - Seal-less, one-piece outer tube with screw-on "foot".  
No weak spin welds or glued components.
- **Easy on-site service. No special tools required.**
- **MOTORS**
  - Heavy duty 1.1 HP electric motors (open or TEFC) with variable speed control for precise delivery without splashback.
  - Explosion-proof and air driven motors

**SERIES 'DP'** Drum Pumps combine modern manufacturing techniques with proven and reliable design features. They are a convenient and efficient means of transferring and dispensing most liquid chemicals from drums, carboys and tanks.

These pumps are available in a selection of engineered plastics or polished 316 stainless steel thus providing a great range of chemical compatibility.

The pumps are available in lengths to meet your requirements and all pumps can be used interchangeably with any of our electric or air motors. They can

be quickly changed to meet particular pumping or motor requirements.

Simply insert the pump into the liquid for immediate pumping. No priming is necessary since the rotor is located at the bottom end of the pump. Flow may be controlled with the unique speed control knob on the ODP-S and ENC-S motors to prevent splashing and control the volume. Keep these handy pumps on location throughout your plant for convenient solution transfer.



**DRUMS & BARRELS**



**LABORATORY**



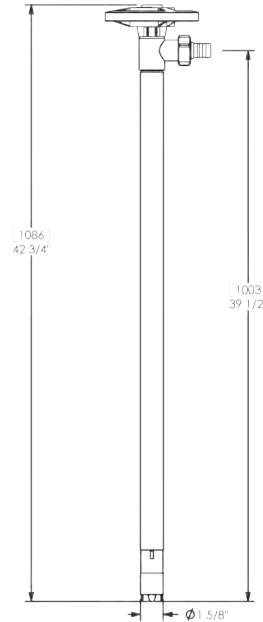
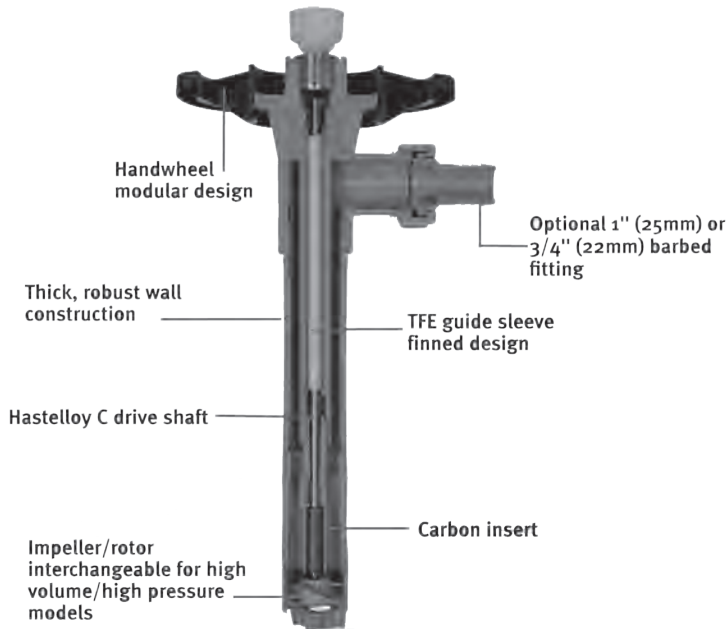
**LARGE STORAGE VESSELS**



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Pump tubes are designed with threaded joints for easy maintenance and individual component replacement without special tools. Our guide sleeves are PTFE, with a specially extruded fin which secures it inside the inner tube.

We utilize a seal grade carbon for our lower bushing (pure carbon 6038C), the most chemically resistant carbon available. Our shafts are Hastelloy® C-276 (PP, PPP, CK and KY models), or 316 stainless steel (SS models).



## Empties a 55 U.S. gallon (200L) drum in less than 2 minutes.

Design: Seal-less / Centrifugal  
 Viscosity: 1500 Cps/mPas (ODP-S, ENC-S)  
 750 Cps/mPas (ODP450, EXP-UL, AIR (F))  
 450 Cps/mPas (AIR (B))

Discharge Options: 1" (25mm) barb  
 3/4" (19mm) barb  
 Maximum Specific Gravity: 1.8

### SAFETY PRECAUTIONS

Verify the chemical compatibility of the material of your pump with the liquid you are pumping. Never use a pump that is not chemically compatible with the fluids you are pumping or serious bodily harm, fire or explosion could result.

The high velocity flow of liquid through a pump could create static electricity. All pumps and containers must be properly grounded and bonded to prevent static discharge and sparking, which could cause electric shock, fire or explosion.

A ground wire should be used on any explosion-proof motor as well as the container when transferring explosive material. This warning pertains to electric and pneumatic motors.

**Only metallic pumps should be used for transferring flammable or explosive liquids. Do not pump an explosive or flammable liquid with ODP, ENC, Air (B) or Air (F) motors.**

Follow all safety recommendations regarding clothing and goggles, which should be worn when using these pumps.



## TO ORDER, use Price Code Number

### PP POLYPROPYLENE APPLICATIONS:

Most chemically aggressive liquids such as acids, salt solutions and solutions which corrode or oxidize metals, such as hydrofluoric or sulfuric acid.

Maximum liquid temperature 130°F (54°C).

**⚠ Not for use with flammable liquids.**

PUMP MODEL NUMBER*	PRICE CODE NUMBER*	MATERIALS OF CONSTRUCTION	LENGTH	DIA.	FOR HOSE SIZE**
PP8327-1	52-1008	Polypropylene w/Hastelloy® C276, PTFE, carbon	27" (690 mm)	1-5/8" (41mm)	1" (25mm)
PP8339-1	52-1000		39" (1000 mm)		
PP8347-1	52-1001		47" (1200 mm)		
PP8360-1	52-1003		60" (1525 mm)		
PP8372-1	52-1005		72" (1825 mm)		

### PPP HIGH TEMPERATURE POLYPROPYLENE APPLICATIONS:

Engineered for transferring high temperature corrosive liquids. Robust PPP polypropylene ensures chemical resistance and excellent heat deflection against light and mildly aggressive liquids.

Maximum liquid temperature 175°F (80°C).

**⚠ Not for use with flammable liquids.**

PUMP MODEL NUMBER*	PRICE CODE NUMBER*	MATERIALS OF CONSTRUCTION	LENGTH	DIA.	FOR HOSE SIZE**
PPP8327-1	52-6000	High temperature Polypropylene w/Hastelloy® C276, PTFE, carbon	27" (690 mm)	1-5/8" (41mm)	1" (25mm)
PPP8339-1	52-6001		39" (1000 mm)		
PPP8347-1	52-6002		47" (1200 mm)		
PPP8360-1	52-6003		60" (1525 mm)		
PPP8372-1	52-6004		72" (1825 mm)		

### CK CPVC / PVDF APPLICATIONS:

Used for pumping aggressive solutions such as sodium hypochlorite or for higher temperature applications where polypropylene is not suitable.

Maximum liquid temperature 190°F (90°C).

**⚠ Not for use with flammable liquids.**

PUMP MODEL NUMBER*	PRICE CODE NUMBER*	MATERIALS OF CONSTRUCTION	LENGTH	DIA.	FOR HOSE SIZE**
CK8327-1	52-5200	CPVC and PVDF w/Hastelloy® C276, PTFE, carbon	27" (690 mm)	1-5/8" (41mm)	1" (25mm)
CK8339-1	52-5201		39" (1000 mm)		
CK8347-1	52-5202		47" (1200 mm)		
CK8360-1	52-5203		60" (1525 mm)		
CK8372-1	52-5204		72" (1825 mm)		

### KY PVDF APPLICATIONS:

Capable of pumping highly aggressive solutions which are not compatible with other thermoplastics.

Maximum liquid temperature 180°F (82°C).

**⚠ Not for use with flammable liquids.**

PUMP MODEL NUMBER*	PRICE CODE NUMBER*	MATERIALS OF CONSTRUCTION	LENGTH	DIA.	FOR HOSE SIZE**
KY8327-1	52-4004	Natural PVDF w/Hastelloy® C276, PTFE, carbon	27" (690 mm)	1-5/8" (41mm)	1" (25mm)
KY8339-1	52-4000		39" (1000 mm)		
KY8347-1	52-4001		47" (1200 mm)		

### SS 316 STAINLESS STEEL APPLICATIONS:

Most solvents and organic acids, as well as salt solutions, nitrous acids, dyes, all alkalis, potable liquids to 200°F (93°C). All components are polished for a quality finish.

Maximum liquid temperature 180°F (82°C).

**⚠ For use with flammable or explosive liquids.**

PUMP MODEL NUMBER*	PRICE CODE NUMBER*	MATERIALS OF CONSTRUCTION	LENGTH	DIA.	FOR HOSE SIZE**
SS8339-1	52-2000	316 stainless steel, PTFE, carbon	39" (1000 mm)	1.65" (42mm)	1" (25mm)
SS8347-1	52-2001		47" (1200 mm)		
SS8360-1	52-2002		60" (1525 mm)		
SS8372-1	52-2003		72" (1825 mm)		

\* For high head pump – Add H to Model Number and Price Code No.

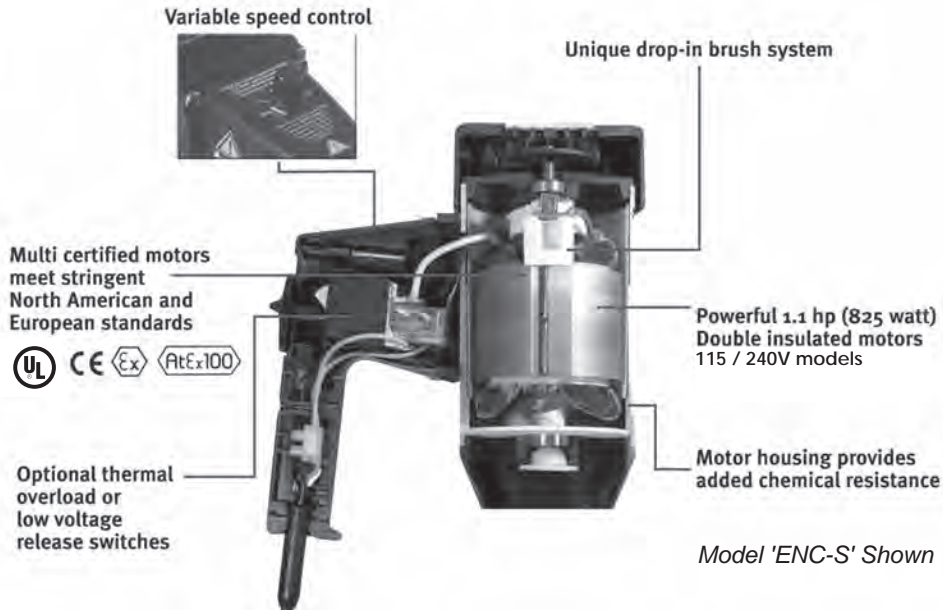
\*\* for 3/4" hose connections, see Accessories on page 8.

All pumps are provided with a 1" stainless steel hose clamp. Stainless steel models also include bonding and grounding cables.

Registered trademarks  
Viton - DuPont Dow Elastomers Teflon - DuPont  
Hastelloy - Haynes, International



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**ODP-S**

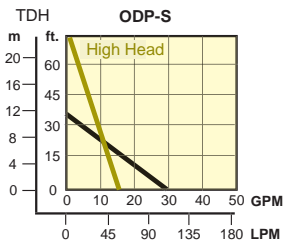


**ODP-S OPEN DRIP-PROOF MOTOR w/speed control**

1.1 HP (825 watts). Drip-proof motor in rugged glass reinforced plastic housing. Speed control knob allows for efficient, controlled liquid dispensing. ON/OFF switch conveniently located for single hand, thumb control. Resettable thermal overload protected, double insulated motor. Cartridge brush design extends life and greatly reduces replacement service time. Includes 16 ft. cord w/molded plug. Not suitable for hazardous duty. For viscosities up to 1500 cps or specific gravity up to 1.8. Weight: 8.8 lbs. (4 kg.)

MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
ODP-S-115	52-8000	115V/1/50-60
ODP-S-240	52-8001	230-240V/1/50-60

Not for use with flammable liquids.



**ENC-S**

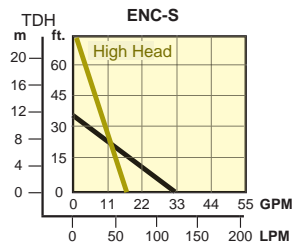


**ENC-S SEVERE DUTY TOTALLY ENCLOSED MOTOR w/speed control**

1.1 HP (825 watts). Totally enclosed motor in anodized aluminum housing for extra protection. Speed control knob allows for efficient, controlled liquid dispensing. ON/OFF switch conveniently located for single hand, thumb control. Resettable thermal overload protected, double insulated motor. Cartridge brush design extends life and greatly reduces replacement service time. Includes 16 ft. cord w/molded plug. For viscosities to 1500 cps or specific gravity up to 1.8. Not suitable for hazardous duty. Weight: 12 lbs. (6 kg.)

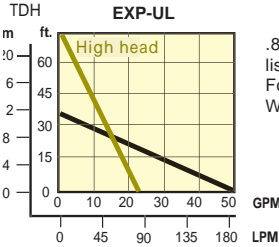
MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
ENC-S-115	52-3000	115V/1/50-60
ENC-S-240	52-3001	220-240V/1/50-60

Not for use with flammable liquids.





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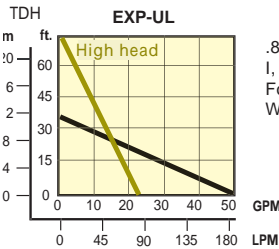
**EXP-UL EXPLOSION-PROOF MOTOR**

.83 HP (620 watts input/450 watt output). Explosion-proof motor in aluminum housing. C.S.A. and U.L. listed Class I, Groups C and D. Thermal overload protected, automatic reset. Includes 16 ft. cord, no plug. For viscosities up to 750 cps or specific gravity up to 1.8. Includes grounding cable. Weight: 20 lbs. (9.5 kg.)

**EXP-UL**

MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
EXP-UL-115	55-0744	115V/1/50-60

For flammable or explosive liquids.



**EXP-UL EXPLOSION-PROOF MOTOR**

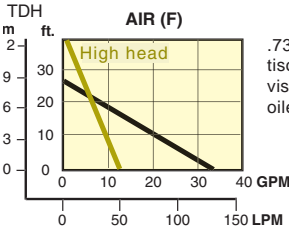
.83 HP (620 watts)\*\*. Explosion-proof motor in aluminum housing. C.S.A. and U.L. listed Class I, Groups C and D. Thermal overload protected, automatic reset. Includes 16 ft. cord, no plug. For viscosities up to 750 cps or specific gravity up to 1.8. Includes grounding cable. Weight: 20 lbs. (9.5 kg.)

**EX5-240**

MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
EXP-UL-115	55-0744	115V/1/50-60
EX5-240*	55-7167	220-240V/1/50

For flammable or explosive liquids.

\* Protection class (PTB) EE<sub>1</sub> de 11C T6  
\*\* 620 watt input / 430 watt output



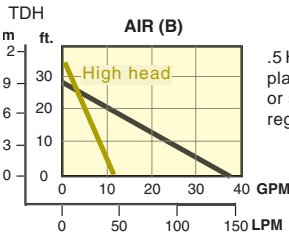
**AIR (F) AIR DRIVEN MOTOR**

.73 HP (550 watts), 28 cu. ft./min. @ 90 PSI, 10,000 RPM. Aluminum motor housing is plastic coated to prevent sparking. Includes muffler, filter, and trigger valve for flow control. For viscosities to 750 cps or specific gravity to 1.75. Air line filter, PSI regulator and automatic oiler recommended. Weight: 3.5 lbs. (1.6 kg.)

**AIR (F)**

MODEL NO.	PRICE CODE NO.
AIR (F)	52-0100

Not for use with flammable liquids.\*\*\*



**AIR (B) AIR DRIVEN MOTOR**


.5 HP (370), 22 cu. ft./min. @ 90 PSI, 10,000 RPM. Aluminum motor housing, glass reinforced plastic pump mounting bracket. Not suitable for hazardous duty. For viscosities to 450 cps or specific gravity up to 1.6. Muffler included. When air supply line is fitted with an optional regulator, the pump output can be precisely controlled. Weight: 3 lbs. (1.4 kg.)

**AIR (B)**

MODEL NO.	PRICE CODE NO.
AIR (B)	55-0701

Not for use with flammable liquids.\*\*\*



\*\*\*  Caution: Air motors are not recognized under any current Underwriters' Laboratory listing program. Consult a qualified safety engineer for suitability for use in hazardous area or with flammables



2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**EVERYTHING YOU NEED FOR SAFE AND EFFICIENT LIQUID TRANSFER**



**PACKAGE 1**  
**Water Treatment**  
**Chemicals**

Engineered to transfer corrosive chemicals associated with the water treatment industry. Common applications include: Sodium Hypochlorite, Potassium Hydroxide and Sodium Bromide.

Motor type: ODP-S  
Pump assembly: CPVC  
Pump length: 39"(1000 mm)  
PVC hose: 6 ft. (1.8 m), I.D. 1" (25 mm)  
Dispensing nozzle: 1" (25 mm), polypropylene  
Barrel adapter: Polypropylene  
Storage bracket: 16 gauge coated steel  
Max. viscosity: 1500 CPS / mPas  
Max. temperature: 190°F(90°C)

PRICE CODE NO.	VOLTAGE
52-9430	115V
52-9431	240V

**PACKAGE 2**  
**Acids & Alkalies**

Engineered to transfer mildly corrosive liquids. Common applications include: Hydrochloric Acid, Nitric Acid - 20%, Acetic Acid and Sulfuric Acid

Motor type: ODP-S  
Pump assembly: Polypropylene  
Pump length: 39"(1000 mm)  
PVC hose: 6 ft. (1.8 m), I.D. 1" (25 mm)  
Dispensing nozzle: 1" (25 mm), polypropylene  
Barrel adapter: Polypropylene  
Storage bracket: 16 gauge coated steel  
Max. viscosity: 1500 CPS / mPas  
Max. temperature: 130°F(55°C)

PRICE CODE NO.	VOLTAGE
52-9400	115V
52-9401	240V

**PACKAGE 3**  
**Concentrated**  
**Acid & Alkalies**

Engineered for transferring very concentrated and extremely aggressive liquids. Common applications include: Sulfuric Acid 66 Baume, Propionic Acid, Concentrated Nitric - 98% and Hydrofluoric Acid.

Motor type: ENC-S  
Pump assembly: PVDF  
Pump length: 39"(1000 mm)  
PVC hose: 6 ft. (1.8 m), I.D. 1" (25 mm)  
Dispensing nozzle: 1" (25 mm), PVDF  
Barrel adapter: Polypropylene  
Storage bracket: 16 gauge coated steel  
Max. viscosity: 1500 CPS / mPas  
Max. temperature: 175°F(80°C)

PRICE CODE NO.	VOLTAGE
52-9420	115V
52-9421	240V

Unique design allows users to safely measure and transfer mildly corrosive liquids. Common applications include: Hydrochloric Acid, Nitric Acid - 20%, Acetic Acid and Sulfuric Acid

Motor type: ODP-S  
Pump assembly: Polypropylene  
Pump length: 39"(1000 mm)  
PVC hose: 6 ft. (1.8 m), I.D. 1" (25 mm)  
Dispensing nozzle: 1" (25 mm), polypropylene  
Flow meter: Digital / polypropylene totalizer  
Barrel adapter: Polypropylene  
Storage bracket: 16 gauge coated steel  
Max. viscosity: 300 CPS / mPas  
Max. temperature: 130°F(55°C)

PRICE CODE NO.	VOLTAGE
52-9500	115V
52-9501	240V

**PACKAGE 4**  
**MEASUREMENT**  
**Acid & Alkalies**

Unique design allows operators to safely measure and transfer concentrated and very aggressive liquids. Common applications include: Sulfuric Acid 66 Baume, Propionic Acid, Concentrated Nitric - 98 and Hydrofluoric Acid.

Motor type: ENC-S  
Pump assembly: PVDF (Kynar®)  
Pump length: 39"(1000 mm)  
PVC hose: 6 ft. (1.8 m), I.D. 1" (25 mm)  
Dispensing nozzle: 1" (25 mm), PVDF  
Flow meter: Digital / PVDF totalizer  
Barrel adapter: Polypropylene  
Storage bracket: 16 gauge coated steel  
Max. viscosity: 300 CPS / mPas  
Max. temperature: 175°F(80°C)

PRICE CODE NO.	VOLTAGE
52-9510	115V
52-9511	240V

**PACKAGE 5**  
**MEASUREMENT**  
**Concentrated**  
**Acid & Alkalies**

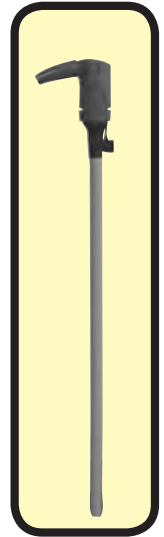
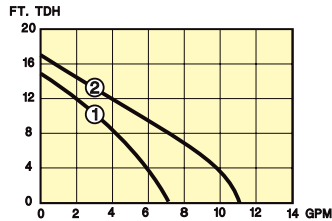


2900 MacArthur Blvd Northbrook, IL USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

**LABORATORY DRUM PUMP**

- Ideal for low volume transfer
- Polypropylene
- 27" or 39" length

Versatile, lightweight pump for the transfer of acids or alkalis from glass carboys and similar containers. Pump will handle liquids to 250 cps. Motor is 160 watt with built-in overload and manual reset for safety. Includes 16' cord with molded plug, 6' of 1/2" vinyl hose and polypropylene flow nozzle.



**TO ORDER, use Price Code No.**

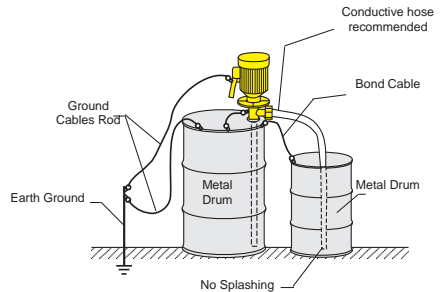
MODEL NO.	PRICE CODE NO.	CURVE	MATERIALS OF CONSTRUCTION	LENGTH	DIA.	HOSE SIZE	MAX. TEMP.	WATT MOTOR	WEIGHT
				inches	inches	inches	°F		Lbs.
PP8327-1-110	55-9000	1	Carbon Viton® Ceramic ETFE Hastelloy®C	27	1	1/2 - 3/4	115	115V/1/60	9.5
PP8327-2-110	55-9001	2			1-1/4			110V/1/50-60	
PP8327-2-220	55-9002	2		1-1/4	220V/1/50-60				
PP8339-1-110	55-9003	1		39	1	1/2 - 3/4	115	110V/1/50-60	10
PP8339-1-220	55-9004	1			1			220V/1/50-60	
PP8339-2-110	55-9005	2			1-1/4			110V/1/50-60	
PP8339-2-220	55-9006	2	1-1/4		220V/1/50-60				

**ACCESSORIES**

**GROUND-BOND CABLE KIT**

When pumping flammable or combustible liquids from one container to another, both containers must be effectively bonded and grounded to prevent discharge of sparks of static electricity which could cause an explosion. Not for use with plastic pumps or ODP/ENC motors.

DESCRIPTION	PRICE CODE NO.
2 ground cables, 6' long with clamps	55-0247
1 bond cable, 10' long with clamps	
1 ground cable, 1' long with clamp for drum	



**316 SS SQUEEZE CLAMP WITH HOSE CLAMP**

To securely hold discharge hose or nozzle to tank flange or container while operating. Holds hose to wall bracket for storage. Prevents spillage and siphoning. Entire assembly is 316 stainless steel and hose clamp is welded onto hand clamp. Ends of clamp have a lip to grip drum flange.



FOR HOSE SIZE I.D.	FORCE TO OPEN		SIZE	PRICE CODE NO
1/2" to 1"	12 lbs.	5.5 kg.	Small - 4.5" handle	99-0190 A
1" to 1 1/2"	22 lbs.	10 kg.	Large - 7.0" handle	99-0191 A



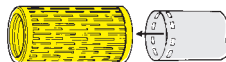


**Increase the functional use of any drum pump**

HOSE, CLAMPS & HOSEBARBS	PRICE CODE NO.
PVC HOSE - CLEAR -	
3/4" I.D. - per foot	55-0266
1" I.D. - per foot	55-0274
NYLON REINFORCED HOSE - CLEAR	
3/4" I.D. - per foot	22-0481
1" I.D. - per foot	22-0432
STAINLESS STEEL FLEXIBLE HOSE -	
3/4" NPT x 8' long (male x female)	22-0539A
PTFE RIBBED HOSE - 1" I.D. x 8' long	22-0463
HOSE CLAMP -	
3/4"stainless steel	22-0520
1"stainless steel	22-0505
DISCHARGE HOSE BARB -	
3/4" polypropylene	52-1051
3/4" PVDF	52-4051
DISCHARGE ADAPTER -	
3/4" MNPT, CPVC	55-6096
3/4" MNPT, 316 SS	55-6095
1"MNPT, 316 SS	55-6100
CHECK VALVE -	
3/4" FNPT, PVC	33-6051

**STRAINER**

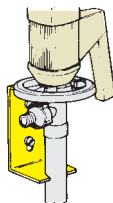
Recommended when pumping dirty liquids or where abrasive particles are present.



	PRICE CODE NO.
PP for PP or PVDF	55-0282A
SS fir SS Pumps	55-0283A

**WALL BRACKET - black vinyl coated 16 ga. steel**

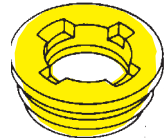
A wall bracket is recommended for every pump. Proper storage will increase the life of the unit.



PRICE CODE NO.
52-1101

**BARREL ADAPTERS / FUME BARRIER**

For all pump models. To hold pump in vertical position and avoid exposure of motor to escaping vapors. Snug slip fit over pump tube allows for depth adjustment in drum. Fume barrier utilizes a Viton seal to hold corrosive fumes within the container.



	PRICE CODE NO.
SS, 2" NPT, for metal drum pumps	99-0157
PP, 2" NPT, for polypropylene, PVDF and metal drum pumps	99-0107A
PP, 2" buttress thread, for polypropylene and PVDF drum pumps	99-0108A
Fume barrier, stainless steel, 2" NPT	52-9019
Fume barrier, polypropylene, 2" NPT	52-9018

**NOZZLE**

Provides controlled dispensing of liquid without splashing for safe chemical transfer. Ideal for dispensing into small containers, the nozzle features full one inch flow-through for maximum flow and allows hand held squeeze control for corrosive applications. 1" hose barb connection.



	PRICE CODE NO.
Polypropylene, Viton® and Hastelloy (shaft and spring)	52-0017
Stainless steel and Teflon®	52-0017S
PVDF.	52-0017K
Aluminum	52-0017A



# SMART DRUM PUMP BATCH CONTROL SYSTEM

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**CHEMICAL PACKAGING / PLATING  
WASTE WATER TREATMENT  
CHEMICAL MANUFACTURING  
SEMI-CONDUCTOR  
PHARMACEUTICAL / AGRICULTURE**



### Dispenses liquids:

- **safely**
- **accurately – preset volume**
- **easily**
  - **push to start**
  - **shuts off automatically**

SERFILCO Smart Pumps are engineered to control, measure and dispense any volume of liquid from drums, IBCs, tanks and any large storage vessel. They can be used in any industry where batching, chemical packaging or dilution is required to be accurate and efficient.

### OPERATIONS

Simply enter the desired volume of liquid with directional arrows. Press ENTER and the SERFILCO Smart Pump Batch Control System engages the motor, dispenses the required volume, then stops the motor to complete the process. Motor speed control is also included to dispense at the desired flow rate.

### FEATURES

- Measure flow rate and volume
- Turbine Paddle Wheel design
- Multiple languages
- Measures: gallon, liters, cubic meters, milliliters, imperial gallons
- Resettable, Totalizer
- +/- .05% accuracy of reading

### TECHNICAL SPECIFICATIONS

<b>Available Wetted Parts</b>	Polypropylene & PVDF
<b>Motor Drive</b>	Open Drip (IP44) or TEFC (IP55)(110v or 230v)
<b>Discharge Fitting</b>	1" (25mm) Hose Barb
<b>Pumping Principle</b>	Centrifugal
<b>Flow Capacity</b>	25 GPM (95 LPM)
<b>Maximum Capacity</b>	300 cps / mPAS
<b>Paddle Wheel Materials</b>	PVDF & Ceramic
<b>Immersion Length</b>	27" (700mm), 39" (1000mm), 47" (1200mm), 60" (1500mm), 72" (1800mm)



# SMART DRUM PUMP BATCH CONTROL SYSTEM

2900 MacArthur Blvd Northbrook, IL USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

\*SYSTEM INCLUDES 1 EACH: SERFILCO drum pump Smart Motor, pump tube and batch controller with all necessary connections.

## 110-120V/1/50-60

### Variable Speed Batch Control Systems

SYSTEM MODEL NUMBER	MOTOR	PUMP TUBE MATERIAL - LENGTH	METER, WETTED COMPONENTS	PRICE CODE NO.
BC-ODP-PP-27 BC-ODP-PP-39 BC-ODP-PP-47 BC-ODP-PP-60 BC-ODP-PP-72	ODP	PP-27" PP-39" PP-47" PP-60" PP-72"	PP, ceramic	52-0400 52-0401 52-0402 52-0403 52-0404
BC-ENC-PP-27 BC-ENC-PP-39 BC-ENC-PP-47 BC-ENC-PP-60 BC-ENC-PP-72	TEFC	PP-27" PP-39" PP-47" PP-60" PP-72"	PP, ceramic	52-0405 52-0406 52-0407 52-0408 52-0409
BC-ODP-KY-27 BC-ODP-KY-39 BC-ODP-KY-47	ODP	PVDF-27" PVDF-39" PVDF-47"	PVDF, ceramic	52-0410 52-0411 52-0412
BC-ENC-KY-27 BC-ENC-KY-39 BC-ENC-KY-47	TEFC	PVDF-27" PVDF-39" PVDF-47"	PVDF, ceramic	52-0413 52-0414 52-0415

## 220-240V/1/50-60

### Variable Speed Batch Control Systems

SYSTEM MODEL NUMBER	MOTOR	PUMP TUBE MATERIAL - LENGTH	METER, WETTED COMPONENTS	PRICE CODE NO.
BC2-ODP-PP-27 BC2-ODP-PP-39 BC2-ODP-PP-47 BC2-ODP-PP-60 BC2-ODP-PP-72	ODP	PP-27" PP-39" PP-47" PP-60" PP-72"	PP, ceramic	52-0416 52-0417 52-0418 52-0419 52-0420
BC2-ENC-PP-27 BC2-ENC-PP-39 BC2-ENC-PP-47 BC2-ENC-PP-60 BC2-ENC-PP-72	TEFC	PP-27" PP-39" PP-47" PP-60" PP-72"	PP, ceramic	52-0421 52-0422 52-0423 52-0424 52-0425
BC2-ODP-KY-27 BC2-ODP-KY-39 BC2-ODP-KY-47	ODP	PVDF-27" PVDF-39" PVDF-47"	PVDF ceramic	52-0426 52-0427 52-0428
BC-ENC-KY-27 BC-ENC-KY-39 BC-ENC-KY-47	TEFC	PVDF-27" PVDF-39" PVDF-47"	PVDF, ceramic	52-0429 52-0430 52-0431



**MODEL SE35 BATTERY POWERED DIGITAL FLOW METER / TOTALIZER**



- Separate flow chamber and electric module with unique “1/4 Turn & Lock” connect system.
- Measure flow rate and volume with resettable totalizer.
- Menu – guided user friendly operating system allows for customized setting. Equipped with E Eprom electronics.
- Accuracy 0.5%, 0.4% repeatability.
- 9V – Lithium Battery.



SERFILCO Model SE35 Digital Flow Meters utilize proven paddle wheel design for greater accuracy when measuring low to medium viscosity liquids. The separate flow chamber and removable electronic module provide maximum chemical resistance to meet the toughest applications. Nema 4 (IP65) enclosure. Measuring range 2-200 GPM (7.5 - 757 LPM). Temperature range 32°F - 217°F (0°C - 100°C).

**FLOW METER KITS**

Flow meter and flow chamber with discharge nozzle and 1” hose barb inlet.

**FLOW METERS**

Flow meter and flow chamber with 1” hose barb inlet & outlet.

**FLOW METERS KITS**

MODEL NO.	WEITED MATERIALS	PRICE CODE NO.
SE35PP-KIT	PP, PVDF, ceramic	52-0160
SE35KY-KIT	PVDF, ceramic	52-0161
SE35SS-KIT	316 SS, PVDF, ceramic	52-0162

**FLOW METERS**

MODEL NO.	WETTED MATERIALS	PRICE CODE NO.
SE35PP-B	PP, PVDF, ceramic	52-0170
SE35KY-B	PVDF, ceramic	52-0171
SE35SS-B	316 SS, PVDF, ceramic	52-0172



**BATTERY POWERED ELECTRONIC FLOW METER**



- Self-contained microprocessor with LCD readout
- + 1.5% accuracy, + 0.3% repeatability
- Measures flow rate and total flow separately  
Consult Sales Dept. for other registers.
- 316 stainless steel, nylon or PVDF
- Factory calibrated: 3 - 50 U.S. GPM or 10 - 190 LPM

SERFILCO Electronic Digital Flow Meters combine microprocessor technology with rugged and accurate turbine flow sensor design. Power is supplied by 2 lithium batteries (included) that provide an average 2,000 hours of intermittent use. LCD display automatically turns on when flow starts and off four minutes after flow ceases. Standard connection is 1” NPT. All electronics are enclosed under splash-tight gasketed acrylic cover. Pressure drop 2 psig @ 30 GPM (1.4 BAR @ 114 LPM) and 5 psig @50 GPM (3.5 BAR @ 190 LPM). Dimensions: 4” x 2.5” x 2” (10.2 x 6.4 x 5.1 cm)

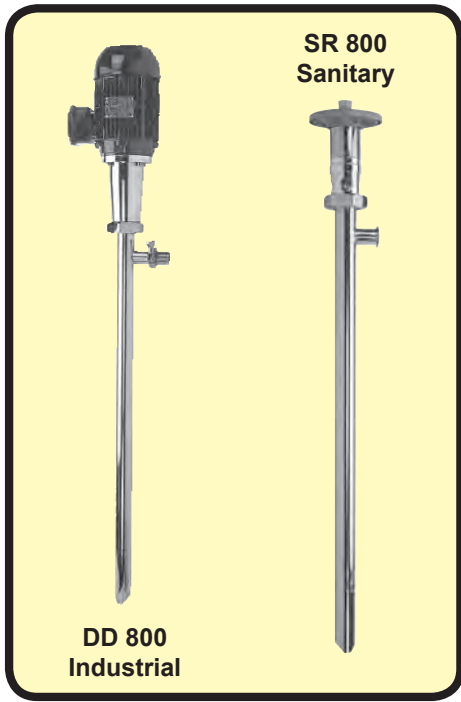
MODEL NO.	WETTED MATERIALS	PRICE CODE NO.
DMSS-1	Stainless steel, PVDF, ferrite, ceramic	52-0998 G
DMN-1	Nylon, ferrite, ceramic, stainless steel	52-0999 G
DMKY-1	PVDF, ceramic	52-0994 G

For LPM calibration change **G** to **L** in Price Code Number



# HIGH VISCOSITY DRUM PUMPS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



## INDUSTRIAL & SANITARY PUMP SERIES

- Flows to 17 GPM / 64 LPM
- Max Pressure 174 psi / 12 bar
- Rugged construction  
All 316 stainless steel  
Choice of stator elastomers
- Industrial Series 700 or Sanitary Series 800
  - Speed Reduced pump (SR)  
Max viscosity 25,000 cps/mPas
  - Direct Drive pump (DD)  
Max viscosity 100,000 cps/mPas



### Progressive Cavity Design


**SERFILCO Progressive Cavity Pumps** are engineered to transfer high viscosity materials from drums, tanks and IBC's. Utilizing the principle of positive displacement, these pumps deliver a continuous flow with little product degradation. The series 700 (Industrial) and series 800 (Sanitary) pumps can transfer materials ranging in viscosity up to 100,000 cps/ mPas. All pumps are constructed from robust 316SS with a choice of stator elastomers.

#### Series 700 Industrial Pump

SERFILCO series 700 Industrial Pumps are commonly used throughout the industrial marketplace for transferring viscous materials such as polymers,

paints, resins, adhesives and petroleum based products.

#### Series 800 Sanitary Pump

SERFILCO series 800 Sanitary Pumps are commonly used throughout the sanitary food processing, pharmaceutical, biotechnology, and cosmetic industries. Applications include the transfer of tomato paste, mayonnaise, pie fillings, salad dressing, shampoos, and cosmetic lotions. The series 800 pumps are manufactured according to  standards with FDA approved materials of construction. The pumps utilize a threaded design and tri-clamp fittings for quick cleaning, inspection and maintenance.



PAINTS



PHARMACEUTICAL



COSMETICS



PETROLEUM



# SR - SPEED REDUCED PUMPS

## Technical Data

**Max. Viscosity:** 25,000cps (mPAS)  
**Discharge Port:** 1.5" / 38mm hose barb, optional 1.25" / 32mm  
**Wetted Material:** Tube & Rotor Assembly: 316 Stainless Steel  
 Stator Material: See below  
**Mechanical Seal:** SiC/Viton/SiC  
**Motor Drives:** ODP450, ODP-S, ENC-S, EXP-UL, AIR(F)  
**Fittings:** Large Type Acme Thread design enables quick disassembly for cleaning and maintenance.

### SR 700 Industrial Pump Series

- Easy Maintenance
- Threaded Components
- Interchangeable Motors Drives
- Continuous Flow
- Low Shearing Properties

MODEL NUMBER	PRICE CODE NO.	FLOW RATE**	MAX PRESSURE	PUMP LENGTH
DD700-71-27-* DD700-71-39-* DD700-71-47-*	52-7710* 52-7713* 52-7716*	7 GPM	87 PSI	27" 39" 47"
DD700-72-27-* DD700-72-39-* DD700-72-47-*	52-7711* 52-7714* 52-7717*	7 GPM	174 PSI	33" 45" 53"
DD700-181-27-* DD700-181-39-* DD700-181-47-*	52-7712* 52-7715* 52-7718*	17 GPM	87 PSI	27" 39" 47"

\* Add to Model No. and Price Code No.

\*\* Based on water

**B** for Buna-N  
**T** for PTFE  
**V** for Viton



### SR 800 Sanitary Series



- Hygienic Design
- Easy to Clean & Maintain
- Gentle Product Treatment
- Continuous Flow

MODEL NUMBER	PRICE CODE NO.	FLOW RATE**	MAX PRESSURE	PUMP LENGTH
SR800-71-27-* SR800-71-39-* SR800-71-47-*	52-7800* 52-7803* 52-7806*	7 GPM	87 PSI	27" 39" 47"
SR800-72-27-* SR800-72-39-* SR800-72-47-*	52-7801* 52-7804* 52-7807*	7 GPM	174 PSI	33" 45" 53"
SR800-181-27-* SR800-181-39-* SR800-181-47-*	52-7802* 52-7805* 52-7808*	17 GPM	87 PSI	27" 39" 47"

\* Add to Model No. and Price Code No.

\*\* Based on water

**FG** for food grade Buna  
**T** for PTFE



Warning: When pumping flammable or combustible liquids pump tube must be used in conjunction with an explosion proof motor



**ODP-S**



Warning: Not suitable for pumping flammable or combustible liquids

**ODP-S OPEN DRIP-PROOF MOTOR w/speed control**

1.1 HP (825 watts). Drip-proof motor in rugged glass reinforced plastic housing. Speed control knob allows for efficient, controlled liquid dispensing. ON/OFF switch conveniently located for single hand, thumb control. Resettable thermal overload protected, double insulated motor. Cartridge brush design extends life and greatly reduces replacement service time. Includes 16 ft. cord w/molded plug.  
Weight: 8 8 lbs. (4 kg.)

MOTOR MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
ODP-S-115	52-8000	115V/1/50-60
ODP-S-240	52-8001	230-240V/1/50-60

**ENC-S**



Warning: Not suitable for pumping flammable or combustible liquids

**ENC-S SEVERE DUTY TOTALLY ENCLOSED MOTOR w/speed control**

1.1 HP (825 watts). Totally enclosed motor in anodized aluminum housing for extra protection. Speed control knob allows for efficient, controlled liquid dispensing. ON/OFF switch conveniently located for single hand, thumb control. Resettable thermal overload protected, double insulated motor. Cartridge brush design extends life and greatly reduces replacement service time. Includes 16 ft. cord w/molded plug.  
Weight: 12 lbs. (6 kg.)

MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
ENC-S-115	52-3000	115V/1/50-60
ENC-S-240	52-3001	220-240V/1/50-60

**EXP-UL**

Warning: Not suitable for pumping flammable or combustible liquids

**EXP-UL EXPLOSION-PROOF MOTOR**

.83 HP (620 watts)\*\*. Explosion-proof motor in aluminum housing. C.S.A. and U.L. listed Class I, Groups C and D. Thermal overload protected, automatic reset. Includes 16 ft. cord, no plug.  
Weight: 20 lbs. (9.5 kg.)

MODEL NO.	PRICE CODE NO.	MOTOR VOLTAGE
EXP-UL-115	55-0744	115V/1/50-60
EX5-240*	55-7167	220-240V/1/50

\*Protection class (PTB): EE<sub>x</sub> de 11C T6

\*\* 620 watt input / 430 watt output

May be used for pumping flammable or combustible liquids

**AIR (F) AIR DRIVEN MOTOR**

**AIR (F)**



.73 HP (550 watts), 28 cu. ft./min. @ 90 PSI, 10,000 RPM. Aluminum motor housing is plastisol coated to prevent sparking. Includes muffler, filter, and trigger valve for flow control. Air line filter, PSI regulator and automatic oiler recommended.

Weight: 3 5 lbs. (1 6 kg.)

MODEL NO.	PRICE CODE NO.
AIR (F)	52-0100

Warning: Not suitable for pumping flammable or combustible liquids

**WARNING:** Pumping of flammables or combustible liquids can generate a static electric discharge, causing fire or explosion resulting in injury or death. Read and understand operating instructions before starting this unit. Follow all federal, state and local safety codes including NFPA 30 - NFPA77. Prior to connecting to air supply, install bond and ground wires and check continuity of each wire. A meter reading of one ohm or less is required for safe liquid transfer. Use only metallic drum, receiving vessel and metallic pump when pumping flammables. Air motors are not recognized under any current Underwriter's Laboratory listing program. Consult a qualified engineer for suitability for use in a hazardous area or on flammables.



# DD - DIRECT DRIVE PUMPS

## Technical Data

- Design:** Progressive Cavity / Positive Displacement
- Max. Viscosity:** 100,000cps (mPAS)
- Discharge Port:** 1.5" / 38mm hose barb, optional 1.25" / 32mm
- Wetted Material:** Tube & Rotor Assembly: 316 Stainless Steel  
Stator Material: See below
- Mechanical Seal:** SiC/Viton/SiC
- Motor Drives:** Pneumatic or electric; B phase / 50-60 Hz  
See page 4 for motor selection.
- Fittings:** Large Type Acme Thread design enables quick disassembly for cleaning and maintenance.

### DD 700 Industrial Pump Series

- Easy Maintenance
- Threaded Components
- Interchangeable Motors Drives
- Continuous Flow
- Low Shearing Properties

MODEL NUMBER	PRICE CODE NO.	FLOW RATE**	MAX PRESSURE	PUMP LENGTH
DD700-71-27-* DD700-71-39-* DD700-71-47-*	52-7710* 52-7713* 52-7716*	7 GPM	87 PSI	27" 39" 47"
DD700-72-27-* DD700-72-39-* DD700-72-47-*	52-7711* 52-7714* 52-7717*	7 GPM	174 PSI	33" 45" 53"
DD700-181-27-* DD700-181-39-* DD700-181-47-*	52-7712* 52-7715* 52-7718*	17 GPM	87 PSI	27" 39" 47"

\* Add to Model No. and Price Code No.

\*\* Based on water

B for Buna-N  
T for PTFE  
V for Viton



### DD 800 Sanitary Series

- Hygienic Design
- Easy to Clean & Maintain
- Gentle Product Treatment
- Continuous Flow


MODEL NUMBER	PRICE CODE NO.	FLOW RATE**	MAX PRESSURE	PUMP LENGTH
DD800-71-27-* DD800-71-39-* DD800-71-47-*	52-7810* 52-7813* 52-7816*	7 GPM	87 PSI	27" 39" 47"
DD800-72-27-* DD800-72-39-* DD800-72-47-*	52-7811* 52-7814* 52-7817*	7 GPM	174 PSI	33" 45" 53"
DD800-181-27-* DD800-181-39-* DD800-181-47-*	52-7812* 52-7815* 52-7818*	17 GPM	87 PSI	27" 39" 47"

\* Add to Model No. and Price Code No.

\*\* Based on water

FG for good grade Buna  
T for PTFE



 Warning: When pumping flammable or combustible liquids pump tube must be used in conjunction with an explosion proof motor





# DD700 & DD800 PUMP MOTORS

**Industrial Electric Motor**



**Industrial Electric Motors** 230-380-415-460v/3/50-60Hz

MODEL	PRICE CODE NO.	HP	KW	RPM	ENCLOSURE	SHIPPING WT. LBS (Kg)
DD-500	52-8010	0.75	,55	750-900	TEFC (IP55)	40 (18)
DD-510	52-8011	1	,75	750-900	TEFC (IP55)	52 (24)

**Sanitary Electric Motor**



**Sanitary Electric Motors** 230-380-415-460v/3/50-60Hz

MODEL	PRICE CODE NO.	HP	KW	RPM	ENCLOSURE (WASHDOWN)	SHIPPING WT. LBS (Kg)
DD-502	52-8020	0.75	,55	750-900	TEFC (IP55)	40 (18)
DD-512	52-8021	1	,75	750-900	TEFC (IP55)	52 (24)

**Industrial Pneumatic Motors**

**Industrial Pneumatic Motor**



MODEL	PRICE CODE NO.	HP	KW	RPM	AIR CONSUMPTION	SHIPPING WT. LBS (Kg)
DD-A4	52-8030	2	1,5	300-900	80 CFM @ 100 psi 37 L/Sec @ 7 Bar	12 (5)
DD-A6	52-8031	4	3,0	300-900	130 CFM @ 100 psi 65 L/Sec @ 7 Bar	24 (11)
DD-A8	52-8032	5	3,7	300-900	170 CFM @ 100 psi 80 L/Sec @ 7 Bar	26 (12)

**Sanitary Pneumatic Motors**

**Sanitary Pneumatic Motor**



MODEL	PRICE CODE NO.	HP	KW	RPM	AIR CONSUMPTION	SHIPPING WT. LBS (Kg)
DD-A4FP	52-8040	2	1,5	300-900	80 CFM @ 100 psi 37 L/Sec @ 7 Bar	12 (5)
DD-A6FP	52-8041	4	3,0	300-900	130 CFM @ 100 psi 65 L/Sec @ 7 Bar	24 (11)
DD-A8FP	52-8042	5	3,7	300-900	170 CFM @ 100 psi 80 L/Sec @ 7 Bar	26 (12)

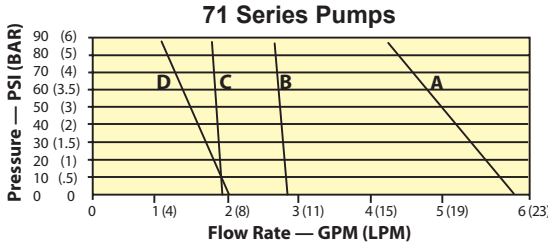
NOTE: Optimal pneumatic motor speed is 300-900 RPM



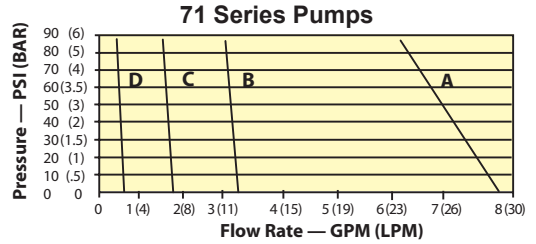
PERFORMANCE CURVES

750 RPM 50 Hz Operation

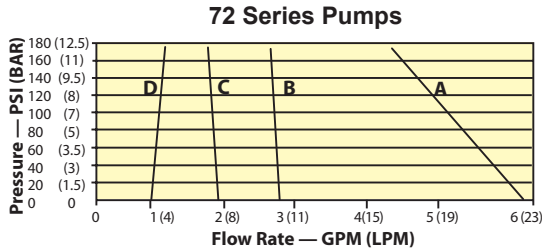
900 RPM 60 Hz Operation & Pneumatic Motors



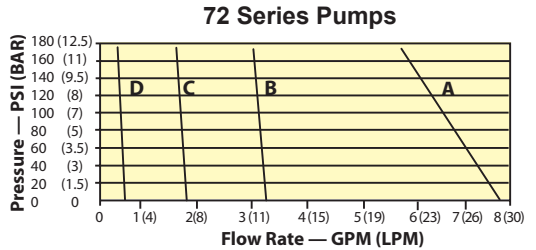
CURVE	VISCOSITY (cps)	HP	KW
A	1+	.5	,37
B	10,000+	1	,75
C	20,000+	1	1,2
D	30,000+	1.5	1,2



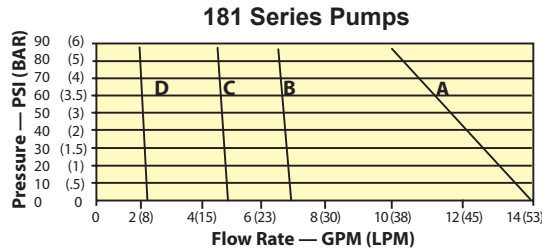
CURVE	VISCOSITY (cps)	HP	KW
A	1+	.5	,37
B	10,000+	1	,75
C	20,000+	1	1,2
D	30,000+	1.5	1,2



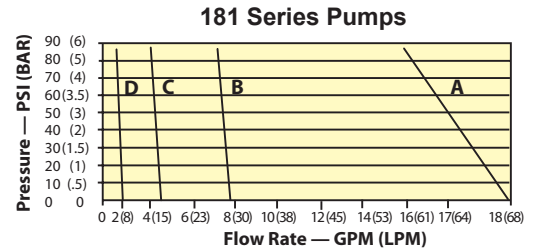
CURVE	VISCOSITY (cps)	HP	KW
A	1+	.5	,37
B	10,000+	1	,75
C	20,000+	1	1,2
D	30,000+	1.5	1,2



CURVE	VISCOSITY (cps)	HP	KW
A	1+	.5	,37
B	10,000+	1	,75
C	20,000+	1	1,2
D	30,000+	1.5	1,2



CURVE	VISCOSITY (cps)	HP	KW
A	1+	.5	,37
B	10,000+	1	,75
C	20,000+	1	1,2
D	30,000+	1.5	1,2



CURVE	VISCOSITY (cps)	HP	KW
A	1+	.5	,37
B	10,000+	1	,75
C	20,000+	1	1,2
D	30,000+	1.5	1,2



# DRUM PUMP ACCESSORIES

## HOSE & CLAMPS

### NYLON REINFORCED HOSE CLEAR

1 1/2" I.D. - per foot.....

Price Code

22-0434

### WIRE REINFORCED HOSE

1 1/2" I.D. - per foot.....

22-0528

### HIGH PRESSURE TRANSFER HOSE

Tube: Black, oil resistant synthetic rubber (Nitrile). Reinforcement One braid of high tensile steel wire. Cover: Black, oil and abrasion resistant synthetic rubber. Maximum working pressure 725 psi. Max. temp 180° F

1 1/2" I.D. - per foot .....

52-9039

### PLICORD® GRAY FOOD TRANSFER HOSE

Construction: White Chemivac® synthetic rubber (FDA/USDA 3A Sanitary Standard 18-03 compliant) Cover: Spiral-plaid synthetic fabric with Galvanized Wire helix. Max. working pressure 150 psi. Max. temp. 180 F

1 1/2" I.D. - per foot.....

52-9037

### VINTNER™ FOOD TRANSFER HOSE (High Pressure)

For handling liquid and/or tank truck transfer of wine, beer, potable water and other nonoily, liquid food stuffs. Construction: White Chlorobutyle (FDA/USDA, 3A Sanitary Standard 18-03 compliant). Cover: Grey Versigard® synthetic rubber. Maximum working pressure 200 psi. Max. temp. 220 F

1 1/2" I.D. - per foot. ....

52-9036

### DISCHARGE HOSE CLAMP

Maleable iron two bolt clamp. Gripping ridges reinforced lugs.

Hose size from 1-48/4 to 2-3/4 (44.50 mm to 27 mm) .....

52-9038

## PUMP HANGER

For DD direct drive pumps constructed of 304S tubing.



Price Code No.  
52 0743

## AIR FILTER REGULATOR/LUBRICATOR

To protect all air driven motors, with polycarbonate bowl & pressure gauge (200 psi), 3/8" NPT



Price Code No.  
55 1142



# SERIES 'HP' HAND DISPENSING PUMP

26

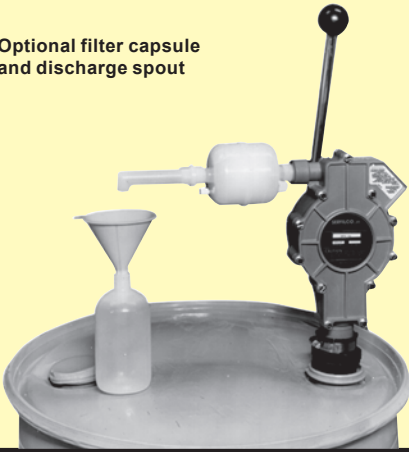
P-404\_AB

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [www.serfilco.com](http://www.serfilco.com) (800) 323 - 5431

**For point-of-use dispensing / filtering of water and chemicals used for:  
PLATING / PHARMACEUTICAL / INDUSTRIAL / PETROLEUM PRODUCTS  
and other stringent applications**

**PREVENT PRODUCT CONTAMINATION.  
IMPROVE PRODUCT QUALITY.**

Optional filter capsule  
and discharge spout



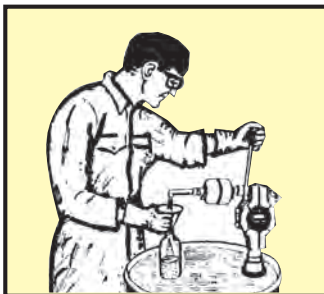
Designed for the transfer or dispensing of concentrates, additives or other liquids which are purchased in bulk but are used in small quantities. This low cost pump delivers one pint per stroke or one quart with the forward and back push/pull of the handle. The variety of materials of construction enables the user to select those which are specifically required for his individual needs according

## A tough, quality engineered pump

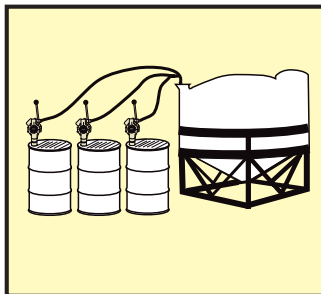
- **QUALITY ENGINEERED THERMOPLASTIC CONSTRUCTION**
- **CONTROLLED DISCHARGE RATE**  
The pump discharges approximately one (1) quart on every complete forward and backward cycle.
- **SUCTION LIFT:** Tested for 15 ft. minimum
- **DISCHARGE HEAD:** Up to 25 ft.
- **VISCOSITIES UP TO 2000 SSU**
- **TWO POSITION PUMP HANDLE**  
Handle can be mounted above the pump or below.
- **TAMPER PROOF HANDLE**  
Can be padlocked to protect against unauthorized use.
- **SELF-LUBRICATING PTFE PISTON RING**  
Operates wet or dry for long life

to chemical resistance charts. The use of this pump eliminates having to pour from one container to another and avoids costly and hazardous spilling and splashing.

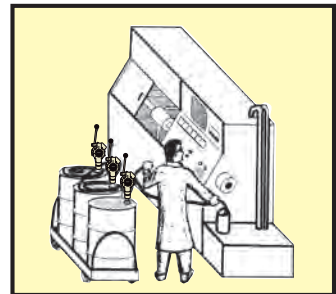
**See following page for specifications  
and ordering information.**



Optional point of use filter  
for filtering/transfer of  
pharmaceutical liquids.



Liquid transfer  
for batch mixing.



Low cost permits use of  
multiple pumps to avoid  
cross-contamination.



**SERIES 'HP' HAND DISPENSING PUMP**

P-404\_AB

2900 MacArthur Blvd Northbrook IL USA 60062 [www.serfilco.com](http://www.serfilco.com) (800) 323 - 5431

**ELIMINATES "DUMPING" & SPILLING OF SOLUTIONS**

The HAND DISPENSING PUMP is a double acting piston type which will handle a wide range of solutions. The pump body, valves, valve seats and piston are all made of chemically resistant, performance engineered plastics, especially compounded to give the pump strength and rigidity. All internal metal parts in contact with the liquid are made of 316 stainless steel. The "O"-ring and gasket materials are cork-nitrile, Viton or EPDM (ethylene propylene). 1" NPT suction, 3/4" NPT discharge.

**TO ORDER, use Price Code Number**  
*Select pump from chart below and add discharge hose and suction tube to complete assembly*

**PUMP**

MODEL	MATERIALS OF CONSTRUCTION	"O"-RING	GASKET	PRICE CODE NO.
HPV HPN HPE	<b>POLYESTER</b> (glass reinforced) - housing, cover plate, piston, valves and bung adapter	VITON® VITON EPDM	VITON CORK-NITRILE EPDM	59-0001 59-0002 59-0003
HRV HRN HRE	<b>RYTON®</b> (glass reinforced) - housing, cover plate, ECTFE piston, valves and bung adapter	VITON VITON EPDM	VITON CORK-NITRILE EPDM	59-0004 59-0005 59-0006
HHV HHE	<b>ECTFE</b> (Halar®) - housing, cover plate, piston, valves and bung adapter	VITON EPDM	VITON EPDM	59-0007 59-0008

All models have 316 stainless steel piston rod, fasteners and suction screen in contact with liquid. All pumps include a 2" NPT bung adapter.

**HOSES & SUCTION TUBE**

**OPTIONAL EQUIPMENT**

MODEL	DESCRIPTION	PRICE CODE NO.
<b>DISCHARGE HOSES</b> (Add to Model No. and Price Code No.)		
-1	8' EPDM, w/polyester elbow & nozzle	-1
-2	8' Nitrile (Buna-N), w/polyester elbow & nozzle	-2
-3	8' PVC black vinyl, w/polyester elbow & nozzle	-3
-4	8' Cross linked polyethylene, w/polyester elbow & nozzle	-4
-5	8' Cross linked polyethylene, w/ECTFE elbow & nozzle	-5
-6	8' EPDM, w/ECTFE elbow & nozzle	-6
-7	8' Nitrile (Buna-N), w/ECTFE elbow & nozzle	-7
-8	8' PVC, w/ECTFE elbow & nozzle	-8

MODEL	DESCRIPTION	PRICE CODE NO.
<b>DISCHARGE SPOUT</b> (Add to Model No. and Price Code No.)		
-M	Polyester	-M
-N	ECTFE	-N

<b>BUTTRESS-BUNG ADAPTER</b> (2" buttress x 2" NPT) (Add to Model No. & Price Code No.)		
-R	Polypropylene/polyester assembly for HP pump	-R
-S	Polypropylene/ECTFE assembly for HR pump	-S
-T	Polypropylene/ECTFE assembly for HH pump	-T

<b>SUCTION TUBE</b> (Add to Model No. and Price Code No.)		
-A	2 pc. 1" polyester, 34" long w/polyester coupling & PTFE tape	-A
-B	2 pc. 1" PTFE, 34" long w/ECTFE coupling & PTFE tape	-B
-C	2 pc. 1" UHMW polyethylene <sup>#</sup> , 34" long w/ECTFE coupling	-C
-E	1 pc. 3/4" PVC flexible, 35" long (prevents tearing of drum liners)	-E

<b>FILTER CAPSULE-PAC</b>			
FPC-1.0	Polypropylene filter capsule with pleated 1.3 ft. <sup>2</sup> polypropylene media, ECTFE pump adapter, ECTFE discharge spout.	1.0 Nominal	59-0011
FPC-0.2		0.2 Nominal	59-0013
FC-1.0	Replacement filter capsule	1.0 Nominal	59-0012
FC-0.2		0.2 Nominal	59-0014

**WALL BRACKET** 55-7149  
**TYPICAL MODEL:** HPN-2AM & **PRICE CODE NO.:** 59-0002-2AM  
Registered trademarks: Teflon, Viton- DuPont Dow Elastomers;

<sup>#</sup>Ultra High Molecular Weight polyethylene

Ryton- Phillips Chemical; Halar - Ausimont

**⚠ SAFETY PRECAUTIONS**

Plastic pumps are not designed nor intended to be used for transferring flammable or explosive liquids. Only metallic pumps which can be grounded and bonded should be used for this purpose. Refer to a chemical resistance data chart for compatibility of materials with liquids to be pumped. Always wear protective safety clothing such as gloves, apron and goggles.



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**For dispensing of small quantities.**



**PROTECTIVE APPAREL  
MUST BE WORN.**

MODEL	PRICE CODE NO.
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PH10	56-0000A
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**PLASTIC SYPHON PUMP**

All polyethylene construction. Hand operated bellows. Fits 5-gal. cans, bottles or drums. Ideal for mildly corrosive fluids at ambient temperatures. Top vent cap is syphon breaker. 16" long tube, 21" long hose.

4A	56-0011C
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**PLASTIC SYPHON PUMP**

All polyethylene. Hand operated bellows and flexible discharge tube will syphon to a lower or pump to a higher level. For dispensing mild acids, caustics, light oils, waxes and disinfectants at ambient temperatures. Top vent cap is syphon breaker, 2" IPS threaded male adapter. 33" long tube, 46" long hose. For 15, 30 and 55 gal. drums. 5 GPM. Wt. 1 lb.

B	56-0003
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**PLASTIC PISTON PUMP**

Constructed of polyethylene and polypropylene. Threads onto 2" and 3/4" NPT drum opening. With adjustable suction tube. For 15, 30 and 55 gal. drums.

SC25	56-0005A
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Syphons 4 GPM after priming;  
Pumps 6 GPM @ 60 RPM.  
Cast iron. Wt. 14 lbs., 52"  
Pumps 15 GPM @ 60 RPM.  
Aluminum. Wt. 14-1/2 lbs., 53"

LP32	56-0022
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**ROTARY METAL PUMPS**

Effortless syphon flow after priming with several turns. For 15, 30 or 55 gal. drums. Ideal for detergents and light oils. Pumps 6 GPM at 60 turns per min. 2" IPS threaded male adapter. Features Buna N gaskets.

316SS	56-0175
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**METAL PISTON PUMPS**

Fits 15, 30 and 55 gal. containers. Includes 2" IPS threaded male adapter. Pumps 8 oz. on each upstroke.

316 stainless steel and PTFE for alkalis, mild acids.

Chrome plated steel with polyethylene for non-corrosives, soaps, disinfectants.

146C	56-0010
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**OPTIONAL**

**GROUND-BOND CABLE KIT**

For use with metal pumps and containers to prevent static discharge. When pumping flammable or combustible liquids from one container to another, both containers must be effectively bonded and grounded to prevent discharge of sparks of static electricity which could cause explosion and bodily harm.

DESCRIPTION	PRICE CODE NO.
2 ground cables, 6' long with clamps	55-0247
1 bond cable, 10' long with clamps	
1 ground cable, 1' long with clamp for drum	



# DRUM PUMP CHEMICAL RESISTANCE GUIDE

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

The information contained in this Drum Pump Chemical Resistance Guide is to be used only as a general guide for proper drum pump tube selection. No warranty is implied nor is any guarantee provided. When compatibility data are inconclusive, field testing is recommended. An asterisk indicates the material is flammable and may only be handled with a stainless steel pump tube and appropriate drive motor which are properly grounded and bonded according to Operating Instructions. Always consult with a safety engineer for proper drive motor selection when pumping flammables. All test data listed is at room temperature (72°F, 22°C) unless otherwise stated.

<b>R</b> = Recommended		Use only explosion-proof motors on flammable liquids. Only metallic pumps should be used for transferring flammable or explosive liquids.
<b>M</b> = Minor to moderate, should be field tested		All pumps and containers must be properly grounded and bonded to prevent static discharge and sparking, which could cause electric shock, fire or explosion. A ground wire should be used on any explosion-proof motor as well as the container when transferring explosive material.
<b>X</b> = Not recommended		Always consult with a Safety Engineer for proper pump / motor selection.
— = No data		
* = Flammable or explosive		

	CPVC/PVDF - MAX. 175°F (80°C) STAINLESS STEEL 316 - MAX. 175°F (80°C) PVDF (KYNAR®) - MAX. 175°F (80°C) POLYPROPYLENE - MAX. 130°F (54°C)					CPVC/PVDF - MAX. 175°F (80°C) STAINLESS STEEL 316 - MAX. 175°F (80°C) PVDF (KYNAR®) - MAX. 175°F (80°C) POLYPROPYLENE - MAX. 130°F (54°C)			
* Acetaldehyde	X	X	R	X	Ammonium persulfate	R	R	R	R
Acetamide (PVDF, R to 75°F/24°C)	—	R	R	—	Ammonium phosphate, dibasic	R	R	R	R
* Acetate solvents	X	X	R	X	Ammonium phosphate, monobasic	R	R	R	R
Acetic acid (10% -80%)	R	R	M	R	Ammonium phosphate, tribasic	R	R	R	R
Acetic acid (80%)	—	R	M	X	Ammonium sulfate	R	R	R	R
Acetic acid, glacial (PVDF, R to 120°F/49°C) (PP, R to 100°F/38°C)	R	R	M	X	Ammonium sulfide (PVDF & CPVC / PVDF, R to 125°F/52°C)	—	R	—	R
Acetic anhydride	X	X	R	X	Ammonium thiocyanate	—	R	—	R
* Acetone	X	X	R	X	Ammonium thiosulfate	—	R	R	R
* Acetyl chloride	X	X	M	X	* Amyl acetate	X	X	R	X
* Acetylene	X	X	R	X	* Amyl chloride	X	X	R	X
* Alcohols	X	X	R	X	Aniline (PVDF, R to 75°F/24°C)	M	R	R	X
Aluminum chloride	R	R	X	R	Aniline dyes	—	—	M	—
Aluminum fluoride	R	R	X	R	Aniline hydrochloride (PVDF, R to 75°F/24°C)	—	R	X	X
Aluminum hydroxide	R	R	R	R	Anisole	—	—	R	—
Aluminum nitrate	R	R	R	R	Aqua regia (80%) (PVDF, R to 75°F/24°C)	X	R	X	X
Aluminum potassium sulfate	R	R	R	R	Arsenic acid	R	R	R	R
Aluminum sulfate	R	R	R	R	Barium carbonate	R	R	R	R
Amines	—	—	R	X	Barium chloride	R	R	M	R
* Ammonia, aqua (10%)	X	X	R	X	Barium hydroxide	R	R	R	R
* Ammonia, aqueous	X	X	R	X	* Barium nitrate	X	X	R	X
* Ammonia, (concentrated)	X	X	R	X	Barium sulfate	R	R	R	R
Ammonium bifluoride (PP, R to 70°F/21°C)	R	R	R	R	Barium sulfide	R	R	R	R
Ammonium carbonate	R	R	R	R	Benzaldehyde (PVDF, R to 75°F/24°C)	X	R	R	X
Ammonium chloride	R	R	M	R	Benzene, benzol	X	X	R	X
Ammonium fluoride (10%)	—	R	—	R	Benzene sulfonic acid (PVDF, R to 75°F/24°C)	—	R	M	X
Ammonium fluoride (25%)	R	R	—	R	Benzoic acid	M	R	R	R
Ammonium hydroxide	R	R	R	X	Bismuth carbonate	R	R	—	R
Ammonium nitrate	R	R	R	R	Black liquors	R	R	—	—
Ammonium nitrite (PP, R to 70°F/21°C)	R	—	—	—	Boric acid	R	R	R	R
Ammonium oxalate	R	—	R	—	Brine acid	—	R	—	—



# DRUM PUMP Chemical Resistance Guide (cont'd)

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

The information contained in this Drum Pump Chemical Resistance Guide is to be used only as a general guide for proper drum pump tube selection. No warranty is implied nor is any guarantee provided. When compatibility data are inconclusive, field testing is recommended. An asterisk indicates the material is flammable and may only be handled with a stainless steel pump tube and appropriate drive motor which are properly grounded and bonded according to Operating Instructions. Always consult with a safety engineer for proper drive motor selection when pumping flammables. All test data listed is at room temperature (72°F, 22°C) unless otherwise stated.


<p><b>R</b> = Recommended  <b>M</b> = Minor to moderate, should be field tested  <b>X</b> = Not recommended  <b>—</b> = No data  <b>*</b> = Flammable or explosive</p>		<p>Use only explosion-proof motors on flammable liquids. Only metallic pumps should be used for transferring flammable or explosive liquids.          All pumps and containers must be properly grounded and bonded to prevent static discharge and sparking, which could cause electric shock, fire or explosion. A ground wire should be used on any explosion-proof motor as well as the container when transferring explosive material. Always consult with a Safety Engineer for proper pump / motor selection.</p>
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	CPVC / PVDF - MAX. 175°F (80°C) STAINLESS STEEL 316 - MAX. 175°F (80°C) PVDF (KYNAR®) - MAX. 175°F (80°C) POLYPROPYLENE - MAX. 130°F (54°C)					CPVC / PVDF - MAX. 175°F (80°C) STAINLESS STEEL 316 - MAX. 175°F (80°C) PVDF (KYNAR®) - MAX. 175°F (80°C) POLYPROPYLENE - MAX. 130°F (54°C)			
* Acetaldehyde	X	X	R	X	Ammonium persulfate	R	R	R	R
Acetamide (PVDF, R to 75°F/24°C)	—	R	R	—	Ammonium phosphate, dibasic	R	R	R	R
* Acetate solvents	X	X	R	X	Ammonium phosphate, monobasic	R	R	R	R
Acetic acid (10% -80%)	R	R	M	R	Ammonium phosphate, tribasic	R	R	R	R
Acetic acid (80%)	—	R	M	X	Ammonium sulfate	R	R	R	R
Acetic acid, glacial (PVDF, R to 120°F/49°C) (PP, R to 100°F/38°C)	R	R	M	X	Ammonium sulfide (PVDF & CPVC / PVDF, R to 125°F/52°C)	—	R	—	R
Acetic anhydride	X	X	R	X	Ammonium thiocyanate	—	R	—	R
* Acetone	X	X	R	X	Ammonium thiosulfate	—	R	R	R
* Acetyl chloride	X	X	M	X	* Amyl acetate	X	X	R	X
* Acetylene	X	X	R	X	* Aniline chloride	X	X	R	X
* Alcohols	X	X	R	X	Aniline (PVDF, R to 75°F/24°C)	M	R	R	X
Aluminum chloride	R	R	X	R	Aniline dyes	—	—	M	—
Aluminum fluoride	R	R	X	R	Aniline hydrochloride (PVDF, R to 75°F/24°C)	—	R	X	X
Aluminum hydroxide	R	R	R	R	Anisole	—	—	R	—
Aluminum nitrate	R	R	R	R	Aqua regia (80%) (PVDF, R to 75°F/24°C)	X	R	X	X
Aluminum potassium sulfate	R	R	R	R	Arsenic acid	R	R	R	R
Aluminum sulfate	R	R	R	R	Barium carbonate	R	R	R	R
Amines	—	—	R	X	Barium chloride	R	R	M	R
* Ammonia, aqua (10%)	X	X	R	X	Barium hydroxide	R	R	R	R
* Ammonia, aqueous	X	X	R	X	* Barium nitrate	X	X	R	X
* Ammonia, (concentrated)	X	X	R	X	Barium sulfate	R	R	R	R
Ammonium bifluoride (PP, R to 70°F/21°C)	R	R	R	R	Barium sulfide	R	R	R	R
Ammonium carbonate	R	R	R	R	Benzaldehyde (PVDF, R to 75°F/24°C)	X	R	R	X
Ammonium chloride	R	R	M	R	Benzene, benzol	X	X	R	X
Ammonium fluoride (10%)	—	R	—	R	Benzene sulfonic acid (PVDF, R to 75°F/24°C)	—	R	M	X
Ammonium fluoride (25%)	R	R	—	R	Benzoic acid	M	R	R	R
Ammonium hydroxide	R	R	R	X	Bismuth carbonate	R	R	—	R
Ammonium nitrate	R	R	R	R	Black liquors	R	R	—	—
Ammonium nitrite (PP, R to 70°F/21°C)	R	—	—	—	Boric acid	R	R	R	R
Ammonium oxalate	R	—	R	—	Brine acid	—	R	—	—





**R** = Recommended  
**M** = Minor to moderate, should be field tested  
**X** = Not recommended  
**—** = No data  
**\*** = Flammable or explosive



Use only explosion-proof motors on flammable liquids. Only metallic pumps should be used for transferring flammable or explosive liquids. All pumps and containers must be properly grounded and bonded to prevent static discharge and sparking, which could cause electric shock, fire or explosion. A ground wire should be used on any explosion-proof motor as well as the container when transferring explosive material. Always consult with a Safety Engineer for proper pump / motor selection.

	CPVC / PVDF - MAX. 175°F (80°C)				STAINLESS STEEL 316 - MAX. 175°F (80°C)				POLYPROPYLENE - MAX. 130°F (54°C)								
	PVDF (KYNAR) - MAX. 175°F (80°C)				POLYPROPYLENE - MAX. 130°F (54°C)				CPVC / PVDF - MAX. 175°F (80°C)				STAINLESS STEEL 316 - MAX. 175°F (80°C)				
* Heptane	X	X	R	X	Muriatic acid (37%) (hot)	—	R	X	R	X	X	R	X				
* Hexane	X	X	R	X	* Naptha	X	X	R	X	X	X	M	X				
Hydrobromic acid	M	R	X	R	* Napthalene	X	X	M	X								
Hydrochloric acid (20%)	R	R	X	R	Nickel chloride	R	R	R	R								
Hydrochloric acid (37%) (cold)	R	R	X	R	Nickel sulfate	R	R	R	R								
Hydrochloric acid (37%) (hot)	—	R	X	R	Nitric acid (5-10%)	R	R	R	R								
Hydrofluoric acid (20%)	R	R	X	X	Nitric acid (20%)	R	R	R	R								
Hydrofluoric acid (50%)	X	R	X	X	Nitric acid, (conc.) (PVDF, R to 120°F/49°C)	X	R	R	X								
Hydrofluoric acid (75%)	X	R	X	X	Nitric acid, red fuming	—	X	R	X								
Hydrofluoric acid (conc.) (cold)	—	R	—	X	Nitrobenzene (PVDF, R to 75°F/24°C)	M	R	M	X								
Hydrofluosilicic acid (20%)	R	R	X	R	Oleic acid	R	R	R	X								
Hydrogen fluoride	R	—	R	—	Oleum	X	X	R	X								
* Hydrogen peroxide	X	X	R	X	Oxalic acid (cold) (PVDF, R to 125°F/52°C)	R	R	R	R								
* Hydrogen sulfide (cold)	X	X	R	X	Palmitic acid	M	R	R	R								
* Hydrogen sulfide (hot)	X	X	R	X	Perchloric acid (PVDF, R to 125°F/52°C)	—	R	X	M								
Hypochlorous acid	—	R	X	R	Perchloroethylene	X	R	R	X								
Iodine (PVDF, R to 150°F/66°C)	M	R	X	M	Petrolatum	—	R	R	R								
* Isopropyl ether	X	X	R	X	Phenol (carbolic acid)	R	R	R	R								
* Jet fuel (JP3, JP4, JP5)	X	X	R	X	Phosphoric acid (20%)	R	R	M	R								
* Lacquer solvents	X	X	R	X	Phosphoric acid (20%-40%)	R	R	R	R								
Lactic acid (PVDF & CPVC / PVDF, R to 120°F/49°C)	R	R	R	R	Phosphoric acid (45%)	R	R	M	R								
Lead acetate	R	R	M	R	Phosphorus, red	—	—	R	—								
Lead sulfamate	R	—	—	—	Phosphorus, yellow	—	—	R	—								
* Ligroin	X	X	R	X	Photographic solutions	R	—	R	—								
Magnesium carbonate	R	R	R	R	Plating solutions, chrome 40	R	R	R	R								
Magnesium chloride	R	R	R	R	Plating solutions, copper	R	R	R	R								
Magnesium hydroxide	R	R	R	R	Plating solutions, gold	R	—	R	—								
Magnesium sulfate	R	R	R	R	Plating solutions, iron	R	R	R	R								
Maleic acid	M	R	R	R	Plating solutions, lead	R	R	—	R								
Mercuric chloride (dilute solution)	R	R	X	R	Plating solutions, nickel	R	R	—	R								
Mercuric cyanide	R	R	R	R	Plating solutions, silver	R	R	R	R								
* Methyl acetone	X	X	R	X	Plating solutions, tin	R	R	R	R								
Methyl chloride	X	R	R	X	Plating solutions, zinc	R	R	R	R								
* Methyl ethyl ketone	X	X	R	X	Potassium bicarbonate	R	R	M	R								
* Methyl isobutyl ketone	X	X	R	X	Potassium bromide	R	R	R	R								
Methylene chloride	X	X	R	X	Potassium carbonate	R	R	R	R								
Milk	R	R	R	R	Potassium chlorate	R	R	R	R								
* Monoethanolamine	X	X	R	X	Potassium chloride	R	R	R	R								
Muriatic acid (20%)	R	R	X	R	Potassium chromate	R	R	M	R								
Muriatic acid (37%) (cold)	R	R	X	R	Potassium dichromate	R	R	R	R								



# DRUM PUMP Chemical Resistance Guide (cont'd)

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<p><b>R</b> = Recommended  <b>M</b> = Minor to moderate, should be field tested  <b>X</b> = Not recommended          — = No data          * = Flammable or explosive</p>		<p>Use only explosion-proof motors on flammable or explosive liquids. Only metallic pumps should be used for transferring flammable or explosive liquids. All pumps and containers must be properly grounded and bonded to prevent static discharge and sparking, which could cause electric shock, fire or explosion. A ground wire should be used on any explosion-proof motor as well as the container when transferring explosive material. Always consult with a Safety Engineer for proper pump / motor selection.</p>
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	CPVC / PVDF - MAX. 175°F (80°C)				STAINLESS STEEL 316 - MAX. 175°F (80°C)				PVDF (KYNAR®) - MAX. 175°F (80°C)				POLYPROPYLENE - MAX. 130°F (54°C)			
Potassium hydroxide (PVDF & CPVC / PVDF, R to 150°F/66°C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Potassium nitrate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Potassium permanganate	M	R	M	R	R	R	R	R	R	R	R	R	R	R	R	R
Potassium sulfate	R	R	M	R	R	R	R	R	R	R	R	R	R	R	R	R
Propionic acid (CPVC / PVDF, R to 140°F/60°C)	—	R	M	R	R	R	R	R	R	R	R	R	R	R	R	R
Silicone oil	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Silver nitrate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Soap solutions	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium acetate	X	X	R	X	R	R	R	R	R	R	R	R	R	R	R	R
Sodium bicarbonate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium bisulfate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium bisulfite	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium borate	—	R	M	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium bromide	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium carbonate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium chlorate (50%)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium chloride	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium cyanide	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium hydroxide (20%)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium hydroxide (50%)	R	X	M	X	R	R	R	R	R	R	R	R	R	R	R	R
Sodium hydroxide (80%)	R	X	X	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium hypochlorite to 20%	X	R	X	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium metaphosphate	X	—	R	—	R	R	R	R	R	R	R	R	R	R	R	R
Sodium nitrate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium perborate	R	—	X	—	R	R	R	R	R	R	R	R	R	R	R	R
Sodium phosphate	R	R	M	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium silicate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium sulfate	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sodium sulfide	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sulfur chloride (PVDF, R to 75°F/24°C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sulfur dioxide	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sulfuric acid (10%)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sulfuric acid (10%-75%)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sulfuric acid (66° Baumè)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sulfurous acid (PVDF & CPVC / PVDF, R to 120°F/49°C)	R	R	M	R	R	R	R	R	R	R	R	R	R	R	R	R
Tannic acid	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Tartaric acid	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
* Tetrahydrofuran	X	X	R	X	R	R	R	R	R	R	R	R	R	R	R	R
Tetralin	—	—	R	—	R	R	R	R	R	R	R	R	R	R	R	R
Titanium tetrachloride (PVDF, R to 150°F/66°C)	—	—	R	M	R	R	R	R	R	R	R	R	R	R	R	R
* Toluene (toluol)	X	X	R	X	R	R	R	R	R	R	R	R	R	R	R	R
Transformer oil	R	—	R	—	R	R	R	R	R	R	R	R	R	R	R	R
Trichloroacetic acid (PVDF & CPVC/PVDF, R to 75°F/24°C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
1, 1, 1, Trichloroethane	—	—	X	—	R	R	R	R	R	R	R	R	R	R	R	R
Trichloroethylene	X	R	R	X	R	R	R	R	R	R	R	R	R	R	R	R
Tricresylphosphate	—	X	R	—	R	R	R	R	R	R	R	R	R	R	R	R
Triethylamine (PVDF, R to 125°F/52°C)	—	R	R	—	R	R	R	R	R	R	R	R	R	R	R	R
* Vinyl chloride	X	X	—	X	R	R	R	R	R	R	R	R	R	R	R	R
* Wood oil	X	X	R	X	R	R	R	R	R	R	R	R	R	R	R	R
* Xylene (xylol)	X	X	R	X	R	R	R	R	R	R	R	R	R	R	R	R
Zinc hydrosulfite	—	R	R	—	R	R	R	R	R	R	R	R	R	R	R	R



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## PROBLEMS CAN ABOUND, SUCH AS:

1. Chemicals may range in pH from 1 - 14.
2. Hot chemicals can cause suction cavitation that can reduce efficiency and cause noise, impeller wear and seal damage.
3. Cooling chemicals may produce crystalline formations which can abrade moving parts.
4. Liquids having an elevated specific gravity (above 1.0) will require a corresponding increase in pump motor horsepower.
5. Motors often operate in hot, unvented areas, requiring proper enclosure selection.

## MATERIAL COMPATIBILITY

Materials must be compatible with the chemicals to be pumped. Most plating solutions and many chemicals are corrosive, so pump materials must resist chemical attack.

Corrosion-resistant chlorinated polyvinyl chloride (CPVC) pumps are made in many sizes to handle a variety of pressure ranges and flow rates. CPVC withstands temperatures to 200°F and somewhat higher at low pressures.

Polypropylene is suitable, but not as versatile as CPVC. Polyethylene, PVDF, Ryton®, Noryl® and Teflon® are also available for specific solutions. Corrosion-resistant alloys are also available. Material used for seals and gaskets must be considered.

## WHAT SPEED AND HP?

Centrifugal pumps are available with various motor speeds, such as 1725 or 3450 RPM. The lower speed pump has half the flow, one-fourth the pressure and requires one-eighth the horsepower of the higher RPM model.

Pump ratings are based on moving liquid with a specific gravity of 1.0. For fluids with a specific gravity greater than 1.0, the required pump/motor horsepower of a direct drive pump can be determined by identifying the desired flow/pressure point on a performance curve and multiplying the indicated horsepower by the specific gravity of the fluid.

Many magnetic-coupled pumps are built with magnets capable of handling fluids with a specific gravity greater than 1.0. Care must be taken not to select a pump whose rating isn't adequate to handle the specific gravity of the fluid or the pump will lose synchronization and fail to pump. On some magnetic coupled pumps, the impeller can be trimmed to pump higher specific gravity liquids. In any match-up of the pump and motor, make sure the piping is adequate. Piping too narrow can starve the pump and ruin efficiency.

## The Ten Commandments of Pumping

1. Always read operating instructions.
2. Strain foreign objects from the pump.
3. Use siphon breakers on suction and discharge piping.
4. Provide proper electrical power with proper overload protection.
5. Never starve the pump; use oversize suction piping for distance, elevated temperatures, vaporization or high atmospheric elevations.
6. Carefully choose materials that contact the liquid.
7. Determine flow, pressure and size of pump required. Match the HP of drive motor to the specific gravity of the liquid being pumped.
8. Install a valve on a centrifugal pump discharge to prevent overloading the motor, or use a non-overloading motor for the entire performance range.
9. Keep adequate spare parts on hand.
10. Install standby pumps when uninterrupted pumping is mandatory.

## PUMP SELECTION

Pump sizing is largely determining the desired pressure and flow rate. Most pumps are of horizontal design. They are available as direct driven or as magnetic coupled seal-less, in many flow rate/pressure combinations. Which to choose? It depends on use conditions.

A direct drive pump requires careful seal selection to minimize wear and failure. Mechanical seals provide precision fit, are self-adjusting and are available water or product flushed. A closed-loop, double water flushed seal system also can be used when an external source of water is not available, or if the seal is to be self-contained.

Vertical pumps must have their drive motors mounted at the tank, which may cause a space problem. Fumes and mist from the plating bath can be a problem, too, so protect the motor if necessary. Vertical pumps are often used to pump waste solution from sumps.

Drum pumps are narrow enough to self-prime liquids through the bung opening. To add chemical for pH control or to add brightener, use a diaphragm or piston type metering pump. Such pumps could be operated on timers or amp-hour meters.



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In order to achieve a desired flow and pressure, the pump selected must provide a TDH at the given flow which must exceed the desired discharge pressure plus friction losses resulting from the length of the pipe line, fittings and valves in the line and any other impediments to flow in the line.

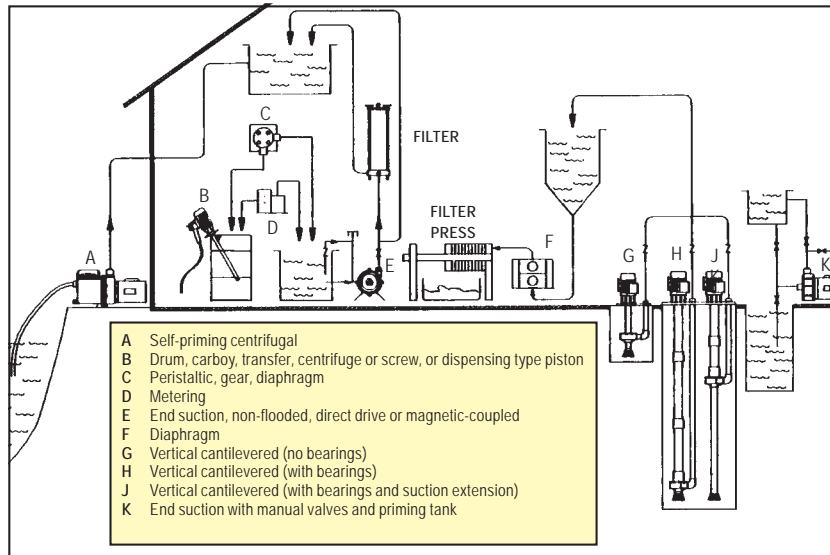
The inlet and outlet port sizes of the pump selected do not necessarily indicate the actual size of either the suction or discharge piping. When specific gravities higher than 1.0 are encountered, oversized motors are required.

In any pumping system, valves should be selected to maintain

the pump prime and control flow and pressure at the desired levels. In order to prevent backsiphoning, loss of solution or loss of prime, check valves should be utilized. Consideration must be given to ensure that the pump will develop adequate pressure to open the check valve at time of start-up. A globe valve, ball valve or plug valve should be installed on the discharge line directly after the pump discharge nozzle. Gate valves are not recommended to throttle or regulate flow.

## TYPICAL PUMP APPLICATIONS

Many different types of pumps with a wide range of flow rates and discharge pressures are available to meet the requirements of various applications. The drawing below illustrates a number of possible applications and the different types of pumps which can be used to meet these requirements.



Please sketch system (note elevations)

Reference E in the above illustration indicates that the horizontal pump would have to be manually primed at least the first time used, and a foot valve (check valve) should be used on the suction side of the pump to maintain the primed condition when the pump is not operating

The illustration also indicates the employment of three different length vertical pumps, the shortest of which will generally be considered to be the most dependable. The slightly longer pump with a suction extension could continue to lift the liquid, provided the level is slightly above the suction strainer (flooded suction). If the pump was shut off and the liquid level falls below the pump and suction strainer, it would lose its suction or prime and the

pump would then require priming or a flooded suction. Therefore, use of the very longest pump may be required under certain conditions, particularly when it would be necessary to pump at any given time from any level within the reservoir.

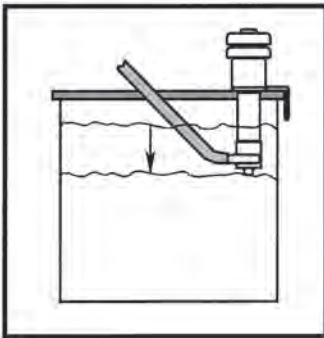
If the installation requires constant pumping or pumping upon demand, it is recommended that standby pumps are included in the installation. If the desired flow rate reaches its peak only occasionally, then it might be possible to use a smaller pump with the second being energized only when required. In such an instance, a third pump might be suggested to make absolutely certain that two of the three pumps are available at any one time.

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<b>PUMP SIZE</b>	Should be considered since it determines the frequency of pump operation. Oversize your sump when possible to keep the pump operating for longer periods, rather than constantly stopping and starting, to avoid torque vibration and possible misalignment.
<b>LENGTH x SPEED</b>	Pumps should be specified as short as possible and driven as slowly as possible, since the longer the pump, or the faster the RPM, the greater the radial load on the bearing surfaces.
<b>ABRASIVE CONDITIONS</b>	Cantilever shaft, bearing-free pumps are recommended for pumping solutions containing abrasives. However, on bearing containing pumps, abrasive conditions may be met if a separate, clean, compatible liquid can be used for flushing to lubricate and cool the bearings. This is especially required when more than one bearing is used.
<b>FLOAT SETTINGS</b>	Make certain adequate liquid is above the pump's impeller to begin pumping, but low enough to prevent damage to the motor. If it is necessary to pump to a greater depth than the length of the pump, continue to pump to a level below the intake with a suction extension. However, on bearing containing pumps using a product flush to cool and lubricate the bearing(s), the pump shut-off must be set above the impeller level to prevent the pump from continuing to run after the reservoir level has dropped too low to provide the necessary product flush for the bearing(s).
<b>ALIGNMENT</b>	Although factory aligned and inspected, positioning of the pump and motor should be checked initially and after periodic operating intervals to assure that misalignment has not occurred, which would place undue wear on the bearing or seal ring surfaces.
<b>AUXILIARY PUMP</b>	For standby operation, design for the possibility of pump operating interruptions. Employ two or more pumps for continuous or partial operation. For example, for a 100 GPM requirement, employ two pumps at 100 GPM each or three at 50 GPM each, keeping one ready for service.

## SUGGESTED INSTALLATIONS



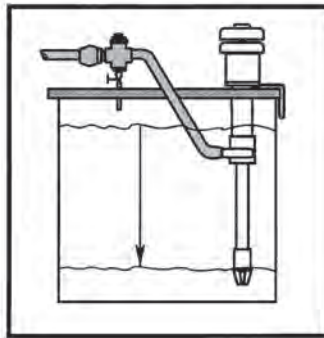
1.

### 1. BASIC IN-TANK INSTALLATION

The Vertical Series may be immersed in the liquid being pumped. No priming is required when the pump discharge port is submerged in the liquid. (See drawing #1)

### 2. IN-TANK INSTALLATION WITH INLET EXTENSION FOR DEEPER TANKS OR SUMPS

Pumps can be used for sump pumping and emptying deeper tanks by adding an extension to the inlet port. With the suction casing immersed (as shown in Drawing #2), the pump will begin pumping immediately and will pump down to the bottom of the inlet extension.

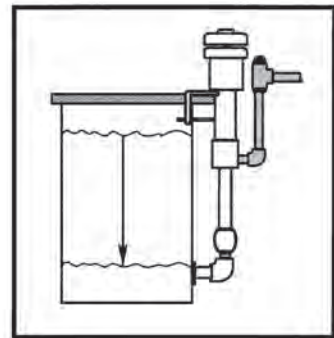


2.

\* In order to continue pumping when the fluid level drops below the discharge port, it may be necessary to maintain a slight back pressure on the discharge line.

### USE OF FOOT VALVE

The installation of a foot valve on the inlet extension enables pump restarting and priming when the tank level is below the pump discharge port (see Drawing #2). The pump must be immersed to the discharge port or primed with a priming tee on initial start-up.



3.

### 3. OUT-OF-TANK (OR CONTAINER INSTALLATION

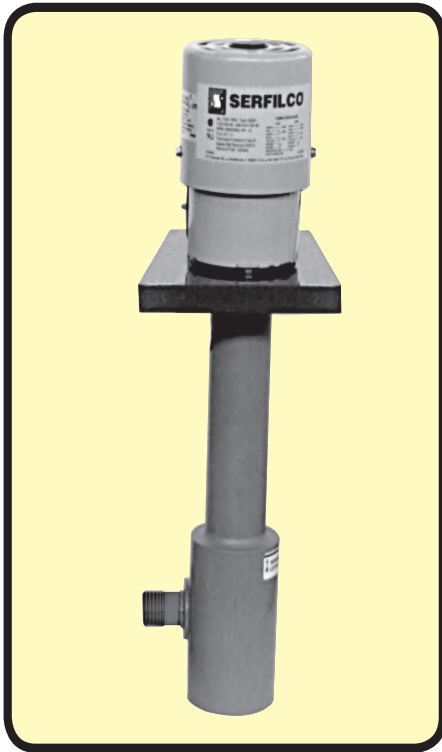
Care must be taken to mount the pump so that the motor is never below the maximum liquid level in the tank. This insures against accidental motor flooding. It is recommended that a drain return line be attached to the vent hole in the pump column and routed back to the tank or container (see Drawing #3). The return line will allow any inadvertent leakage to drain back into the tank. This mounting is often used where tank space is limited, on fume scrubbers or to isolate the motor from heavy corrosive fumes.



# SERIES 'E' VERTICAL PUMPS

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2



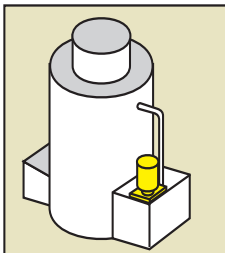
## ACIDS / CAUSTICS / CLEANERS CHEMICALS / PCB / PLATING WATER / WASTE WATER

- **Flows to 20 U.S. GPM or 15 ft. TDH @ 60 Hz**  
*(63 LPM or 3.2m @ 50 Hz)*
- **Non-metallic solution contact**  
CPVC w/sleeved shaft & Viton® "O"-ring  
Natural polypropylene w/sleeved shaft & Viton "O"-ring  
PVDF w/sleeved shaft & Viton "O"-ring  
*(See a chemical resistance chart)*
- **Runs dry — no bearings**
- **Chemical duty motor - 1/8 HP, TEFC,  
2-part epoxy finish, stainless steel shaft**
- **Centrifugal — quiet, vibration-free**
- **In- or out-of-tank installation**
- **Shaft vapor seal protects motor bearings  
and atmosphere**

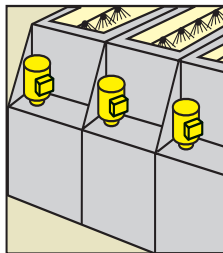
The rugged **Series 'E'** sump pump is a tough, all machined pump designed for years of trouble-free operation. This pump features a cantilevered, sleeved stainless steel shaft which eliminates bearings and seals, resulting in a pump that can run dry without damage. A vapor seal between the rotating shaft and the support column protects the motor. The compound impeller prevents liquid from rising in the column, even at maximum TDH, while the semi-enclosed bottom impeller provides efficient flow performance at low horsepower.

A unique characteristic of the Series 'E' pump is its ability to perform on continuous duty as a level control when an optional suction extension pipe is installed. With the motor energized, the pump will self-prime when liquid is above impeller level. The solution level will then be pumped down to the end of the suction extension, the pump will lose prime, then reprime when liquid again reaches the impeller.

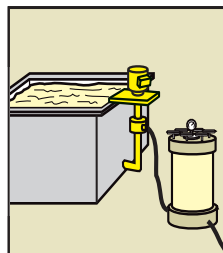
Discharge pipe assembly, suction extension and suction strainer are available options.



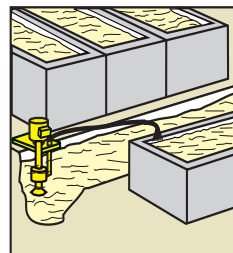
FUME  
SCRUBBING



PCB WET  
PROCESSING



OUT-OF-TANK PUMPING  
and FILTRATION

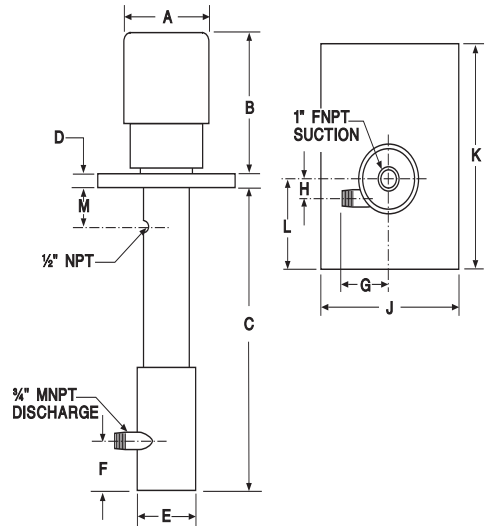
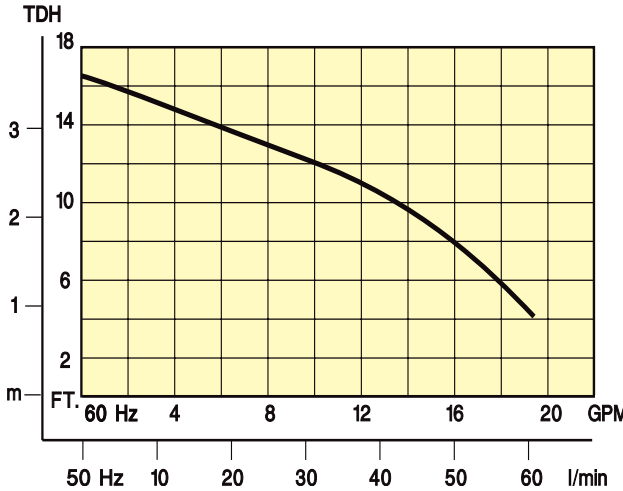


SUMP DRAINING and  
WASTE TREATMENT



# SERIES 'E' PUMP Specifications

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DIMENSIONS												
	A	B	C	D	E	F	G	H	J	K	L	M
in	4	5-7/8	11-7/8	1/2	2-3/4	2-1/4	2-3/8	3/4	6-1/4	8-3/4	3-1/8	1-7/8
mm	102	149	302	13	70	57	60	19	159	222	79	48

**TO ORDER, use Price Code No.**

MATERIAL	MODEL	1/8 HP MOTOR VOLTAGE	CONNECTIONS (NPT)		PRICE CODE NO.
			SUCTION	DISCHARGE	
PP, Viton*	E3/4SPPV C1/8	115-230/1/50-60	1" F	3/4" M	45-0030 A
CPVC, Viton*	E3/4SCV C1/8	TEFC motor with 8 ft. cord and 3-prong plug.			45-0027 1A
PVDF, Viton*	E3/4SKV C1/8				45-0028 1A

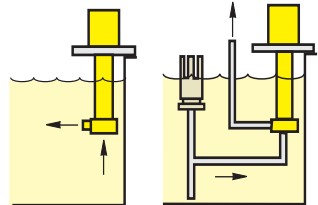
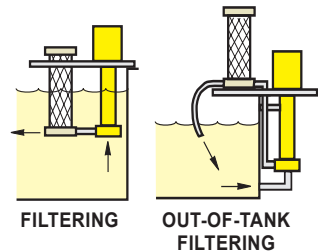
\* For EPDM, change V to L in Model and drop A suffix from Price Code No.  
Shipping weight 10 Lbs. (4.54 kg.)

### OPTIONAL

DESCRIPTION	ADD SUFFIX TO MODEL	ADD TO PRICE CODE NO.
Through hole in standard mounting plate	-MPH	H

DESCRIPTION	ADD SUFFIX TO MODEL	MATERIAL	PRICE CODE NO.
Suction strainer assembly	-ST	Polyethylene	33-6058
		PVDF & ECTFE	45-0251
Suction extension, 18" (457mm)	-SX	PP	45-0274
		CPVC	45-0208
		PVDF	45-0230
Discharge pipe assembly	-DPA	PP	45-0270
		CPVC	45-0225
		PVDF	45-0228

### TYPICAL APPLICATIONS



Read: "Tips for the successful operation of sump pumps".  
See bulletin TP-113



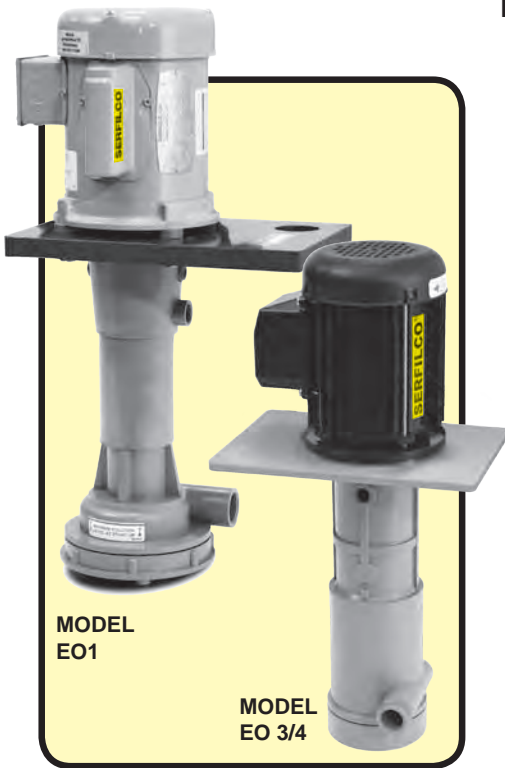
# SERIES 'EO' MOLDED VERTICAL PUMPS

38

P-312\_K

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2



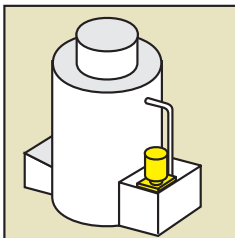
**Efficient and dependable performance for:**

**ACIDS / CAUSTICS / CLEANERS  
CHEMICALS / PCB / PLATING  
WATER / WASTE WATER**

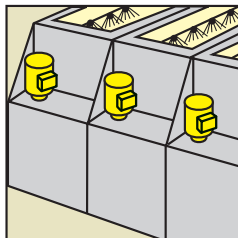
- **Flows to 92 U.S. GPM or 68 FT. TDH @ 60 Hz**  
(110 LPM or 10m @ 50 Hz)
- **Non-metallic solution contact**  
PPP Polypropylene, CPVC or 100% PVDF  
Viton® or EPDM elastomers  
(See a chemical resistance chart)
- **Runs Dry** — no bearings, bushings, spindles or liners to replace
- **Centrifugal** — quiet, vibration-free
- **In- or out-of-tank installation**
- **Will replace most OEM pumps**
- **Shaft vapor seals protect motor bearings and atmosphere**
- **Chemical duty motor (1/8 - 2HP)**

**The Series 'EO' Pump** benefits from proven design features gained through over 30 years of experience in developing chemically resistant vertical pumps. All models feature a cantilevered, sleeved stainless steel shaft which eliminates bearing or bushing resulting in a chemical duty pump which can run dry indefinitely, providing years of trouble free service.

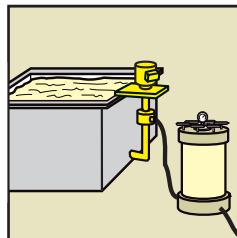
A vapor seal between the rotating shaft and the support column protects the motor. The compound impeller prevents liquid from rising in the column, even at maximum TDH, while the semi-enclosed bottom impeller provides efficient flow performance at low horsepower.



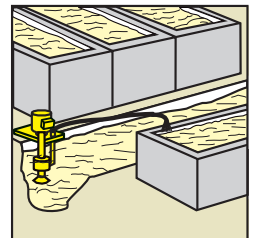
FUME SCRUBBING



PCB WET PROCESSING



OUT-OF-TANK PUMPING  
and FILTRATION



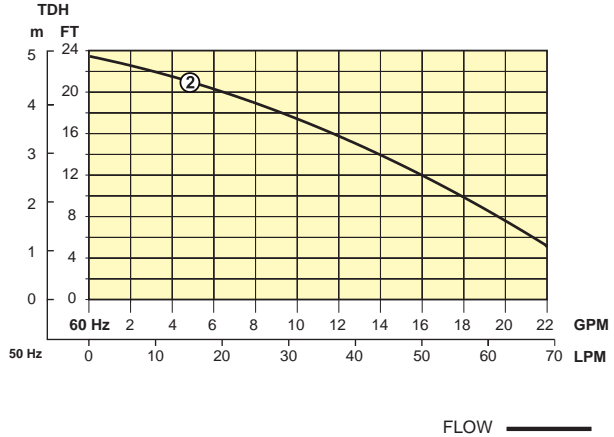
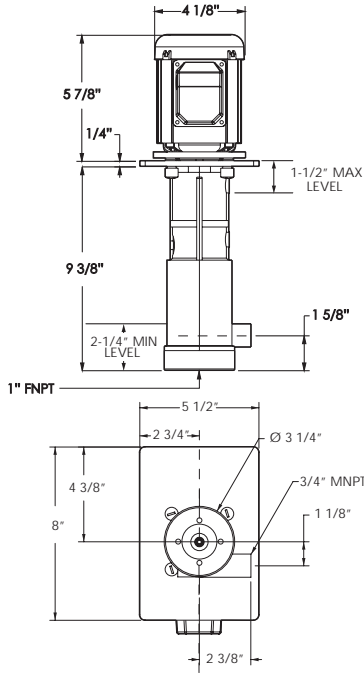
SUMP DRAINING and  
WASTE TREATMENT



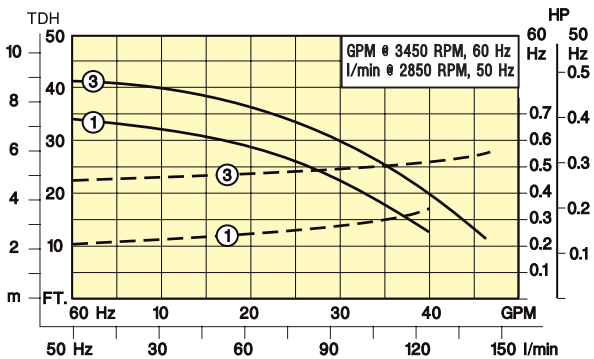
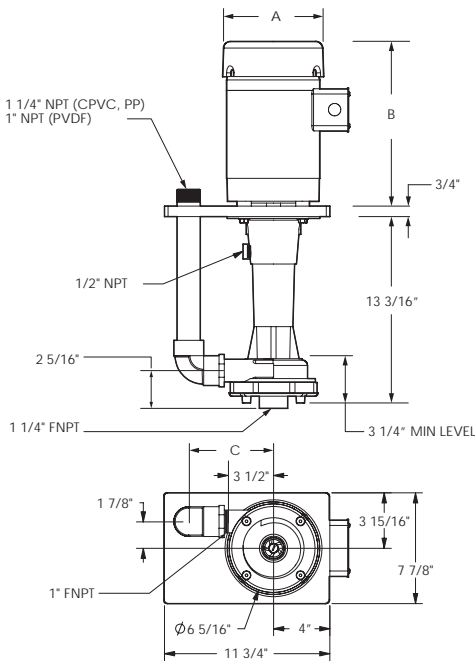


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**MODEL EO<sup>3/4</sup>**



**MODEL EO1**



PUMP MODEL	HP	A	B	MATERIAL	C
EO1	.33	5-7/8	8-1/2	CPVC	6
	.75	7-1/8	9-5/8	PP	6-3/8
				PVDF	5-3/8

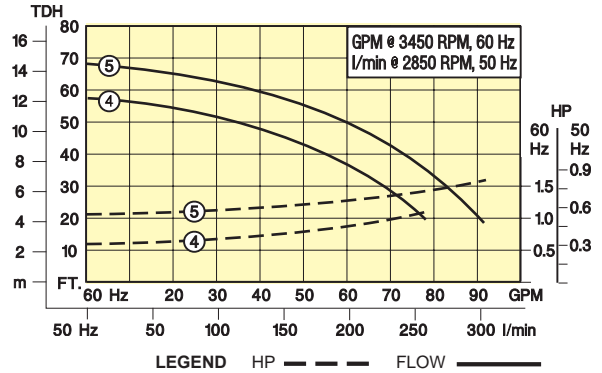
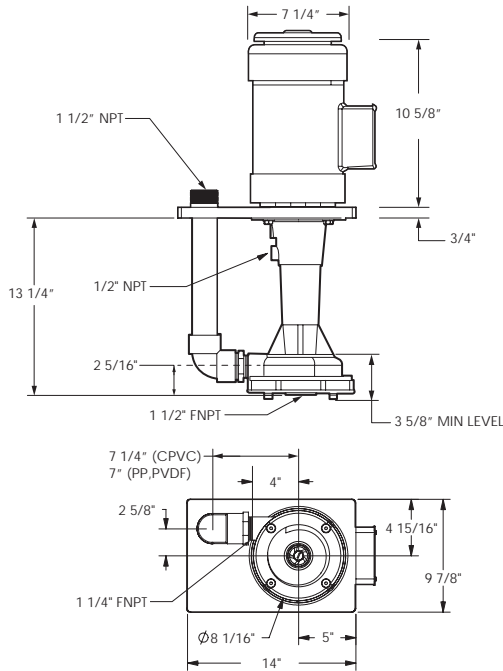


**SERIES 'EO' PUMP Dimensions and Ordeing Information**

P-312\_K

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**MODEL EO1¼**



**TO ORDER, use Price Code Number**

**TABLE I** For standard CPVC, PP and PVDF pump-motor combination, select model from Table I. For other pump-motor combinations, select from components in TABLE II.

Select flow curve and material. Use Price Code No. to order.

FLOW CURVE NO.	MAX. FLOW <sup>1</sup>	POLYPROPYLENE / EPDM		CPVC / EPDM		PVDF / VITON	
		MODEL	PRICE CODE NO	MODEL	PRICE CODE NO	MODEL	PRICE CODE NO
2	17	EO¼PPL2-C1/8	39-0112B	EO¼CL2-C1/8	39-0212B	EO¼KV2-C1/8	39-0322B
1	40	EO1PPL1-C.3	39-1111 A	EO1CL1-C.3	39-1211 A	EO1KV1-C.3	39-1321 A
3	47	EO1PPL3-C.75	39-1113 C	EO1CL3-C.75	39-1213 C	EO1KV3-C.75	39-1323 C
4	78	EO1¼PPL4-D1.0	39-2114 J	EO1¼CL4-D1.0	39-2214 J	EO1¼KV4-D1.0	39-2324 J
5	92	EO1¼PPL5-D1.5	39-2115 K	EO1¼CL5-D1.5	39-2215 K	EO1¼KV5-D1.5	39-2325 K

<sup>1</sup> Maximum flow (U.S. GPM) @ 60 Hz with 1.0 specific gravity liquid at ambient temperature.



# SERIES 'EO' PUMP Ordering Information

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**TABLE II**

To select pump with EPDM elastomer or for use with elevated specific gravity at required GPM, TDH and material: Select performance point on curve, determine required HP by moving vertically from GPM to corresponding number dotted line. Read the required HP at right ordinate and multiply by S.G. This is the HP required. Construct Model and Price Code No. by adding series, size, material, elastomer, impeller and motor from charts below. Use Price Code No. to order.

SERIES		SIZE			MATERIAL			ELASTOMER		
MODEL	PRICE CODE NO	MODEL	PRICE CODE NO	DESCRIPTION	MODEL	PRICE CODE NO	DESCRIPTION	MODEL	PRICE CODE NO	DESCRIPTION
EO	39-	¾	0	1 x ¾	PP	1	Polypropylene CPVC PVDF	L	1	EPDM Viton
		1	1	1¼ x 1	C	2				
		1½	2	1½ x 1½	K	3				

IMPELLER / FLOW CURVE		
MODEL	PRICE CODE NO.	DESCRIPTION
2	2	EO¾
1	1	2¾" for EO1
3	3	3" for EO1
4	4	3¾" for EO1¼
5	5	4" for EO1¼

TEFC MOTOR - 1φ <sup>2</sup>		
MODEL	PRICE CODE NO.	HORSEPOWER
C1/8	B	.12
C.3	A	.33
C.75	C	.75
C1.0	D	1.0
C1.5	E	1.5

TEFC MOTOR - 3φ <sup>2</sup>		
MODEL	PRICE CODE NO.	HORSEPOWER
D.3	F	.33
D.75	H	.75
D1.0	J	1.0
D1.5	K	1.5
D2.0	L	2.0

<sup>2</sup> 1φ motors are:  
115-208/230 @ 60 Hz, 3450 RPM  
115-220/240 @ 50 Hz, 2850 RPM  
  
<sup>3</sup> 3φ motors are:  
208-230/460 @ 60 Hz, 3450 RPM  
190-380/415 @ 50 Hz, 2850 RPM

## OPTIONAL EQUIPMENT

DESCRIPTION	ADD SUFFIX TO MODEL	ADD TO PRICE CODE NO.
Through hole in standard mounting plate (N/A EO¾)	MPH	X
Titanium option - shaft and fasteners (N/A EO¾)	T	T
Drip cover - installed (N/A .12 & .33 HP)	DC	Z
PVDF impeller on CPVC pump	-K	KY

DESCRIPTION	EO¾		EO1		EO1¼	
	SIZE	PRICE CODE NO.	SIZE	PRICE CODE NO.	SIZE	PRICE CODE NO.
<b>DISCHARGE PIPE ASSEMBLY</b>						
Polypropylene	¾"	39-1006 PP	1¼"	39-1000 PP	1½"	39-2000 PP
CPVC	¾"	39-1006 C	1¼"	39-1000 C	1½"	39-2000 C
PVDF	¾"	39-1006 K	1"	39-1000 K	1½"	39-2000 K
<b>18" SUCTION EXTENSION</b>						
Polypropylene	1"	45-0274	1¼"	39-1004 PP	1½"	39-2004 PP
CPVC	1"	45-0208	1¼"	39-1004 C	1½"	39-2004 C
PVDF	1"	45-0230	1½"	39-1004 K	1½"	39-2004 K
<b>SUCTION STRAINER</b>						
Polyethylene / PP	—	39-1007 PP	—	39-1002 PP	—	39-2002 PP
Polyethylene / CPVC	—	39-1007 C	—	39-1002 C	—	39-2002 C
ECTFE / PVDF	—	39-1007 K	—	39-1003 K	—	39-2003 K





# SERIES 'EH' VERTICAL PUMPS

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2



**SHOWN WITH OPTIONAL THROUGH HOLE  
IN MOUNTING PLATE AND DISCHARGE  
PIPE ASSEMBLY**

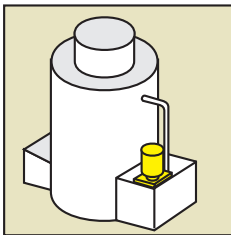
## HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

**PLATING / WET PROCESSING / ACIDS  
CHEMICALS / FUME SCRUBBERS and  
CLEANING SOLUTIONS**

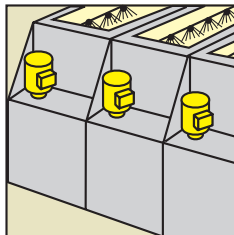
- **Flows to 185 U.S. GPM or 145 FT. TDH @ 60 Hz**  
(580 LPM or 31m @ 50 Hz)
- **Non-metallic solution contact**  
- PPP high temperature polypropylene construction, CPVC,  
PVDF or ECTFE-T  
(Refer to a chemical resistance chart)
- **Shaft vapor seal protects motor bearing and atmosphere**
- **Runs dry — no bearings**  
**Chemical duty motor (1.0 - 7.5 HP)**  
Sealed oversized bearings, cast iron end bells with  
vapor seal, corrosion resistant epoxy enamel finish,  
stainless steel nameplate. Dual 50/60 Hz. Service factor  
1.15 at 60 Hz., 1.0 at 50 Hz
- **Centrifugal — quiet, vibration-free**
- **In- or out-of-tank installation**
- **Choice of 12" or 18" column**
- **NPT or BSP connections**

The Series 'EH' Sump Pump features a cantilevered, sleeved, stainless steel shaft with vapor seal between the rotating shaft and the support column to further protect the motor. The cantilevered shaft eliminates bearings and conventional pump seals, resulting in a pump that can run dry without damage. A compound impeller prevents liquid from rising in the column, even at maximum TDH, while the fully-enclosed bottom impeller provides high hydraulic

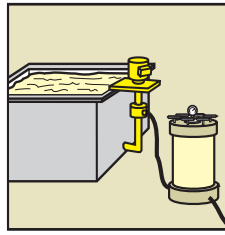
efficiency at low horsepower. A unique characteristic of all Series 'EH' pumps is their ability to lift solution with an optional suction extension pipe installed. With the motor energized, the pump will self-prime when liquid is at impeller level. The solution level will then be pumped down to the end of the suction extension to a maximum depth of 9 ft. (2.7m). The pump will lose prime, then automatically re-prime when liquid again reaches the impeller.\*



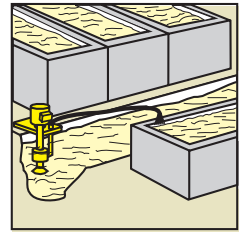
**FUME SCRUBBING**



**PCB WET  
PROCESSING**



**OUT-OF-TANK PUMPING  
AND FILTRATION**

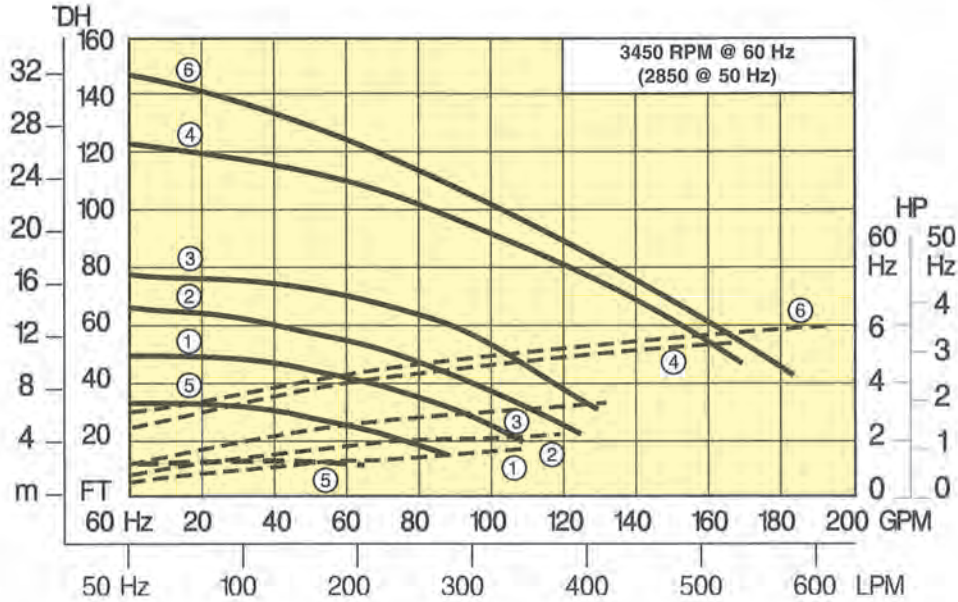


**SUMP DRAINING AND  
WASTE TREATMENT**

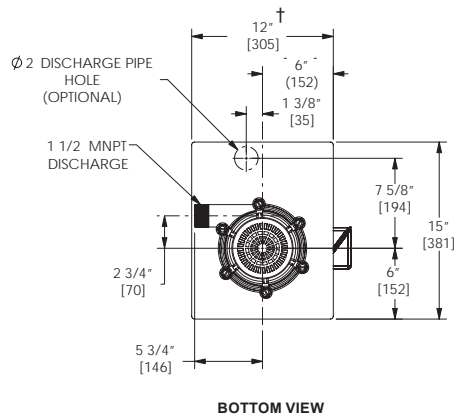
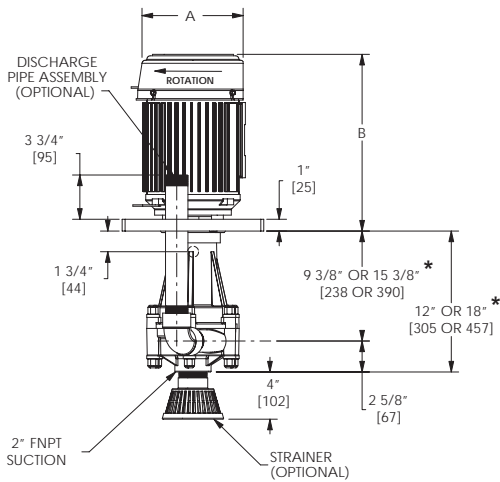
\* Read: "Tips for the successful operation of sump pumps", Technical Bulletin TP-113



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**DIMENSIONS - Inches (mm)**



† The standard 12" x 15" (305 x 381 mm) mounting plate for CPVC, polypropylene and ECTFE-T pumps is shown. PVDF pumps have an 11-3/4" x 11-3/4" (298 x 298 mm) mounting plate.

\* 15-3/8" and 18" dimensions are for the LX models



## SERIES 'EH' Ordering Information

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Pump models are constructed of CPVC, PPP polypropylene, PVDF, or ECTFE-T with sleeved stainless steel shaft. Mounting plate is 1" (25mm) thick and includes PTFE vapor seal. Standard "O"-rings are EPDM (ethylenepropylene) on CPVC and Halar® pumps and Viton® on polypropylene and PVDF pumps. Impeller is fully enclosed for maximum efficiency, compound design with pressure plate.

Assembly offers non-metallic solution contact. Chemical duty motors are 1 or 3 phase, TEFC, 50 or 60 Hz, 3450 or 2850 or 1725 or 1450 RPM, NEMA "C" face, painted with two-part epoxy enamel. May be used with up to a 9 ft. (2.7m) suction extension under certain conditions. The pump discharge orientation can be relocated in increments of 60°.

### TO ORDER, use Price Code Number

*For standard CPVC, PP, PVDF and Halar® (ECTFE) pump-motor combination, select model from TABLE I.  
For other pump-motor combinations, select from components in TABLE II.*

60 Hz MODELS						
FLOW CURVE NO.	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBERS	Price Code No.	MODEL NUMBER	Price Code No.
	CPVC		Polypropylene		PVDF	
1	EH 1-1/2-1SC-D1.5	45-0112	EHP 1-1/2-1SC-D1.5	45-0612	EHK 1-1/2-1SC-D1.5	45-0712
2	EH 1-1/2-2SC-D2.0	45-0123	EHP 1-1/2-2SC-D2.0	45-0623	EHK 1-1/2-2SC-D2.0	45-0723
3	EH 1-1/2-3SC-D3.0	45-0134	EHP 1-1/2-3SC-D3.0	45-0634	EHK 1-1/2-3SC-D3.0	45-0734
4	EH 1-1/2-4SC-D5.0	45-0145	EHP 1-1/2-4SC-D5.0	45-0645	EHK 1-1/2-4SC-D5.0	45-0745
5	EH 1-1/2-5SC-H1.5	45-0159	EHP 1-1/2-5SC-H1.5	45-0659	EHK 1-1/2-5SC-H1.5	45-0759
6	EH 1-1/2-5SC-D7.5	45-0156	EHP 1-1/2-5SC-D7.5	45-0656	EHK 1-1/2-5SC-D7.5	45-0756

60 Hz			50 Hz MODELS			
FLOW CURVE NO.	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBERS	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
	ECTFE-T		CPVC		POLYPROPYLENE	
1	EHH 1-1/2-1SC-D1.5	45-1912	EH 1-1/2-1SC-D1.0 (.75kW)	45-0111	EHP 1-1/2-1SC-D1.0 (.75 kW)	45-0611
2	EHH 1-1/2-2SC-D2.0	45-1923	EH 1-1/2-2SC-D1.5 (1.1kW)	45-0122	EHP 1-1/2-2SC-D1.5 (1.1 kW)	45-0622
3	EHH 1-1/2-3SC-D3.0	45-1934	EH 1-1/2-3SC-D2.0 (1.5kW)	45-0133	EHP 1-1/2-3SC-D2.0 (1.5 kW)	45-0633
4	EHH 1-1/2-4SC-D5.0	45-1945	EH 1-1/2-4SC-D3.0 (2.2kW)	45-0144	EHP 1-1/2-4SC-D3.0 (2.2 kW)	45-0644
5	EHH 1-1/2-5SC-H1.5	45-1959	EH 1-1/2-5SC-D1.5 (1.1kW)	45-0159	EHP 1-1/2-5SC-H1.5 (1.1 kW)	45-0659
6	EHH 1-1/2-5SC-D7.5	45-1956	EH 1-1/2-5SC-D5.0 (3.7kW)	45-0155	EHP 1-1/2-5SC-D5.0 (3.7 kW)	45-0655

50 Hz MODELS				
FLOW CURVE NO.	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBERS	PRICE CODE NO.
	PVDF		ECTFE-T	
1	EHK 1-1/2-1SC-D1.0 (.75kW)	45-0711	EHH 1-1/2-1SC-D1.0 (.75kW)	45-1911
2	EHK 1-1/2-2SC-D1.5 (1.1kW)	45-0722	EHH 1-1/2-2SC-D1.5 (1.1kW)	45-1922
3	EHK 1-1/2-3SC-D2.0 (1.5kW)	45-0733	EHH 1-1/2-3SC-D2.0 (1.5kW)	45-1933
4	EHK 1-1/2-4SC-D3.0 (2.2kW)	45-0744	EHH 1-1/2-4SC-D3.0 (2.2kW)	45-1944
5	EHK 1-1/2-5SC-H1.5 (1.1kW)	45-0759	EHH 1-1/2-5SC-D1.5 (1.1kW)	45-1959
6	EHK 1-1/2-5SC-D5.0 (3.7kW)	45-0755	EHP 1-1/2-5SC-D5.0 (3.7kW)	45-1955

*See Page 4 for additional specifications.*



# SERIES 'EH' Ordering Information

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PUMP		
MATERIAL	MODEL	PRICE CODE NO.
CPVC	EH 1½	45-01
CPVC-18"	EHLX 1½	45-09
POLYPROPYLENE*	EHP 1½	45-06
POLYPRO-18"	EHPLX 1½	45-13
PVDF	EHK 1½	45-07
PVDF-18"	EHLX 1½	45-14
ECTFE-T	EHH 1½	45-19

IMPELLER		
FLOW CURVE NO.	ADD TO...	
	MODEL	PRICE CODE NO.
1	-1 SC	1
2	-2 SC	2
3	-3 SC	3
4	-4 SC	4
5	-5 SC	5
6	-5 SC	5

MOTOR (NEMA) <sup>1</sup>							
VOLTAGE	STD. HP (kW)	ADD TO...		DIMENSIONS <sup>2</sup>			
		MODEL NO.	PRICE CODE NO.	A		B	
				in	mm	in	mm
208-230/460/3/60, 3450 RPM or 190/380-415/3/50, 2850 RPM	1.0 (.75)	-D 1.0	1	7-1/4	184	12-1/2	317
	1.5 (1.1)	-D 1.5	2	7-1/4	184	12-1/2	317
	2.0 (1.5)	-D 2.0	3	7-1/4	184	12-3/16	310
	3.0 (2.2)	-D 3.0	4	9-9/16	243	14-7/8	378
	5.0 (3.7)	-D 5.0	5	9-9/16	243	14-7/8	378
	7.5 (5.5)	-D 7.5	6	9-9/16	243	14-7/8	378
115/208-230/1/60, 3450 RPM or 190-230/1/50, 2850 RPM	1.5 (1.1)	-C 1.5	7	7-1/4	184	13-1/2	343
115/208-230/1/60, 1725 RPM or 190-230/1/150, 1450 RPM	1.5 (1.1)	-G 1.5	8	7-1/4	184	11-1/2	292
208-230/460/3/60, 1725 RPM or 190/380-415/3/50, 1450 RPM	1.5 (1.1)	-H 1.5	9	7-1/4	184	12-3/16	310

PUMP + MOTOR SHIPPING WEIGHTS	
Lbs.	kg.
66	30
70	32
75	34
95	43
97	44
105	48
73	33
73	33
73	33

<sup>1</sup> To order pump without motor, use 0 for motor Price Code No.

\* Polypropylene is glass filled.

<sup>2</sup> Motor dimensions for references only.

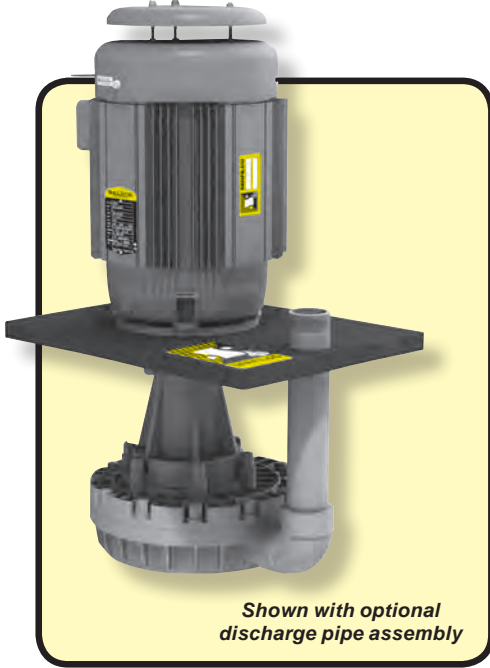
OPTIONAL	ADD SUFFIX TO MODEL	ADD TO PRICE CODE NO.
Viton "O"-ring installed in CPVC, Halar® pumps EPDM "O"-rings in PP or PVDF pumps	V L	V L
PVDF impeller & shaft sleeve for CPVC pump (installed). For continuous operation over 180°F	K	K
Titanium option - shaft and fasteners	T	T
Through hole in standard mounting plate 2" diameter	MPH	H
Discharge pipe assembly, 1-1/2" NPT, for 12" or 18" pump; For 18" Discharge pipe assembly - add X to PCN	- CPVC - PVDF - Polypropylene - SS (For ECTFE-T)	DPA DPAK DPAP DPAS 45-0161 45-0161 K 45-0161 P 45-0161 S
Suction strainer w/ close nipple, 2" NPT	- Polyethylene / CPVC - Polyethylene / PP - Halar / PVDF - Halar/SS	ST 45-0162 45-0162 PP 45-0162 HK 45-0162HS
Suction extension, 24" x 2" NPT	- CPVC - PVDF - Polypropylene	SX SXK SXP 45-0163 45-0163 K 45-0163 P



# SERIES 'EF' VERTICAL PUMPS

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2



*Shown with optional discharge pipe assembly*

## HIGH FLOW, HIGH TDH HIGH EFFICIENCY LOW ENERGY USAGE

- Flows to 400 U.S. gpm or 170 ft. TDH @ 60 Hz (1250 l/m or 42m @ 50 Hz)
- Non-metallic solution contact high temperature polypropylene or CPVC (See a chemical resistance chart)
- Pump has no bearings, and can run dry indefinitely
- Heavy duty PTFE vapor seal Protects motor bearing and end bell.
- Centrifugal - quiet, vibration free
- In-tank or Out-of-tank
- Chemical duty motor (7.5 - 15.0 HP) Sealed oversized bearings. Cast iron end bells with vapor seal. Corrosion resistant two-part epoxy coating. Stainless steel nameplate.

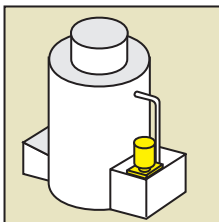
The Series 'EF' Vertical Pump represents the next generation of molded pumps from SERFILCO with flows to 400 U.S. GPM at 60 Hz. It is a robust design to meet the most demanding applications while providing the economy of operation found in all of SERFILCO's molded pumps.

The 'EF' features a cantilevered, sleeved, stainless steel shaft with vapor seal to provide protection for the motor. The cantilevered shaft eliminates bearings and conventional pump seals, resulting in a pump that can run dry indefinitely without damage. This pump is offered in a choice of SERFILCO exclusive high temperature polypropylene or CPVC construction and, as with all of

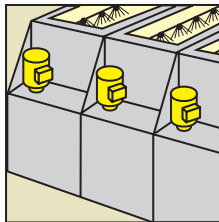
SERFILCO's vertical cantilever pumps, provides non-metallic solution contact. A compound impeller prevents liquid from rising in the column even at maximum TDH, while the fully enclosed bottom impeller provides high hydraulic efficiency at low horsepower.

A unique characteristic of these vertical cantilever pumps is their ability to lift liquid with an optional suction extension installed. The pump self primes as long as liquid is at or above the level of the impeller. Once primed the liquid level can be lowered to the end of the suction extension to a maximum depth of 9 ft. (2.7m).

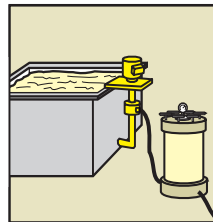
## TYPICAL APPLICATIONS



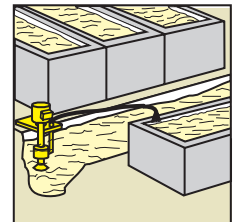
FUME SCRUBBING



PCB WET PROCESSING



IN-TANK OR OUT-OF-TANK PUMPING AGITATION and FILTRATION

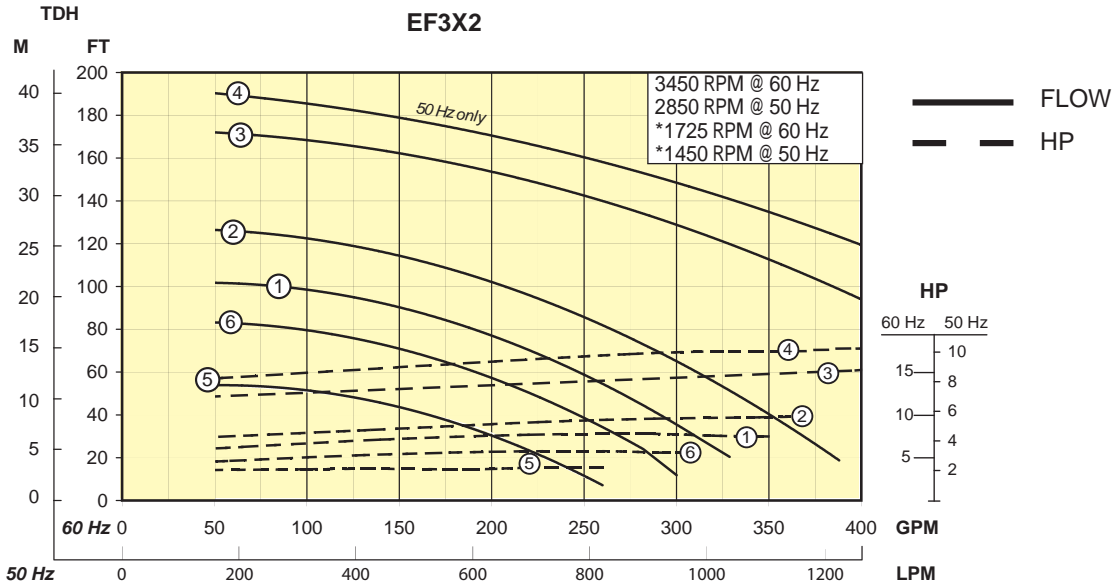


- SUMP DRAINING  
- WASTE TREATMENT

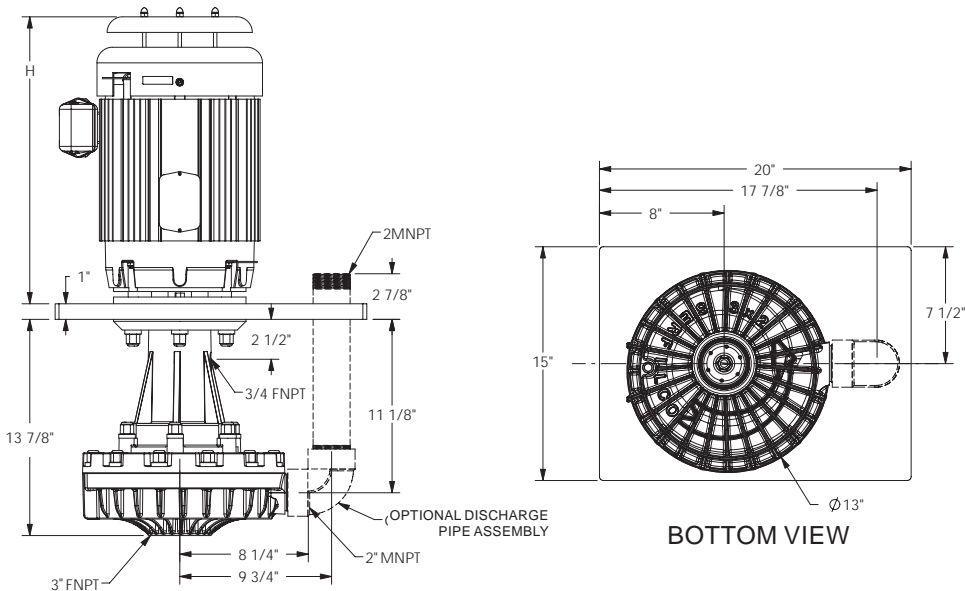




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**DIMENSIONS - Inches (mm)**





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2

Pump models are molded of SERFILCO exclusive high temperature polypropylene or CPVC with a sleeved stainless steel shaft for non-metallic solution contact. The 1" thick mounting plate is polypropylene or PVC and includes a PTFE vapor seal. The compound impeller is fully enclosed for maximum efficiency.

The Chemical Duty, NEMA"C" face motors are 208-230-460V/3/60 @ 3450 or 1725 RPM and 190-208-380-415 V/3/50 @ 2850 or 1450 RPM. Motors are coated with two-part epoxy. These pumps can be used with up to a 9 ft (2.7 m) suction extension under certain conditions.

**TO ORDER use Price Code Number**

*For standard pump-motor combination, select model from TABLE I.  
For custom pump-motor combination, select from TABLE II on page 4.*

**TABLE I STANDARD MODELS**

From performance curves graph, select flow curve number providing the desired performance. Then match to Model Number listed below. Motor HP is non-overloading at full capacity. Standard models include EPDM (ethylene propylene) elastomers.

60 Hz MODELS				
FLOW CURVE	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
	CPVC		POLYPROPYLENE	
1	EF 3X2 -1SC-D 7.5	45-2011	EFP 3X2 -1SC-D 7.5	45-2211
2	EF 3X2 -2SC-D 10.0	45-2022	EFP 3X2 -2SC-D 10.0	45-2222
3	EF 3X2 -3SC-D 15.0	45-2033	EFP 3X2 -3SC-D 15.0	45-2233
5	EF 3X2 -5SC-H7.5	45-2054	EFP 3X2 -5SC-H7.5	45-2254
6	EF 3X2 -6SC-D 7.5	45-2061	EFP 3X2 -6SC-D 7.5	45-2261

50 Hz MODELS				
FLOW CURVE	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
	CPVC		POLYPROPYLENE	
1	EF 3X2 -1SC-D 7.5-50	45-2015	EFP 3X2 -1SC-D 7.5-50	45-2215
2	EF 3X2 -2SC-D 7.5-50	45-2025	EFP 3X2 -2SC-D 7.5-50	45-2225
3	EF 3X2 -3SC-D 10.0-50	45-2036	EFP 3X2 -3SC-D 10.0-50	45-2236
4	EF 3X2 -4SC-D 10.0-50	45-2046	EFP 3X2 -4SC-D 10.0-50	45-2246
5	EF 3X2 -5SC-H 7.5-50	45-2057	EFP 3X2 -5SC-H 7.5-50	45-2257
6	EF 3X2 -6SC-H 7.5-50	45-2065	EFP 3X2 -6SC-D 7.5-50	45-2265



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**TABLE II CUSTOM MODELS**

To determine pump model for a specified GPM, TDH, and specific gravity (SG), select performance point on curve. Determine required HP by moving vertically to corresponding number dotted line. Read required HP at right ordinate and multiply by SG Select pump, impeller and motor to construct Model and Price Code No.

**EXAMPLE:** PUMP + IMPELLER + MOTOR = PRICE CODE NO.  
 EF 3x2 + -1SC + -D7.5 = 45-2011

PUMP		
MODEL	MATERIAL & COLUMN LENGTH	PRICE CODE NO.
EF 3x2	CPVC - 14"	45-20
EFP 3x2	PP - 14"	45-22

IMPELLER		
FLOW CURVE NO.	ADD TO . . .	
	MODEL	PRICE CODE NO.
1	-1SC	1
2	-2SC	2
3	-3SC	3
4	-4SC	4
5	-5SC	5
6	-65C	6

MOTOR <sup>1</sup>			
VOLTAGE	STD. HP (kW)	ADD TO . . .	
		MODEL NO.	PRICE CODE NO. <sup>1</sup>
208-230/460/3/60 3450 RPM	7.5	-D 7.5	1
	10	-D 10.0	2
	15	-D 15.0	3
208-230/460/3/60 1725 RPM	7.5	-H 7.5	4
220/380/440/3/50 190/380/3/50 2850 RPM	7.5 (5.5)	-D 7.5 -50	5
	10.0 (7.5)	-D 10.0 -50	6
220/380/440/3/50 1450 RPM	7.5 (5.5)	-H 7.5 -50	7

MOTOR (NEMA)			
DIMENSIONS			
DIAMETER		HEIGHT (H)	
INCHES	mm	INCHES	mm
10-1/4	260	15-5/16	389
10-3/8	264	18-3/8	467
10-3/8	264	18-3/8	467
10-1/4	260	15-9/16	395
10-1/4	260	15-9/16	395
10-3/8	264	18-3/8	467
10-1/4	260	15-9/16	395

PUMP + MOTOR	
SHIPPING WEIGHTS <sup>2</sup>	
LBS.	kg.
160	73
215	98
215	98
190	86
190	86
215	98
190	86

<sup>1</sup> To order pump without motor, use 0 for motor Price Code No.  
<sup>2</sup> Pump end only: 60 lbs (27 kg.)

**OPTIONAL**

DESCRIPTION	ADD SUFFIX TO MODEL	ADD TO OR SEPARATE PRICE CODE NO.
Viton "O"-rings (installed)	-V	V
Titanium shaft — (installed)	-T	T
Through hole to mounting plate	-MPH	H

DESCRIPTION	CPVC		POLYPROPYLENE	
	ADD SUFFIX TO MODEL	USE SEPARATE PRICE CODE NO.	ADD SUFFIX TO MODEL	USE SEPARATE PRICE CODE NO.
Discharge pipe assembly	-DPA	45-1202	-DPAP	45-1202 PP
Suction strainer	-ST	45-1203	-STP	45-1203 PP
Suction extension w/ strainer				
12"	-K12	46-0081	-K12P	46-0081 PP
24"	-K24	46-0082	-K24P	46-0082 PP
36"	-K36	46-0083	-K36P	46-0083 PP



# SERIES 'EHM' VERTICAL PUMPS

50

P-309\_G

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2



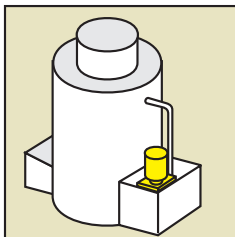
## HIGH EFFICIENCY LOW ENERGY USAGE

- **Flows to 650 U.S. GPM or 115 FT. TDH @ 60 Hz (2050 l/m or 24m @ 50 Hz)**
- **Non-metallic solution contact CPVC construction**  
(See a chemical resistance chart)
- **Can run dry indefinitely, no bearings**
- **Heavy duty PTFE vapor seal**  
Protects motor bearing and end bell.
- **In-tank or out-of-tank**
- **Chemical duty motor (7.5 - 20.0 HP)**  
Sealed oversized bearings. Cast iron end bells with vapor seal. Corrosion resistant epoxy enamel finish. Stainless steel nameplate. Service factor 1.15.
- **Includes PVC pump mounting plate**

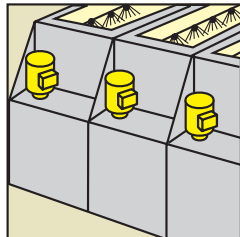
The **Series 'EHM' Vertical Pump** features a cantilevered CPVC sleeved stainless steel shaft which eliminates bearings and conventional pump seals, resulting in a pump that can run dry without damage. A compound impeller prevents liquid from rising in the column while the fully-enclosed bottom impeller provides high hydraulic efficiency at low horsepower.

The pump drive shaft is stainless steel and is protected by a heavy duty CPVC impeller sleeve assembly. A vapor seal between the rotating shaft and pump column protects the motor and motor bearings. The complete pump assembly features non-metallic solution contact.

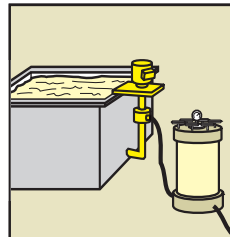
The high efficiency impeller provides "pump-down" capabilities to 9 ft. below the inlet when using a suction extension. Viton® "O"-rings, discharge pipe assembly and suction strainer are available as options.



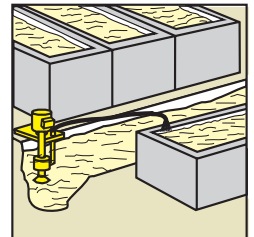
FUME SCRUBBING



PCB WET  
PROCESSING



OUT-OF-TANK  
PUMPING and FILTRATION



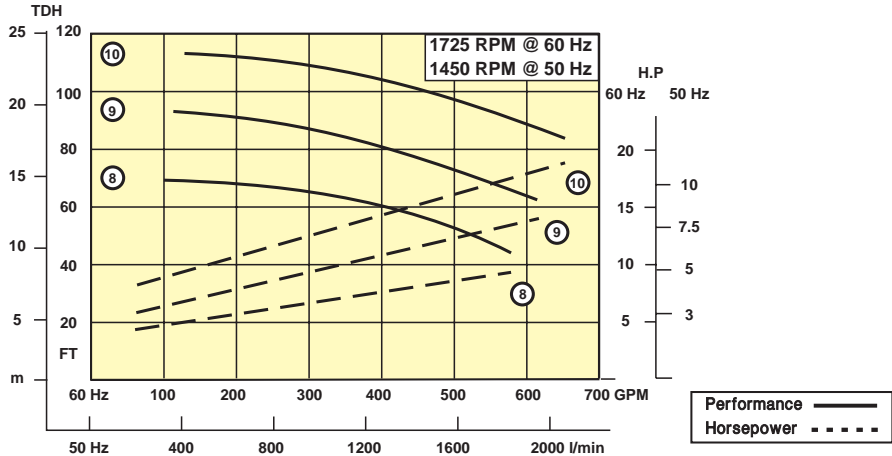
SUMP DRAINING  
and WASTE TREATMENT



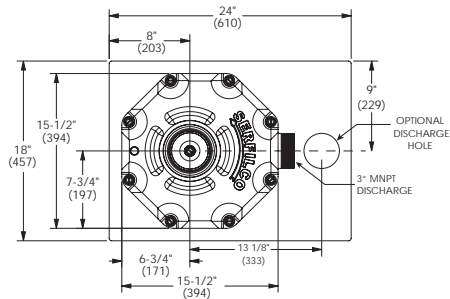
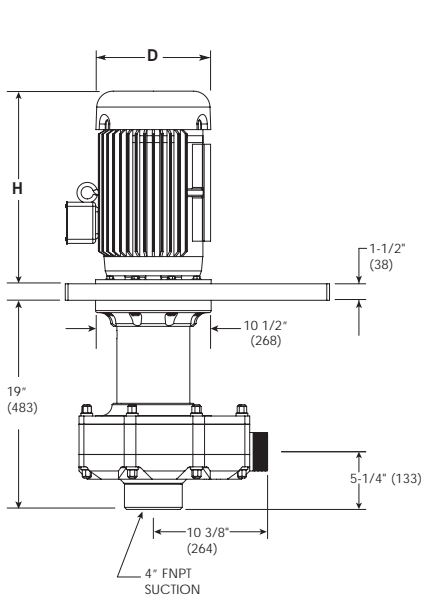
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Pump models are constructed of CPVC with CPVC sleeved stainless steel shaft. The mounting plate is PVC and includes a PTFE vapor seal. Standard "O"- rings are EPDM (ethylene propylene). The compound design impeller is fully enclosed for maximum efficiency.

Series 'EHM' pumps offer non-metallic solution contact. The chemical duty motors are 208-230/460V/3/60 @ 3450 or 1725 RPM and 190-208/380-415V/3/50 @ 2850 or 1450 RPM, TEFC, NEMA "C" face, painted with two-part epoxy enamel. These pumps can be used with up to a 9 ft. (2.7 m) suction extension under certain conditions.



**DIMENSIONS Inches (mm)**



MOTOR (NEMA)					PUMP + MOTOR	
DIMENSIONS					SHIPPING WEIGHTS	
HP (KW)	DIAMETER (D)		HEIGHT (H)		LBS.	kg.
	INCHES	mm	INCHES	mm		
10	10 <sup>-3/8</sup>	264	18 <sup>-3/8</sup>	467	230	105
15	10 <sup>-3/8</sup>	264	18 <sup>-3/8</sup>	467	290	132
20	13	330	19-15/16	506	360	163
7.5 (5.5)	10 <sup>-1/4</sup>	260	14-9/16	370	210	95
10 (7.5)			14-9/16	370	250	113
15 (11.0)			14-9/16	370	330	150



**TO ORDER, use Price Code Number**

**TABLE I**

*For standard CPVC pump-motor combination, select model from TABLE I.  
For custom pump-motor combination, select from TABLE II*

Select flow curve number providing the desired performance. Then match to Model Number listed below. Motor HP is non-overloading at full capacity.

TYPICAL 60 Hz MODELS		
FLOW CURVE NO.	MODEL	PRICE CODE NO.
8	EHM 3-8SC-H10.0	45-1886
9	EHM 3-9SC-H15.0	45-1897
10	EHM 3-10SC-H20.0	45-1808

TYPICAL 50 Hz MODELS		
FLOW CURVE NO.	MODEL	PRICE CODE NO.
9	EHM 3-9SC-H10.0 (7.5kW)	45-1895 A
10	EHM 3-10SC-H15.0 (11.0kW)	45-1809

**TABLE II**

To determine pump model for a specified GPM, TDH, and specific gravity, select performance point on curve. Determine required HP by moving vertically to corresponding number dotted line. Read required HP at right ordinate and multiply by S.G. Select pump, impeller and motor and construct Model and Price Code No.

**EXAMPLE:** PUMP + IMPELLER + MOTOR = PRICE CODE NO.  
EHM 3 + -9SC + H15.0 = 45-1897

PUMP		
MODEL	MATERIAL	PRICE CODE NO.
EHM 3	CPVC-19"	45-18

IMPELLER		
FLOW CURVE NO.	ADD TO . . .	
	MODEL	PRICE CODE NO.
8	-8SC	8
9	-9SC	9
10	-10SC	0

MOTOR <sup>1</sup>			
FREQ RPM	STD. HP (kW)	ADD TO . . .	
		MODEL NO.	PRICE CODE NO. <sup>1</sup>
60 Hz 1725	10	-H 10.0	6
	15	-H 15.0	7
	20	-H 20.0	8
50 Hz 1450	7.5	-H 7.5	4A
	10	-H 10.0	5A
	15	-H 15.0	9

<sup>1</sup> 60 Hz = 208-230/460/3/60  
50 Hz = 190-208/380/415/3/50  
To order pump without motor, use 0 for motor Price Code No.

**OPTIONAL**

DESCRIPTION	ADD SUFFIX TO MODEL	ADD TO OR SEPARATE PRICE CODE NO.
Viton "O"-rings (installed)	-V	V
Titanium shaft for extremely corrosive atmosphere. (installed)	-T	T
Discharge pipe assembly	-DPA	45-1241
Suction strainer	-ST	45-1242
Suction extension, CPVC		
12"	K12	46-0089
24"	K24	46-0090
36"	K36	46-0091



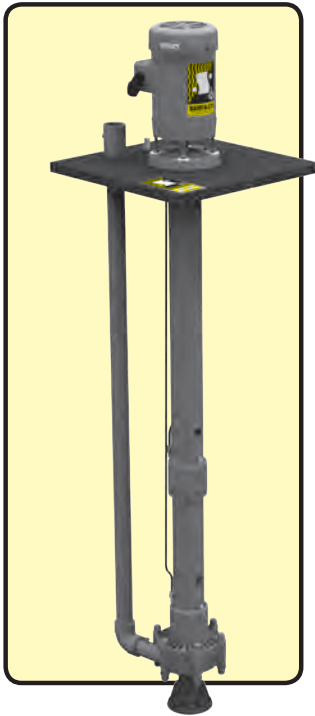
# SERIES 'HB' VERTICAL PUMPS

53

P-302\_U

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2



## HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

### WASTES / ACIDS / PLATING / CHEMICALS

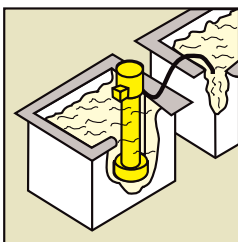
- **Flows to 140 U.S. GPM or 130 ft. TDH @ 60 Hz**  
(450 LPM or 28m @ 50 Hz)
- **Corrosion resistant, CPVC construction**  
(See a chemical resistance chart)
- **Pump lengths: 2 ft. to 10 ft. (.6m to 3.0m)**
- **Chemical duty motor**  
Sealed oversized bearings, cast iron end bells, liquid/vapor seal and slinger, corrosion resistant two-part epoxy finish, stainless steel nameplate, 1.15 service factor at 50 and 60 Hz.
- **Centrifugal — quiet, vibration-free**
- **Shaft vapor seal protects motor bearings and atmosphere**

The Series 'HB' Sump Pump features corrosion resistant construction for deep sumps and chemical transfer. A stainless steel shaft sleeved in CPVC offers unmatched strength and chemical resistance. A vapor seal between the rotating shaft and the pump column protects the motor and motor bearings.

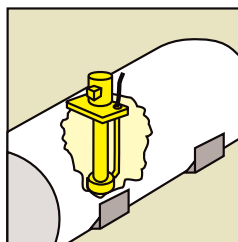
The shaft bearing and liner are positively lubricated with the product being pumped or clean water from a

separate source by means of the bleed line. A spiral flush groove in the rotating bearing ensures a uniform flow of liquid across the bearing surface. The bearing liner is made of a special fluoride-resistant ceramic.

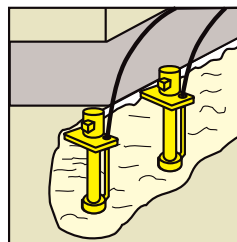
A suction extension can be utilized to pump to depths below impeller level. Thus, a shorter pump can be used, reducing shaft length and the number of bearings required.



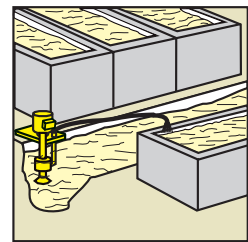
CHEMICAL  
TRANSFERRING



STORAGE TANK



DEEP STANDBY PUMPING  
when priming not possible

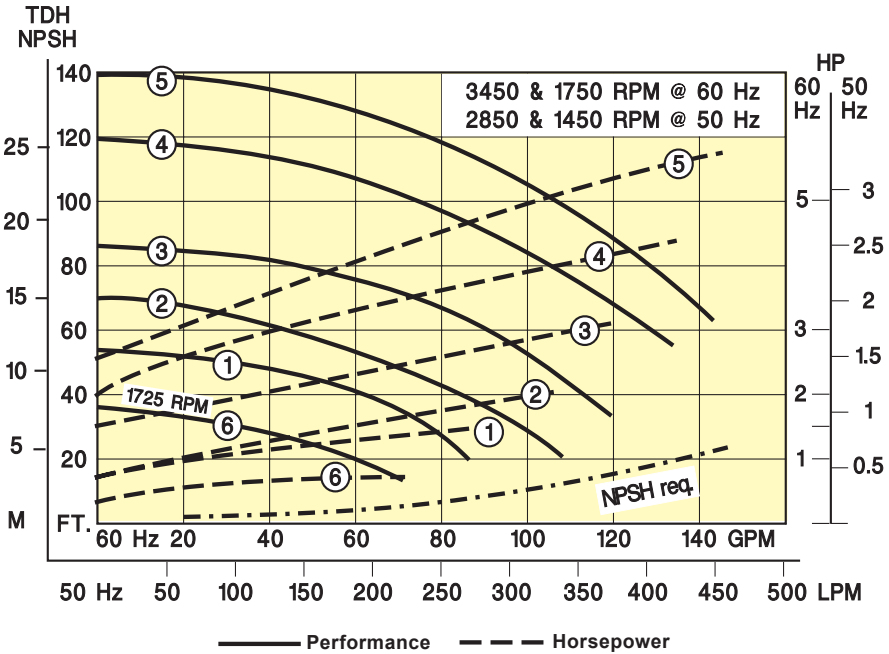


SUMP DRAINING and  
WASTE TREATMENT

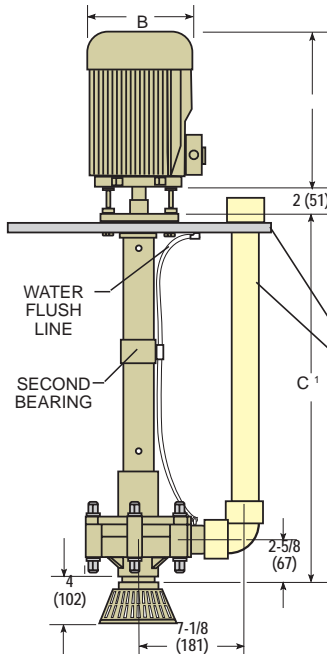


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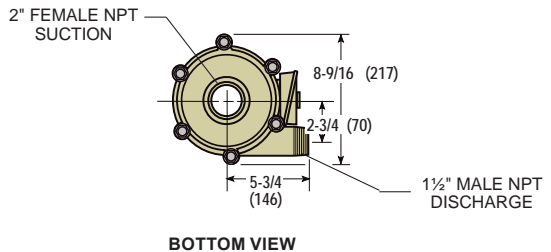


**DIMENSIONS - Inches (mm)**



HORSE-POWER	RPM @ 60 Hz	NEMA FRAME	A		B		SHIP. WT <sup>2</sup>	
			inches	mm	Inches	mm	lbs.	kg.
1.0	1725	143TCZ	9-7/8	251	9-5/8	244	103	47
1.5	1725						102	46
1.5	3450	143TCZ	9-7/8	251	9-5/8	244	102	46
2.0	3450	145TCZ	9-7/8	251	9-5/8	244	106	48
3.0	3450	182TCZ	11-7/8	302	10-3/4	273	116	53
5.0	3450	184TCZ	13-1/4	337	11-1/4	286	138	63
7.5							151	68

<sup>1</sup> Pump length (C) and mounting plate dimensions are as ordered  
<sup>2</sup> Approx. weight of 2 ft. (.6m) pump with square mounting plate. Add 4½ lbs. (2.0 kg.) per foot (.3m) of additional pump length above 2 feet (.6m).







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Standard models are constructed of CPVC with high purity chemical resistant graphite or Rulon® (glass filled PTFE) bearing and silica-free ceramic liner for fluoride resistance. Includes polyethylene suction strainer. Elastomer "O"-rings are EPDM (ethylene propylene) with Viton® optional. Impeller is fully enclosed for maximum efficiency. Pump shaft is 303 stainless steel sleeved in CPVC, so complete pump assembly offers non-metallic solution contact except for titanium fasteners at each bearing. Hastelloy® C276 fasteners are optional. Standard pumps are suitable for 140°F (60°C) maximum. High temperature

models to 160°F (71°C) are available as single graphite bearing pumps only. Pump lengths are available as listed in one foot (.3m) increments only. The bleed line provides pressurized water or pumped solution to the bearings. (Each bearing requires 10 PSI.) Standard is external water flush. Product flush may be specified. All models are wet tested before shipment. Series 'HB' pumps can provide up to 9 ft.(2.7m) suction lift under certain conditions. Pump includes 20" x 20" square mounting plate and discharge pipe assembly.



**TO ORDER, use Price Code Number**

*For standard 24" - 60" pump / motor combinations, select model from TABLE I.  
For other combinations, select components from TABLE II.*

**TABLE I**

FLOW CURVE NO.	24" PUMP		36" PUMP	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
1	HB1½CE1-24"C-CG- * °F-D1.5-SD	41-1024 AS	HB1½CE1-36"C-CG- * °F-D1.5-SD	41-1034 AS
2	HB1½CE2-24"C-CG- * °F-D2.0-SD	41-2024 BS	HB1½CE2-36"C-CG- * °F-D2.0-SD	41-2034 BS
3	HB1½CE3-24"C-CG- * °F-D3.0-SD	41-3024 CS	HB1½CE3-36"C-CG- * °F-D3.0-SD	41-3034 CS
4	HB1½CE4-24"C-CG- * °F-D5.0-SD	41-4024 DS	HB1½CE4-36"C-CG- * °F-D5.0-SD	41-4034 DS
5	HB1½CE5-24"C-CG- * °F-D7.5-SD	41-5024 ES	HB1½CE5-36"C-CG- * °F-D7.5-SD	41-5034 ES
6	HB1½CE5-24"C-CG- * °F-H1.0-SD	41-5024 GS	HB1½CE5-36"C-CG- * °F-H1.0-SD	41-5034 GS

FLOW CURVE NO.	48" PUMP		60" PUMP	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
1	HB1½CE1-48"C-CGx2- * °F-D1.5-SD	41-1045 AS	HB1½CE1-60"C-CGx2- * °F-D1.5-SD	41-1055 AS
2	HB1½CE2-48"C-CGx2- * °F-D2.0-SD	41-2045 BS	HB1½CE2-60"C-CGx2- * °F-D2.0-SD	41-2055 BS
3	HB1½CE3-48"C-CGx2- * °F-D3.0-SD	41-3045 CS	HB1½CE3-60"C-CGx2- * °F-D3.0-SD	41-3055 CS
4	HB1½CE4-48"C-CGx2- * °F-D5.0-SD	41-4045 DS	HB1½CE4-60"C-CGx2- * °F-D5.0-SD	41-4055 DS
5	HB1½CE5-48"C-CGx2- * °F-D7.5-SD	41-5045 ES	HB1½CE5-60"C-CGx2- * °F-D7.5-SD	41-5055 ES
6	HB1½CE5-48"C-CG- * °F-H1.0-SD	41-5044 GS	HB1½CE5-60"C-CGx2- * °F-H1.0-SD	41-5055 GS

\*Include operating temperature in model number.

Registered Trademarks Rulon - Dixon; Viton - DuPont Dow Elastomers; Hastelloy - Hayness International.



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**TABLE II**

Determine pump-motor model for a specified GPM, TDH, length, bearing and specific gravity. Select performance point on curve and size HP from corresponding number dotted line vertically above or below performance point. Read required HP at right ordinate and multiply by specific gravity. Select pump model components and Price Code Numbers from Table II.

**EXAMPLE:**

**PUMP + IMPELLER + LENGTH + BRG & LINER + MOTOR/MTG PLATE = PRICE CODE NO.**  
 HB 1½CE + 2 + 48°C + CRX2-90°F + D1.5 = 41-2042A

PUMP		IMPELLER			LENGTH						BRG & LINER				MOTOR/MTG PLATE			
MODEL	PRICE CODE NO.	FLOW CURVE NO.	ADD TO ...		FT.	m	RPM	BRGS	ADD TO ...		MATERIAL	NO. OF ADD	TO ...		TEFC - 230-460V/3/50-60 <sup>2</sup>			
			MODEL PRICE	CODE NO.					MODEL	PRICE CODE NO.			MODEL	PRICE CODE NO.	RPM	MODEL (HP)	PCN	
HB1½CE	41-	1	1	1	2	.6	1725/1450 3450/2850	1	24°C	02	CERAMIC & RULON <sup>1</sup>	1 2 3	CR-°F CRx2-°F CRx3-°F	1 2 3	3450/2850	D1.5_SD D2.0_SD D3.0_SD D5.0_SD D7.5_SD	AS BS CS DS ES	
		2	2	2							CERAMIC & GRAPHITE	1 2 3	CG-°F CGx2-°F CGx3-°F	1 4 5 6	1725/1450 3450/2850	H1.0_SD H1.5_SD	GS HS	
		3	3	3	3	.9	1725/1450 3450/2850	1	36°C	03								
		4	4	4	4	1.2	1725/1450 3450/2850	1 2	48°C	04								
		5 & 6	5	5	5	1.5	1725/1450 3450/2850	2	60°C	05								
					6	1.8	1725/1450 3450/2850	2	72°C	06								
					7	2.1	1725/1450 2850	2	84°C	07								
					8	2.4	1725/1450 2850	3	96°C	08								
					9	2.7	1725/1450	3	108°C	09								
					10	3.0	1725/1450	3	120°C	10								

For BSP fittings or adapters, explosion-proof motors, motor starters, level controls, and Dri-Stop Pressure Switch for external bearing flush, contact Sales Department for appropriate bulletin.

\* Include operating temperature in model number.

<sup>1</sup> Rulon for 140°F maximum temperature

<sup>2</sup> 230-380/415V/3/50

**OPTIONAL**

DESCRIPTION	ADD SUFFIX TO MODEL	ADD TO PRICE CODE NO.
Viton "O"-rings (installed)	V	V
Hastelloy C276 fasteners	HC	X
High temperature for single bearing pumps to 160°F (71°C). Use graphite bearing.	HT	T
Round -24" diameter x 1" thick	change -SD to -CD in model	replace S with C in PCN

DESCRIPTION	ADD SUFFIX TO MODEL	USE SEPARATE PRICE CODE NO.
Suction extension - 2" NPT CPVC pipe, threaded both ends	-K12" -K24" -K36	41-0633 41-0634 41-0635



# SERIES 'B' VERTICAL PUMPS

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P-303\_X

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## HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

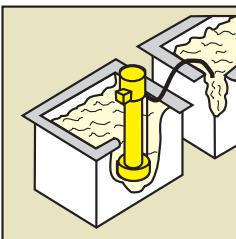
### WASTES / ACIDS / PLATING / CHEMICALS

- **Flows to 370 U.S. GPM or 84 Ft. TDH @ 60 Hz**  
(1150 LPM or 18.5M @ 50 Hz)
- **Pump lengths: 2 ft. to 10 ft.** (.6M to 3.0M)
- **Corrosion resistant, CPVC construction**  
(See a chemical resistance chart)
- **Water or product lubricated bearings**
- **Chemical duty, 1725 RPM motor** (1.0 - 10.0 HP)  
Sealed oversized bearings; cast iron end bells;  
liquid/vapor seal and slinger; corrosion resistant  
two-part epoxy finish; 1.15 service factor.
- **Centrifugal — quiet, vibration-free**
- **Shaft vapor seal protects motor bearings  
and atmosphere**

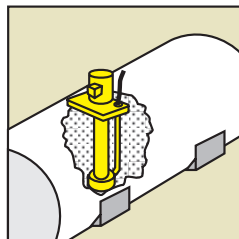
The Series 'B' Pump features corrosion resistant construction for deep sumps and demanding conditions. An oversized machined pump housing is utilized allowing for high flow rates using low RPM motors, thus extending pump life. A stainless steel shaft sleeved in CPVC offers unmatched strength and chemical resistance. A vapor seal between the rotating shaft and the pump column protects the motor and motor bearings.

The shaft bearing and liner are positively lubricated with the product being pumped or clean water from a separate source by means of the bleed line. A spiral flush groove in the rotating bearing ensures a uniform flow of liquid across the bearing surface. The bearing liner is made of a special fluoride-resistant ceramic.

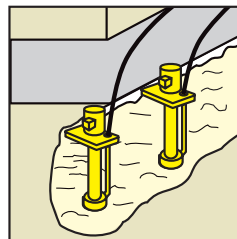
A suction extension can be utilized to pump to depths below impeller level. Thus, a shorter pump can be used, reducing shaft length and number of bearings required.



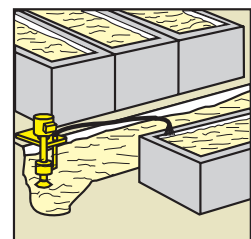
**CHEMICAL  
TRANSFERRING**



**STORAGE TANK**



**DEEP STANDBY PUMPING**  
when priming not possible



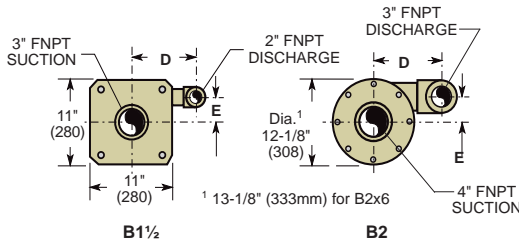
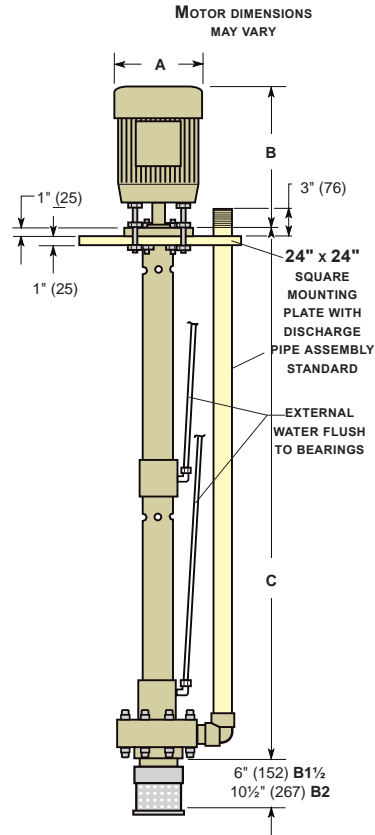
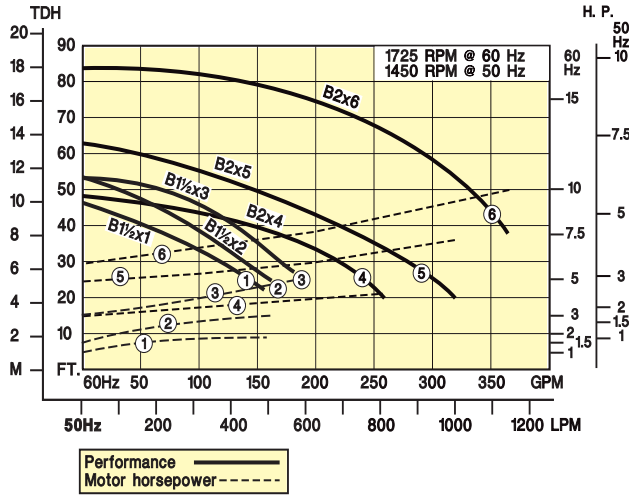
**SUMP DRAINING and  
WASTE TREATMENT**



# SERIES 'B' Specifications

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**BOTTOM VIEWS**

PUMP MODEL	NPT CONNS.	DIMENSIONS Inches (mm)					HP	MOTOR FRAME	APPROX. SHIPPING WEIGHT <sup>2</sup>	
		A	B	C	D	E			Lbs.	(Kg.)
B1½ x 1	3" x 2"	7¼ (184)	13¼ (236)	<b>SELECT LENGTH</b>	9 (229)	2-3/4 (70)	1.5	143TC	130	59
			14¼ (362)			2-7/8 (73)	2.0	145TC	135	61
B1½ x 2	3" x 2"	7¼ (184)	14¼ (362)		11-1/8 (283)	2-7/8 (73)	2.0	145TC	140	64
		8½ (216)	15½ (394)			3.0	182TC	145	66	
B1½ x 3	3" x 2"	8½ (216)	15½ (394)		8-1/2 (216)	2-5/8 (67)	3.0	182TC	150	68
			17¼ (438)		5.0	184TC	170	77		
B2 x 4	4" x 3"	8½ (216)	17¼ (438)		11-1/8 (283)	3-3/16 (81)	5.0	184TC	170	77
B2 x 5	4" x 3"	10¼ (260)	18 (457)		11-5/8 (295)	3-3/4 (95)	7.5	213TC	190	86
B2 x 6	4" x 3"	10¼ (260)	19 (483)				10	213TC	200	91

<sup>2</sup> Add 4½ lb. (2.0 kg.) per foot (.3M) of additional pump length above 2 feet (.6M).



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Standard models are constructed of CPVC with high purity chemical resistant graphite or Rulon® (glass filled PTFE) bearing and silica-free ceramic liner for fluoride resistance. Includes threaded suction and discharge. Models B1½ have polyethylene suction strainer, Models B2 have CPVC suction strainer. The "O"-rings are EPDM (Viton optional). Models B1½ have semi-enclosed impellers, Models B2 fully-enclosed impellers. Motors are "C" face, 1725 RPM, 230-460V/3/50-60, TEFC, chemical duty, painted with two-part epoxy enamel. Pump shaft is 303 stainless

steel sleeved in CPVC. Complete pump assembly offers non-metallic solution contact except titanium fasteners at each bearing (Hastelloy® C 257 optional). Pump lengths are available in one foot (.3M) increments. Bleed line provides water or pumped solution to bearings. (Each bearing requires 10 PSI.) All models wet-tested before shipment. Standard is external water flush. Product flush may be specified, or field converted. All models include 24" x 24" square mounting plate and discharge pipe assembly.

**TO ORDER, use Price Code Number**

For standard 24" - 60" pump-motor combinations, select model from TABLE I.  
 For custom pump-motor combination, select components from TABLE II on page 4.

**TABLE I**

Select flow curve number providing the desired performance.  
 Then match to Model Numbers listed below.  
 Motor HP is non-overloading at full capacity.

CURVE NO.	24" PUMP		36" PUMP	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
1	B1½ x 1SCEY-24"C-CGL-_*°F-H2.0-SD	46-1024 BS	B1½ x 1SCEY-36"C-CGL-_*°F-H2.0-SD	46-1034 BS
2	B1½ x 2SCEY-24"C-CGL-_*°F-H3.0-SD	46-2024 CS	B1½ x 2SCEY-36"C-CGL-_*°F-H3.0-SD	46-2034 CS
3	B1½ x 3SCEY-24"C-CGL-_*°F-H5.0-SD	46-3024 DS	B1½ x 3SCEY-36"C-CGL-_*°F-H5.0-SD	46-3034 DS
4	B2 x 4SCEY-24"C-CGL-_*°F-H5.0-SD	46-4024 DS	B2 x 4SCEY-36"C-CGL-_*°F-H5.0-SD	46-4034 DS
5	B2 x 5SCEY-24"C-CGL-_*°F-H7.5-SD	46-5024 ES	B2 x 5SCEY-36"C-CGL-_*°F-H7.5-SD	46-5034 ES
5	B2 x 6SCEY-24"C-CGL-_*°F-H10.0-SD	46-6024 FS	B2 x 6SCEY-36"C-CGL-_*°F-H10.0-SD	46-6034 FS

CURVE NO.	48" PUMP		60" PUMP	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
1	B1½ x 1SCEY-48"C-CGL-_*°F-H2.0-SD	46-1044 BS	B1½ x 1SCEY-60"C-CGLX2-_*°F-H2.0-SD	46-1055 BS
2	B1½ x 2SCEY-48"C-CGL-_*°F-H3.0-SD	46-2044 CS	B1½ x 2SCEY-60"C-CGLX2-_*°F-H3.0-SD	46-2055 CS
3	B1½ x 3SCEY-48"C-CGL-_*°F-H5.0-SD	46-3044 DS	B1½ x 3SCEY-60"C-CGLX2-_*°F-H5.0-SD	46-3055 DS
4	B2 x 4SCEY-48"C-CGLX2-_*°F-H5.0-SD	46-4045 DS	B2 x 4SCEY-60"C-CGLX2-_*°F-H5.0-SD	46-4055 DS
5	B2 x 5SCEY-48"C-CGLX2-_*°F-H7.5-SD	46-5045 ES	B2 x 5SCEY-60"C-CGLX2-_*°F-H7.5-SD	46-5055 ES
5	B2 x 6SCEY-48"C-CGLX2-_*°F-H10.0-SD	46-6045 FS	B2 x 6SCEY-60"C-CGLX2-_*°F-H10.0-SD	46-6055 FS

\* Include operating temperature in Model Number.



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**TABLE II** Determine pump model for a specific GPM, TDH, pump length and bearing. Select performance point on curve and size horsepower from corresponding number dotted line vertically above

or below performance point. Read required HP at right ordinate and multiply by specific gravity. Select pump model components and Price Code Number from Table II.

PUMP		
PUMP CURVE	MODEL NUMBER	PRICE CODE NO.
1	B1½ x 1SCEY	46-1
2	B1½ x 2SCEY	46-2
3	B1½ x 3SCEY	46-3
4	B2 x 4SCEY	46-4
5	B2 x 5SCEY	46-5
6	B2 x 6SCEY	46-6

- LENGTH (Dimension C)					
		NO. of BEARINGS		ADD TO . . .	
		B1½	B2	MODEL NUMBER	PRICE CODE NO.
FT.	(M)				
2	.6	1	1	- 24°C	02
3	.9	1	1	- 36°C	03
4	1.2	1	2	- 48°C	04
5	1.5	2	2	- 60°C	05
6	1.8	2	2	- 72°C	06
7	2.1	2	3	- 84°C	07
8	2.4	2	3	- 96°C	08
9	2.7	3	3	- 108°C	09
10	3.1	3	3	- 120°C	10

Read: "Tips for the successful operation of sump pumps". See Technical Bulletin TP-113.

-BEARING & LINER			
MATERIAL NO.	OF BRGS. ADD TO	MODEL NO.	PRICE CODE NO.
Ceramic & Graphite Max. 160°F	1	- CGL- * °F	4
	2	- CGLx2- * °F	5
	3	- CGLx3- * °F	6
Ceramic & Rulon Max. 140°F	1	- CRL- * °F	1
	2	- CRLx2- * °F	2
	3	- CRLx3- * °F	3

\* Include operating temperature in Model Number.

- MOTOR & MOUNTING PLATE			
TEFC , 230-460V/3/50-60 **			
		ADD TO . . .	
RPM	HP (kw)	MODEL NO.	PRICE CODE NO.
1725 @ 60 Hz	1.0 (.75)	- H1.0-SD	GS
	1.5 (1.1)	- H1.5-SD	AS
	2.0 (1.5)	- H2.0-SD	BS
	3.0 (2.2)	- H3.0-SD	CS
1450 @ 50 Hz **	5.0 (3.7)	- H5.0-SD	DS
	7.5 (5.6)	- H7.5-SD	ES
	10.0 (7.5)	- H10.0-SD	FS

\*\* B2 Models are 230-460V/3/60 as standard  
230-380-415V/3/50 FOR 50 Hz models

**OPTIONAL**

DESCRIPTION	ADD SUFFIX to MODEL NO.	ADD TO PRICE CODE NUMBER
Viton "O"-rings	-V	V
Hastelloy C 257 bearing fasteners	-HC	X
50 Hz - B2 Models	-5	5
Round -24" diameter x 1" thick	change -SD to -CD in model	replace S with C in PCN

DESCRIPTION	ADD SUFFIX to MODEL NO.	USE SEPERATE PRICE CODE	
		B1 1/2	B2
Suction extension, CPVC pipe, threaded both ends	-K12"	46-0081	46-0089
	-K24"	46-0082	46-0090
	-K36"	46-0083	46-0091

Consult Sales Dept. for explosion-proof motors, custom pump stations, motor starters, level controls and Dri-Stop flow switch for bearing protection.



# SERIES 'ECI' & 'ESS' METAL VERTICAL PUMPS

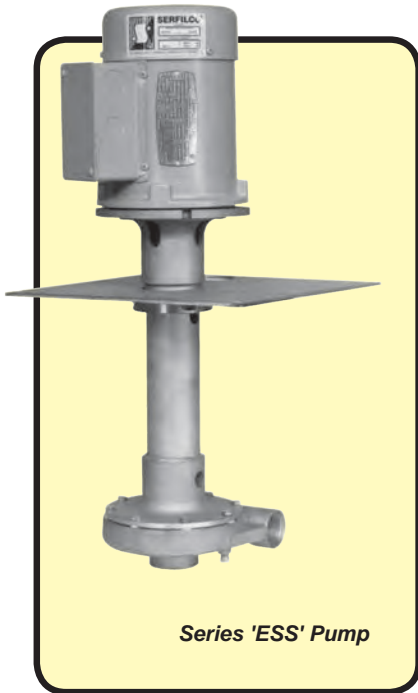
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High efficiency and low energy usage for:

**ACIDS  
WET PROCESSING SOLUTIONS  
FUME SCRUBBERS  
CLEANING SOLUTIONS**

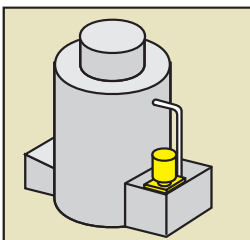


*Series 'ESS' Pump*

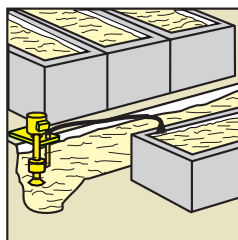
- **Flows to 180 U. S. GPM or 90 ft. TDH @ 60 Hz**  
(565 LPM or 19.5m @ 50 Hz)
- **Standard column length is 13"**  
Available in 20", 32" and 44" lengths
- **Available in cast iron or all 316 stainless steel solution contact**
- **Available in two sizes -**  
1¼" x 1" and 2" x 1½" NPT
- **Motors are standard NEMA 'C' face**  
(.75 - 5.0 HP)
- **Centrifugal — quiet, vibration-free**
- **Shaft vapor seal protects motor bearings and atmosphere**

**The Series 'ECI' and 'ESS' Vertical Pumps** feature a high efficiency semi-open impeller, cast construction for superior strength and corrosion resistance, and a cantilevered 316 stainless steel shaft guided by a graphite or Rulon® bushing. This same bushing design and unique column assembly allows for reliable operation with columns up to 44".

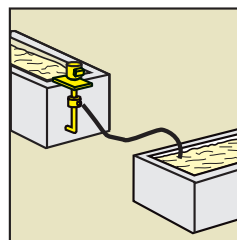
The bushing is lubricated by the product being pumped, thus no external flushing liquid is required. However, since the bushing is being product flushed, these pumps must be used inside the tank. The optional heavy duty mounting plate uses a clamp arrangement which allows it to be positioned anywhere along the length of the pump column. The optional discharge pipe then fits through the mounting plate for easy drop-in installation.



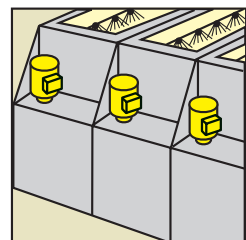
**FUME SCRUBBING  
SUMP DRAINING**



**CHEMICAL**



**TRANSFERRING  
PCB WET PROCESSING**



**or CLEANING SOLUTIONS**

2

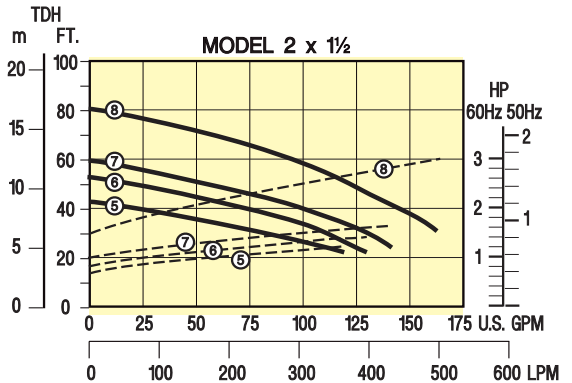
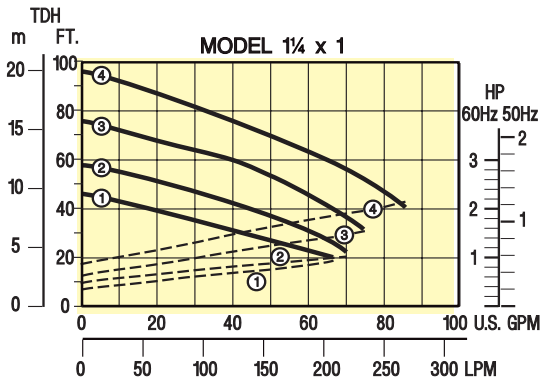


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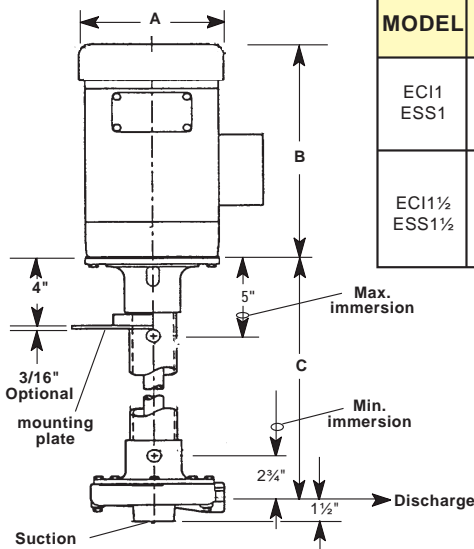
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Pumps are constructed of 316 stainless steel throughout for maximum corrosion resistance. Gasket is a synthetic fiber with cast iron, Teflon® with 316 SS, shaft vapor seal is Viton®, Shaft is available in four lengths to 44". Graphite or Rulon® shaft bushing provides vibration-free service and is located directly above the semi-enclosed high efficiency impeller, therefore, it is product flushed. Optional mounting plate can be clamped and tightened

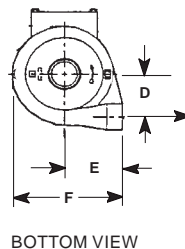
at any given point on the pump column, which allows the pump to be set at the desired depth. Motors are 3450 RPM @ 60 Hz or 2850 @ 50 Hz, TEFC or EXP, painted with two-part epoxy paint. Single phase TEFC motors include 8 ft. (2.4m) line cord.



DIMENSIONS



MODEL	HP B	SUC. DISCH		DIMENSIONS Inches					WEIGHT Lbs.(kg.)	
		NPT	(In.)	F	A	C	D	E		
ECI1 ESS1	3/4			6-1/8	9-1/4	13				59 (27)
	1		1	6-1/8	9-3/4	20				63 (28)
	1-1/2 2	1-1/4		7-1/4 7-1/4	10-1/2 11-1/8	32 44	2-3/4	3-1/2	6-5/8	69 (31) 85 (39)
ECI1 1/2 ESS1 1/2	1			6-1/8	9-3/4	13				63 (28)
	1-1/2		1-1/2	7-1/4	10-1/2	20				80 (36)
	2 3	2		7-1/4 7-1/4	11-1/8 12-3/8	32 44	3-1/8	3-3/4	7-7/8	85 (38) 88 (40)
	3 5			7-1/4 8-1/2	12-3/8 13-5/8					



BOTTOM VIEW





**SERIES 'ECI' and 'ESS' Ordering Information**

P-307\_E

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**TO ORDER**

**TABLE I**

Select 13" long pump-motor model from flow curve number providing the desired performance. Motor HP is non-overloading at full flow, for 1.0 specific gravity and 60 Hz operation. Graphite bushing.

ESS1 PUMP - MOTOR (230/460/3/50-60) 13" 'C' length		
FLOW CURVE NO.	MODEL NUMBER	PRICE CODE NO.
1	ESS1-1-13"C-G-D1.0	61-1011E
2	ESS1-2-13"C-G-D1.5	61-2011F
3	ESS1-3-13"C-G-D2.0	61-3011G
4	ESS1-4-13"C-G-D3.0	61-4011H
ESS1½ PUMP - MOTOR (230/460/3/50-60) 13" 'C' length		
5	ESS1½-5-13"C-G-D1.5	62-5011F
6	ESS1½-6-13"C-G-D2.0	62-6011G
7	ESS1½-7-13"C-G-D3.0	62-7011H
8	ESS1½-8-13"C-G-D5.0	62-8011J

**TABLE II**

Determine pump-motor model for a specified GPM, TDH, length, bushing and specific gravity. Select performance point on curve and size HP from corresponding number dotted line vertically above or below performance point. Read required HP at right ordinate and multiply by specific gravity. Select pump model components and Price Code Numbers from Table II.

PUMP		IMPELLER			LENGTH		
MODEL	PRICE CODE NO.	FLOW CURVE NO.	ADD TO ...		C DIM.	ADD TO ...	
			MODEL	PRICE CODE NO.		MODEL	PRICE CODENO.
ECI1	61-	1	1	1	13"	13°C	01
ESS1		2	2	2	20"	20°C	02
		3	3	3	32"	32°C	03
ECI1½	62-	4	4	4	44"	44°C	04
ESS1½		5	5	5			
		6	6	6			
		7	7	7			
		8	8	8			

**MATERIAL**

PUMP	BUSHING	ADD TO ...	
		MODEL	PRICE CODE NO.
ESS 316SS	Graphite	G	1
	Rulon	R	2
ECI CI	Graphite	G	3
	Rulon	R	4
	None <sup>1</sup>	—	5

<sup>1</sup> Standard 13" CI pump does not have a bushing

<sup>2</sup> For explosion-proof motors (UL and CSA listed for Class I, Group D or Class II, Groups F & G.), add **X** to Model No. and Price Code No. EXP motors are 60 Hz only.

**TEFC MOTOR<sup>2</sup> (3450 or 2850)**

HP	SINGLE PHASE <sup>3</sup>		THREE PHASE <sup>3</sup>	
	ADD TO ...		ADD TO ...	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
.75	C.75	A	D.75	D
1	C1.0	B	D1.0	E
1.5	C1.5	C	D1.5	F
2.0	—	—	D2.0	G
3.0	—	—	D3.0	H
5.0	—	—	D5.0	J

<sup>3</sup> Single phase - 115-208-230V/1/60 or 220-440V/1/50  
Three phase - 208-230-460V/3/60 or 380-415V/3/50

**OPTIONAL EQUIPMENT**

DESCRIPTION	ADD SUFFIX to MODEL NO.	USE SEPARATE PRICE CODE NO.
Mtg. plate (12"x12" w/hole for disch. pipe assy.) Steel 304 stn. steel	-MP	61-1000 61-2000
Discharge pipe assy. 1" NPT for ESS1 1½" NPT for ESS1½	-DPA1	61-1001
	-DPA1½	61-1002
1" NPT for ECI1 1½" NPT for ECI1½	-DPA1	61-1003
	-DPA1½	61-1004



# COLLECTION AND PUMPING STATIONS

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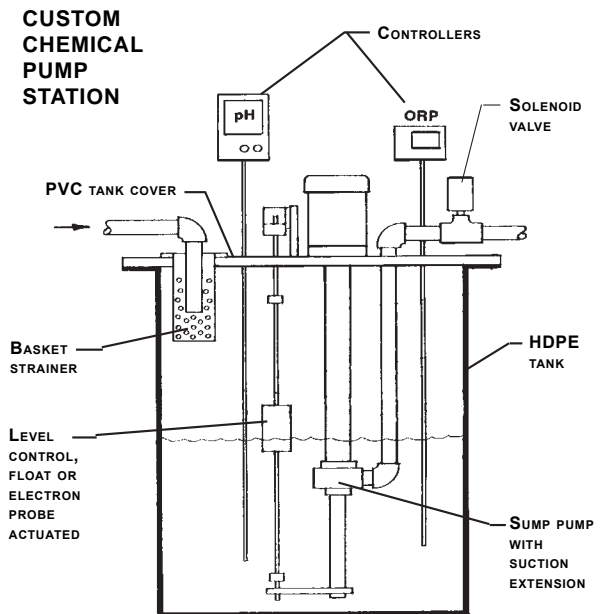
2

**OPTIONAL**

DESCRIPTION	PRICE CODE NO.
Suction strainer	
EO ¾ pump	39-1007C
EO1 & EO3 pumps	39-1002C
EO4 & EO5 pumps	39-2002C
EH2 pump	45-0162
High level alarm relay (For customer supplied sonic or visual device)	O-1378
Audible alarm (80 decibels) installed	O-1486

DESCRIPTION	PRICE CODE NO.
230 volt, single phase (in place of 115V standard)	O-HV230
Magnetic starter with H-O-A selector switch in watertight (IP54) PVC enclosure	
- single phase (specify voltage)	O-MS1P-S
- 3 phase (specify voltage, will change CPS to 3 phase motor)	O-MS3P-S
(1 starter req'd for each pump)	

Select accessories individually to complete your chemical collection, treatment or transfer system.





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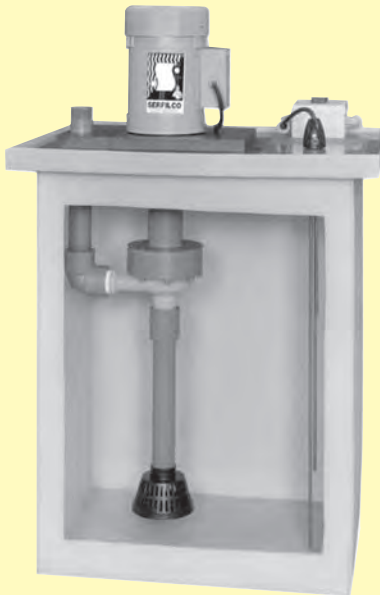
## FOR COLLECTION AND TRANSFER OF:

**WASTE TREATMENT  
ACID NEUTRALIZATION / PLATING RINSE  
PHOTOGRAPHIC & LABORATORY SOLUTIONS  
CHEMICAL STORAGE**

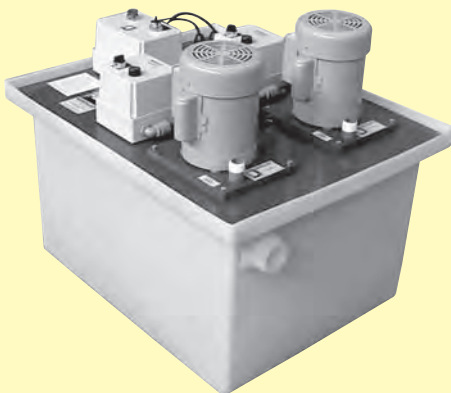
- **Flows to 120 U. S. GPM or 71 ft. TDH @ 60 Hz  
(380 l/m or 15m @ 50 Hz)**
- **Corrosion resistant CPVC pump and HDPE tank**  
for most acid/waste solutions to 140°F (60°C).  
Consult Sales Dept. for selection of systems for use  
up to 210°F (99°C)  
*(See a chemical resistance chart)*
- **Automatic, self-contained units**  
offer unattended operation
- **Compact and ready-to-use**  
simply make connections and plug in;  
models available to fit under counter tops
- **Maintenance-free vertical pump can run dry**  
seal-less, no bearings, cantilever shaft
- **Duplex systems with high level alarm and  
electronic alternator**
- **Custom systems** (Consult Sales Dept.)
  - **Self-priming horizontal centrifugal pumps**
  - **Larger sizes available**
  - **Filter chamber on pump discharge**
  - **pH and ORP controllers for pH and redox  
adjustment**

Collection and Pumping Stations utilize industrial duty corrosion resistant Series, 'EO' and 'EH' vertical pumps. Units are offered in a variety of capacities and all feature bearing-free pumps as standard. They offer the most economical and reliable means of collecting and transferring corrosive or hazardous wastes that need to be held for batch transfer and are not allowed to go down municipal drains. The systems are conveniently packaged to fit under most lab sinks, into photoprocessing systems or alongside production machines. Pump suction extension empties tank to within 1/2" of the tank bottom. When optional suction strainer is used, the minimum level is 4" above the tank bottom.

Collection and Pumping Station can also serve as a replacement sump to existing leaking or otherwise inadequate sump pit. If installed in an existing pit/tank, it would provide double containment.



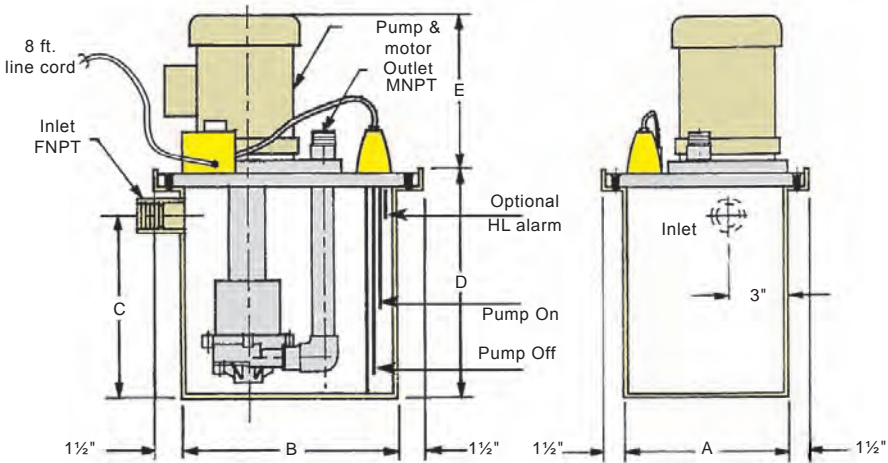
**MODEL CPS 115**  
with optional suction strainer



**MODEL CPS 56**  
Alternating duplex pumps with starters



**DIMENSIONS & SPECIFICATIONS**



MODEL	TANK SIZE			TANK INLET	A		B		C		D	
	U.S. gallons	Liters	L x W x H		in.	mm	in.	mm	in.	mm	in.	mm
			Inches	NPT								
CPS7	7	27	12x12x12	1 1/2"	12.5	317	12.5	317	10	254	13.5	343
CPS11	11	42	12x12x18	1 1/2"	12.5	317	12.5	317	16	406	19.5	495
CPS14	14	53	12x18x15	1 1/2"	12.5	317	18.5	470	13	330	16.5	419
CPS18	18	68	12x18x18	1 1/2"	12.5	317	18.5	470	16	406	19.5	495
CPS25	25	95	18x18x18	1 1/2"	18.5	470	18.5	470	16	406	19.5	495
CPS30	30	114	12x24x24	2"	12.5	317	24.5	622	21.2	538	25.5	648
CPS37	37	140	18x24x18	2"	18.5	470	24.5	622	15.2	386	19.5	495
CPS44	44	166	18x24x24	2"	18.5	470	24.5	622	21.2	538	25.5	648
CPS56	56	212	24x30x18	2"	24.5	622	30.5	775	15.2	386	19.5	495
CPS75	75	284	24x24x30	2"	24.5	622	24.5	622	27.2	691	31.5	800
CPS90	90	341	24x36x24	2"	24.5	622	36.5	927	21.2	538	25.5	648
CPS115	115	435	30x30x30	2"	30.5	775	30.5	775	27.2	691	31.5	800
CPS150	150	568	24x48x30	2"	24.5	622	48.5	1232	27.2	691	31.5	800
CPS270	270	1021	36x48x36	2"	36.5	927	48.5	1232	33.2	843	37.5	952

PUMP MODEL & FLOW CURVE	MAX. FLOW		MAX. TDH		MOTOR	PUMP OUTLET	E	
	U.S. GPM @ 60 Hz	l/m @ 50 Hz	Ft. @ 60 Hz	m @ 50 Hz			in.	mm
					HP	MNPT		
EO 1/4	20	63	18	3.9	1/8	3/4"	5.9	162
EO1	37	120	34	7.2	.3	1 1/4"	9.3	236
EO3	50	150	42	8.9	CPS25	1 1/4"	10.4	264
EO4	74	240	52	10.9		1 1/2"	11.4	290
EO5	92	300	71	15.0	1.5	1 1/2"	11.4	290
EH2	120	380	65	14.0	2.0	1 1/2"	12.2	310

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2

Pumps are constructed of CPVC, mounted on a thick PVC tank cover (1/2", 3/4" or 1", depending on model). PVC cover plate is bolted down to the tank with 304SS bolts. Pumps are independently mounted to the CPS cover via their own mounting plate. This allows for "drop in" service or replacement. Tanks are molded rigid HDPE, eliminating leakage. Tank is provided with 1 1/2" or 2" NPT inlet fitting installed near top of side. Motors are chemical duty, TEFC and are rated continuous duty at either 50 Hz or 60 Hz.

Motors for EO4 pumps and smaller (1.0 HP) are single phase and are supplied with 8 ft. line cord with molded plug. Motors for EO5 pumps and larger are three phase.

Level controls are state-of-the-art electronic conductivity type with 316SS probes or float sensors for non-conductive solutions. The level control relay is mounted in a watertight (IP54) PVC enclosure which includes on/off switch with indicating light.

**TO ORDER, use Price Code Number**

Select tank size, pump, configuration and level control from the tables below. Combine selections to form the Model and Price Code Numbers. See optional equipment below.

EXAMPLE: TANK + PUMP + CONFIGURATION + LEVEL CONTROL = MODEL & PRICE CODE NO.  
CPS25- + EO1 + -D + C = CPS25-EO1-DC

**TANK**

MODEL & PRICE CODE NO.
CPS7-
CPS11-
CPS14-
CPS18-
CPS25-
CPS30-
CPS37-
CPS44-
CPS56-
CPS75-
CPS90-
CPS115-
CPS150-
CPS270-

**PUMP**

MODEL & PRICE CODE NO.	HP
EO 3/4	1/8
EO1	.3
EO3	.75
EO4	1.0

MODEL & PRICE CODE NO.	HP
EO5	1.5
EH2	2.0

**CONFIGURATION**

DESCRIPTION	MODEL & PRICE CODE NO.
Simplex	-S
Duplex - Non Alternating	-D
Duplex Alternating	-A

**LEVEL CONTROL**

DESCRIPTION	MODEL & PRICE CODE NO.
Conductivity	C
Float sensors	F

Consult Sales Dept. for custom systems:

Special tank materials and sizes, special connections, pump selections and additional add-on equipment not listed as optional.

**GENERAL PRODUCT NOTES:**

- 'EO 3/4' pump available on sizes CPS7 through CPS37.
- 'EO1', 'EO3' and 'EO4' pumps available on all sizes except CPS7.
- 'EO5' and 'EH2' pumps available on sizes CPS56 and larger.
- Duplex configurations available on sizes CPS18 and larger.
- All 3-phase pumps and single phase pumps greater than 1.0 HP require motor starters. (See optional equipment.)



# TIPS FOR THE PROPER SELECTION OF SEALS USED IN HORIZONTAL PUMPS

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**Select the seal which offers materials of construction most compatible with the liquid to be pumped, and order as part of pump.**

*See a chemical resistance chart.*

3

### SINGLE MECHANICAL SEAL

Located outside the pump housing in the back of the support plate, the seal consists of a stationary ceramic face and cup in contact with the liquid which also lubricates the face of the carbon and bellows which is rotated with the shaft. The seal in this position does not have any metal in contact with the liquid since the spring used to maintain contact of the seal surfaces is external.

### DOUBLE MECHANICAL SEAL

Consists of two independent seals mounted within a seal chamber which is flushed with an independent water supply at a flow rate of approximately 2 to 4 gallons per hour minimum and a pressure slightly higher than the maximum expected operating pressure of the pump. Metal components of a double seal assembly do not contact pumped solution. Also, double seal design permits the use of a less exotic inboard seal material, so when replacement is necessary, the replacement seal is less expensive.

The following applications would require a double mechanical seal to minimize the risk of pump failure resulting from the use of a single seal pump. In some instances, it is the only method to pump the solution.

#### ELECTROLESS PLATING SOLUTIONS

The double seal contains the liquid in the pump and prevents "plating out" onto the inboard seal faces. It is applicable to room temperature or hot solutions.

#### CONCENTRATED CHEMICALS

Recommended because the water flush on the inboard seal faces reduces the corrosive effect of the solution.

#### HIGH TEMPERATURES

Water flush cools inboard seal faces and reduces the effect of high temperatures on the seal components and adjacent pump elements.

#### ABRASIVE and CRYSTAL FORMING SOLUTIONS

The pressurized water flush with double seal pumps prevents the abrasive from adhering to the inboard seal faces. If solutions are left in the pump, crystals do not form on seal faces because they are water flushed. Eliminates seal replacement due to scored faces from both solutions.

#### CONTAINING CRITICAL SOLUTIONS

For the above reasons, the possibility of seal failure is minimized. However, if seal failure should occur, it will be less frequent and can be immediately determined by analyzing the seal discharge fluid.

## PUMP PROTECTORS

*Prevent pump damage due to dry operation of system.*

### DRI-STOP 2R and 2RE (flow activated)

Cooling water service for double mechanical seal pumps and vertical pump bearings. Monitors flow and de-energizes motor if flow drops below minimum 4 GPH.

### DRI-STOP 3 (pressure activated)

Suitable for chemical solution contact in single mechanical seal and magnetic drive pumps. Senses low pressure on pump discharge to de-energize motor at loss of prime.

### MODEL P-10 (digital motor monitor)

Shuts down pump in the event of dry run, cavitation, damaged impeller, closed inlet or outlet valve or line blockage.





# 'NPSH' NET POSITIVE SUCTION HEAD

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [www.serfilco.com](http://www.serfilco.com) (800) 323 - 5431

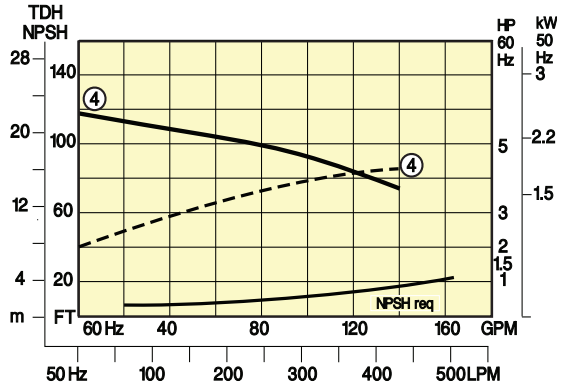
An understanding of net positive suction head (NPSH) is necessary to avoid poor application of centrifugal pumps. NPSH combines all factors limiting the suction side of the pump. It is wise to be concerned with NPSH if one of the following conditions is present:

- a. High flow and low head relationship
- b. High temperature
- c. High elevation above sea level
- d. Restricted suction (high friction loss)
- e. Low static suction head (liquid level above pump)
- f. High suction lift (liquid level below pump)
- g. High vapor pressure of solution

**REQUIRED NPSH** — Refers to internal pump losses. It is determined by the pump manufacturer's laboratory tests. The greater the pump's capacity, the greater the required NPSH.

For a specific TDH and GPM requirement on a pump curve, the corresponding required NPSH is directly below and read off the left ordinate of flow curves.

**AVAILABLE NPSH** — The net positive suction head above the vapor pressure which is available at the suction flange of a pump to maintain a liquid state.



**Available NPSH must always exceed required NPSH.** To determine the **available NPSH** in a system, deduct the negative factors from the positive factors. All values are to be in feet, with consideration for specific gravity.

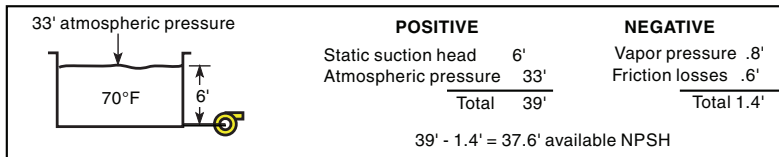
POSITIVE FACTORS	NEGATIVE FACTORS
Static suction head	Vapor pressure (PSIA)
Atmospheric pressure (if open tank)	at operating temperature
Positive pressure (if pressurized tank)	Friction losses
	Static suction lift (including specific gravity)

**minus**

## EXAMPLES

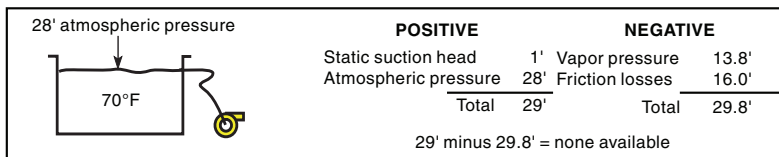
Model HE2x1½ with No. 4 impeller will flow 140 GPM @ 62 ft. TDH. The required NPSH is 17 ft.

**EXAMPLE A** If a pump is connected by a 2" suction pipe one foot long, to the bottom of a 6 ft. deep tank in Chicago, Illinois (500 ft. elevation), and the tank contains water at 70°F, what is the **available NPSH**?



Since the required NPSH is 17 ft., the pump will perform satisfactorily. (Note, if the pump were "hosed" over the side of the tank, static suction head would be the same, but friction losses would increase).

**EXAMPLE B** If a pump is connected by a 2" suction pipe 10 ft. long, with 3 elbows, near the top of a 6 ft. deep tank in Denver, Colorado (5,000 ft. elevation), and the tank contains water at 170°F, what is the **available NPSH**?



Since the required NPSH is 17 ft. and none is available, the pump will experience a reduction in capacity, loss of efficiency, noise, vibration and cavitation. Net answer: This is a poor application.





# SERIES 'HH' HORIZONTAL PUMPS

70

P-206\_B

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## HIGH DISCHARGE HEAD PERFORMANCE For transfer pumping and recirculation of:

3



Optional Pedestal Mounted

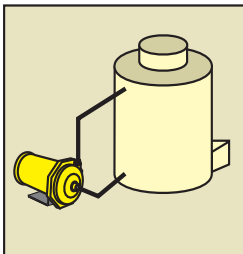
### D.I. WATER / PHOTO PROCESSING PLATING / ETCHING / ELECTRONICS WATER TREATMENT / ACID TRANSFER

- **Flows to 68 U.S. GPM or 167 ft. TDH @ 60 Hz**  
(215 LPM or 35m @ 50 Hz)
- **Non-metallic solution contact**  
CPVC - 140° max  
PVDF - 200° max  
(See a chemical resistance chart)
- **Single mechanical seal**  
Carbon/ceramic with EPDM or Viton elastomers
- **Connections:**  
1" MNPT inlet x 3/4" MNPT outlet
- **Maximum solid size -15" outlet**

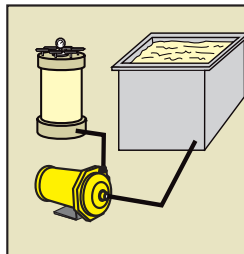
**Series 'HH' Pumps** are molded of natural CPVC or natural PVDF. They feature a volute designed for high TDH at high efficiency and all around optimum performance. The unique sleeved impeller design and non-metallic internally mounted mechanical seal combine to provide a compact assembly offering non-metallic solution contact.

Five impeller diameters provide a full range of flow and head performance with efficient use of motor horsepower. Motors are standard NEMA 56C, TEFC. For explosion-proof motors, consult Sales Department.

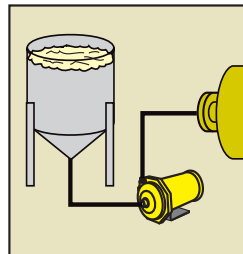
Pedestal mounted pump assemblies are available for ½ to 5 HP standard end bell motors. An optional long-coupled kit includes cast iron bearing, pedestal frame, flexible coupling, guard and FRP mounting channel.



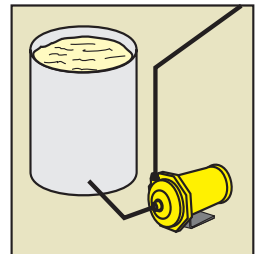
FUME  
SCRUBBER



FILTRATION  
SYSTEM  
CHEMICAL



PROCESS  
SOLUTION



TRANSFER





# SERIES 'HH' PUMPS Ordering Information

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**TO ORDER, use Price Code No.**

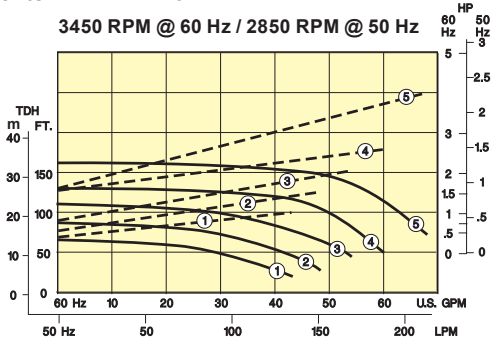
For standard pump-motor combination, select model from TABLE I.

For custom pump-motor combination, select from components in TABLE II or TABLE III.

**TABLE I** Select pump-motor model or flow curve number providing the desired performance.

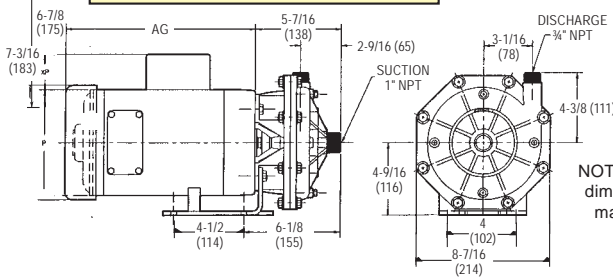
FLOW CURVE	CPVC PUMP w/EPDM MODEL NUMBER	PRICE CODE NO.
1	HH1x3/4C1L(M1)-D1.0	61-5111G
2	HH1x3/4C2L(M1)-D1.5	61-5121H
3	HH1x3/4C3L(M1)-D2.0	61-5131J
4	HH1x3/4C4L(M1)-D3.0	61-5141K
5	Long-coupled only. See TABLE III.	

3450 RPM @ 60 Hz / 2850 RPM @ 50 Hz



2-1/16 (52)

**DIMENSIONS - Inches (mm)**



NOTE: Motor dimensions may vary

HORSE-POWER	MOTOR DIMENSIONS (AG)	
	Inches	mm
1/2	8-3/4	222
3/4	9-1/4	235
1	9-3/4	248
1-1/2	10-1/2	267
2	11-1/8	282
3	12-3/8	314

**TABLE II** To determine pump model for a specified GPM, TDH, material and specific gravity, select performance point on curve. Determine required HP by moving vertically to corresponding number dotted line. Read the required HP at right ordinate and multiply by S.G. Select pump, impeller and motor and construct Model and Price Code No.

Typical Model: HH1x3/4C1L(M1)-C.5 = Price Code No. 61-5111A

PUMP <sup>1</sup>		
MODEL	MATERIAL	PRICE CODE NO.
HH1x3/4C	CPVC	61-51
HH1x3/4K	PVDF	61-52

IMPELLER	
CURVE NUMBER	ADD TO MODEL & PCN
1	1
2	2
3	3
4	4
5	5

"O"-RING & MECHANICAL SEAL		
CARBON / CERAMIC & EPDM VITON	ADD TO	
	MODEL	PCN
	L(M1)	1
	V(M2)	2

MOTOR - TEFC <sup>2</sup> , 3450 RPM @ 60 Hz						
HP SIN-	GLE PHASE <sup>4</sup>		THREE PHASE <sup>4</sup>		MOTOR <sup>3</sup> SHIP. WT.	
	MODEL NO.	PRICE CODE NO.	MODEL NO.	PRICE CODE NO.	Lbs.	kg.
.5	C.5	A	D.75	G	27	12
.75	C.75	B	D1.0	H	32	14
1.0	C1.0	C	D1.5	J	37	17
1.5	C1.5	D	D2.0	K	45	20
2.0	C2.0	L	D3.0	18	65	30
3.0	C3.0	—	E	22	8	
5.0	See TABLE III.				10	

<sup>1</sup> To order pump only (without motor), delete motor suffix from Model Number and Price Code Number.

<sup>2</sup> For explosion-proof motors, consult Sales Department.

<sup>3</sup> For shipping weight of pump-motor assembly, add 5 lbs. (3 kg.) to motor ship. wt.

<sup>4</sup> Single phase - 115-208-230V/1/60 or 220-440V/1/50

Three phase - 208-230-460V/3/60 or 380-415V/3/50

For 50 Hz, add -50 to Model No. and add 5 to Price Code No.

A DRI-STOP<sup>®</sup> 3 Pump Protector switch is available to prevent damage to pump due to dry operation. Consult Bulletin A-105.

**TABLE III** 1. Select pump only from TABLE II above, e. g. HH1x3/4 C5V(M2)  
2. Select appropriate long-coupled kit from chart below.  
3. Select motor from chart at right.  
4. For factory assembly, add motor mounting and alignment, PCN 42-0204.  
5. To order above example: 61-5152 + 42-0201F + 44-7362 + 42-0204.

LONG-COUPLED KIT		
MODEL NUMBER	FOR MOTOR FRAME	PRICE CODE NO.
LCK-1	182/4 T	42-0201F
LCK-2	143/5 T	42-0202F
LCK-3	56	42-0203F

MOTOR <sup>3</sup> TEFC, 3450 RPM @ 60 Hz			
HP	PRICE CODE NUMBER		MOTOR FRAME
	115-230V/1/60	230-460V/3/60	
.5	64-0761	64-0735	56
.75	64-0762	64-0736	56
1.0	64-0796	64-0737	56
1.5	64-0799	64-0738	56
2.0	64-0763	64-0739	56
3.0	—	44-7133	145T
5.0	—	44-7362	184T

For elbows, pipe, gaskets, clamps, motor starters, BSP fittings or adapters, consult Sales Department.



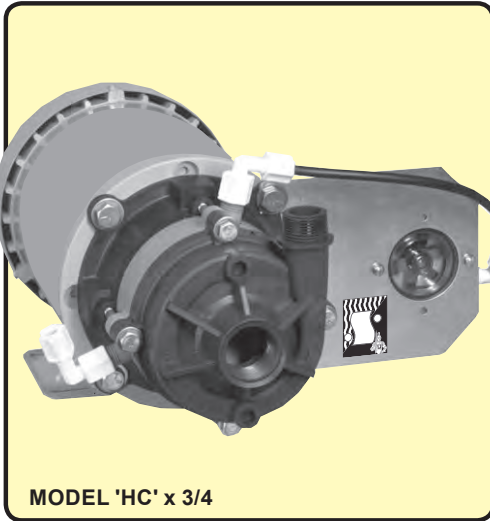
# SERIES 'HC' HORIZONTAL PUMPS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**High Efficiency and Low Energy usage for:**

Wastes | Acids | Plating | Chemicals | Photographic | Etching | Scrubbing

3



MODEL 'HC' x 3/4

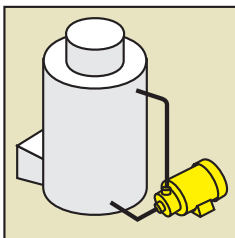
Shown with double mechanical water-flush seal and available DRI-STOP 2R

- **Flows to 35 U.S. GPM or 48 FT. TDH @ 60 Hz**  
(110 LPM or 10m @ 50 Hz)
- **Non-metallic solution contact**  
- CPVC or 100% PVDF  
(See a chemical resistance chart)
- **Single or double mechanical seal**  
Carbon/ceramic or silicon carbide  
EPDM or Viton® elastomers
- **Centrifugal — quiet, vibration-free**
- **Standard models provide non-overloading full flow with liquids to 1.2 S.G.**
- **Chemical duty motor (1/3 - 3/4 HP)**  
Sealed oversized bearings, cast iron end bells  
Corrosion resistant two-part epoxy enamel finish, stainless steel name plate  
1.15 service factor at 50 and 60 Hz

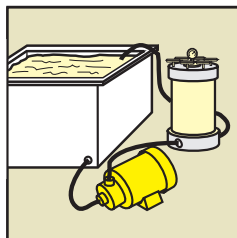
**Series 'HC' Horizontal Pumps** feature "total" chemical resistance with non-metallic construction of all wetted components. The molded, semi-enclosed impellers are designed to provide maximum pumping efficiency. These pumps feature external single seal or double water-flushed mechanical seal with choice of EPDM or Viton elastomer materials.

Available close-coupled to minimize size or long-coupled with bearing pedestal base plate and motor. All close-coupled pumps are driven by chemical duty motors suitable for continuous duty in corrosive environments.

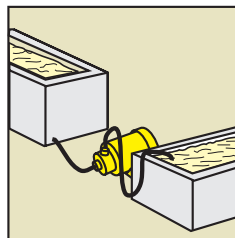
Pumps are ideal for transferring and recirculating industrial solutions, plating solutions, process chemicals and other fluid handling applications.



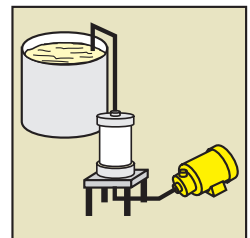
FUME SCRUBBING



CLEANING & DESCALING



WASTE TREATMENT



SOLUTION TRANSFER  
w/PRIMING CHAMBER



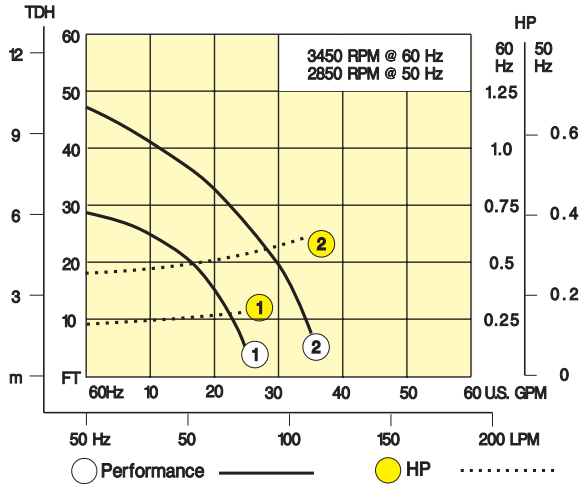
2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431

**Series 'HC' pumps** have 1" FNPT suction x 3/4" MNPT discharge and are available in CPVC or 100% PVDF. Elastomers are Viton or EPDM.

All models utilize a molded, semi-enclosed impeller. Mechanical seal is externally mounted and not in solution contact. Double water flushed mechanical seal is recommended for applications where abrasives or salts are present, or for conditions where metal deposition will occur. In addition, double water flush sealed pumps will permit dry run operation.

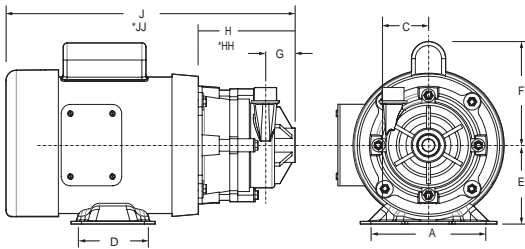
Mechanical seals are available with carbon/ceramic or all silicon carbide seal faces.

Motors are chemical duty with sealed oversize bearings, cast iron end bells, two-part epoxy finish, and stainless steel tag. Motors are rated with 1.15 service factor at 50 or 60 Hz.



**DIMENSIONS**

**MODEL HC1 x 3/4**



DIMENSIONS						
	A	B	C	D	E	F
Inches (mm)	4-7/8 (124)	9 (229)	1-11/16 (43)	3 (76)	3-1/2 (89)	2-3/4 (70)

G	H	* HH	J	* JJ
1-13/32 (36)	4-5/16 (110)	5-7/32 (133)	13-1/16 (332)	14 (356)

\* HH and JJ are double seal dimensions.

**ORDERING INFORMATION**

**TABLE I**

Select flow curve with desired performance. Select CPVC or PVDF. All models have carbon/SF<sup>1</sup> ceramic seal, Viton elastomers, and single phase motor. Motor HP is non-overloading for full flow at 1.2 S.G.

CURVE	CPVC SINGLE SEAL		CPVC DOUBLE SEAL	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
1	HC1 x 3/4C1V(M2) C.3	47-0612 A	HC1 x 3/4C1V(M2 x M1) C.3	47-0615 A
2	HC1 x 3/4C2V(M2) C.75	47-0622 C	HC1 x 3/4C2V(M2 X M1) C.75	47-0625 C
	PVDF SINGLE SEAL		PVDF DOUBLE SEAL	
1	HC1 x 3/4K1V(M2) C.3	47-0712 A	HC1 x 3/4K1V(M2 x M1) C.3	47-0715 A
2	HC1 x 3/4K2V(M2) C.75	47-0722 C	HC1 x 3/4K2V(M2 x M1) C.75	47-0725 C

<sup>1</sup> SF= Silica-free ceramic.



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**ORDERING INFORMATION Con't**

**TABLE II**

To construct model/price code number for pump with EPDM elastomers, SiC seal, three phase motor or increased horsepower, see chart below. Use price code number to order.

**EXAMPLE:**

**PUMP** + **IMPELLER** + **ELASTOMER & MECHANICAL SEAL** + **MOTOR** = **PRICE CODE NO.**  
 HC1x3/4C + 2 + V(M8 x M1) + C.75 = 47-0628 C

PUMP		
MATERIAL	MODEL	PRICE CODE NO.
CPVC	HC1 x 3/4C	47-06
100% PVDF	HC1 x 3/4K	47-07

IMPELLER	
FLOW CURVE	ADD TO MODEL & PCN
1	1
2	2

"O"-RING MECHANICAL SEAL		
MATERIAL (SOLUTION CONTACT)	ADD TO . . .	
	MODEL	PCN
<u>SINGLE SEAL</u>		
EPDM, carbon SF <sup>1</sup> ceramic	L(M1)	1
EPDM, silicon, carbide	L(M8)	0
Viton, carbon SF <sup>1</sup> ceramic	V(M2)	2
Viton, silicon carbide	V(M8)	7
<u>DOUBLE SEAL</u>		
EPDM, carbon SF <sup>1</sup> ceramic	L(M1xM1)	4
EPDM, silicon, carbide	L(M8xM1)	9
Viton, carbon SF <sup>1</sup> ceramic	V(M2xM1)	5
Viton, silicon carbide	V(M8xM1)	8

HP	MOTOR - TEFC				PUMP & MOTOR SHIP. WT. (Lbs.)
	I-PHASE <sup>2</sup>		3-PHASE <sup>3</sup>		
	MODEL	PCN	MODEL	PCN	
1/3	-C.3	A	-D.3	B	25
3/4	-C.75	C	-D.75	D	30

<sup>1</sup> SF= Silica-free ceramic.

<sup>2</sup> Single Phase  
115-190-230V/1/50-60

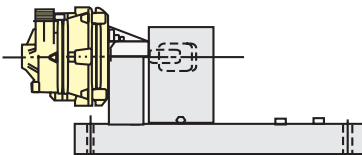
<sup>3</sup> Three Phase  
230-460V/3/50-60 or 380-415V/3/50

**OPTIONAL**

**LONG-COUPLED KIT**

Long-Coupled Kit includes plastic bearing pedestal frame, fiberglass reinforced channel (23.5" x 10" x 2.75"), flexible coupling and guard, and stainless steel fasteners. To order unit assembled with motor, add 42-0204.

TO ORDER LONG COUPLED KIT	ADD TO MODEL NO.	PRICE CODE NO.
For 56 frame (HC1 x 3/4 pump)	- LCK-1	42-0210
Assembled with motor		42-0204





# SERIES 'HK' HORIZONTAL PUMPS

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MODEL 'HK'

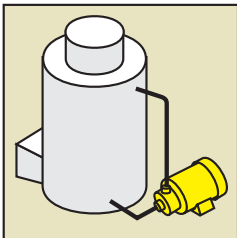
- **Flows to 78 U.S. GPM or 53 FT. TDH @ 60 Hz**  
(246 LPM or 11m @ 50 Hz)
- **Non-metallic solution contact**  
- CPVC or 100% PVDF  
(See a chemical resistance chart)
- **Single or double mechanical seal**  
Carbon/ceramic or silicon carbide  
EPDM or Viton® elastomers
- **Centrifugal — quiet, vibration-free**
- **Standard models provide non-overloading full flow with liquids to 1.2 S.G.**
- **Chemical duty motor (1 - 1 1/2 HP)**  
Sealed oversized bearings, cast iron end bells  
Corrosion resistant two-part epoxy enamel finish,  
stainless steel name plate  
1.15 service factor at 50 and 60 Hz

3

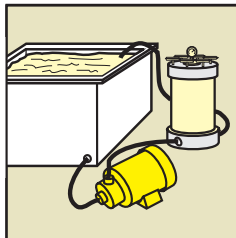
**Series 'HK' Horizontal Pumps** feature "total" chemical resistance with non-metallic construction of all wetted components. The molded, semi-enclosed impellers are designed to provide maximum pumping efficiency. These pumps feature external single seal or double water-flushed mechanical seal with choice of EPDM or Viton elastomer materials.

Available close-coupled to minimize size or long-coupled with bearing pedestal base plate and motor. All close-coupled pumps are driven by chemical duty motors suitable for continuous duty in corrosive environments.

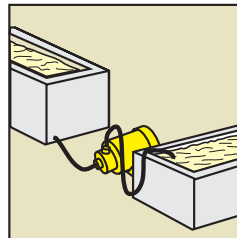
Pumps are ideal for transferring and recirculating industrial solutions, plating solutions, process chemicals and other fluid handling applications.



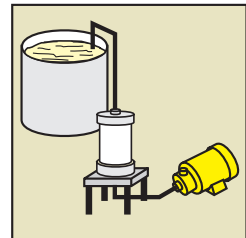
FUME SCRUBBING



CLEANING & DESCALING



WASTE TREATMENT



SOLUTION TRANSFER  
w/PRIMING CHAMBER



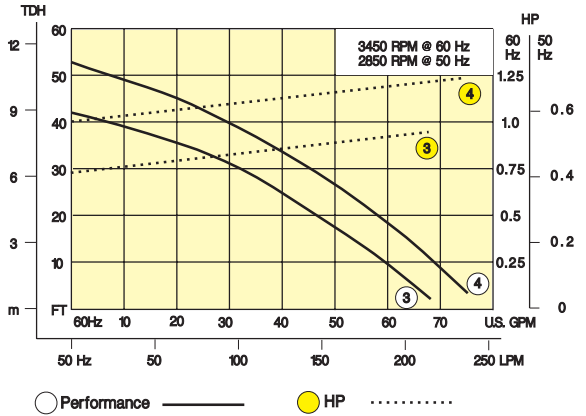
2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

Series 'HK' Pumps have 1½" MNPT suction x 1½" MNPT discharge and are available in CPVC with PVDF suction casing or 100% PVDF. Elastomers are Viton, or EPDM.

All models utilize a molded, semi-enclosed impeller. Mechanical seal is Type 21, externally mounted and not in solution contact. Double water flushed mechanical seal is recommended for applications where abrasives or salts are present, or for conditions where metal deposition will occur. In addition, double water flush sealed pumps will permit dry run operation.

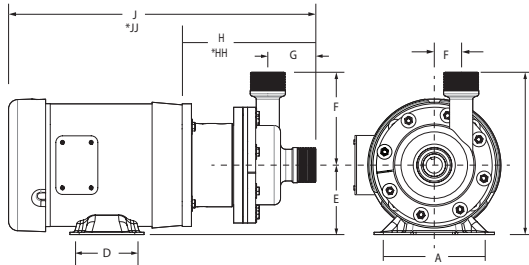
Mechanical seals are available with carbon/ceramic or all silicon carbide seal faces.

Motors are chemical duty with sealed oversize bearings, cast iron end bells, two-part epoxy finish, and stainless steel tag. Motors are rated with 1.15 service factor at 50 or 60 Hz.



**DIMENSIONS**

**MODEL HK1-1/2x1-1/2**



DIMENSIONS						
	A	B	C	D	E	F
Inches	5-1/2	9	1-1/2	4	3-1/2	5
(mm)	(140)	(229)	(38)	(102)	(89)	(127)

G	H	* HH	J	* JJ
2-9/16 (65)	7-1/4 (184)	7-1/4 (184)	18-1/4 (464)	18-1/4 (464)

\* HH and JJ are double seal dimensions.

**ORDERING INFORMATION**

**TABLE I**

Select flow curve with desired performance. Select CPVC or PVDF. All models have carbon/SF<sup>1</sup> ceramic seal, Viton elastomers, and three phase motor. Motor HP is non-overloading for full flow at 1.2 S.G.

CURVE	CPVC SINGLE SEAL			CPVC DOUBLE SEAL	
	MODEL	PRICE CODE NO.		MODEL	PRICE CODE NO.
3	HK1½ x 1½CK3V(M2) D1.0	47-0832 F		HK1½ x 1½CK3V(M2 X M1) D1.0	47-0835 F
4	HK1½ x 1½CK4V(M2) D1.5	47-0842 H		HK1½ x 1½CK4V(M2 x M1) D1.5	47-0845 H
PVDF SINGLE SEAL			PVDF DOUBLE SEAL		
3	HK1½ x 1½K3V(M2) D1.0	47-0932 F		HK1½ x 1½K3V(M2 x M1) D1.0	47-0935 F
4	HK1½ x 1½K4V(M2) D1.5	47-0942 H		HK1½ x 1½K4V(M2 x M1) D1.5	47-0945 H

<sup>1</sup> SF= Silica-free ceramic.



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**ORDERING INFORMATION** *Con't*

**TABLE II**

To construct model/price code number for pump with EPDM elastomers, SiC seal, three phase motor or increased horsepower, see chart below. Use price code number to order.

**EXAMPLE**

PUMP + IMPELLER + ELASTOMER & MECHANICAL SEAL + MOTOR = PRICE CODE NO.  
 HK1½ x 1½K + 3 + V(M8 x M1) + D1.5 = 47-0938 H

PUMP		
MATERIAL	MODEL	PRICE CODE NO.
CPVC / PVDF	HK1-1/2 x 1-1/2CK	47-08
100% PVDF	HK1-1/2 x 1-1/2K	47-09

IMPELLER	
FLOW CURVE	ADD TO MODEL & PCN
3	3
4	4

"O"-RING MECHANICAL SEAL		
MATERIAL (SOLUTION CONTACT)	ADD TO . . .	
	MODEL	PCN
<b>SINGLE SEAL</b>		
EPDM, carbon SF <sup>1</sup> ceramic	L(M1)	1
EPDM, silicon, carbide	L(M8)	0
Viton, carbon SF <sup>1</sup> ceramic	V(M2)	2
Viton, silicon carbide	V(M8)	7
<b>DOUBLE SEAL</b>		
EPDM, carbon SF <sup>1</sup> ceramic	L(M1xM1)	4
EPDM, silicon, carbide	L(M8xM1)	9
Viton, carbon SF <sup>1</sup> ceramic	V(M2xM1)	5
Viton, silicon carbide	V(M8xM1)	8

MOTOR - TEFC					PUMP & MOTOR SHIP. WT. (Lbs.)
HP	I-PHASE <sup>2</sup>		3-PHASE <sup>3</sup>		
	MODEL	PCN	MODEL	PCN	
1	-C1.0	E	-D.1	F	35
1-1/2	-C1.5	G	-D1.5	H	40

<sup>1</sup> SF= Silica-free ceramic.

<sup>2</sup> Single Phase

<sup>3</sup> Three Phase

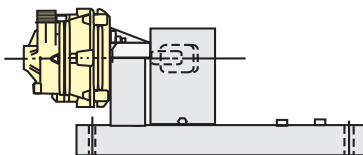
115-190-230V/1/50-60

230-460V/3/50-60 or 380-415V/3/50

**OPTIONAL**

**LONG-COUPLED KIT**

Long-Coupled Kit includes cast iron bearing pedestal frame, fiberglass reinforced channel, flexible coupling and guard. To order unit assembled with motor, add 42-0204.



TO ORDER LONG COUPLED KIT	ADD TO MODEL NO.	PRICE CODE NO.
For 143T & 145T frame (HK1-1/2 x 1-1/2 pump)	- LCK-2	42-0217A
Assembled with motor		42-0204





# SERIES 'HN' HORIZONTAL PUMPS

2900 MacArthur Blvd Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## RELIABLE CORROSION-RESISTANT PUMPS FOR

### ACID / PHOTO PROCESSING PLATING / SCRUBBING WASTES AND WASTE WATER

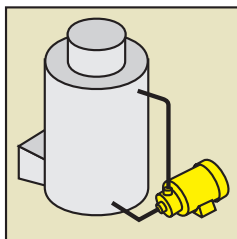
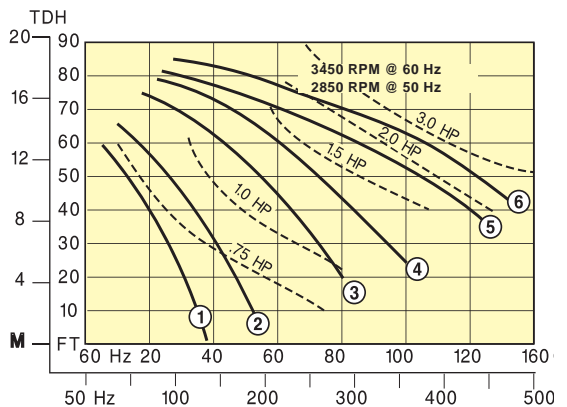
- **Flows to 135 U.S. GPM or 88 ft. TDH @ 60 Hz**  
(425 LPM or 19 M @ 50 Hz)
- **Non-metallic solution contact**  
30% glass-filled Noryl®  
(See a chemical resistance chart)
- **Single mechanical seal**  
carbon / silica-free ceramic  
EPDM or Viton® elastomers
- **Centrifugal — quiet, vibration-free**
- **1½" x 1½" FNPT connections**
- **Back pull-out design, easy assembly and maintenance**



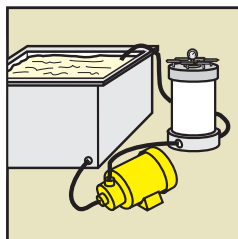
The **Series 'HN' Pump** is capable of "total" chemical resistance, both internally and externally with its non-metallic construction of all wetted components. Engineering grade thermoplastics provide application compatibility with a variety of chemicals that would be corrosive to other materials of construction.

The totally enclosed impeller is molded to close tolerances which allow this pump to operate at peak horsepower efficiency across a broad range of operational flow/head requirements.

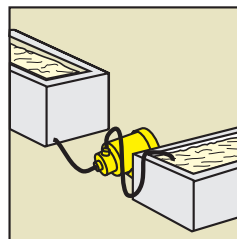
The unique mechanical seal eliminates any metal in contact with the solution pumped. All of these features allow this pump to properly handle many applications at a fraction of the cost of exotic alloys.



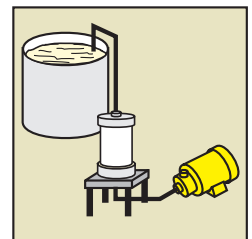
PRESSURE



FILTER



WASTE



SOLUTION TRANSFER



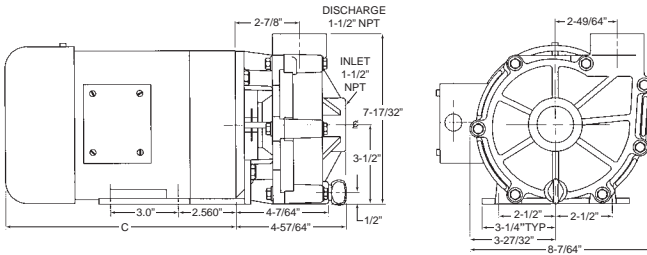


**SERIES 'HN' PUMPS Specifications and Ordering Information**

P-111\_A

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**DIMENSIONS**



HP	Typical "C" dimensions of TEFC motor and wt. of pump / motor unit.	
	1 Phase	3 Phase
3/4	10.25" 35 lbs.	9.38" 30 lbs.
1	11.25" 44 lbs.	9.38" 33 lbs.
1.5	11.50" 49 lbs.	10.25" 35 lbs.
2	12.25" 55 lbs.	11.38" 44 lbs.
3	--	12.13" 54 lbs.

Motor dimensions may vary.

**TO ORDER, use Price Code No.**

**TABLE I - Complete Noryl pump & motor**

FLOW CURVE NO.	MAX. FLOW		MAX. TDH		EPDM - carbon / ceramic SEAL		VITON - carbon / ceramic SEAL	
	GPM @ 60 Hz	l/m @ 50 Hz	FT.	M	MODEL NO.	PRICE CODE NO.	MODEL NO.	PRICE CODE NO.
1	36	113	65	14	H1½ x 1½ NE1L(M1)-D.75	42-1011 F	H1½ x 1½ NE1V(M2)-D.75	42-1012 F
2	54	170	72	15	H1½ x 1½ NE2L(M1)-D1.0	42-1021 G	H1½ x 1½ NE2V(M2)-D1.0	42-1022 G
3	80	236	78	15	H1½ x 1½ NE3L(M1)-D1.5	42-1031 H	H1½ x 1½ NE3V(M2)-D1.5	42-1032 H
4	100	308	84	18	H1½ x 1½ NE4L(M1)-D1.5	42-1041 H	H1½ x 1½ NE4V(M2)-D1.5	42-1042 H
5	124	390	85	18	H1½ x 1½ NE5L(M1)-D2.0	42-1051 J	H1½ x 1½ NE5V(M2)-D2.0	42-1052 J
6	135	425	88	19	H1½ x 1½ NE6L(M1)-D3.0	42-1061 K	H1½ x 1½ NE6V(M2)-D3.0	42-1062 K

**NOTE:** Motors are 230-460V / 3φ / 60 Hz. See Table II for 1φ and / or other HP

**TABLE II - Select pump components**

**EXAMPLE:** Model H1½ x 1½ Material N Impeller E Curve 3 Seal V(M2) Motor -C1.5 = Price Code No. 42-1032 C

PUMP		MAT'L of CONSTRUCTION		IMPELLER TYPE		FLOW CURVE	SEAL		HP	MOTOR 115-230V / 1 / 60		MOTOR 230-460V / 3 / 60	
MODEL	PCN	MODEL	PCN	MODEL	PCN	MOD. & PCN	MODEL			MODEL TEFC	PRICE CODE	MODEL TEFC	PRICE CODE
H1½ x 1½ Horizontal 1½ x 1½ FTPT connections	42-	N	1	E	0	1	L (M1)	1	.75	-C.75	A	-D.75	F
							EPDM	2	1.0	-C1.0	B	-D1.0	G
							Carb./ ceramic	3	1.5	-C1.5	C	-D1.5	H
							V (M2)	2	2.0	-C2.0	D	-D2.0	J
							Viton		3.0	-C3.0	E	-D3.0	K
							Carb. / ceramic						

Consult Sales Dept. for 50 Hz or other motors.





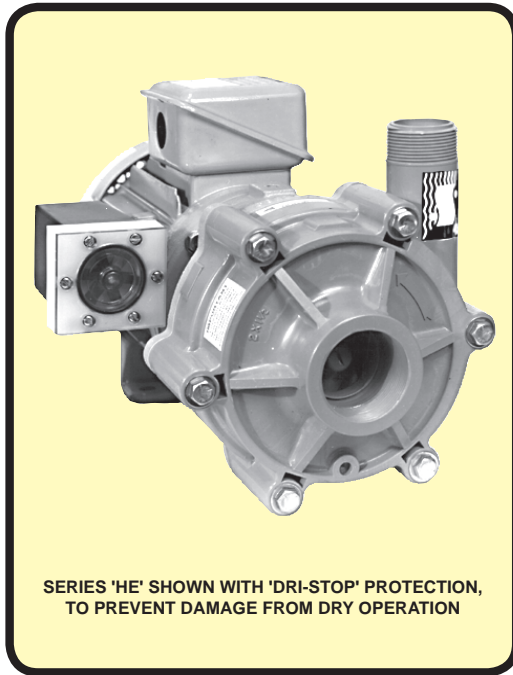
# SERIES 'HE' HORIZONTAL PUMP

80

P-201\_T

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3



SERIES 'HE' SHOWN WITH 'DRI-STOP' PROTECTION,  
TO PREVENT DAMAGE FROM DRY OPERATION

## ENERGY SAVING CENTRIFUGAL PUMPS FOR:

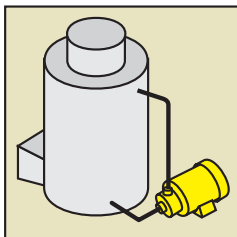
**ACID / AQUEOUS / CAUSTIC  
CHEMICAL / ETCHING / PHOTOGRAPHIC  
PLATING / SCRUBBING / WASTES**

- **Flows to 175 U.S. GPM or 130 ft. TDH @ 60 Hz**  
(552 LPM or 28 M @ 50 Hz)
- **Non-metallic solution contact**  
High temperature polypropylene, CPVC, PVDF or ECTFE (Refer to a chemical resistance chart)
- **Single or double mechanical seal,**  
carbon/ceramic, or silicon carbide with EPDM or Viton® elastomers
- **Centrifugal - quiet, vibration-free**
- **NPT or metric connections available**
- **Pump casing indexes to six directions of discharge**
- **Chemical duty motor (1.0 - 7.5 HP)**  
Sealed oversized bearings, liquid/vapor seal and slinger, cast iron end bells, corrosion resistant two-part epoxy finish, stainless steel nameplate, 1.15 service factor at 50 or 60 Hz.

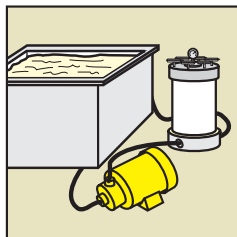
Here is a pump capable of "total" chemical resistance, both internally and externally with its non-metallic construction of all wetted components, choice of seal assembly and elastomer materials. The use of engineered plastics in a choice of materials provide excellent chemical compatibility for the most demanding applications.

The totally enclosed impeller is molded to close tolerances which allow this pump to operate at peak horsepower efficiency across a broad range of operational flow/head requirements

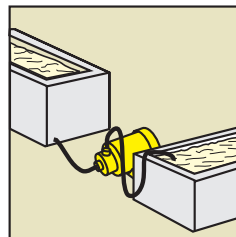
The external mechanical seal and impeller sleeve design isolates metal components to provide non-metallic solution contact with the pumped solution. The standard (M8) seal assembly has silicon carbide seal faces and is the most durable and longest lasting mechanical seal available. The double mechanical seal models require water lubrication of the seal faces and allows the pump to be used for solutions containing abrasives, high salt concentrations and for electroless plating solutions. Either Viton or EPDM elastomers are available on the 'HE' pump.



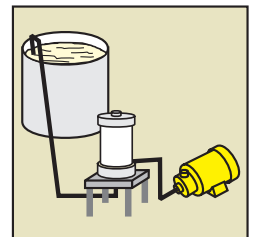
PRESSURE  
SPRAYING



FILTER  
SYSTEM



WASTE  
TREATMENT

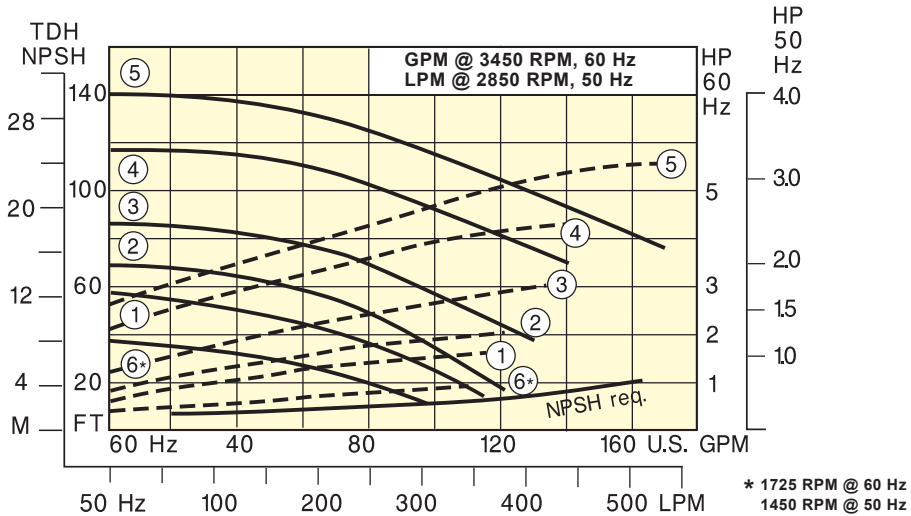


SOLUTION TRANSFER  
w/PRIMING CHAMBER

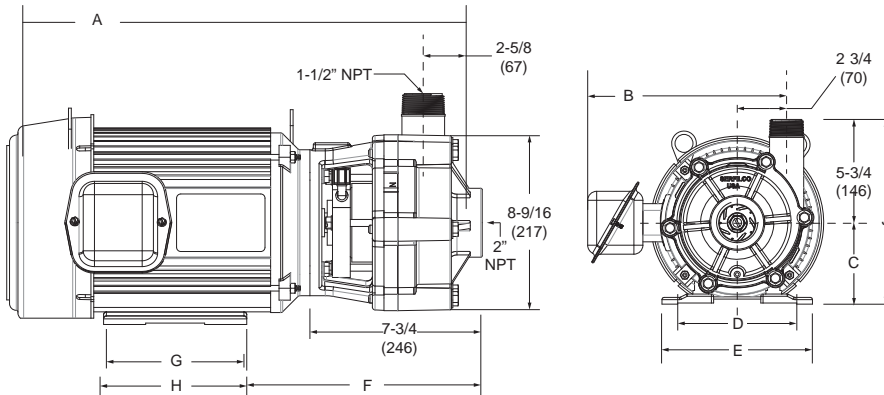


**SERIES 'HE' Dimensions and Flow Curves**

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**DIMENSIONS in inches (mm)**



**DIMENSIONS for NEMA motors are in inches and those for metric motors are in mm.**

										MOTOR WT.*	
										Lbs.	
<b>NEMA</b>	MOTOR HP	A	B	C	D	E	F	G	H	J	
	1.5 (& 1 @ 1725 RPM)	16.94	8.63	3.5	5.5	6.75	10.5	4	4.75	9.25	43
	2 (& 1.5 @ 1725 RPM)	18	8.63	3.5	5.5	6.75	10.5	5	5.75	9.25	44
	3	19.63	9.63	4.5	7.5	9	11.25	4.5	5.5	10.25	50
	5	21	9.63	4.5	7.5	9	11.25	5.5	6.5	10.25	65
	7.5	21	9.63	4.5	7.5	9	11.25	5.5	6.5	10.25	110
<b>METRIC</b>	MOTOR KW	A	B	C	D	E	F	G	H	J	Kg.
	1.5 (90S frame)	496	212	90	140	170	307	100	125	236	23
	2.2 (90L frame)	521	212	90	140	170	307	125	150	236	25
	3.0 (100 frame)	549	236	100	160	197	314	140	172	246	30

\*For shipping weight, add 15 lbs (6.8 Kg.) to motor weight.





Standard models are constructed of CPVC, polypropylene, PVDF, or ECTFE with threaded connections. The motor shaft is protected by the impeller sleeve assembly. Elastomers are EPDM or Viton. Impellers are enclosed. The mechanical seal is type 21, externally mounted with stainless steel components not in solution contact. A double mechanical seal is recommended for solutions

containing abrasives and for high temperature or other critical service. Close coupled motors are NEMA 'JM' or metric (IEC) standard. The motors designated NEMA can operate on 50 or 60 Hz at full rated horsepower. Consult Application Engineering Department for BSP fittings or adapters.



**ORDERING INFORMATION**

*For standard CPVC, PP, PVDF, and ECTFE pump-motor combination, select model from TABLE I.  
For other pump-motor combinations, select from TABLE II.*

**TABLE I STANDARD MODELS**

Select flow curve number providing the desired performance. Then match to Model Number listed below. Standard models include silicon carbide single mechanical seal with EPDM or Viton elastomers. Motor HP is non-overloading at full capacity with 1.1 specific gravity fluids.

FLOW CURVE NO.	CPVC/EPDM	PRICE CODE NUMBER	POLYPROPYLENE**/EPDM	PRICE CODE NUMBER
	MODEL NO.		MODEL NO.	
1	H2 x 1½ CE1L(M8) -D1.5	42-0110A	H2 x 1½ PE1L(M8) -D1.5	42-0410A
2	H2 x 1½ CE2L(M8) -D2.0	42-0120B	H2 x 1½ PE2L(M8) -D2.0	42-0420B
3	H2 x 1½ CE3L(M8) -D3.0	42-0130C	H2 x 1½ PE3L(M8) -D3.0	42-0430C
4	H2 x 1½ CE4L(M8) -D5.0	42-0140D	H2 x 1½ PE4L(M8) -D5.0	42-0440D
5	H2 x 1½ CE5L(M8) -D7.5	42-0150E	H2 x 1½ PE5L(M8) -D7.5	42-0450E
6	H2 x 1½ CE6L(M8) -H1.0	42-0160F	H2 x 1½ PE6L(M8) -H1.0	42-0460F

FLOW CURVE NO.	PVDF/Viton	PRICE CODE NUMBER	ECTFE/EPDM	PRICE CODE NUMBER
	MODEL NO.		MODEL NO.	
1	H2 x 1½ KE1V(M8) -D1.5	42-0318A	H2 x 1½ HE1L(M8) -D1.5	42-0610A
2	H2 x 1½ KE2V(M8) -D2.0	42-0328B	H2 x 1½ HE2L(M8) -D2.0	42-0620B
3	H2 x 1½ KE3V(M8) -D3.0	42-0338C	H2 x 1½ HE3L(M8) -D3.0	42-0630C
4	H2 x 1½ KE4V(M8) -D5.0	42-0348D	H2 x 1½ HE4L(M8) -D5.0	42-0640D
5	H2 x 1½ KE5V(M8) -D7.5	42-0358E	H2 x 1½ HE5L(M8) -D7.5	42-0650E
6	H2 x 1½ KE6V(M8) -H1.0	42-0368F	H2 x 1½ HE6L(M8) -H1.0	42-0660F

\*\* Polypropylene models are glass reinforced



**SERIES 'HE' Ordering Information And Optional Equipment**

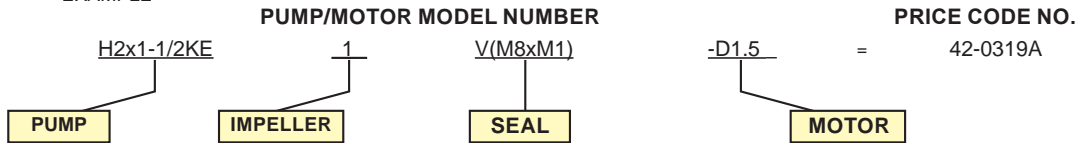
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**TO ORDER FROM TABLE II**

To determine pump-motor for a selected GPM, TDH and/or specific gravity, select flow/pressure point on curve. Required HP is determined by moving vertically to corresponding dotted line and then horizontally to HP scale. Multiply indicated HP by specific gravity. Select pump materials and mechanical seal(s) and construct Model and Price Code No.

**TABLE II**

EXAMPLE



PUMP	PRICE CODE NO.
CPVC H2 x 1-1/2CE	42-01
PVDF H2 x 1-1/2KE	42-03
POLYPROP. H2 x 1-1/2PE	42-04
ECTFE H2X1-1/2HE	42-06

FLOW CURVE NO.	ADD TO . . .	
	MODEL NO.	PRICE
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

'O'-RING & MECHANICAL SEAL MATERIAL (SOLUTION CONTACT)		ADD TO . . .	
		MODEL NUMBER	PRICE CODE NO.
<b>SINGLE MECHANICAL SEAL</b>			
EPDM CARBON/CERAMIC*	L(M1)		1
EPDM SILICON CARBIDE	L(M8)		0
VITON CARBON/CERAMIC*	V(M2)		2
VITON SILICON CARBIDE	V(M8)		8
<b>DOUBLE MECHANICAL SEAL**</b>			
EPDM CARBON/CERAMIC*	L(M1xM1)		5
EPDM SILICON CARBIDE	L(M8xM1)		4
VITON CARBON/CERAMIC*	V(M2xM1)		6
VITON SILICON CARBIDE	V(M8xM1)		9

TEFC 208-230/460/3/60 or 190/380-415/3/50		
RPM	NEMA MOTORS	
	ADD TO . . .	
	HP MODEL NUMBER	PRICE CODE NUMBER
3450 or 2850	D1.5	A
	D2.0	B
	D3.0	C
	D5.0	D
	D7.5	E
1725 or 1450	H1.0	F
	H1.5	G

\*Ceramic is silica free

\*\* ADRI-STOP pressure switch is available to prevent damage to pump due to dry operation; consult Bulletin A-105.

**OPTIONAL**

DESCRIPTION	PRICE CODE NUMBER
FLANGE CONNECTIONS ANSI 150 Lbs. (ASA 150) 2"x1-1/2" (not installed)	CPVC 42-0200
	PVDF 42-0211
	Polypropylene 42-0218
STAINLESS STEEL SHAFT	42-0230
METRIC PIPE ADAPTER SETS Consult Application Sales Dept.	

LONG COUPLED KIT		
MODEL	FOR MOTOR FRAME	PRICE CODE NUMBER
LCK-1	182T & 184T	42-0201A
LCK-2	143T & 145T	42-0202A
LCK-3	56	42-0203A
LCK-4	182 & 184	42-0205A
MOTOR MOUNTING & ALIGNMENT		42-0204

Long-coupled kit includes cast iron bearing pedestal frame, fiberglass reinforced channel (23-1/2" x 10" x 2-3/4"), flexible coupling and guard, and stainless steel shaft and fasteners. (Order pump separately)





# SERIES 'HF' HORIZONTAL PUMP

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*Available with optional flange connections and long-coupled.*

## HIGH FLOW, HIGH TDH ANSI DIMENSIONAL HIGH EFFICIENCY /LOW ENERGY USAGE

- **Flows to 400 U.S. GPM or 160 ft. TDH @ 60 Hz** (1250 L/min or 37 m @ 50 Hz)
- **Non-metallic solution contact**  
**High-temperature polypropylene or CPVC**  
(Refer to a chemical resistance chart)
- **Centrifugal – quiet, vibration free**
- **Choice of single or double mechanical seal**  
with EPDM or Viton® elastomers
- **Choice of long or close-coupled**
- **Chemical Duty motor – standard**  
Sealed oversized bearings, cast iron end bells, corrosion resistant two-part epoxy coating, stainless steel nameplate
- **ANSI dimensional — with optional flanges**

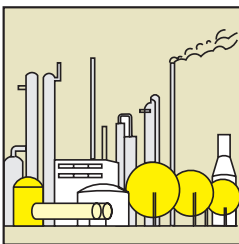
The Series 'HF' Horizontal Pump represents the next generation of molded pumps from SERFILCO. The 'HF' retains a robust design and non-metallic solution contact to meet the most demanding applications while providing the choice of materials of construction and economy found in all of our molded pumps.

The 'HF' is offered in a choice of SERFILCO exclusive high-temperature polypropylene or CPVC construction and is ANSI dimensional with the optional flanged connections.

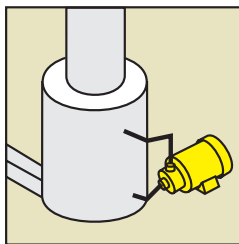
The totally enclosed impeller is molded to close tolerances which allows peak horsepower efficiency across a broad range of operational flow and head requirements.

The external mechanical seal and impeller sleeve design isolates metal components to provide non-metallic solution contact with the pumped liquid. The standard (M8) seal assembly has silicon carbide seal faces and is the most durable and longest lasting mechanical seal available. Double mechanical seal models require water lubrication of the seal faces and allow the pump to be used for solutions containing abrasives, high salt concentrations and for electroless plating solutions.

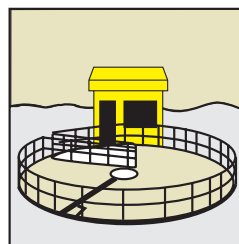
### TYPICAL APPLICATIONS



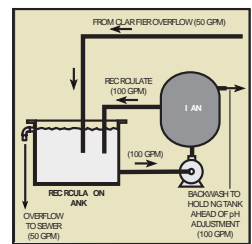
**PETROCHEMICAL**



**– FUME SCRUBBING  
– COOLING TOWER**



**– WASTE TREATMENT  
– PROCESS WATER**



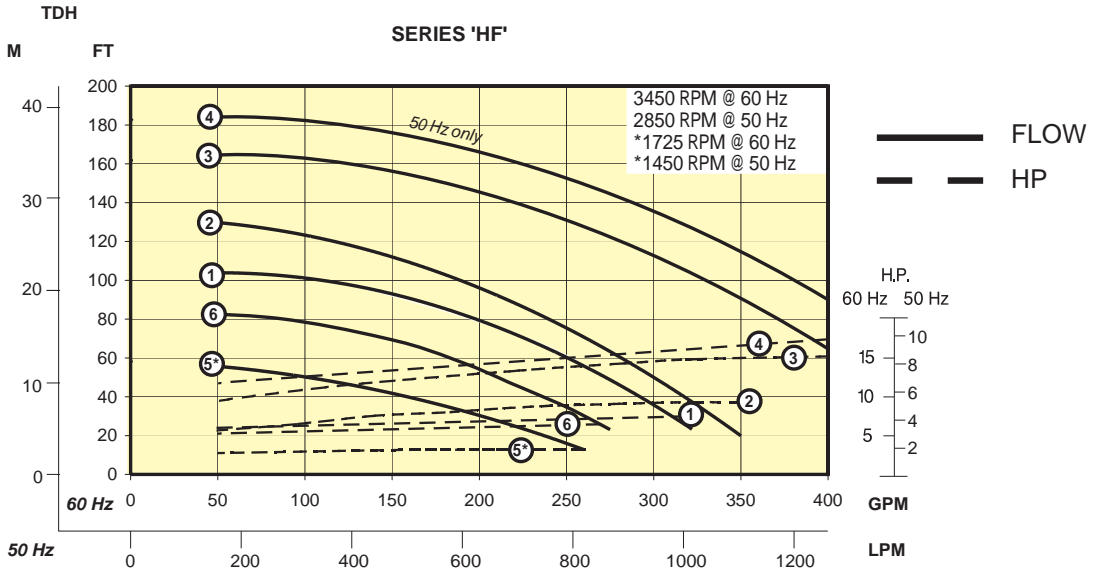
**FILTER SYSTEM**



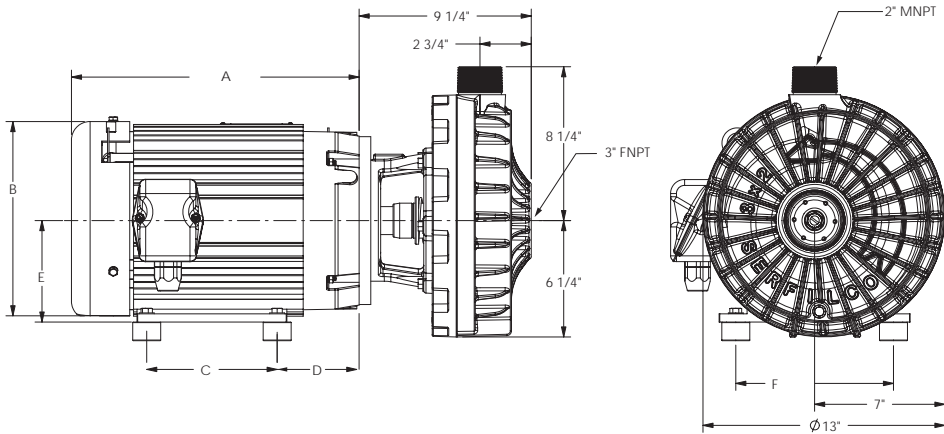
**SERIES 'HF' Specifications And Performance Curves**

P-208\_B

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**DIMENSIONS**



MOTOR FRAME	HP	DIMENSIONS in. (mm)					
		A*	B*	C	D	E*	F
184TC	5.0	14.0(356)	8.7(221)	5.5(140)	2.8(71)	4.5(114)	7.5(191)
213TC	7.5	15.5(394)	10.4(263)	5.5(140)	3.5(89)	5.3(135)	8.5(216)
215TC	10.0	15.4(390)	10.4(263)	7.0(178)	4.4(111)	5.5(140)	8.5(216)
215TC	15.0	15.4(390)	10.4(263)	7.0(178)	4.4(111)	5.5(140)	8.5(216)

\* Motor dimensions will vary with motor manufacturer



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Pumps are molded of SERFILCO exclusive high-temperature polypropylene or CPVC and have sleeved stainless steel shafts for non-metallic solution contact. All models have an enclosed impeller and externally mounted Type 21 mechanical seal with silicon carbide seal faces. ANSI 150 lb. flange connections are optional. Standard O-rings are EPDM (ethylene propylene).

External hardware not in liquid contact is stainless steel. Motor is coated with two-part epoxy.

A double mechanical seal is recommended for solutions containing abrasives, high temperature and other critical service.

**TO ORDER use Price Code Number**

**FOR STANDARD PUMP-MOTOR COMBINATION, SELECT MODEL FROM TABLE I.  
FOR CUSTOM PUMP-MOTOR COMBINATION, SELECT FROM TABLE II ON NEXT PAGE**

**TABLE I STANDARD MODELS**

From performance curves graph, select flow curve number providing the desired performance. Then match to Model Number listed below. Standard models include silicon carbide single mechanical seal and EPDM (ethylene propylene) elastomers. Motor HP is non-overloading at full capacity.

60 Hz MODELS				
FLOW CURVE	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
	CPVC		POLYPROPYLENE	
1	HF3x2CM1L(M8)-D7.5	47-5011A	HF3x2PM1L(M8)-D7.5	47-5111A
2	HF3x2CM2L(M8)-D10.0	47-5021B	HF3x2PM2L(M8)-D10.0	47-5121B
3	HF3x2CM3L(M8)-D15.0	47-5031C	HF3x2PM3L(M8)-D15.0	47-5131C
5	HF3x2CM5L(M8)-H5.0	47-5051D	HF3x2PM5L(M8)-D7.5	47-5151D
6	HF3x2CM6L(M8)-D7.5	47-5061A	HF3x2PM6L(M8)-D7.5	47-5161A

50 Hz MODELS				
FLOW CURVE	MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
	CPVC		POLYPROPYLENE	
1	HF3X2CM1L(M8)-D7.5-50	47-5011E	HF3X2PM1L(M8)-D7.5-50	47-5111E
2	HF3X2CM2L(M8)-D7.5-50	47-5021E	HF3X2PM2L(M8)-D7.5-50	47-5121E
3	HF3X2CM3L(M8)-D10.0-50	47-5031F	HF3X2PM3L(M8)-D10.0-50	47-5131F
4	HF3X2CM4L(M8)-D10.0-50	47-5041F	HF3X2PM4L(M8)-D10.0-50	47-5141F
5	HF3X2CM5L(M8)-H5.0-50	47-5051G	HF3X2PM5L(M8)-H5.0-50	47-5151G
6	HF3X2CM6L(M8)-D7.5-50	47-5061E	HF3X2PM6L(M8)-H7.5-50	47-5161E



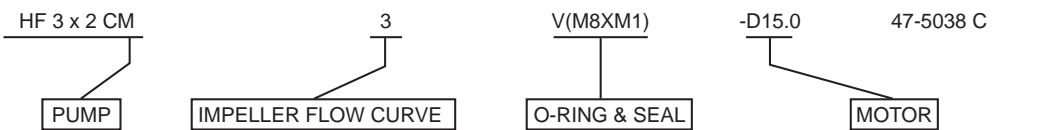


# SERIES 'HF' Ordering Information

P-208\_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431**TABLE II****CUSTOM MODELS**

To determine pump model for a specified gpm, TDH, material and specific gravity (SG), select performance point on curve. Determine required HP by moving vertically to corresponding number dotted line. Read the required HP at right ordinate and multiply by SG. Select pump, O-ring, mechanical seal, and motor to construct Model and Price Code No.

**EXAMPLE:**

PUMP	PRICE CODE NO.
CPVC HF 3x2CM	47-50
POLYPROPYLENE HF 3x2PM	47-51

FLOW CURVE NO.	ADD TO . . .	
	MODEL NO.	PRICE CODE NO.
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

'O'-RING & MECHANICAL SEAL MATERIAL (SOLUTION CONTACT)	ADD TO . . .	
	MODEL NUMBER	PRICE CODE NO.
<b>SINGLE MECHANICAL SEAL</b>		
EPDM SILICON CARBIDE	L(M8)	1
VITON SILICON CARBIDE	V(M8)	7
<b>DOUBLE MECHANICAL SEAL<sup>1</sup></b>		
EPDM SILICON CARBIDE	L(M8xM1)	4
VITON SILICON CARBIDE	V(M8xM1)	8

Hz RPM	NEMA MOTORS <sup>2</sup>	
	ADD TO . . .	
	HP MODEL NUMBER	PRICE CODE NUMBER
60 Hz 3450	-D.7.5	A
	-D10.0	B
	-D15.0	C
60 Hz 1725	-H5.0	D
50 Hz 2850	-D7.5-50	E
	-D10.0-50	F
50 Hz 1450	-H5.0-50	G

<sup>1</sup> DRI-STOP 2R is recommended when a double mechanical seal is used. DRI-STOP switch prevents damage to pump due to dry operation. Consult Bulletin A-105

<sup>2</sup> 60 Hz= 208-230/460/3/60  
50 Hz=190-208/380-415/3/50

**OPTIONS**

DESCRIPTION	ADD TO MODEL	PRICE CODE NO.
Trimmed impeller to meet specified flow	—	47-0084
Flange connections ANSi dimensional	-F	X

LONG COUPLING KIT		
FOR MODEL	FOR MOTOR FRAME	PRICE CODE NO.
HF 3 X 2	182/184T	42-0506
	213/215T	42-0507
Motor mounting		42-0504

LONG COUPLING KIT INCLUDES CAST IRON BEARING PEDESTAL FRAME, BASEPLATE, FLEXIBLE COUPLING, GUARD



# SERIES 'HA' HORIZONTAL PUMP

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P-207\_C

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3



## ANSI DIMENSIONAL HEAVY DUTY CONSTRUCTION

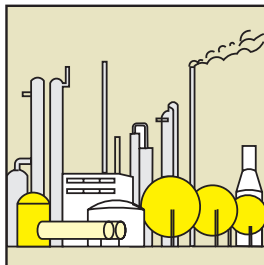
- **Flows to 1200 U.S. GPM or 115 ft. TDH @ 60 Hz**  
(3800 l/min or 24 m @ 50 Hz)
- **Excellent chemical resistance**  
Machined from solid CPVC (Corzan®)  
(Refer to a chemical resistance chart)
- **Centrifugal – quiet, vibration free**
- **Single or double mechanical seal**  
with EPDM or Viton® elastomers
- **Long or close-coupled**
- **Chemical duty motor – standard**  
Sealed oversized bearings, cast iron end bells,  
corrosion resistant two-part epoxy finish, stainless  
steel nameplate

The Series 'HA' is a heavy-duty, ANSI dimensional horizontal pump engineered for utmost reliability in severe chemical applications. The pump is machined from solid CPVC and utilizes an externally mounted mechanical seal. The 4x3x8 pumps have sleeved shafts for non-metallic solution contact while the 4x3x10 and 6x4x10 pumps utilize titanium or Hastelloy C shafts. This proven design provides excellent resistance to aggressive chemicals as well as economical and reliable operation for many years of service.

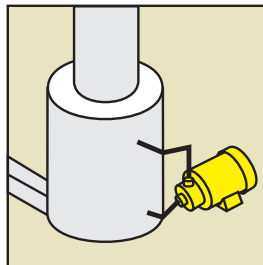
The Series 'HA' horizontal pump is available in three sizes with flow rates to 1200 U.S. GPM (3800 LPM),

and is available with single or double mechanical seals and EPDM or Viton elastomers. Larger sized pumps designed to achieve 2400 U.S. GPM are in development. The standard configuration for these pumps is close coupled, however certain models are available long-coupled.

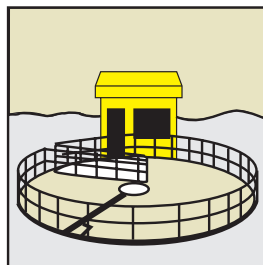
The Series 'HA' pump with its high flow rates, chemical resistance and durability makes it the perfect "workhorse" for chemical processing, transfer and filter pumping, fume scrubbers and cooling towers or for waste treatment applications.



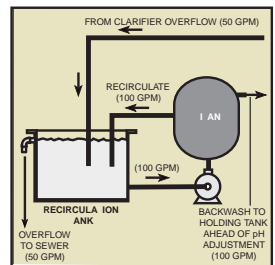
PETROCHEMICAL



FUME SCRUBBING  
COOLING TOWER



WASTE TREATMENT



FILTER SYSTEM



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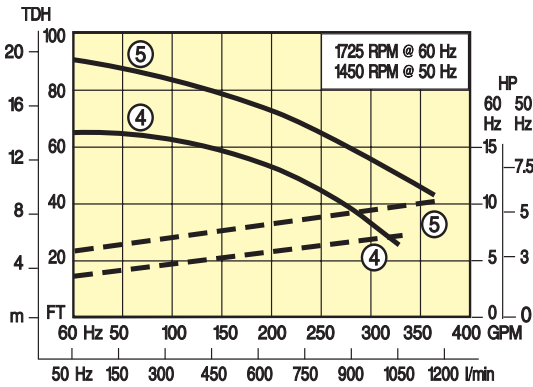
Pumps are machined from solid CPVC. 4x3x8 pumps have CPVC sleeved shafts while 4x3x10 and 6x4x10 pumps have titanium shafts standard with Hastelloy C shafts optional. Elastomers are Viton or EPDM. All models have an enclosed impeller, externally mounted Type 21 mechanical seal with silicon carbide seal faces and ANSI 150 lb. flange connections. External hardware not in solution contact is stainless steel. Motor is painted with two-part epoxy paint.

Single or double mechanical seals are available depending on the application. A double, water flushed mechanical seal is recommended for solutions containing abrasives, high temperatures or other critical service applications.

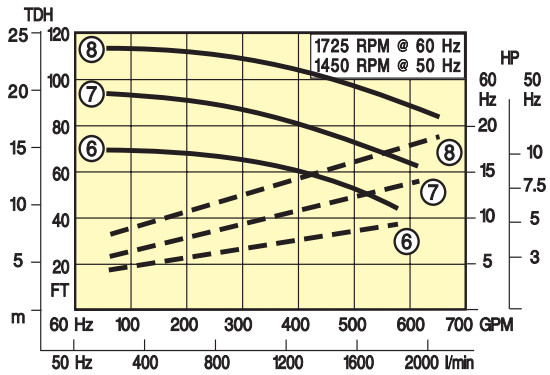
The standard configuration for Series 'HA' pumps is close coupled, however 4x3x8 AND 4x3x10 pumps are also available long coupled. Models 4x3x10 and larger are mounted on a 18" x 30" steel baseplate.



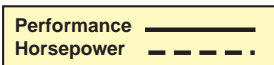
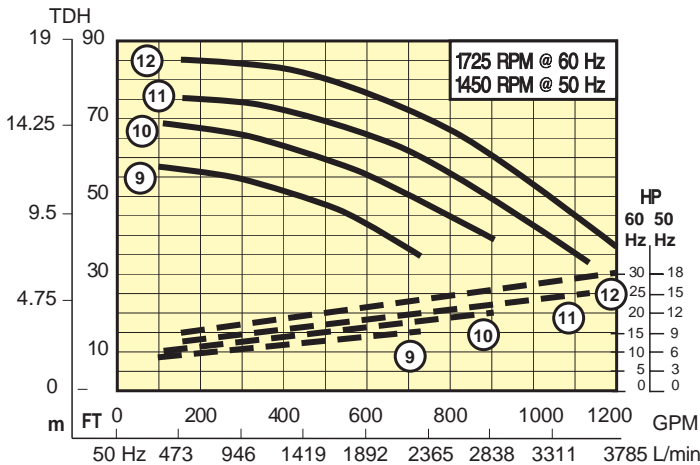
### MODEL 4 x 3 x 8



### MODEL 4 x 3 x 10

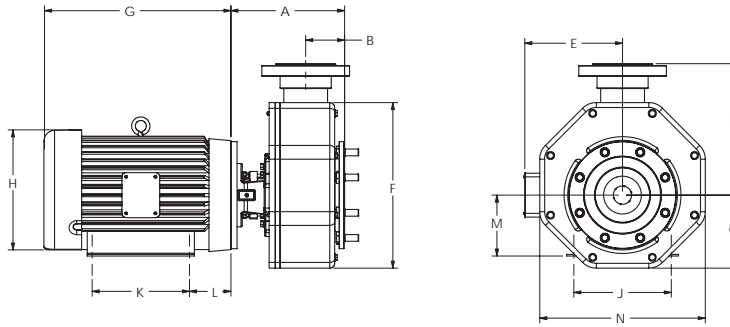


### MODEL 6 x 4 x 10





**DIMENSIONS**



MODEL	MOTOR FRAME	HP	DIMENSIONS in. (mm)											
			A	B	C	D	E*	F&N	G*	H*	J	K	L	M
4 x 3 x 8	213TC	7.5	11 <sup>9/16</sup> (294)	4(102)	8 <sup>1/4</sup> (210)	11(279)	7.3(185)	15.5(394)	15.5(394)	10.3(262)	8.5(216)	5.5(140)	3.5(89)	5.3(135)
	215TC	10.0	11 <sup>9/16</sup> (294)	4(102)	8 <sup>1/4</sup> (210)	11(279)	9.6(244)	15.5(394)	16.6(422)	12.0(305)	10.0(254)	7.0(178)	4.3(109)	6.3(160)
4 x 3 x 10	215TC	10.0	11 <sup>9/16</sup> (294)	4(102)	8 <sup>1/4</sup> (210)	11(279)	7.3(185)	15.5(394)	16.6(422)	10.3(262)	8.5(216)	7.0(178)	3.5(89)	5.3(135)
	254TC	15.0	11 <sup>9/16</sup> (294)	4(102)	8 <sup>1/4</sup> (210)	11(279)	9.6(244)	15.5(394)	17.8(452)	12.0(305)	10.0(254)	8.3(211)	4.3(109)	6.3(160)
	256TC	20.0	11 <sup>9/16</sup> (294)	4(102)	8 <sup>1/4</sup> (210)	11(279)	9.6(244)	15.5(394)	20.0(508)	12.0(305)	10.0(254)	10.0(254)	4.3(109)	6.3(160)
6 x 4 x 10	254TC	15.0	11 <sup>11/16</sup> (297)	4(102)	10(254)	13 <sup>1/2</sup> (343)	9.6(244)	17.0(432)	17.8(452)	12.0(305)	10.0(254)	8.3(211)	4.3(109)	6.3(160)
	256TC	20.0	11 <sup>11/16</sup> (297)	4(102)	10(254)	13 <sup>1/2</sup> (343)	9.6(244)	17.0(432)	20.0(508)	12.0(305)	10.0(254)	10.0(254)	4.3(109)	6.3(160)
	284TC	25.0	11 <sup>11/16</sup> (297)	4(102)	10(254)	13 <sup>1/2</sup> (343)	13.1(333)	17.0(432)	21.6(549)	14.0(356)	11.0(279)	9.5(241)	4.8(121)	7.0(178)
	286TC	30.0	11 <sup>11/16</sup> (297)	4(102)	10(254)	13 <sup>1/2</sup> (343)	13.1(333)	17.0(432)	21.6(549)	14.0(356)	11.0(279)	11.0(279)	4.8(121)	7.0(178)

\* Motor dimensions will vary with motor manufacturer

**TO ORDER, use Price Code Number**

**TABLE I STANDARD MODEL**

To order standard pump-motor combination select model from Table I. Standard models include CPVC sleeved or titanium shaft, single mechanical silicon carbide seal and EPDM elastomers.

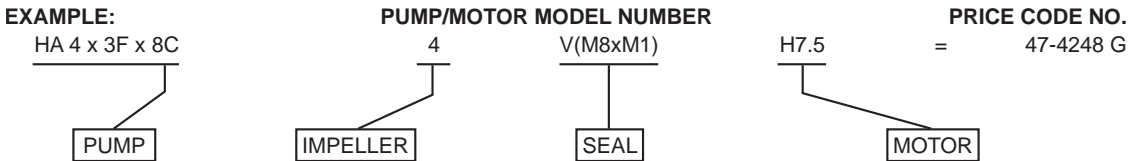
MODEL	FLOW CURVE	MODEL NUMBER	MAXIMUM FLOW (GPM)	MAXIMUM TDH (Ft.)	PRICE CODE NO. 60 Hz
4 x 3 x 8	4	HA 4 x 3F x 8 C4L(M8)-H7.5	325	65	47-4241 G
	5	HA 4 x 3F x 8 C5L(M8)-H10.0	370	90	47-4251 H
4 x 3 x 10	6	HA 4 x 3F x 10 CT6L(M8)-H10.0	600	70	47-4361 H
	7	HA 4 x 3F x 10 CT7L(M8)-H15.0	630	95	47-4371 S
	8	HA 4 x 3F x 10 CT8L(M8)-H20.0	650	110	47-4381 V
6 x 4 x 10	9	HA 6 x 4F x 10 CT9L(M8)-H15.0	820	60	47-4491 S
	10	HA 6 x 4F x 10 CT10L(M8)-H20.0	1000	75	47-4401 V
	11	HA 6 x 4F x 10 CT11L(M8)-H25.0	1120	85	47-4411 W
	12	HA 6 x 4F x 10 CT12L(M8)-H30.0	1300	95	47-4421 X



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**TABLE II OTHER MODELS**

To determine pump model for a specified GPM, TDH, material and specific gravity, select performance point on curve. Determine required HP by moving vertically to corresponding number dotted line. Read the required HP at right ordinate and multiply by S.G. Select pump, "O"-ring and seal, and motor to complete Model Number. Add corresponding number designations together to create Price Code Number.



PUMP	PRICE CODE NO.
HA 4 x 3F x 8C	47-42
HA 4 x 3F x 10CT	47-43
HA 6 x 4F x 10CT	47-44

FLOW CURVE NO.	ADD TO . . .	
	MODEL NO.	PRICE CODE NO.
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	0
11	11	1
12	12	2

'O'-RING & MECHANICAL SEAL MATERIAL (SOLUTION CONTACT)	ADD TO . . .	
	MODEL NUMBER	PRICE CODE NO.
<b>SINGLE MECHANICAL SEAL</b>		
EPDM SILICON CARBIDE	L(M8)	1
VITON SILICON CARBIDE	V(M8)	7
<b>DOUBLE MECHANICAL SEAL<sup>1</sup></b>		
EPDM SILICON CARBIDE	L(M8xM1)	4
VITON SILICON CARBIDE	V(M8xM1)	8

TEFC 208-230/460/3/60 or 190/380-415/3/50		
RPM	NEMA MOTORS <sup>2</sup>	
	ADD TO . . .	
	MODEL NUMBER	PRICE CODE NUMBER
1725 or 1450	-H7.5 -H10.0 -H15.0 -H20.0 -H25.0 -H30.0	G H S V W X

<sup>1</sup> DRI-STOP 2R is recommended when a double mechanical seal is used. DRI-STOP switch prevents damage to pump due to dry operation. Consult Bulletin A-105

<sup>2</sup> For 50 Hz add -50 to Model Number and 5 to Price Code Number

**OPTIONS**

DESCRIPTION	PRICE CODE NO.
Trimmed impeller to meet specified flow	47-0084
Hastelloy C shaft -HC	-HC

LONG COUPLING KIT		
FOR MODELS	FOR MOTOR FRAME	PRICE CODE NO.
4 x 3 x 8 4 x 3 x 10 (10 HP and smaller)	213/215T	42-0502
Motor mounting and alignment		42-0504





# SERIES 'HCI' & 'HSS' METAL HORIZONTAL PUMPS

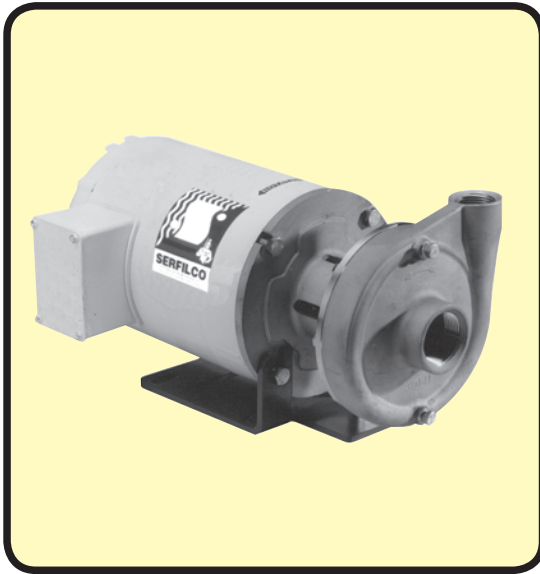
92

P-108\_F

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## HEAVY DUTY CAST IRON or 316SS CONSTRUCTION FOR:

3



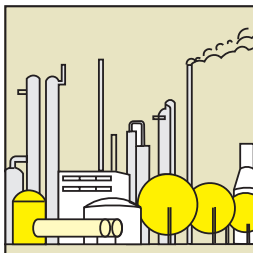
### ACIDS / ALKALIES / SOLVENTS WET PROCESSING SOLUTIONS D. I. WATER / FERTILIZERS

- Flows to 160 U. S. GPM or 90 ft. TDH @ 60 Hz (510 LPM or 19.5m @ 50 Hz)
- Available in cast iron or all 316 stainless steel solution contact
- **Single or double mechanical seal**  
Carbon/ceramic  
Viton® or EPDM elastomers
- **316 stainless steel shaft adapter**
- **Centrifugal, quiet, vibration-free**
- **Includes steel mounting base**
- **Motors are standard NEMA 'C' face**  
TEFC or explosion-proof

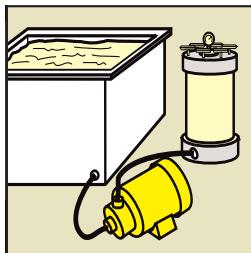
**The Series 'HCI' and 'HSS' Horizontal Pumps** feature compact close-coupled design. A high efficiency semi-open impeller allows for less clogging and quick cleaning.

Since the components are cast, there are no welds to break. Also, cast construction provides a superior corrosion resistance over similar welded styles.

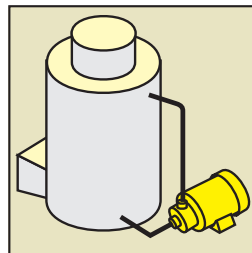
The Series 'HCI' and 'HSS' pumps feature the most widely accepted industrial mechanical seal designated as Type 21. This seal is mounted "in-board" and, thus tends to be self-cleaning. The seal is available as a single seal solution flush or as a double seal which uses external liquid as a flush. By adding the double seal, these pumps can better handle abrasives / salts and be protected from running dry.



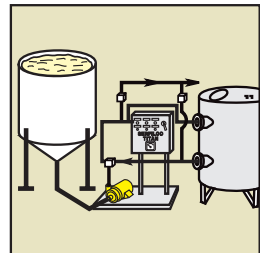
PETROCHEMICAL



CLEANING & DESCALING



FUME SCRUBBING  
& SPRAYING



WASTE TREATMENT



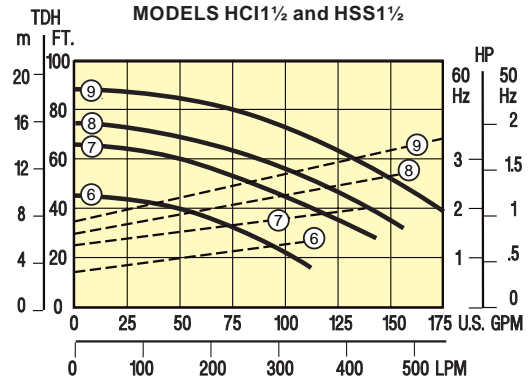
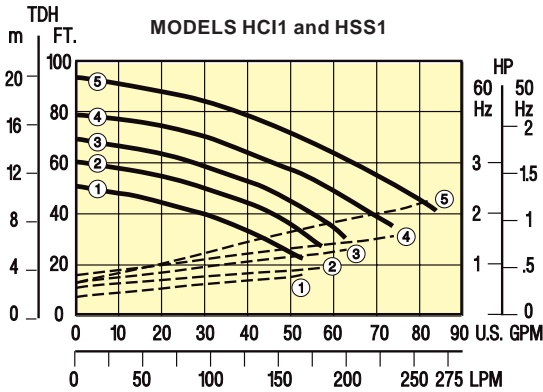
**SERIES 'HCI' and 'HSS' PUMPS Performance and Dimensions**

P-108\_F

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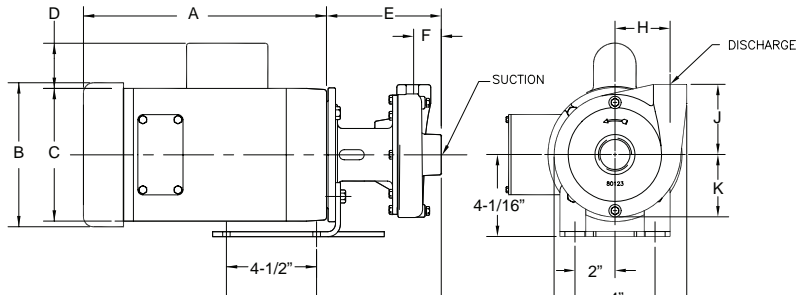
Pumps are constructed of cast iron or 316 stainless steel for maximum corrosion resistance. Gasket is a synthetic fiber with cast iron; Teflon® with 316SS. Both the single and double inboard seal assemblies are available in either EPDM or Viton®. Double seal is recommended for flushing the seal chamber with

water when abrasives are present or for certain other critical conditions. The stainless steel shaft adapter protects the motor shaft and allows the use of standard NEMA motor. Motors are 3450 RPM @ 60Hz or 2850 RPM @ 50 Hz, TEFC or EXP. Single phase TEFC motors include 8 ft. (2.4m) line cord.



**DIMENSIONS**

MODEL	HP A	SUCT. NPT (in)	DISCH. NPT (in)	DIMENSIONS (inches)											WEIGHT Lbs. (kg.)
				B	C	D	F	E	G	H	J	K	L		
HCI1 & HSS1	3/4	1-1/4	1	9-1/4	6-1/8	5-3/8	2-1/16	5-3/4	1-3/8	6-1/4	2-3/4	3-1/2	3-1/8	7	39 (18)
	1			9-3/4	6-1/8	5-3/8	2-1/16								43 (20)
	1-1/2			10-1/2	7-3/16	6-7/8	2-1/16								49 (22)
	2			11-1/8	7-3/16	6-7/8	2-1/4								65 (30)
HCI1½ & HSS1½	1	2	1-1/2	9-3/4	6-1/8	5-3/8	2-1/16	6-1/4	1-11/16	6-3/4	3-1/8	3-13/16	3-7/8	8-1/4	63 (29)
	1-1/2			10-1/2	7-3/16	6-7/8	2-1/16								57 (26)
	2			11-1/8	7-3/16	6-7/8	2-1/4								62 (28)
	3			12-3/8	7-3/16	6-7/8	2-1/4								65 (29)





**SERIES 'HCI' and 'HSS' PUMPS Ordering Information**

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**TO ORDER**

**TABLE I**

Select pump-motor model from flow curve number providing the desired performance. Motor horsepower is non-overloading for 1.0 specific gravity and 60 Hz operation.

<b>HSS1 PUMP - MOTOR single seal (230-460V/3/50-60) TEFC</b>		
<b>FLOW CURVE NO.</b>	<b>MODEL NUMBER</b>	<b>PRICE CODE NO.</b>
1	HSS1-1V(M2)-D1.0	61-0112G
2	HSS1-2V(M2)-D1.5	61-0122H
3	HSS1-3V(M2)-D1.5	61-0132H
4	HSS1-4V(M2)-D2.0	61-0142J
5	HSS1-5V(M2)-D3.0	61-0152K
<b>HSS1½ PUMP - MOTOR single seal (230-460V/3/50-60) TEFC</b>		
6	HSS1½-6V(M2)-D1.5	62-0162H
7	HSS1½-7V(M2)-D2.0	62-0172J
8	HSS1½-8V(M2)-D3.0	62-0182K
9	HSS1½-9V(M2)-D5.0	62-0192L

**TABLE II**

Determine pump-motor model for a specified GPM, TDH, mechanical seal and specific gravity. Select performance point on curve and size horsepower from corresponding numbered dotted line vertically above or below performance point. Read required horsepower at right ordinate and multiply by specific gravity. Select pump model components and Price Code Numbers from Table II.

**PUMP**

<b>MODEL</b>	<b>PRICE CODE NO.</b>
HCI1	61-03
HCI1½	62-03
HSS1	61-01
HSS1½	62-01

**IMPELLER**

<b>FLOW CURVE NO.</b>	<b>ADD TO . . .</b>	
	<b>MODEL</b>	<b>PRICE CODE NO.</b>
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

**MECHANICAL SEAL**

<b>MATERIAL (SOLUTION CONTACT)</b>	<b>ADD TO . . .</b>	
	<b>MODEL NUMBER</b>	<b>PRICE CODE NO.</b>
<b>SINGLE MECHANICAL SEAL</b>		
EPDM, carbon, ceramic	L(M1)	1
Viton, carbon, ceramic	V(M2)	2
<b>DOUBLE MECHANICAL SEAL</b>		
EPDM, carbon, ceramic	L(M1xM1)	3
Viton, carbon, ceramic	V(M2xM1)	4

**TEFC MOTOR <sup>1</sup> (3450 RPM / 2850 RPM)**

<b>HP</b>	<b>SINGLE PHASE <sup>2</sup></b>		<b>THREE PHASE <sup>2</sup></b>	
	<b>ADD TO . . .</b>		<b>ADD TO . . .</b>	
	<b>MODEL</b>	<b>PRICE CODE NO.</b>	<b>MODEL</b>	<b>PRICE CODE NO.</b>
.75	-C.75	B	-D.75	F
1	-C1.0	C	-D1.0	G
1.5	-C1.5	D	-D1.5	H
2.0	—	—	-D2.0	J
3.0	—	—	-D3.0	K
5.0	—	—	-D5.0	L

<sup>1</sup> For explosion-proof motors (UL and CSA listed for Class I, Group D or Class II, Group F & G), add **X** to Model No. and Price Code No. EXP motors are 60 Hz only.

<sup>2</sup> Single phase - 115-208-230V/1/60 or 220-440V/1/50  
 Three phase - 208-230-460V/3/60 or 380-415V/3/50.  
 All motors are 3450 or 2850 RPM.





# SERIES 'RC' HORIZONTAL PUMPS

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P-109\_D

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## **WET PROCESSING SOLUTIONS / MACHINE TOOL COOLANTS / CHEMICAL TRANSFER COOLING TOWERS / CIRCULATION FOR WASHING OR RINSING**

- **Flows to 420 U.S. GPM or 82 ft. TDH @ 60 Hz**  
(1325 LPM or 17.4m @ 50 Hz)
- **316 stainless steel shaft, cast iron mounting bracket**
- **Single or double mechanical seal**  
Carbon/ceramic  
EPDM or Viton® elastomers
- **Centrifugal, quiet, vibration-free**
- **Motors are standard NEMA C face, TEFC**

3

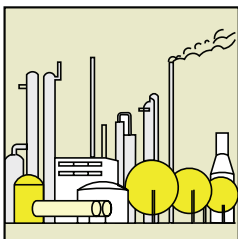
The Series 'RC' horizontal pump is a compact close-coupled design. A high efficiency, semi-open cast iron impeller allows for less clogging and quick cleaning. The components are cast so there are no welds to break. In addition, the cast iron construction provides improved corrosion resistance over similar welded styles.

The Series 'RC' pump is available with a choice of mechanical seals, Type 21 single or double. The seal is mounted "in-board" and, thus tends to be self-cleaning. It is available as a single seal solution

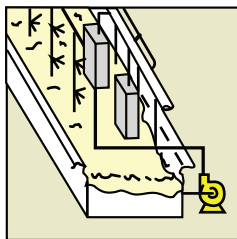
flush or as a double seal which requires external liquid to flush. When ordered with a double seal, the pump will better handle abrasives, solutions which tend to crystallize, and dry run operation.

Series 'RC' pumps are constructed of cast iron with a synthetic fiber gasket. Standard pumps feature EPDM or Viton elastomers with ceramic and carbon seal faces. These pumps use a standard NEMA C face motor. Motors are TEFC, 3450 RPM @ 60 Hz or 2850 RPM @ 50 Hz.

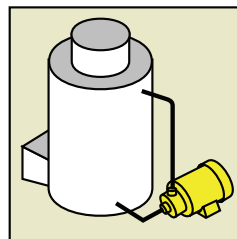
Viton is registered trademark of DuPont Dow Elastomers.



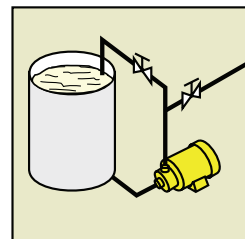
PETROCHEMICAL



SPRAY WASHERS



RECIRCULATION OF  
COOLING TOWERS

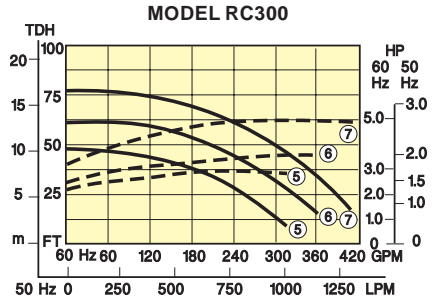
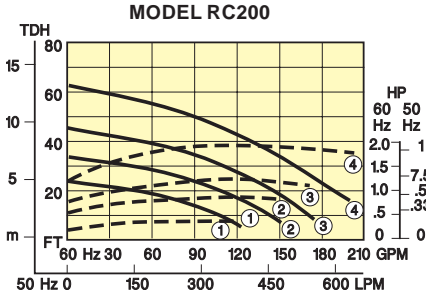


CHEMICAL  
TRANSFER PUMPING

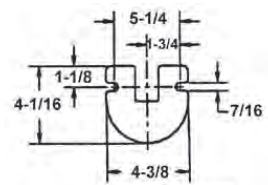
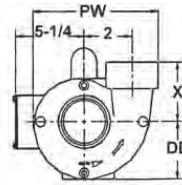
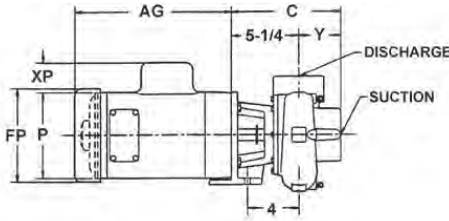


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SERIES 'RC' PUMPS specifications and ordering information



DIMENSIONS



BOTTOM VIEW OF MOUNTING BRACKET

MODEL	MOTOR HP 3600 RPM 56CFRM	DIMENSIONS (Inches)											WT. Lbs.		
		AG	FP	P	XP	C	Y	PW	Z	X	DD	SUCTION		DISCHARGE	
RC200	1/3	8-1/2	7-3/16	6-7/8	2-1/16										63
	1/2	8-3/4	7-3/16	6-7/8	2-1/16										63
	3/4	9-1/4	7-3/16	6-7/8	2-1/16										63
	1	9-3/4	7-3/16	6-7/8	2-1/16	8-1/8	2-7/8	7-1/8	2-1/2	3-3/4	3-1/2	2" NPT	2"NPT		64
	1-1/2	10-1/2	7-3/16	6-7/8	2-1/4										70
RC300	2	11-1/8	7-3/16	6-7/8	2-1/4										75
	3	12-3/8	7-3/16	6-7/8	2-1/4	8-9/16	3-5/16	9-5/8	3-11/16	4-1/2	4-3/8	3" NPT	3" NPT		88
	5*	13-5/8	8-1/2	7-7/8	2-1/4										115

NOTE: 1. Motor dimensions will vary by model and make. Dimensions are to be used for reference only.  
 2. For engineering purposes, Model RC300 has been used to create drawing.  
 3. All dimensions have been rounded to the nearest sixteenth of an inch.

\* 184C frame motor

TO ORDER, use Price Code Number

TABLE I

RC200 PUMP - MOTOR single seal (230/460V/3/60) TEFC		
FLOW CURVE NO.	MODEL NUMBER	PRICE CODE NO.
1	RC200 - 1L(M1)-D.5	61-0511 G
2	RC200 - 2L(M1)-D.75	61-0521 H
3	RC200 - 3L(M1)-D1.5	61-0531 K
4	RC200 - 4L(M1)-D2.0	61-0541 L
RC300 PUMP - MOTOR single seal (230/460V/3/60) TEFC		
5	RC300 - 5L(M1)-D3.0	62-0551 M
6	RC300 - 6L(M1)-D5.0	62-0561 N
7	RC300 - 7L(M1)-D5.0	62-0571 N

TO ORDER FROM TABLE I (60 Hz)

Select pump-motor model from flow curve number providing the desired performance. Motor horsepower is non-overloading for 1.0 specific gravity and 60 Hz operation.

TO ORDER FROM TABLE II

Determine pump-motor model for a specified GPM, TDH, mechanical seal and specific gravity. Select performance point on curve and size horsepower from corresponding numbered dotted line vertically above or below performance point. Read required horsepower at right ordinate and multiply by specific gravity. Select pump model components and Price Code Numbers for Table II.

TABLE II

MODEL	PRICE CODE NO.	PUMP FLOW CURVE NO.	IMPELLER		MECHANICAL SEAL		TEFC MOTOR (3450/2850)						
			FLOW CURVE NO.	ADD TO ...		MATERIAL (SOLUTION CONTACT)	ADD TO ...		HP	SINGLE PHASE <sup>1</sup>		THREE PHASE <sup>1</sup>	
				MODEL NUMBER	PRICE CODE NO.		MODEL NUMBER	PRICE CODE NO.		MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
RC200	61-05	1	1	1	EPDM, carbon, ceramic	L(M1)	1	.3	- C.3	A	- D.3	F	
RC300	62-05	2	2	2	Viton, carbon, ceramic	V(M2)	2	.5	- C.5	B	- D.5	G	
		3	3	3	DOUBLE MECHANICAL SEAL		EPDM, carbon, ceramic	L(M1XM1)	.75	- C.7.5	C	- D.7.5	H
		4	4	4	Viton, carbon, ceramic	V(M2XM1)			4	1	- C.1.0	D	- D.1.0
		5	5	5			1	3	1.5	- C.1.5	E	- D.1.5	K
		6	6	6					2.0	--	--	- D.2.0	L
		7	7	7					3.0	--	--	- D.3.0	M
										2.0	--	--	- D.2.0
								3.0	--	--	- D.3.0	M	
								4.0	--	--	- D.4.0	N	

<sup>1</sup> Single phase - 115-208-230V/1/60 or 220-440V/1/50  
 Three phase - 208-230-460V/3/60 or 380-415V/3/50



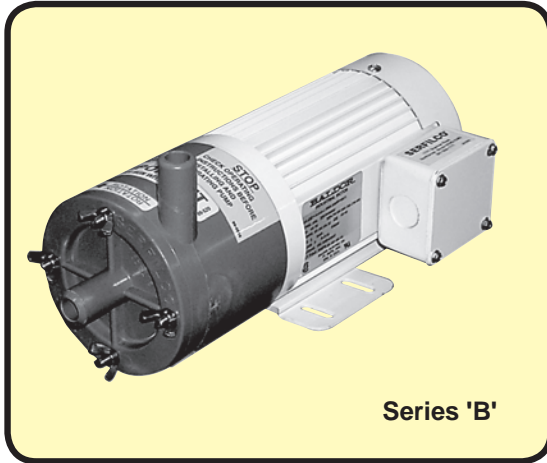
# SERIES 'A' & 'B' MAGNETIC COUPLED PUMPS

97

P-503\_R

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## LEAK-PROOF / NON-METALLIC DESIGN



**AQUEOUS / CAUSTICS / ACID  
RINSE / CLEANING / PLATING  
PHOTOGRAPHIC / ETCH  
PHARMACEUTICAL**

- **Flows to 12 U.S. GPM or 24 FT. TDH @ 60 Hz**  
(45 LPM or 10m @ 50 Hz)
- **Non-metallic solution contact**  
Polypropylene, CPVC, PVDF or ECTFE  
(See a *chemical resistance chart*)
- **Continuous duty design**
- **Quiet, economical, centrifugal**
- **Low maintenance**  
No spindles, bearings or thrust washers

4

The **Series 'A' and 'B' Magnetic Coupled Pumps** are seal-less and leakproof, providing total solution and vapor containment. These pumps feature a shaft and bearing free design that allows them to be used for electroless solutions. The impeller magnet assembly floats in the radial magnetic field set up by the external drive magnet, eliminating the need for a shaft or spindle.

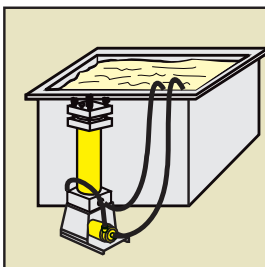
The pump body can be rotated to selected direction of discharge. Neutralizing fluid will normally flush the interior adequately without need for disassembly.

Impellers supplied on all standard seal-less pumps are suitable for water-like liquids up to 1.2 specific gravity.

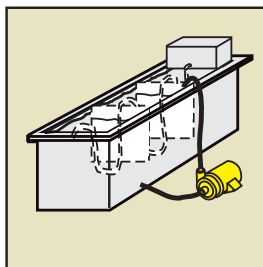
Liquids with a higher specific gravity can be pumped if:

1. The outlet flow is restricted so the impeller magnet stays synchronized with the drive magnet.
2. The restrictions from a filter or other source of discharge head loss are sufficient to keep the impeller and drive magnets synchronized.
3. The overall diameter of the impeller is reduced.

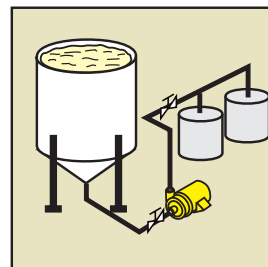
**Use for filtering, circulation, processing and transfer.**



FILTRATION



RECIRCULATION



TRANSFER

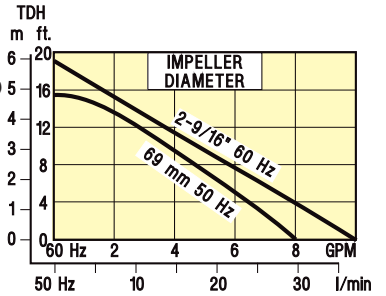
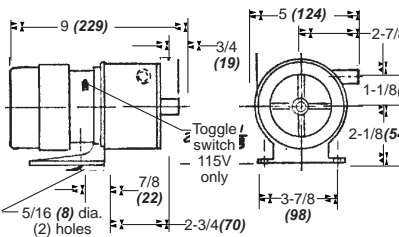


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**SERIES 'A'**

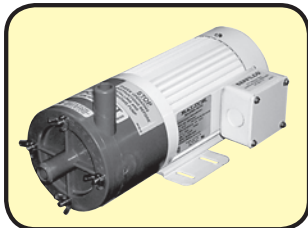


**DIMENSIONS**  
Inches (mm)

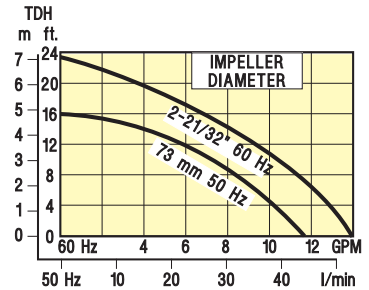
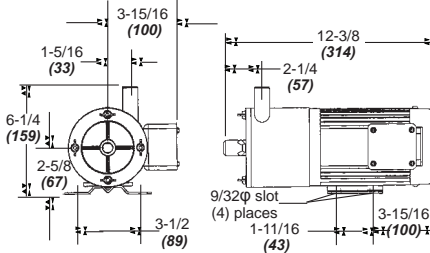


CPVC <sup>1</sup>		POLYPROPYLENE <sup>1</sup>		ECTFE		PVDF		MOTOR, TEFC 3000 RPM @ 60 Hz 2500 RPM @ 50 Hz	SHIPPING WEIGHT	
MODEL CPP3000A	PRICE CODE NO.	MODEL APS3000A	PRICE CODE NO.	MODEL H3000A	PRICE CODE NO.	MODEL KH3000A	PRICE CODE NO.		Lbs.	Kg.
w/ECTFE encapsulated impeller magnet, EPDM "O"-ring. 5/8" hose conn. <sup>2</sup>	44-1372	w/polypropylene encapsulated impeller magnet, EPDM "O"-ring. 5/8" hose conn. <sup>2</sup>	44-0852	w/ECTFE encapsulated impeller magnet, Viton® "O"-ring. 5/8" hose connection. <sup>2</sup>	44-1495	w/ECTFE encapsulated impeller magnet, Viton "O"-ring. 5/8" hose connection. <sup>2</sup>	44-1367	1/12 HP, 115V/1/50-60Hz	10	4.5
	44-1373		44-0858		44-1496		44-1368	1/15 HP, 208-240V/1/50-60Hz		

**SERIES 'B'**



**DIMENSIONS**  
Inches (mm)



CPVC <sup>1</sup>		POLYPROPYLENE <sup>1</sup>		ECTFE		PVDF		MOTOR 3450 RPM @ 60 Hz 2850 RPM @ 50 Hz 1/6 HP, TEFC NEMA 42 Frame	WEIGHT	
MODEL CPP3450BL	PRICE CODE NO.	MODEL APS3450BL	PRICE CODE NO.	MODEL H3450BL	PRICE CODE NO.	MODEL KH3450BL	PRICE CODE NO.		Lbs.	Kg.
w/ECTFE encapsulated impeller magnet, EPDM "O"-ring. 3/4" hose conn. <sup>2</sup>	48-0120	w/polypropylene encapsulated impeller magnet, EPDM "O"-ring. 3/4" hose conn. <sup>2</sup>	48-0140	w/ECTFE encapsulated impeller magnet, Viton "O"-ring. 3/4" hose connection. <sup>2</sup>	48-0221	w/ECTFE encapsulated impeller magnet, Viton "O"-ring. 3/4" hose connection. <sup>2</sup>	48-0220	115-230V/1/60	21	9.5
	48-0120B		48-0140B		48-0221B		48-0220B	230V/1/50		
	48-0120C		48-0140C		48-0221C		48-0220C	208-230/460V/3/60 230/380V/3/50		

Single phase TEFC motors include 8 ft. (2.4M) of 3-wire cord and plug. (Toggle switch & plug omitted on 50Hz 'A' pump; plug omitted on 50 Hz 'B' pump.)

<sup>1</sup> To change "O"-ring from ethylene propylene to Viton, add V to Model Number and Price Code Number.

<sup>2</sup> For 'A' pump, to change hose connections to pipe thread — 5/8" dia. to 3/8" MNPT — add Price Code Number 44-0886.

For 'B' pump, to change hose connections to pipe thread — 3/4" dia. to 1/2" MNPT — add Price Code Number 44-0887.

For Trimmed Impeller — add Price Code Number 44-1244.



# SERIES 'X' MAGNETIC COUPLED PUMPS

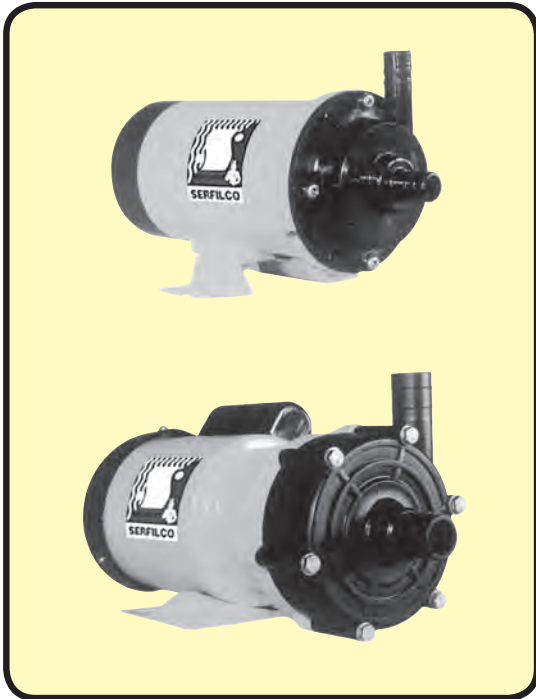
99

P-511\_E

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

## NON-METALLIC AND SEAL-LESS PROVIDING TOTAL VAPOR AND SOLUTION CONTAINMENT FOR:

**ACID / AQUEOUS / CAUSTIC  
CHEMICAL / PLATING  
PHOTOGRAPHIC**



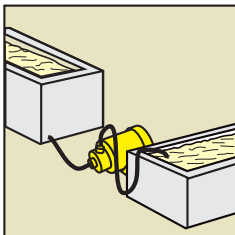
- Flows from 1 to 25 U.S. GPM @ 60 Hz (3 - 78 LPM @ 50 Hz)
- Non-metallic solution contact  
Polypropylene, PVDF, ETFE, Viton®  
(See a chemical resistance chart)
- NPT or hose barb connections
- Strong magnets will handle liquids to 1.3 specific gravity
- Continuous duty design
- Compact, quiet and efficient
- UL approved, CEC conforming
- Motors are available  
115V/1/60 Hz or  
230V/1/50-60 Hz

4

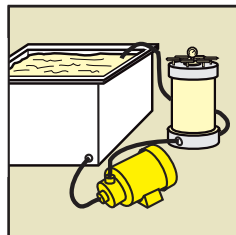
**SERIES 'X' Magnetic Coupled Pumps** are the latest in magnetic coupled pump technology. Tested and proven design features provide a pump that is seal-less and leakproof. Available materials of construction and flow capacities from 1 to 25 U.S. GPM make these pumps an excellent choice for a wide variety of applications from water at ambient temperatures to harsh chemicals at elevated temperatures.

Standard 'X' models have strong magnets and powerful, highly efficient continuous duty motors which allow them to operate non-overloading and provide continuous flow with liquids up to 1.3 specific gravity. Compact and quiet Series 'X' pumps are designed to provide years of trouble-free operation.

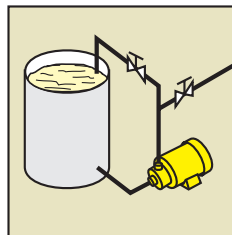
The following information covers standard Series 'X' models. For other models and magnetic coupled pumps to 250 GPM, consult our Sales Dept.



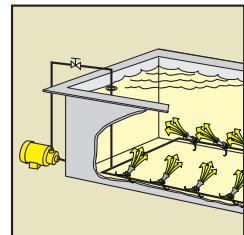
WASTE TREATMENT



FILTER SYSTEM



MIXING and TRANSFER  
PUMPING

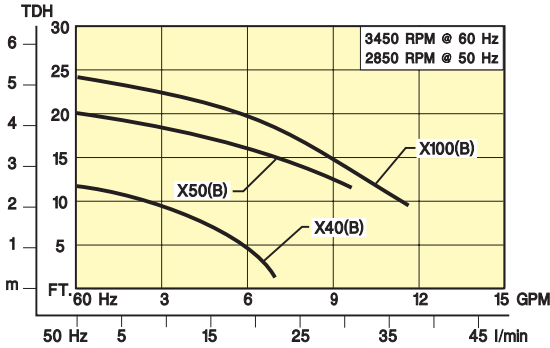


EDUCTOR AGITATION  
and MIXING

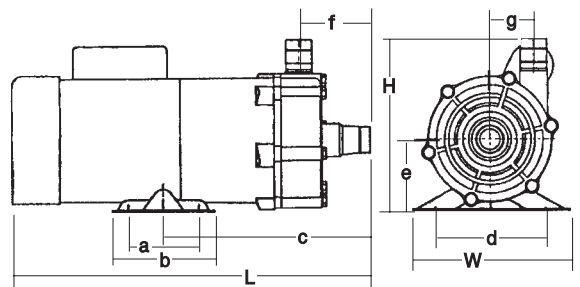
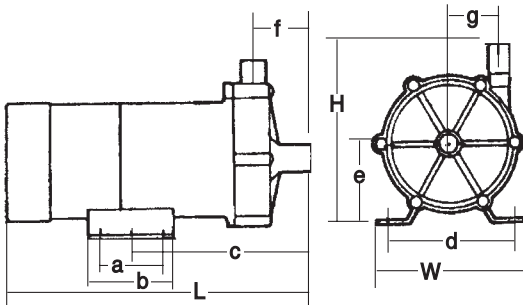
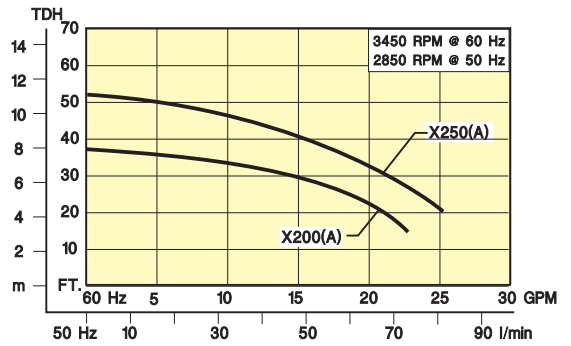


SERIES 'X' Performance and Dimensions

Models X40, X50 & X100



Models X200 & X250



Models X40, X50 & X100

Models X200 & X250

MODEL	DIMENSIONS (Inches)									
	W	H	L	a	b	c	d	e	f	g
X40	3.73	4.53	8.08	1.19	1.97	5.18	2.68	2.17	1.30	1.12
X50	4.72	5.12	9.12	1.58	2.52	6.65	3.94	2.36	1.89	1.22
X100	4.36	5.12	10.31	1.58	2.52	6.65	3.94	2.36	1.89	1.22
X200	6.14	6.50	13.97	2.76	3.94	8.07	4.33	2.59	2.75	1.72
X250	6.14	6.50	14.30	2.76	3.94	8.07	4.33	2.59	2.75	1.72





**SERIES 'X' Ordering information**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431

Select flow curve providing desired performance. Select materials of construction and connections required. Use Price Code Number to order.

**POLYPROPYLENE / VITON w/HOSE CONNECTIONS**

FLOW CURVE	MAX. FLOW GPM	MAX. TDH Ft.	HP	CONNS. In.	S. G. *	MODEL NUMBER	PRICE CODE NO.
X40 (B)	7.3	11.6	1/40	5/8	1.3	X40PV 5/8H CRYR B C.02	81-4114 2D
X50 (B)	10	20	1/15	3/4	1.3	X50PV 3/4H CRYR B C.06	81-5134 2E
X100 (B)	12	24	1/10	3/4	1.3	X100PV 3/4H CRYR B C.1	81-6134 2F
X200 (A)	24	36	1/5	1	1.1	X200PV 1H CR A C.2	81-7156 1G
X250 (A)	29	50	1/3	1	1.1	X250PV 1H CR A C.3	81-8156 1H

**POLYPROPYLENE / VITON w/MNPT CONNECTIONS**

X40 (B)	7.3	11.6	1/40	3/4	1.3	X40PV 3/4T CRYR B C.02	81-4144 2D
X50 (B)	10	20	1/15	3/4	1.3	X50PV 3/4T CRYR B C.06	81-5144 2E
X100 (B)	12	24	1/10	3/4	1.3	X100PV 3/4T CRYR B C.1	81-6144 2F
X200 (A)	24	36	1/5	1	1.1	X200PV 1T CR A C.2	81-7166 1G
X250 (A)	29	50	1/3	1	1.1	X250PV 1T CR A C.3	81-8166 1H

**PVDF / VITON w/HOSE CONNECTIONS**

X40 (B)	7.3	11.6	1/40	5/8	1.3	X40KV 5/8H CRT B C.02	81-4213 2D
X50 (B)	10	20	1/15	3/4	1.3	X50KV 3/4H CRT B C.06	81-5233 2E

**PVDF / VITON w/MNPT CONNECTIONS**

X100 (B)	12	24	1/10	3/4	1.3	X100KV 3/4T CRT B C.1	81-6243 2F
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**ETFE / VITON w/MNPT CONNS.**

X200 (A)	24	36	1/5	1	1.1	X200EV 1T CR A C.2	81-7366 1G
X250 (A)	29	50	1/3	1	1.1	X250EV 1T CR A C.3	81-8366 1H

\* Consult Sales Dept. for operation with solutions having higher specific gravity.

**OPTIONAL**

DESCRIPTION	ADD TO MODEL NO.	ADD TO PRICE CODE NO.
OPTIONAL Motor - 230V / 1Ø/ 50-60	-50	5
EDPM elastomers	Consult Sales Department	

**MODEL KEY**

Series	Materials	Connections	Friction Surfaces	Spindle	R. Thrust	F. Thrust	Bearing	Mouth Ring	Impeller			Motor	HP
									A	B	C		
X40	PV	5/8" H = 5/8" hose barb	CRT	Ceramic	Rulon®/TFE	Rulon/TFE	Ceramic	—	A	to 1.1 S.G.	C.02	1/40	
X50	PP / Viton	1/2" T = 1/2" MNPT	CRYR	Ceramic	Ryton®	Rulon	Ceramic	—	B	to 1.3 S.G.	C.06	1/15	
X100	KV	3/4" H = 3/4" hose barb	CR	Ceramic	Ceramic	Ceramic	Rulon	Rulon	C	to 1.5 S.G.	C.1	1/10	
X200	100% PVDF/Viton	3/4" T = 3/4" MNPT									C.2	1/5	
X250	EV	1H = 1" hose barb									C.3	1/3	
X250	ETFE / Viton	1T = 1" MNPT											

**GENERAL PRODUCT NOTES:**

- ⚠ Caution: Consult chemical resistance guide to assure material / solution compatibility.
- Do not use with liquids having ferrous (magnetic) metal particles.
- Standard 115V/1Ø/60 Hz motors include 6 ft. cord with molded 60 Hz plug.
- PV and EV models are glass reinforced.

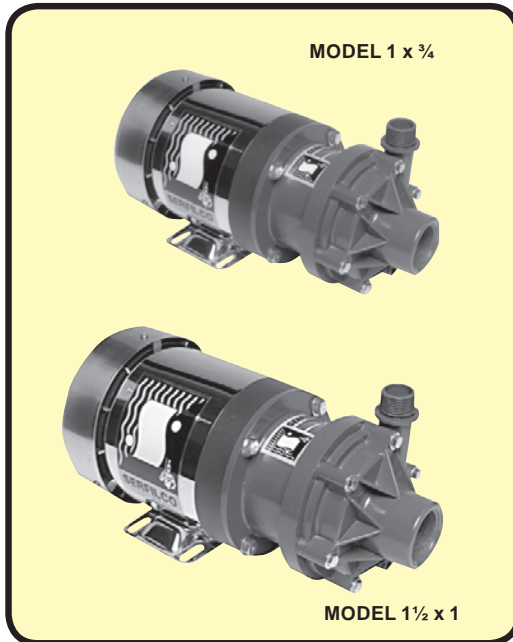




# SERIES 'M' MAGNETIC COUPLED PUMPS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## EFFICIENT & DEPENDABLE, TROUBLE-FREE PERFORMANCE FOR:



### ACID / CAUSTIC / CHEMICAL PHOTOGRAPHIC / PLATING WATER / WASTE WATER

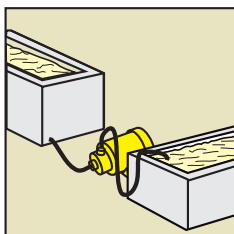
- **Flows to 70 GPM or 56 ft. TDH @ 60 Hz**  
(220 LPM or 12m @ 50 Hz)
- **Non-metallic solution contact**  
Glass reinforced polypropylene or carbon reinforced PVDF  
(See a chemical resistance chart)
- **Extended dry run**  
Unique design helps prevent pump damage
- **Powerful rare-earth magnets**  
Provide sure coupling to 1.6 S.G. @ 30 CPS
- **Connections -NPT or BSP**  
Optional: 1/4" NPT drain
- **Accepts standard motors**  
NEMA or IEC metric

**Series 'M' Magnetic-Coupled Pumps** are seal-less and "leak-proof", providing total solution and vapor containment. They are available in two different materials of construction for a wide range of chemical and temperature compatibility.

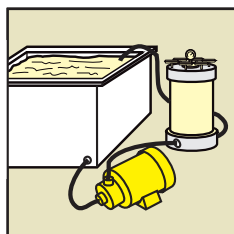
The relationship of the impeller magnet to the liner reflects an advanced design which allows extended operation at dry run or during loss of prime without causing damage to the pump. The impeller head is separate from the impeller magnet hub for field interchangeability. The mouth ring design eliminates the need for a front thrust washer.

By using rare-earth magnets, this pump provides flow and pressure equal to that of a physically much larger pump. This powerful coupling allows the pump to operate at full flow with the full size impeller while handling liquids up to 1.6 S.G. @ 30 CPS.

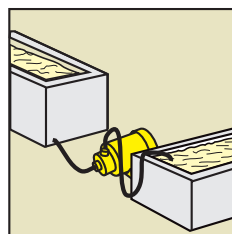
The balanced magnetic field eliminates loading on bearing surfaces, thus providing an extended life span of the bushing compared to that of other magnetic coupled pumps. The fluted bushing provides positive internal liquid circulation/flush along the shaft spindle. These pumps utilize a high-purity silica-free ceramic stub-shaft which eliminates breakage and is compatible with fluoride solutions.



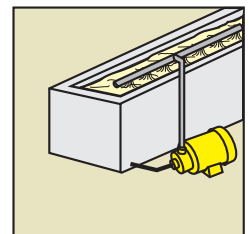
WASTE TREATMENT



FILTER SYSTEM



MIXING and TRANSFER  
PUMPING



RECIRCULATION





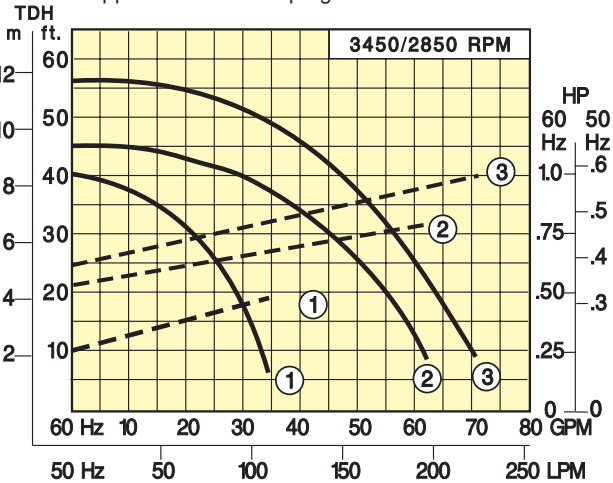
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Standard models are constructed of chemically coupled, glass-reinforced polypropylene or carbon-reinforced PVDF for suction casing, impeller-magnet assembly and liner. The casing "O"-ring is Viton. The spindle bushing is carbon with a flush groove for positive lubrication. The spindle, thrust button and mouth ring are high purity, fluoride resistant ceramic. The "thrust ring" is carbon filled Teflon®.

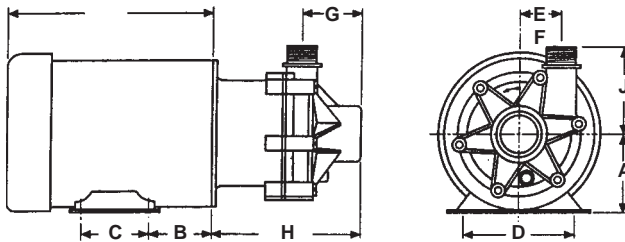
External fasteners are 304SS. The inlet and outlet are designed to accommodate an "O"-ring to provide a leak tight seal at these connections. The pump casing includes a blind boss for the ¼" NPT drain (optional). The inlet O.D. on the 1½ x 1 model will accommodate a 150mm I.D. socket flange. Maximum pump pressure is 65 PSI (4.4 BAR).

Pumps operating at all flow curves are capable of handling solutions of 1.6 S.G. at 75°F (24°C) with maximum 30 CPS. U.S. motors are NEMA 56C face, ½, ¾, and 1 HP continuous duty. They are painted with two part epoxy gray enamel and have a 1.15

service factor. Single phase motors are supplied with an 8 ft. (2.4m) 3-wire cord and plug. Three phase motors are not supplied with cord or plug.



**DIMENSIONS<sup>1</sup>**



MODEL	SUCTION & DISCHARGE	MOTOR	DIMENSIONS								
			A	B	C	D	E	F	G	H	J <sup>2</sup>
1 x ¾	1" FNPT ¾" MNPT or 1" FBSP ¾" MBSP	NEMA 56C	3.5 (89)	2.75 (70)	3.0 (76)	4.87 (124)	1.81 (46)	2.06 <sup>1</sup> (52)	6.0 <sup>1</sup> (152)	3.5 (89)	80 (203)
		METRIC 71 B3/B14	2.8 (71)	1.8 (45)	3.5 (89)	4.4 (112)					
1½ x 1	1½" FNPT 1" MNPT or 1½" FBSP 1" MBSP	NEMA 56C	3.5 (89)	2.75 (70)	3.0 (76)	4.87 (124)	1.87 (47)	2.75 (70)	6.69 (170)	3.87 (98)	90 (228)
		METRIC 80 B3/B14	3.15 (80)	2.0 (50)	3.9 (100)	4.9 (125)					

<sup>1</sup> BSP dimension for F: 2.47 (63), for G: 6.41 (163)

<sup>2</sup> Varies with motor size and manufacturer. Dimensions are for reference only.



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**ORDERING INFORMATION**

**TABLE I** Select flow curve number providing the desired performance. Then select either polypropylene or PVDF construction. Use Price Code Number to order.

Materials in solution contact include Viton, carbon, silica-free ceramic. See TABLE II for other models.

SPECIFIC GRAVITY <sup>1</sup>	MODEL (POLYPROPYLENE PUMP / MOTOR)	PRICE CODE NUMBER	MODEL (PVDF PUMP / MOTOR)	PRICE CODE NUMBER
1.5	1 x ¾ MPVCR 1A C.75	51-4111 B	1 x ¾ MKVCR 1A C.75	51-5111 B
1.3	1½ x 1 MPVCR 2B D1.0	51-6221 F	1½ x 1 MKVCR 2B D1.0	51-7221 F
1.5	1½ x 1 MPVCR 3C D1.5	51-6331 P	1½ x 1 MKVCR 3C D1.5	51-7331 P

<sup>1</sup> Motor HP shown will handle full flow to the listed S.G.

**TABLE II** To determine pump model for use with elevated specific gravity at specified GPM, TDH, or material, select performance point on curve. Move vertically to the corresponding dotted line, then horizontally to HP ordinate. Multi-

ply by specific gravity to determine the required horsepower. Select the pump impeller, magnet coupling and motor to construct the model. Use Price Code No. to order.

PUMP <sup>2</sup>			IMPELLER			MAGNETIC COUPLING			
MODEL NUMBER	MATERIAL	PRICE CODE NO.	FLOW CURVE	ADD TO . . .		MAX. HP		ADD TO . . .	
				MODEL NO.	PRICE CODE NO.	60 Hz	50 Hz	MODEL	PRICE CODE NO.
1 x ¾ MPVCR	POLYPROPYLENE	51-4	1	1	1	.8	.6	A	1
1 x ¾ MKVCR	PVDF	51-5		1	1				
1½ x 1 MPVCR	POLYPROPYLENE	51-6	2	2	2	1.2	.9	B	2
1½ x 1 MKVCR	PVDF	51-7	3	3	3	1.6	1.2	C	3

FRAME SIZE		MOTOR <sup>4</sup>						SHIP WT lbs.
		TEFC				IP54		
		SINGLE PHASE ADD TO . . .		THREE PHASE ADD TO . . .		THREE PHASE ADD TO . . .		
	MODEL NO.	PRICE CODE NO.	MODEL NO.	PRICE CODE NO.	MODEL NO.	PRICE CODE NO.		
TEFC	56C	C.5	1A	D.5	1D			35
		C.75	1B	D.75	1E			40
		C1.0	1C	D1.0	1F	-	-	50
		C1.5	1N	D1.5	1P			55
EXP <sup>3</sup>	56C	E.5	1G	F.5	1K			34
		E.75	1H	F.75	1L	-	-	45
		E1.0	1J	F1.0	1M			45
METRIC	71B3/B14	-	-	-	-	DM.37	2G	19
	80B3/B14	-	-	-	-	DM.55	2H	19
						DM.75	3J	28

<sup>2</sup> For pump only, eliminate letter suffix from Price Code No. and motor suffix from Model.

<sup>3</sup> EXP motors are 60 Hz only; Class 1 Group D and Class 2 Groups F & G.

<sup>4</sup> Single phase - 115/208-230V/1/60 or 190/200-220V/1/50  
Three phase - 208-230/460V/3/60 or 190/380-415V/3/50

For 50 Hz, add **-50** to Model No. and add **5** to Price Code No.



## SERIES M' PUMP (continued)

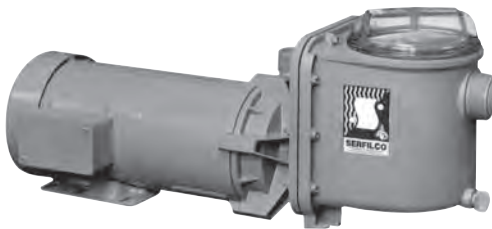
105

P-509\_F

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**OPTIONAL**, use Price Code Number

DESCRIPTION		ALTER MODEL NO.	ADD TO PRICE CODE NO.
Teflon® bushing		Change <b>C</b> to <b>T</b>	T
EPDM elastomers		Change <b>V</b> to <b>L</b>	1
BSP ports (1 x ¾)	PP	—	51-4000
	PVDF	—	51-5000
BSP ports (1½ x 1)	PP	—	51-6000
	PVDF	—	51-7000
¼" NPT drain and plug	PP	—	51-4001
	PVDF	—	51-5001



### PUMP PRIMING CHAMBER

with removable polypropylene basket.  
Use Price Code No. to order

MATERIAL	LIFT *	SUCTION CONNECTION	DIMENSIONS	PRICE CODE NO.
CPVC, Ryton®, Viton	8 ft.	1½" FNPT / 2" MNPT	9" L x 9" W x 12" H	99-1159 R
PVC, Noryl®, Viton	(2.4 m)	(5" dia. removable cover)		99-1159 V

\* Based on water (1.0 S.G.) at 68°F (20°C). Suction lift is approximate and determined by air volume in suction piping.

4



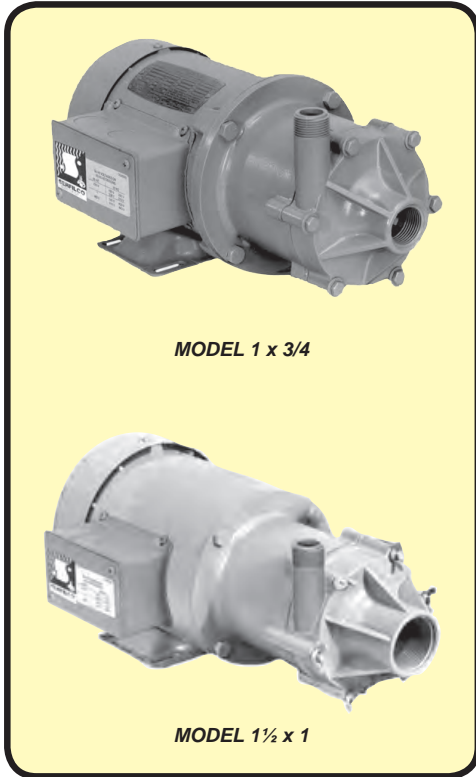
# SERIES 'D' MAGNETIC COUPLED PUMPS

106

P-504\_S

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4



MODEL 1 x 3/4

MODEL 1 1/2 x 1

## SEAL-LESS AND "LEAK-PROOF" FOR TOTAL SOLUTION CONTAINMENT

*Reliable, trouble-free pumping for:*

### WASTE TREATMENT / FUME SCRUBBING CHEMICALS / PHOTOGRAPHIC ACIDS / PLATING

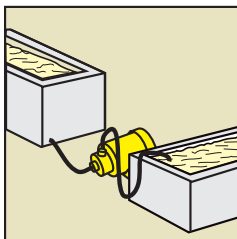
- **Flows to 53 U.S. GPM or 58 FT. TDH @ 60 Hz**  
(167 LPM or 12m @ 50 Hz)
- **Non-metallic solution contact**  
Polypropylene and Ryton  
PVDF  
316 stainless steel  
(See chemical Resistance Chart)
- **Centrifugal** – quiet, vibration-free
- **Rugged construction**  
Designed for continuous duty  
Horizontal or vertical discharge
- **Severe duty motor**  
All motors carry 1.15 service factor at 50 and 60 Hz  
Single phase motors have automatic thermal  
overload protection

**SERIES 'D' Magnetic Coupled Pumps** are seal-less, providing for maintenance-free and "leak-proof" operation. The magnetic coupling acts as a clutch to provide overload protection. The broad range of construction materials allows for a variety of applications and service with most corrosive solutions.

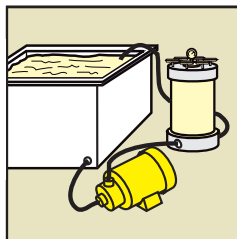
The impeller magnet assembly floats in the radial magnetic field set up by the motor driven external drive magnet. The impeller is designed to deliver the maximum flow

and pressure utilizing the available strength of the synchronized magnets.

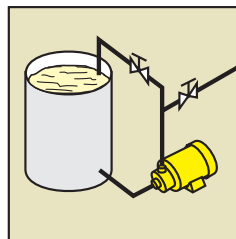
The standard diameter impeller is suitable for water-like liquids to 1.1 specific gravity. Liquids having a higher specific gravity can be pumped if the overall diameter of the impeller is reduced, the outlet flow is restricted, or the restrictions from a filter or other head loss is sufficient to keep the impeller magnet in synchronization.



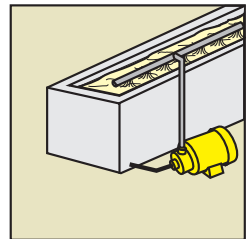
WASTE TREATMENT



FILTRATION



MIXING and  
TRANSFER PUMPING



RECIRCULATION

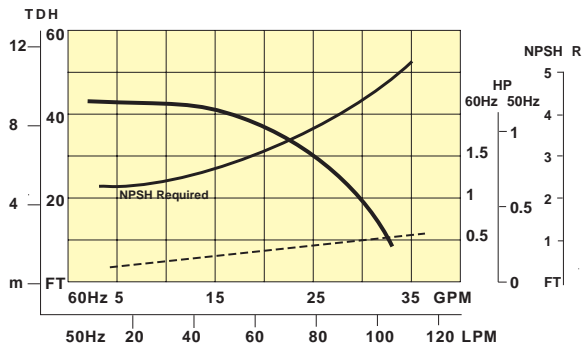
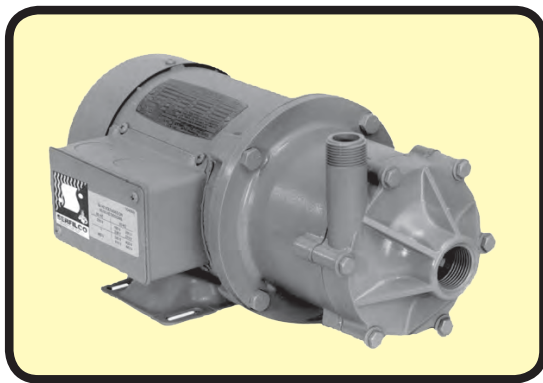


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Pump materials of construction are as specified, all of which include a fluoride resistant ceramic spindle and thrust washer. Casing 'O' ring is Viton® and external fasteners are stainless steel. Standard impeller is designed to pump solutions having a specific gravity up to 1.1. (See flow curves.) For solutions having a higher specific gravity, up to 1.8 maximum, a trimmed impeller is required. Flow rate and TDH will be proportionately reduced. Refer to impeller trim chart, specify impeller diameter and add Price Code No. 48-0200.

Motors are chemical service rated continuous duty, TEFC or explosion proof, painted two-part epoxy gray paint. An eight foot (2.4m) three-wire cord and plug are supplied on all TEFC single phase motors. Three phase and explosion-proof motors are supplied without cord or plug.

**SERIES 'D' 1 X 3/4 - CAPACITIES TO 33 U. S. GPM OR 43 FT. TDH @ 60 HZ  
(104 LPM OR 9.1M @ 50 HZ)**

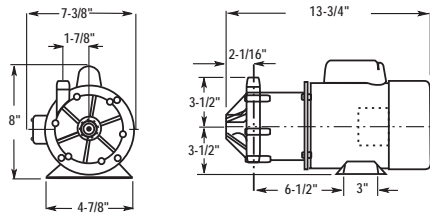


MODEL	SUCTION CASING	IMPELLER BUSHING <sup>3</sup>	LINER	MAX.	TEMP	INLET PRESSURE
					°F (°C)	
MRGR <sup>1</sup>	Ryton	Polypro	Ryton	Ryton	150 (65)	50 (3.5)
MKGC <sup>2</sup>	PVDF	PVDF	Carbon	PVDF	220 (104)	

PORT SIZES - 1" F x 3/4" M (NPT)

<sup>1</sup> Glass filled casing, liner, and impeller  
<sup>2</sup> Carbon fiber filled PVDF

<sup>3</sup> Ryton bushings are a blend of Ryton, PTFE, and carbon



**IMPELLER TRIM CHART**

SPECIFIC GRAVITY	1.0 to 1.1	1.1 to 1.3	1.3 to 1.5	1.5 to 1.7	1.7 to 1.9	1.9 to 2.0
IMPELLER DIAMETER 60 Hz	3-1/2 std.	3-1/4	3-1/8	3.0	2-7/8	2-3/4
50 Hz	88.9 mm (3-1/2 in) std.			82.5mm (3-1/4 in.)		

**TO ORDER, use Price Code Number**

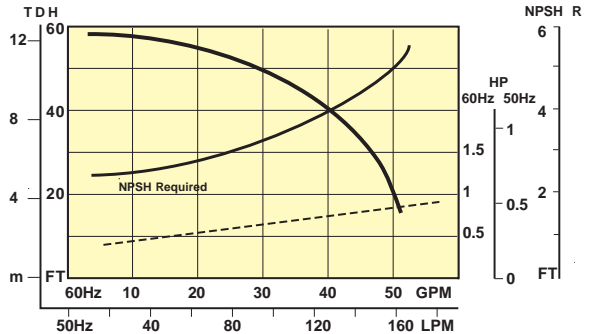
MODEL NUMBER	w/TEFC MOTOR			w/EXP. MOTOR			MOTOR VOLTAGE
	ADD TO MOD. NO.	PRICE CODE NO.	SHIPPING WEIGHT	ADD TO MOD. NO.	PRICE CODE NO.	SHIPPING WEIGHT	
	(HP)		Lbs (kg)	(HP)		Lbs (kg)	
1 x 3/4 MRGR	-C.5	44-4101	30 (14)	-E.75	44-4301A <sup>4</sup>	37 (17)	115/190-230/1/50-60
1 x 3/4 MKGC		44-4105			44-4302A <sup>4</sup>		
1 x 3/4 MRGR	-D.5	44-4101C	27 (12)	-F.75	44-4301C	34 (15)	190-230/380-415-460/3/50-60
1 x 3/4 MKGC		44-4105C			44-4302C		

<sup>4</sup> 60 Hz only



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**SERIES 'D' 1-1/2 X 1 - CAPACITIES TO 53 U. S. GPM OR 58 FT.TDH @ 60 HZ  
(167 LPM OR 12M @ 50 HZ)**

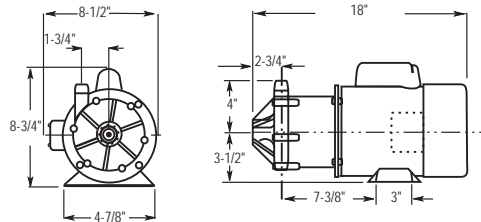


**CONSTRUCTION MATERIALS**

MODEL	SUCTION CASING	IMPELLER	BUSHING <sup>3</sup>	LINER	MAX. TEMP	MAX. INLET PRESSURE
					°F (°C)	PSI (BAR)
MPGR <sup>1</sup>	Polypro	Polypro	Ryton	Ryton	150 (65)	50 (3.5)
MSGR	316 SS	316 SS	Ryton	316 SS	250 (121)	200 (13.8)
MKGC <sup>2</sup>	PVDF	PVDF	CARBON	PVDF	220 (104)	75 (5.2)

<sup>1</sup> Glass filled casing, impeller and liner      <sup>3</sup> Ryton bushings are a blend of Ryton, PTFE, and carbon  
<sup>2</sup> Carbon fiber filled PVDF

**PORT SIZES - 1-1/2" F x 1" M (NPT)**



**IMPELLER TRIM CHART**

SPECIFIC GRAVITY	1.0 to 1.1	1.1 to 1.3	1.3 to 1.5	1.5 to 1.7	1.7 to 1.9	1.9 to 2.0
					°F (°C)	PSI (BAR)
IMPELLER DIAMETER	3-3/4 std	3-5/8	3-1/2	3-3/8	3-1/4	3-1/8
60 Hz						
50 Hz	95.2mm (3-3/4 in) std.				88.9 mm (3-1/2 in.)	

**TO ORDER, use Price Code Number**

MODEL NUMBER	w/TEFC MOTOR			w/EXP. MOTOR			MOTOR VOLTAGE
	ADD TO MOD. NO.	PRICE CODE NO.	SHIPPING WEIGHT	ADD TO MOD. NO.	PRICE CODE NO.	SHIPPING WEIGHT	
	(HP)		Lbs (kg)	(HP)		Lbs (kg)	
1-1/2 x 1 MPGR		44-0581	42 (19)		44-0571A <sup>4</sup>	49 (22)	115/190-230/1/50-60
1-1/2 x 1 MSGR	-C.75	44-0441	49 (22)	-E.75	44-0691A <sup>4</sup>	56 (25)	
1-1/2 x 1 MKGC		44-0585	42 (19)		44-4304A <sup>4</sup>	49 (22)	
1-1/2 x 1 MPGR		44-0581C	32 (15)		44-0571C	39 (18)	190-230/380-415-460/3/50-60
1-1/2 x 1 MSGR	-D.75	44-0441C	39 (18)	-F.75	44-0691C	46 (21)	
1-1/2 x 1 MKGC		44-0585C	32 (15)		44-4304C	39 (18)	

<sup>4</sup> 60 Hz only

**OPTIONAL**

		EXAMPLE	ADD TO PRICE CODE NO.
Chemic (PTFE & mica) bushing <sup>5</sup>	change R to K in Model No.	MPGK	- K
Carbon bushing	change R to C in Model No.	MPGC	- L
Stainless steel liner	add S to Model No.	MPSGR	- M
Stainless steel spindle & thrust washer	change G to S in Model No.	MSSR	- N

<sup>5</sup> This is a replacement for bushings formerly referred to as Chem-

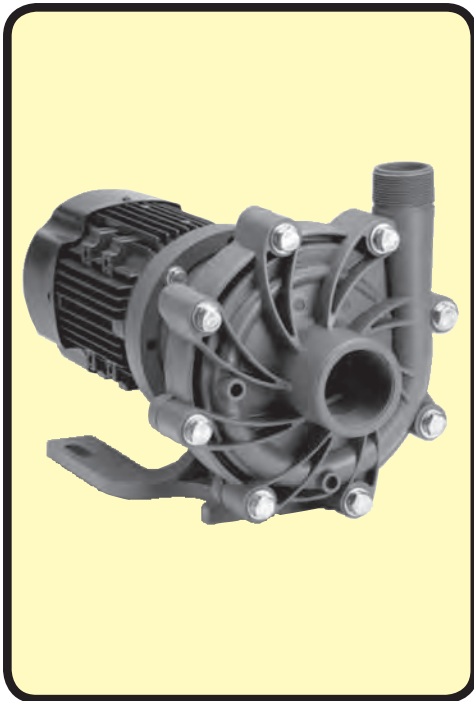


# SERIES 'FE' MAGNETIC-COUPLED PUMPS

109

P-518

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## EFFICIENCY, RELIABILITY AND PERFORMANCE

### *WASTES / ACIDS CHEMICALS / PLATING PHOTOGRAPHIC ETCHING*

- **Flows to 130 GPM or 97 ft. TDH @ 60 Hz**  
(483 LPM or 27.3 m @ 50 Hz)
- **Non-metallic solution contact**  
Glass reinforced polypropylene or  
carbon reinforced PVDF  
(See a chemical resistance chart)
- **High operating efficiency – up to 70%**
- **Capable of running dry without damage**
- **Powerful rare earth magnets**  
Provide sure coupling to 1.8 S.G.
- **Choice of connections – NPT or BSP threads,  
flanges or unions**
- **Accepts standard motors NEMA or IEC metric**

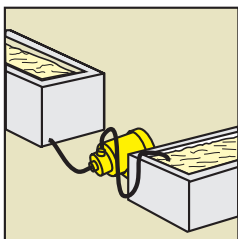
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Series 'FE' magnetic coupled pumps are seal-less and "leak-proof", providing total solution containment. They are available in a choice of two different corrosion resistant materials for a wide range of chemical and temperature compatibility and are ideal for handling even the most difficult applications.

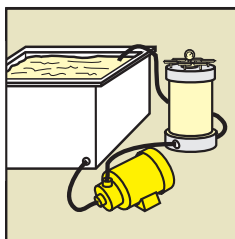
The Series 'FE' magnetic coupled pumps offer extremely high operating efficiencies for their size; up to 70%. This technological advancement results in smaller motor horsepower and means lower energy consumption and operating costs over the long life cycle of the pump.

These pumps utilize powerful rare earth, neodymium, magnets which allow them to operate at full flow with a full size impeller while handling liquids over 1.8 specific gravity.

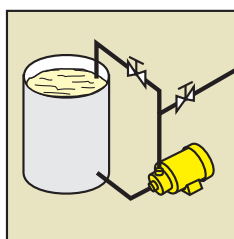
Additionally the Series 'FE' is capable of running dry without damage when equipped with the standard carbon bushing and under optimum operating conditions. This helps protect the pump from operator errors and system upsets. Their innovative and highly efficient design, and low energy consumption make these pumps one of the most versatile and economical centrifugal pumps on the market.



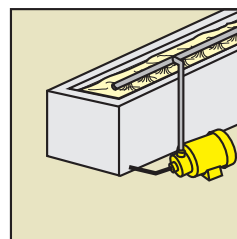
WASTE TREATMENT



FILTRATION



MIXING and  
TRANSFER PUMPING



RECIRCULATION



## SERIES 'FE' Performance and Specifications

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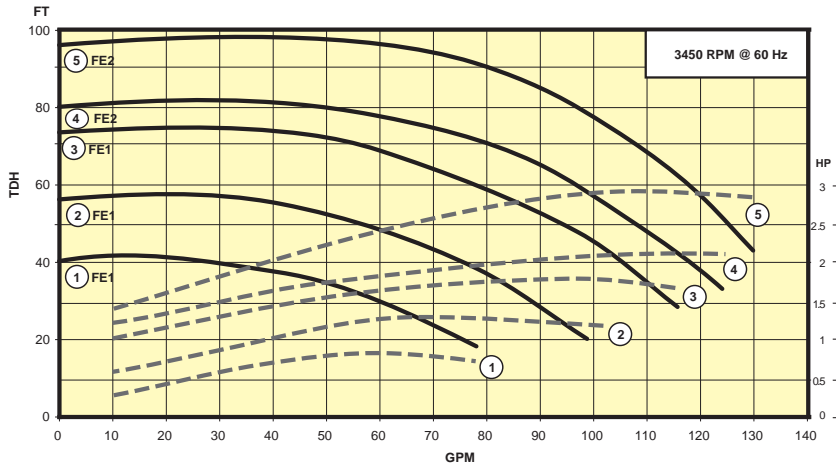
Standard models are constructed of glass-fiber reinforced polypropylene or carbon-fiber reinforced PVDF for suction casing, magnet liner and impeller. Impeller magnets are encapsulated in unfilled polypropylene or unfilled PVDF. The front and rear thrust rings and shaft are high purity, fluoride resistant alumina ceramic. The impeller thrust ring

is molybdenum disulfide filled PTFE. The casing 'O' ring is viton. Maximum pump pressure; 90 PSI (6.2 bar).

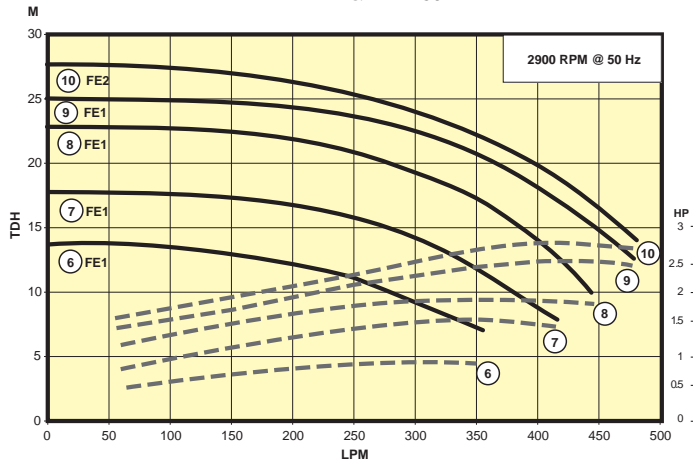
Motors are continuous-duty, painted with two-part gray epoxy enamel and have a 1.5 service factor. Single phase motors are supplied with 8 ft. (2.4m) of 3-wire cord and plug. Three phase motors are not supplied with cord.



### FE1 & FE2 - 60 Hz



### FE1 & FE2 - 50 Hz







# SERIES 'FE' Pump Ordering Information

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*For standard 60HZ pump-motor combination, select model from TABLE I  
For custom pump-motor combination, select from components in TABLE II*

**TABLE I**

Select pump-motor model or flow curve number providing the desired performance

**MODEL FE1**

FLOW CURVE	POLYPROPYLENE PUMP / MOTOR		PVDF PUMP / MOTOR		* Motor HP shown will handle full flow to a S.G. of:
	MODEL NUMBER	PRICE CODE NUMBER	MODEL NUMBER	PRICE CODE NUMBER	
1	FE1MPVGC 1A-D1.0	51-0211G	FE1MKVGC 1A-D1.0	51-0311G	1.35
2	FE1MPVGC 2A-D1.5	51-0221J	FE1MKVGC 2A-D1.5	51-0321J	1.23
3	FE1MPVGC 3B-D2.0	51-0232K	FE1MKVGC 3B-D2.0	51-0332K	1.14

**MODEL FE2**

4	FE2MPVGC 4C-D3.0	51-0443L	FE2MKVGC 4C-D3.0	51-0543L	1.45
5	FE2MPVGC 5C-D5.0	51-0454P	FE2MKVGC 5C-D5.0	51-0554P	1.75

\* For higher specific gravity or reduced flow, refer to HP required. Then refer to Table II and construct Model and Price Code Number accordingly

**TABLE II**

To determine pump-motor for a specific flow, TDH, and/or specific gravity, select flow/pressure point on performance curve (solid line). Required HP is determined by moving vertically to corresponding HP

curve (dotted line) and then horizontally to HP scale. Multiply indicated HP by specific gravity of fluid to be pumped. Select pump materials and construct Model and Price Code.

**EXAMPLE: PUMP + IMPELLER + MAGNET/FRAME + MOTOR = PRICE CODE NO.**  
 FE1MPVGC + 3 + B + D2.0 = 51-0232K

**PUMP<sup>1</sup>**

MODEL NUMBER	PCN
FE1 MPVGC Polypropylene	51-02
FE1 MKVGC PVDF	51-03
FE2 MPVGC Polypropylene	51-04
FE2 MKVGC PVDF	51-05

**IMPELLER**

	MODEL	FLOW CURVE	ADD TO	
			MODEL	PCN
60 HZ	FE1	1	1	1
		2	2	2
		3	3	3
	FE2	4	4	4
		5	5	5
50 HZ	FE1	6	6	6
		7	7	7
	FE2	8	8	8
		9	9	9
		10	10	0

<sup>1</sup> For pump only eliminate motor suffix from price code number.

<sup>2</sup> single phase —  
 115-208-230V/1/60 or  
 110-220V/1/50  
 Three phase —  
 208-230-460V/3/60 or  
 220-380V/3/50

**MAGNET SET / FRAME SIZE**

**MOTOR<sup>2</sup>**

	HP/KW	MAGNET SET	FRAME SIZE	ADD TO		SINGLE PHASE		THREE PHASE	
				MODEL	PCN	MODEL	PCN	MODEL	PCN
60 HZ	.75	6 POLE	56C	A	1	-C.75	A	-D.75	E
	1.0	6 POLE	56C	A	1	-C1.0	C	-D1.0	G
	1.5	6 POLE	56C	A	1	-C1.5	D	-D1.5	J
	2.0	6 POLE	143/5 TC	B	2	—	—	-D2.0	K
	3.0	8 POLE	143/5 TC	C	3	—	—	-D3.0	L
	5.0	10 POLE	182/4 TC	D	4	—	—	-D5.0	P

50 HZ	1.0	6 POLE	56C	A	1	C1.0-50	A	-D1.0-50	D
	1.5	6 POLE	56C	A	1	C1.5-50	C	—	—
	1.5	6 POLE	143/5 TC	B	2	—	—	-D1.5-50	E
	2.0	6 POLE	143/5 TC	B	2	—	—	-D2.0-50	G
	3.0	8 POLE	182/4 TC	E	5	—	—	-D3.0-50	J
	5.0	10 POLE	182/4 TC	H	7	—	—	-D5.0-50	K
	1.0/1.75	6 POLE	80 FR	C	3	—	—	-DM.75	L
	1.5/1.1	6 POLE	80 FR	C	3	—	—	-DM1.1	P
	2.0/1.5	6 POLE	90 FR	D	4	—	—	-DM1.5	Q
	3.0/2.2	8 POLE	90 FR	F	6	—	—	-DM2.2	U
	4.0/3.0	10 POLE	100 FR	J	8	—	—	-DM3.2	V
	5.5/4.0	10 POLE	112 FR	M	9	—	—	-DM4.2	W



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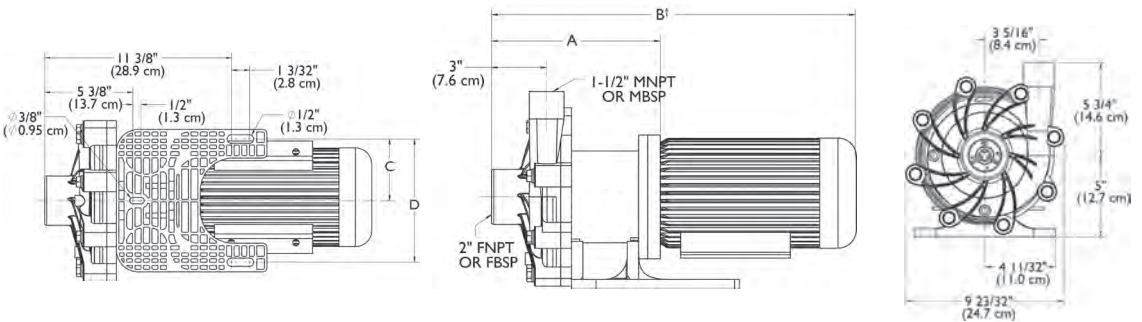
**OPTIONAL, use Price Code Number**

DESCRIPTION	ADD OR CHANGE MODEL	ADD TO PCN
O-RING: (Change V in Model)		
EPDM	-L	1
Gylon gasket	-G	2
Simriz	-Z	3
Kalrez	-K	4
Bushing: (Change C in Model)		
Teflon	-T	T
Alumina Ceramic	-R	R

DESCRIPTION	ADD OR CHANGE MODEL	ADD TO PCN
CONNECTIONS:		
BSP threads	-B	B
Union	-U	U
Flange	-F	F
SPECIALS:		
SiC (bushing, thrust ring, shaft)	-S	S
Hastelloy shaft	-H	H
Titanium hardware	-M	M
Non-Sparking ring	-N	N

4

**DIMENSIONS**



MOTOR FRAME	A	B	C	D	Weight - lbs (kg)	
					PP	PVDF
NEMA 56C	8-17/32" (21.7cm)	20-17/32" (52.1cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	21.6 (9.8)	22.8 (10.3)
NEMA 145	8-17/32" (21.7cm)	18-29/32" (48.0cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	21.6 (9.8)	22.8 (10.3)
NEMA 184	9-13/32" (23.9cm)	22-6/32 (56.4 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.7 (11.7)	26.9 (12.2)
IEC 80/90 w/B14 or B5*	9-5/32" (23.3 cm)	19-11/16" (50.0 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	22.1 (10)	23.3 (10.6)
IEC 80/90 w/B14 ATEX*	9-5/32" (23.3 cm)	19-7/8" (50.5 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	N/A	23.5 (10.7)
IEC 100 w/B14 or B5*	9-7/32" (23.4 cm)	21-3/8" (54.3 cm)	3-5/32" (8.0 cm)	6-10/32" (16.0 cm)	25.2 (11.4)	26.4 (12)
IEC 100 w/B14 ATEX*	9-7/32" (23.4 cm)	21-3/8" (54.3 cm)	3-5/32" (8.0 cm)	6-10/32" (16.0 cm)	N/A	26.6 (12.1)
IEC 112 w/B14 or B5*	9-7/32" (23.4 cm)	21-7/8" (55.6 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.2 (11.4)	26.4 (12)
IEC 112 w/B14 ATEX*	9-7/32" (23.4 cm)	21-7/8" (55.6 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	N/A	26.6 (12.1)



# SERIES 'Z' CENTRIFUGAL MAGNETIC COUPLED PUMPS

113

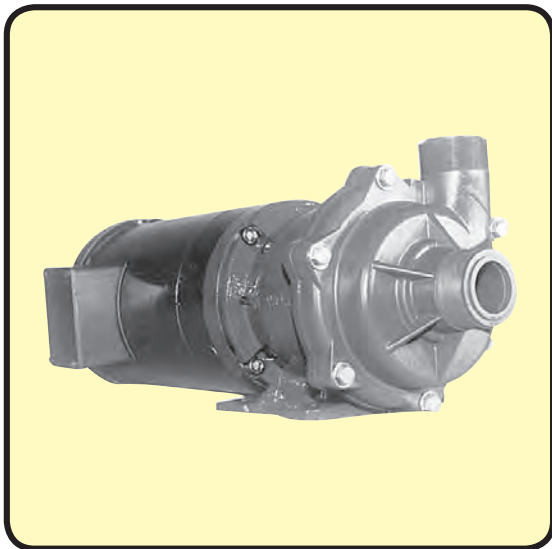
P-512\_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## NON-METALLIC AND SEAL-LESS PUMP PROVIDING TOTAL VAPOR AND SOLUTION CONTAINMENT FOR:

**ACID / AQUEOUS / CAUSTIC  
CHEMICAL / PLATING  
PHOTOGRAPHIC**

- **Flows to 145 U.S. GPM @ 60 Hz**  
(548 LPM @ 50 Hz)
- **Non-metallic solution contact**  
Polypropylene / Viton® or ETFE / Viton  
(See a chemical resistance chart)
- **Powerful magnets**
- **Seal-less pump provides zero leakage and low friction for energy efficiency**
- **High efficiency closed impellers**



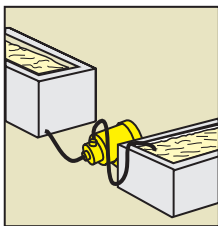
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**Series 'Z' Magnetic Coupled Pumps** are the latest in magnetic coupled pump technology. Tested and proven design features provide a pump that is seal-less and leakproof. Available materials of construction and flow capacity to 145 U.S. GPM make this pump an excellent choice for a wide variety of applications.

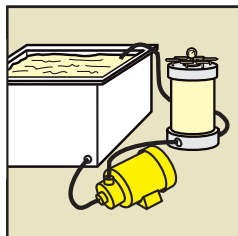
Standard 'Z' models have strong magnets, allowing them to provide continuous flow with liquids up to 1.1 specific gravity. Trimmed impellers allow continuous flow with liquids to 1.9 specific gravity. Durable and

corrosion resistant construction of polypropylene or ETFE ensures efficient and reliable performance for even the most critical applications. Standard TEFC motors, strong magnets and highly efficient impellers provide a quiet and efficient pump designed for years of trouble-free operation.

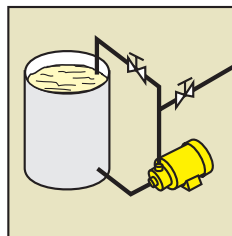
The following information covers standard Series 'Z' models for use with solutions to 1.1 specific gravity. For other models consult Sales Department.



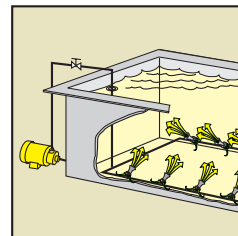
WASTE TREATMENT



FILTRATION



TRANSFER PUMPING  
EDUCTOR AGITATION



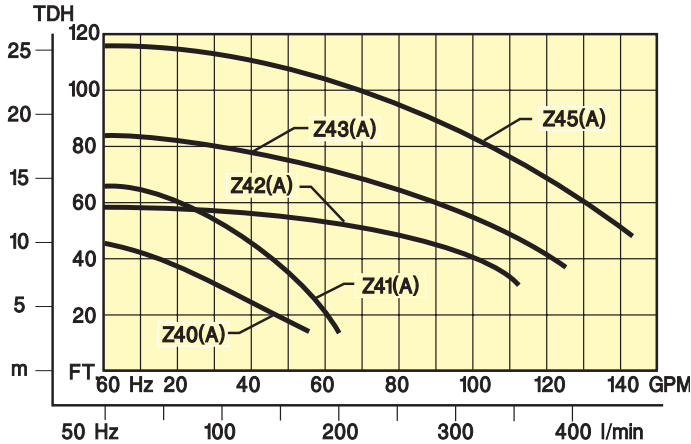
and MIXING



**SERIES 'Z' PUMPS Performance and Dimensions**

P-512\_A

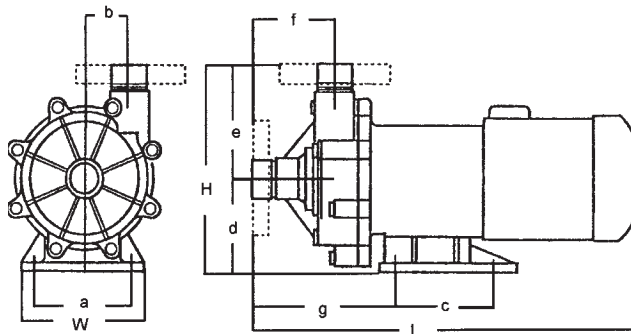
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NOTE:  
 3450 RPM @ 60Hz  
 2850 RPM @ 50Hz  
 Flows with 1.1 specific gravity.

FLOW CURVE	PORT SIZE IN x OUT (FNPT x MNPT)	PORT SIZE IN x OUT (mm)	BEST EFFICIENCY POINT (GPM @ ft.)	MAXIMUM FLOW (GPM)	MAXIMUM HEAD (ft.)	HP
Z40(A*)	1½" x 1½"	40 x 40	30 @ 30	52	44	.5
Z41(A*)	1½" x 1½"	40 x 40	40 @ 44	64	58	1.0
Z42(A*)	2" x 1½"	50 x 40	80 @ 44	110	58	2.0
Z43(A*)	2" x 1½"	50 x 40	85 @ 60	125	83	3.0
Z45(A*)	2" x 1½"	50 x 40	100 @ 86	145	115	5.0

\*A series impeller for 1.1 S. G.



MODEL	PORT NPT		DIMENSIONS (inches)									
	IN	OUT	W	H	L**	a	b	c	d	e	f	g
Z40	1 1/2	1½	5.52	8.33	9.12	4.33	2.01	3.86	3.78	9.87	3.28	5.77
Z41	1 1/2	1½	6.30	9.75	19.56	5.12	2.27	5.12	4.53	10.31	3.78	6.98
Z42	2	1½	10.23	9.84	23.34	8.19	2.56	7.87	4.53	12.22	3.31	6.03
Z43	2	1½	10.23	9.84	24.22	8.19	2.56	7.87	4.53	12.22	3.31	6.03
Z45	2	1½	10.94	10.44	26.66	8.19	2.56	7.87	5.12	13.16	3.31	6.03

\*\*Varies with motor manufacturer.



**SERIES 'Z' PUMPS Ordering Information**

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**POLYPROPYLENE PUMP and MOTOR**

POLYPROPYLENE / VITON (CHCR\*)

FLOW CURVE	MAX FLOW GPM	MAX TDH Ft.	HP/Ø	CONNS. NPT	MODEL NUMBER	PRICE CODE NO.
Z40(A)	52	44	0.5/1 0.5/3	1½" x 1½"	Z40PV 1½T CHCR A C.5 Z40PV 1½T CHCR A D.5	82-3178 1J 82-3178 1K
Z41(A)	64	58	1.0/1 1.0/3	1½" x 1½"	Z41PV 1½T CHCR A C1.0 Z41PV 1½T CHCR A D1.0	82-4178 1N 82-4178 1P
Z42(A)	110	58	2.0/1 2.0/3	2" x 1½"	Z42PV 2T CHCR A C2.0 Z42PV 2T CHCR A D2.0	82-5188 1Q 82-5188 1R
Z43(A)	125	83	3.0/3	2" x 1½"	Z43PV 2T CHCR A D3.0	82-6188 1S
Z45(A)	145	115	5.0/3	2" x 1½"	Z45PV 2T CHCR A D5.0	82-7188 1T

POLYPROPYLENE / VITON (SCR\*)

Z40(A)	52	44	0.5/1 0.5/3	1½" x 1½"	Z40PV 1½T SCR A C.5 Z40PV 1½T SCR A D.5	82-3179 1J 82-3179 1K
Z41(A)	64	58	1.0/1 1.0/3	1½" x 1½"	Z41PV 1½T SCR A C1.0 Z41PV 1½T SCR A D1.0	82-4179 1N 82-4179 1P
Z42(A)	110	58	2.0/1 2.0/3	2" x 1½"	Z42PV 2T SCR A C2.0 Z42PV 2T SCR A D2.0	82-5189 1Q 82-5189 1R
Z43(A)	125	83	3.0/3	2" x 1½"	Z43PV 2T SCR A D3.0	82-6189 1S
Z45(A)	145	115	5.0/3	2" x 1½"	Z45PV 2T SCR A D5.0	82-7189 1T

**ETFE PUMP and MOTOR**

ETFE / VITON (CHCR\*)

FLOW CURVE	MAX FLOW GPM	MAX TDH Ft.	HP/Ø	CONNS. NPT	MODEL NUMBER	PRICE CODE NO.
Z40(A)	52	44	0.5/1 0.5/3	1½" x 1½"	Z40EV 1½T CHCR A C.5 Z40EV 1½T CHCR A D.5	82-3378 1J 82-3378 1K
Z41(A)	64	58	1.0/1 1.0/3	1½" x 1½"	Z41EV 1½T CHCR A C1.0 Z41EV 1½T CHCR A D1.0	82-4378 1N 82-4378 1P
Z42(A)	110	58	2.0/1 2.0/3	2" x 1½"	Z42EV 2T CHCR A C2.0 Z42EV 2T CHCR A D2.0	82-5388 1Q 82-5388 1R
Z43(A)	125	83	3.0/3	2" x 1½"	Z43EV 2T CHCR A D3.0	82-6388 1S
Z45(A)	145	115	5.0/3	2" x 1½"	Z45EV 2T CHCR A D5.0	82-7388 1T

ETFE / VITON (SCR\*)

Z40(A)	52	44	0.5/1 0.5/3	1½" x 1½"	Z40EV 1½T SCR A C.5 Z40EV 1½T SCR A D.5	82-3379 1J 82-3379 1K
Z41(A)	64	58	1.0/1 1.0/3	1½" x 1½"	Z41EV 1½T SCR A C1.0 Z41EV 1½T SCR A D1.0	82-4379 1N 82-4379 1P
Z42(A)	110	58	2.0/1 2.0/3	2" x 1½"	Z42EV 2T SCR A C2.0 Z42EV 2T SCR A D2.0	82-5389 1Q 82-5389 1R
Z43(A)	125	83	3.0/3	2" x 1½"	Z43EV 2T SCR A D3.0	82-6389 1S
Z45(A)	145	115	5.0/3	2" x 1½"	Z45EV 2T SCR A D5.0	82-7389 1T

- Pumps good to 1.1 specific gravity.
- For heavier solutions, consult Sales Dept. for performance and operating voltage.

- TEFC, 3450 RPM, 'C' motors are 110-220V/1/60 Hz; 'D' motors are 208-230-460V/60 Hz.
- For 50 Hz motors, add -5 to Model and Price Code Nos
- For EPDM elastomers, consult Sales Department.

\* FRICTION SURFACES

MODEL	SPINDLE	REAR THRUST	FRONT THRUST	BEARING	MOUTH RING
CHCR	Ceramic	Ceramic	Ceramic	H.D. Carb.	Rulon
SCR	SiC	SiC	SiC	SiC	Rulon





# SERIES 'TM-SS' CENTRIFUGAL MAGNETIC COUPLED PUMPS

116

P 516\_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**CAST 316 STAINLESS STEEL CONSTRUCTION  
RUGGEDLY ENGINEERED FOR LONG TERM RELIABILITY IN DEMANDING**

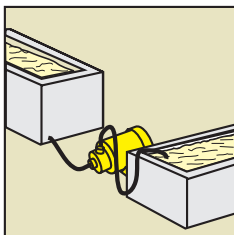
**CLEANERS / SEMI-CONDUCTORS / INKS  
FUME SCRUBBERS / PHOTO PROCESSING  
WASTE WATER TREATMENT**

- Flows to 160 GPM or 79 ft. TDH @ 60 Hz  
(505 LPM or 16.7m @ 50 Hz)
- 316 stainless steel construction  
PTFE gaskets standard  
(See a chemical resistance chart)
- High torque magnets
- Massive thrust bearings
- Seal-less, leak-free magnetic coupled
- Centrifugal, quiet, vibration-free
- Heavy walled voluted casings
- For use with standard NEMA or IEC 'C'-face motors

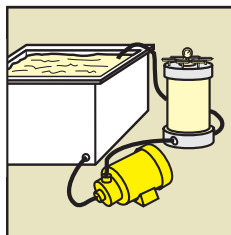


**The Series 'TM-SS' Magnetic Coupled Pump** directly addresses the weaknesses of other magnetic drive pumps. From high torque compact magnets to a large diameter, reduced length shaft to massive precision finished thrust bearings, the 'TM-SS' pump is designed to excel where other pumps fail. Heavy

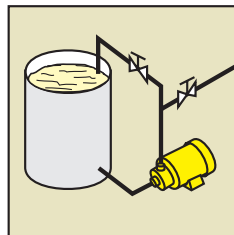
walled voluted casings improve pump strength, internal shaft support, chemical resistance, pressure and temperature capabilities as well as hydraulic efficiencies. Standard models are non-overloading with stated elevated specific gravity liquids.



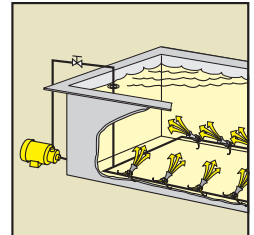
WASTE TREATMENT



FILTRATION



TRANSFER PUMPING



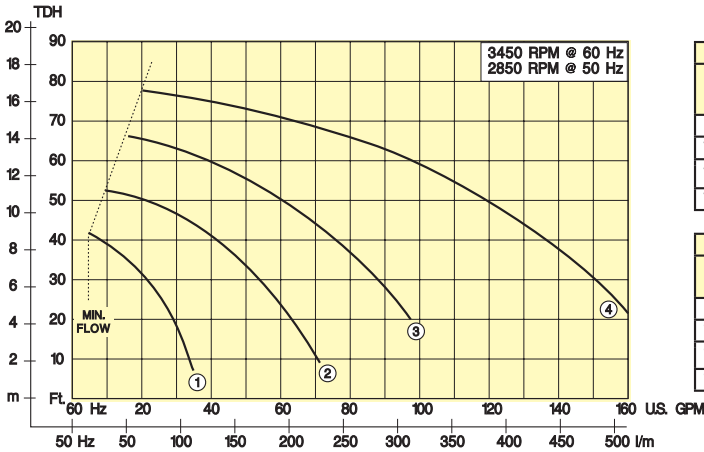
EDUCTOR AGITATION  
and MIXING



**SERIES 'TM-SS' PUMPS Specifications and Ordering Information**

P-516\_B

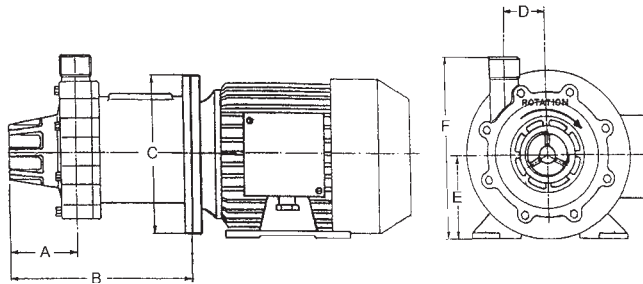
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DIMENSIONS Inches				
MODEL	NEMA FRAME	A	B	C
TMSS6	56C	2-1/4	8-1/4	6-5/8
TMSS10		2-3/4	9	6-5/8
TMSS15	145TC	3-1/8	10-1/8	7-7/8
TMSS30	184TC	3-1/4	10-3/4	10-1/8

DIMENSIONS Inches				
MODEL	NEMA FRAME	D	E	F
TMSS6	56C	1-3/4	3-1/2	7
TMSS10		1-3/4	3-1/2	7-3/8
TMSS15	145TC	2-1/2	3-1/2	8-3/8
TMSS30	184TC	2-5/8	4-1/2	10

NOTE: Motor dimensions may vary.



**Series 'TM-SS' 316 stainless steel / PTFE:**

316 SS casing, impeller, impeller magnet and shaft. Special carbon stationary and front thrust bearing. SIC shaft sleeve bearing. PTFE casing gaskets standard. To order, use Price Code No. (Maximum operating temperature 300°F Maximum psi 250)

FLOW CURVE	MAX. FLOW <sup>1</sup>		MAX. TDH <sup>2</sup>		MAX. S. G. <sup>3</sup>	HP	IMPELLER DIA.	CONNECTIONS SUCT. x DISCH.	MODEL NO.	PRICE CODE NO.	SHIPPING WT. (lbs.)
	GPM	LPM	ft.	m							
1	32	100	41	8.7	1.3	.75	3.13"	1" FNPT x 3/4" MNPT	TMSS6.2H-3.13-D.75	51-0114	40
2	69	218	58	12.3	1.4	2.0	3.78"	1 1/2" FNPT x 1" MNPT	TMSS10.2H-3.78-D2.0	51-0115	59
3	100	315	67	14.2	1.4	3.0	4.13"	2" FNPT x 1 1/2" MNPT	TMSS15.2H-4.13-D3.0	51-0116	80
4	160	505	79	16.7	1.4	5.0	4.50"	2" FNPT x 1 1/2" MNPT	TMSS30.2H-4.50-D5.0	51-0117	159

- <sup>1</sup> GPM @ 60 Hz, LPM @ 50 Hz
- <sup>2</sup> ft. TDH @ 60 Hz, m TDH @ 50 Hz
- <sup>3</sup> Motors are non-overloading at stated specific gravity.

Motors are TEFC, 230 - 460V / 3Ø / 60Hz  
 .75 HP motor may be ordered as single phase  
 To order 115 - 230V / 1Ø / 60, change **D** to **C** in Model No.  
 and add **-1** to Price Code No.

Consult sales department for 50 Hz motors.





# SERIES 'UC' MAGNETIC COUPLED PUMPS

118

P-514\_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## EXTREME RELIABILITY FOR:

**PLATING / CHEMICAL PROCESSES  
STRONG ACIDS & ALKALIES  
PULP - PAPER / PHARMACEUTICAL  
PETROCHEMICAL / WATER TREATMENT**



- **Flows to 330 U.S. GPM or 320 ft. TDH @ 60 Hz**  
(983 LPM or 67m TDH @ 50 Hz)
- **Non-metallic solution contact**  
ETFE (fluoropolymer) lined high strength ductile iron casing  
Silicon carbide shaft and bushings for applications to 250° F (121° C)  
(See a chemical resistance chart)
- **ANSI dimensional**
- **Powerful rare earth magnets**  
Neodymium boron iron for maximum power and reliability
- **Magnetic coupled** for leak-free pumping
- **Accepts standard motors**  
NEMA or IEC metric

**Series 'UC' Magnetic Coupled Pumps** are seal-less, ANSI dimensional, ETFE lined pumps that are specifically designed for corrosive chemical applications in a wide range of industrial services.

The Series 'UC' pump is engineered to provide the utmost in reliability and longer pump life in even the most extreme applications. All wetted surfaces are non-metallic to provide superior chemical resistance. The Series 'UC' pump has a tough ductile iron casing bonded with a pure Tefzel® (ETFE) lining. The enclosed impeller and pump liner are precision molded from carbon fiber reinforced ETFE while the pump liner also has an external containment shell of glass reinforced vinyl ester for optimum pressure resistance.

The dual impeller bushings, shaft and front and rear thrust rings are sintered silicon carbide. The impeller thrust ring is manufactured from Fluorosint®.

These components provide exceptional chemical resistance and wear characteristics at all flows.

The modified concentric volute and generous impeller balance holes equalize pressure across the entire flow range, allowing minimal hydraulic thrust loads and decreased stress on the impeller. These design innovations provide reduced wear on critical pump components.

Series 'UC' pumps also utilize straightening vanes in the suction to prevent "pre-rotation" and reduced turbulence on the impeller for enhanced low flow operation.

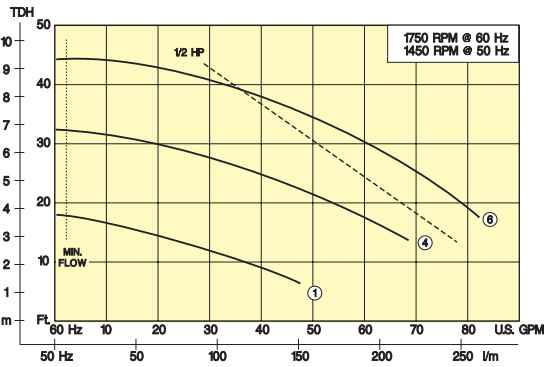
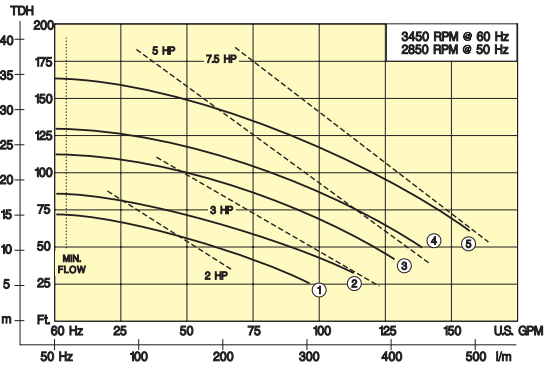
Series 'UC' magnetic coupled pumps are designed to perform efficiently with great reliability and low maintenance requirements and to provide increased productivity and minimal operating costs. In short, they provide great value in critical pumping applications.



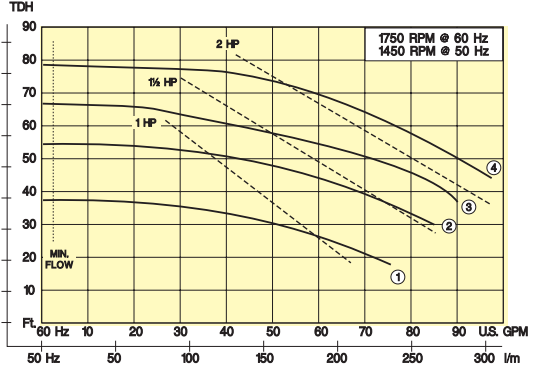
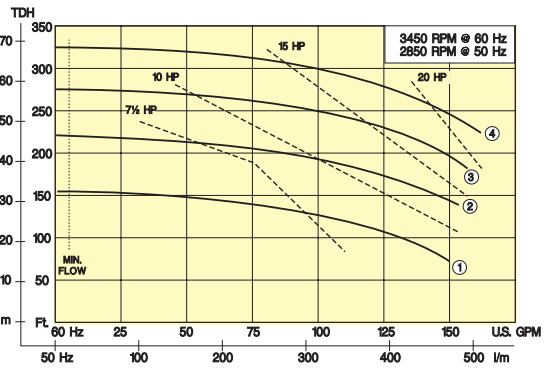


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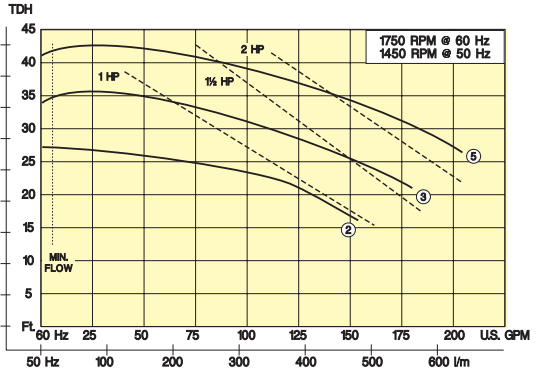
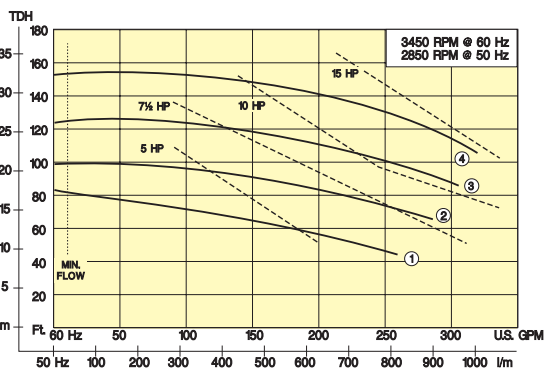
MODEL UC1516 (1 1/2 x 1 x 6)



MODEL UC1518 (1 1/2 x 1 x 8)



MODEL UC326 (3 x 2 x 6)



Consult Sales Dept for 50 Hz HP requirements.





2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**SPECIFICATIONS**

- **Materials of construction**  
 Casing — ductile iron ETFE lined  
 Impeller & liner — carbon filled ETFE  
 Shaft & bushings — silicon carbide  
 'O'-ring — Viton (EPDM optional)
- **Working pressure** — 175 PSI max.
- **Maximum temperature** — 250°F (121° C)
- **Maximum viscosity** — 200 cps
- **Casing dimensions** — ANSI / ASME B73.1 m
- **Flange mounting** — ANSI or ISO
- **Motors** — NEMA or IEC to 20 HP (15 kW)

**TO ORDER, use Price Code No.**

*For pump - motor combination, select components from table below.*

To determine pump-motor for a specific flow, TDH and/or specific gravity, select flow/pressure point on performance curve (solid line). Required horsepower is determined by the section of the impeller curve falling below and/or to the left of the dotted HP curve.

Multiply the indicated HP by the specific gravity of the fluid to be pumped. Select pump, then impeller curve, magnet assembly and motor; then compile Model and Price Code Numbers.

**EXAMPLE:**

For UC1516 pump @ 3450 RPM, impeller curve 4, magnet assembly A and 7.5 HP motor

**Model No.:** UC1516 + -4 + A + -D7.5 = UC1516-4A-D7.5  
**Price Code No.:** 63-1 + 4 + 1 + 2C = 63-1412 C

PUMP <sup>1</sup>	
MODEL	PRICE CODE NO.
UC1516	63-1
UC1518	63-2
UC326	63-3

IMPELLER		
IMPELLER CURVE	ADD TO	
	MODEL	PRICE CODE NO.
1	-1	1
2	-2	2
3	-3	3
4	-4	4
5	-5	5
6	-6	6

MAGNET ASSEMBLY		
MAXIMUM HP	ADD TO	
	MODEL	PRICE CODE NO.
7.5	A	1
20.0	B	2

MOTOR <sup>2</sup>				
RPM	TEFC		ADD TO	
	NEMA FRAME	HORSE-POWER	MODEL	PRICE CODE NO.
3450 @ 60 Hz	145TC	3.0	-D3.0	3A
	182/4TC	5.0	-D5.0	2B
		7.5	-D7.5	2C
	215TC	10.0	-D10.0	5D
		15.0	-D15.0	5E
256TC	20.0	-D20.0	6F	
1725 @ 60 Hz	143/5TC	1.5	-H1.5	3G
	182/4TC	3.0	-H3.0	2H

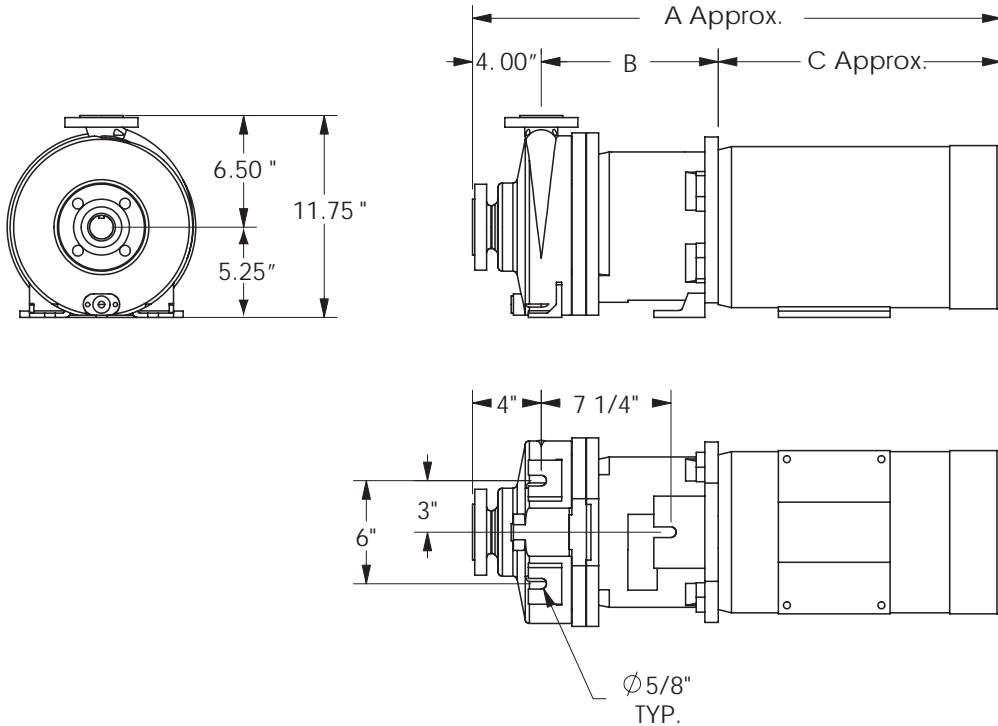
OPTIONAL		
DESCRIPTION	MODEL	ADD TO PRICE CODE NO.
EPDM elastomers	-L	L

<sup>1</sup> For pump only, eliminate motor suffix from Model No. and suffix letter from Price Code No.

<sup>2</sup> Motors are NEMA 208-230-460V/3/60 Hz, TEFC. For 50 Hz, IEC or EXP, consult Sales Dept.



**DIMENSIONS**



MODEL	SUCTION	DISCHARGE	MOTOR FRAME	A	B	C	SHIPPING WEIGHT *
UC1516	1 1/2" Flange	1" Flange	NEMA 143	22.56"	8.54"	10.00"	85 lbs.
			NEMA 184	25.06"	10.30"	10.75"	
			NEMA 215	26.81"	10.30"	12.38"	
			NEMA 256	29.19"	10.30"	14.88"	
UC1518	1 1/2" Flange	1" Flange	NEMA 143	22.56"	8.54"	10.00"	90 lbs.
			NEMA 184	25.06"	10.30"	10.75"	
			NEMA 215	26.81"	10.30"	12.38"	
			NEMA 256	29.19"	10.30"	14.88"	
UC326	3" Flange	2" Flange	NEMA 143	22.56"	8.54"	10.00"	100 lbs.
			NEMA 184	25.06"	10.30"	10.75"	
			NEMA 215	26.81"	10.30"	12.38"	
			NEMA 256	29.19"	10.30"	14.88"	

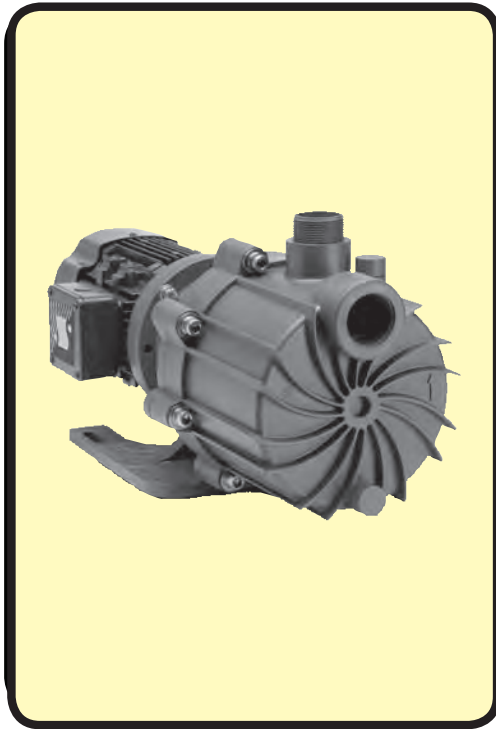


# SERIES 'FES' SELF-PRIMING MAGNETIC COUPLED PUMPS

122

P-519

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5

## VERSATILE-ECONOMICAL

### *WASTES / ACIDS CHEMICALS / PLATING PHOTOGRAPHIC ETCHING*

- **Flows to 120 GPM or 90 ft. TDH @ 60 Hz**  
(330 LPM or 23.5 m @ 50 Hz)
- **Non-metallic solution contact**  
Glass reinforced polypropylene or  
carbon reinforced PVDF  
(See a chemical resistance chart)
- **Deep-lift capability**  
up to 25 feet / 7.6 meters
- **Fast priming**  
18 feet / 4.6 meters in 90 sec.
- **Capable of running dry without damage**
- **Powerful rare earth magnets**  
Provide sure coupling to 1.8 S.G.
- **Accepts standard motors NEMA or IEC metric**

Series 'FES' self-priming magnetic coupled pumps are seal-less and "leak-proof" providing total solution containment. They are available in a choice of two different corrosion resistant materials for a wide range of chemical and temperature compatibility and are ideal for handling even the most difficult applications.

The outstanding self-priming feature of the Series 'FES' combines deep-lift capabilities (up to 25 feet / 7.6 meters) and lightning-fast priming (18 feet / 4.6 meters in 90 seconds). The priming chamber's gooseneck design eliminates the need for internal check valves while ensuring that enough liquid is retained for efficient re-priming.

These pumps utilize powerful rare earth, neodymium, magnets which allow them to operate at full flow with a full size impeller while handling liquids over 1.8 specific gravity.

Additionally the Series 'FES' is capable of running dry without damage when equipped with the standard carbon bushing and under optimum operating conditions. This helps protect the pump from operator errors and system upsets.

Their innovative and highly efficient design, and low energy consumption make these pumps one of the most versatile and economical centrifugal pumps on the market.

## APPLICATIONS

- Over-the-side pumping for filtration and agitation
- Pump from sumps or pits for waste treatment
- Transfer from rail cars, tanker trucks, or bulk storage
- Systems with entrained air or where dry run protection is required

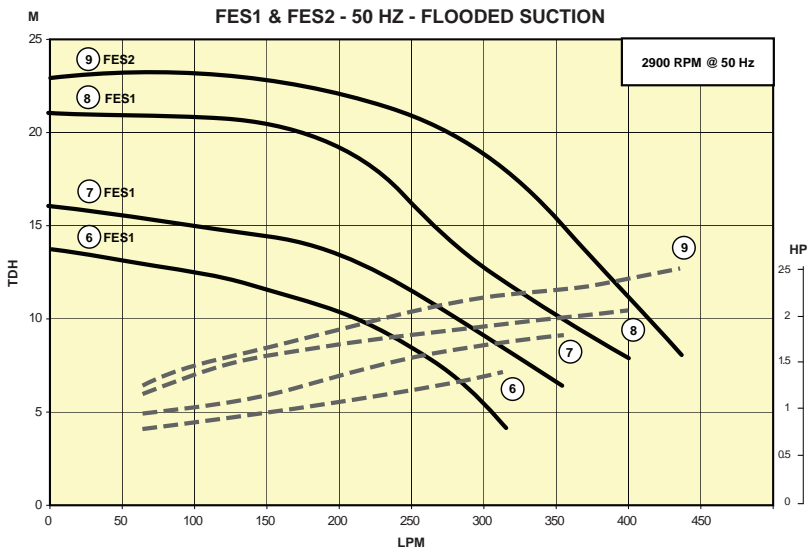
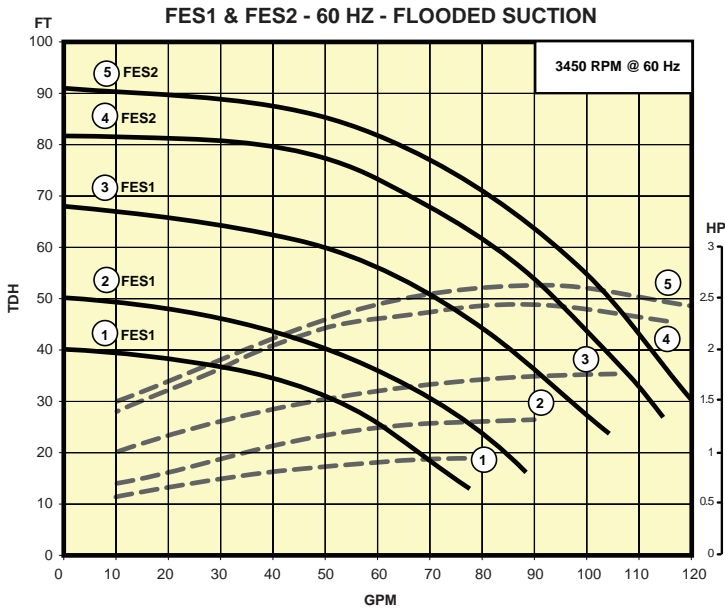


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Standard models are constructed of glass-fiber reinforced polypropylene or carbon-fiber reinforced PVDF for suction casing, separator plate, inner volute, magnet liner and impeller. Impeller magnets are encapsulated in unfilled polypropylene or unfilled PVDF. The front and rear thrust rings and shaft are high purity, fluoride resistant alumina ceramic. The impeller thrust ring is molybdenum disulfide

filled PTFE. The casing 'O' ring is Viton. Maximum pump pressure; 90 PSI (6.2 bar).

Motors are continuous-duty, painted with two-part gray epoxy enamel and have a 1.5 service factor. Single phase motors are supplied with 8 ft. (2.4 m) of 3-wire cord and plug. Three phase motors are not supplied with cord.





# SERIES 'FES' Pump Ordering Information

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**For standard 60 HZ pump-motor combination, select model from TABLE I**  
**For custom pump-motor combination, select from components in TABLE II**

**TABLE I**

Select pump-motor model or flow curve number providing the desired performance

**MODEL FES1**

FLOW CURVE	POLYPROPYLENE PUMP / MOTOR		PVDF PUMP / MOTOR		* Motor HP shown will handle full flow to a S.G. of:
	MODEL NUMBER	PRICE CODE NUMBER	MODEL NUMBER	PRICE CODE NUMBER	
1	FES1MPVGC 1A-D1.0	51-0611G	FES1MKVGC 1A-D1.0	51-0711G	1.11
2	FES1MPVGC 2A-D1.5	51-0621J	FES1MKVGC 2A-D1.5	51-0721J	1.15
3	FES1MPVGC 3B-D2.0	51-0632K	FES1MKVGC 3B-D2.0	51-0732K	1.11

**MODEL FES2**

4	FES2MPVGC 4C-D3.0	51-0843L	FES2MKVGC 4C-D3.0	51-0943L	1.28
5	FES2MPVGC 5C-D3.0	51-0853L	FES2MKVGC 5C-D3.0	51-0953L	1.13

\* For higher specific gravity or reduced flow, refer to HP required. Then refer to Table II and construct Model and Price Code Number accordingly

**TABLE II**

To determine pump-motor for a specific flow, TDH, and/or specific gravity, select flow / pressure point on performance curve (solid line). Required HP is determined by moving vertically to corresponding HP

curve (dotted line) and then horizontally to HP scale. Multiply indicated HP by specific gravity of fluid to be pumped. Select pump materials and construct Model and Price Code.

**EXAMPLE: PUMP + IMPELLER + MAGNET/FRAME + MOTOR = PRICE CODE NO.**  
 FES1MPVGC + 3 + B + D2.0 = 51-0632K

**PUMP<sup>1</sup>**

MODEL NUMBER	PCN
FES1 MPVGC Polypropylene	51-06
FES1 MKVGC PVDF	51-07
FES2 MPVGC Polypropylene	51-08
FES2 MKVGC PVDF	51-09

**IMPELLER**

	MODEL	FLOW CURVE	ADD TO	
			MODEL	PCN
60 HZ	FES1	1	1	1
		2	2	2
		3	3	3
	FES2	4	4	4
		5	5	5
		6	6	6
50 HZ	FES1	7	7	7
		8	8	8
		9	9	9
	FES2	9	9	9

<sup>1</sup> For pump only, eliminate motor suffix from price code number.

<sup>2</sup> single phase —  
 115-208-230V/1/60 or  
 110-220V/1/50  
 Three phase —  
 208-230-460V/3/60 or  
 220-380V/3/50

MAGNET SET / FRAME SIZE					MOTOR <sup>2</sup>				
	HP/KW	MAGNET SET	FRAME SIZE	ADD TO		SINGLE PHASE		THREE PHASE	
				MODEL	PCN	MODEL	PCN	MODEL	PCN
60 HZ	1.0	6 POLE	56C	A	1	-C1.0	C	-D1.0	G
	1.5	6 POLE	56C	A	1	-C1.5	D	-D1.5	J
	2.0	6 POLE	143/5 TC	B	2	—	—	-D2.0	K
	3.0	8 POLE	143/5 TC	C	3	—	—	-D3.0	L
	5.0	10 POLE	182/4 TC	D	4	—	—	-D5.0	P

50 HZ	1.0	6 POLE	56C	A	1	C1.0-50	A	-D1.0-50	D
	1.5	6 POLE	56C	A	1	C1.5-50	C	—	—
	1.5	6 POLE	143/5 TC	B	2	—	—	-D1.5-50	E
	2.0	6 POLE	143/5 TC	B	2	—	—	-D2.0-50	G
	3.0	8 POLE	182/4 TC	E	5	—	—	-D3.0-50	J
	5.0	10 POLE	182/4 TC	H	7	—	—	-D5.0-50	K
	1.0/.75	6 POLE	80 FR	C	3	—	—	-DM.75	L
	1.5/1.1	6 POLE	80 FR	C	3	—	—	-DM1.1	P
	2.0/1.5	6 POLE	90 FR	D	4	—	—	-DM1.5	Q
	3.0/2.2	8 POLE	90 FR	F	6	—	—	-DM2.2	U
	4.0/3.0	10 POLE	100 FR	J	8	—	—	-DM3.2	V
	5.5/4.0	10 POLE	112 FR	M	9	—	—	-DM4.2	W



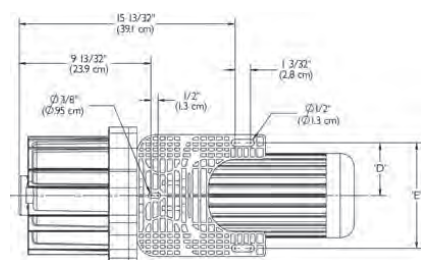
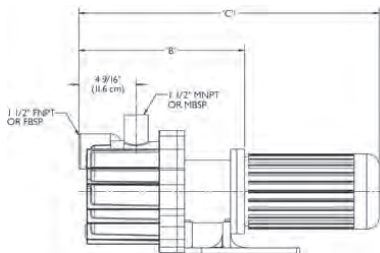
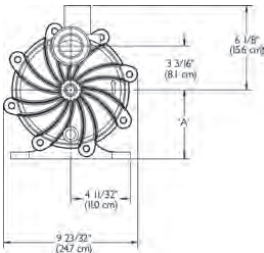
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**OPTIONAL, use Price Code Number**

DESCRIPTION	ADD OR CHANGE MODEL	ADD TO PCN
O-RING: (Change V in Model) EPDM	-L	1
Bushing: (Change C in Model) Teflon	-T	T
Alumina Ceramic	-R	R
CONNECTIONS:		
BSP Threads	-B	B
Union	-U	U
Flange	-F	F

DESCRIPTION	ADD OR CHANGE MODEL	ADD TO PCN
SPECIALS:		
SiC (bushing, thrust ring, shaft)	-S	S
Hastelloy shaft	-H	H
Titanium hardware	-M	M
Non-Sparking ring	-N	N

**DIMENSIONS — IN (MM)**



Also available 1-1/2" x 1-1/2" 150 lb. ANSI-ISO PN20/PN40 flange or 50 mm x 50 mm union connection

MOTOR FRAME	A	B	C*	D	E	Weight - lbs (kg)	
						PP	PVDF
NEMA 56C	5" (12.7 cm)	12-9/16" (31.9 cm)	24-9/16" (62.4 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25 (11.3)	30 (13.6)
NEMA 145	5" (12.7 cm)	12-9/16" (31.9 cm)	23-5/16" (59.2 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25 (11.3)	30 (13.6)
NEMA 184	5" (12.7 cm)	13-7/16" (31.4 cm)	25-11/16" (66.6 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	26 (11.8)	31 (14.1)
IEC 80 w/B14 or B5*	5" (12.7 cm)	13-3/16" (33.5 cm)	23-23/32" (60.2 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.5 (11.6)	30.5 (13.8)
IEC 90 w/B14 or B5*	5" (12.7 cm)	13-3/16" (33.5 cm)	23-7/8" (60.6 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.5 (11.6)	30.5 (13.8)
IEC 100 w/B14	5" (12.7 cm)	13-1/4" (33.7 cm)	25-13/32" (64.5 cm)	3-5/32" (8.0 cm)	6-10/32" (16.0 cm)	25.5 (11.6)	30.5 (13.8)
IEC 112 w/B14	5" (12.7 cm)	13-1/4" (33.7 cm)	25-29/32" (65.8 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.5 (11.6)	30.5 (13.8)

**NOTE** Contact factory for dimensions on flanged or union models. \*Varies with motor manufacturer.

\* Doesn't include motor weight. \*\* For B5 weight, add 3 lbs. to 80/90 B14 frame weight and 6 lbs. to 100/112 B14 weight.



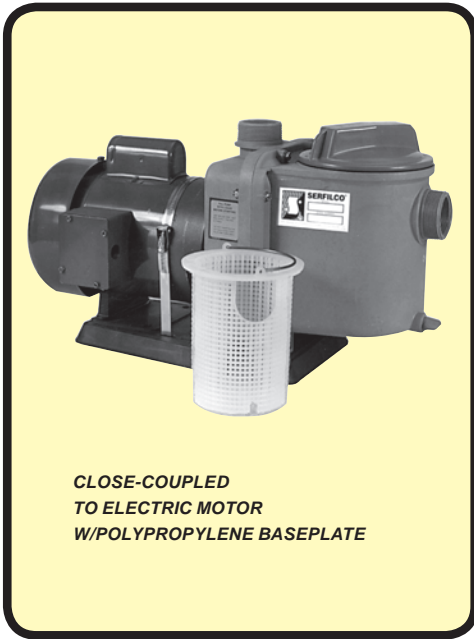


# SERIES 'G' HORIZONTAL PUMPS

126

P-613\_N

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CLOSE-COUPLED  
TO ELECTRIC MOTOR  
W/POLYPROPYLENE BASEPLATE

## SELF-PRIMING CENTRIFUGAL PUMPS FOR TRANSFER AND RECIRCULATION OF:

### CHEMICAL SOLUTIONS / WASTE TREATMENT PHOTOGRAPHIC SOLUTIONS (*inorganic*)

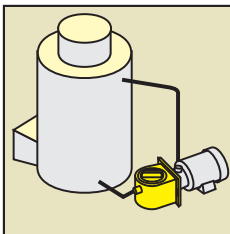
- Flows to 100 U.S. GPM or 73 ft. TDH @ 60 Hz (315 LPM or 15m @ 50 Hz)
- Noryl® or Ryton® construction with 316 SS internal hardware (See a chemical resistance chart)
- Non-metallic solution contact available
- Will reprime to 15 feet (4.6m)\*
- Close coupled - electric motor driven
- Shaft sleeve is same material as pump Isolates pump shaft from solutions.
- Combination 2" O.D. MNPT x 1½" I.D. FNPT connections

The Self-Priming Series 'G' Pump is made in either Noryl or Ryton, providing a maximum range of chemical resistance. It is available with 316 stainless steel, internal hardware or completely non-metallic solution contact. The pump comes standard with 304 stainless external hardware. The pump is protected with a basket-type strainer in either polypropylene or ECTFE. The large cover makes initial priming and removal of the strainer quick and easy. The cover is the same material as the pump or it can be ordered in clear Lexan® (PCN 64-1818 90). A polypropylene baseplate is included with close-coupled electric

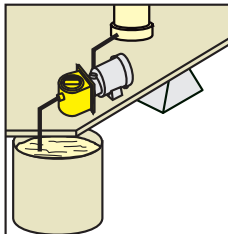
drive pumps. After initial prime, the Series 'G' Pump will lift up to 15 vertical feet (4.6m) and will remain primed even after shutdown. This pump also features an open, non-clogging impeller which is molded in conjunction with the shaft sleeve, thus isolating the shaft from solution contact.

The self-priming ability, chemical resistance, light weight and basket strainer make this an ideal pump for chemical transfer, waste treatment, emergency/backup or filtering.

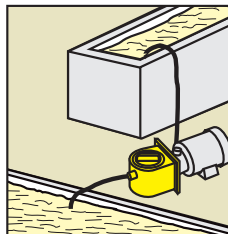
\* Based on water-like liquids @ 70°F and 60 Hz (3450 RPM) operation after initial priming of pump housing.



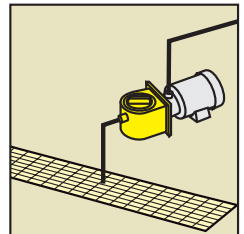
RECIRCULATION OF  
COOLING TOWERS, MIXING  
VATS



FILTRATION



LIFTING FROM PONDS,  
TANKS, SUMPS, PITS



EMERGENCY STANDBY

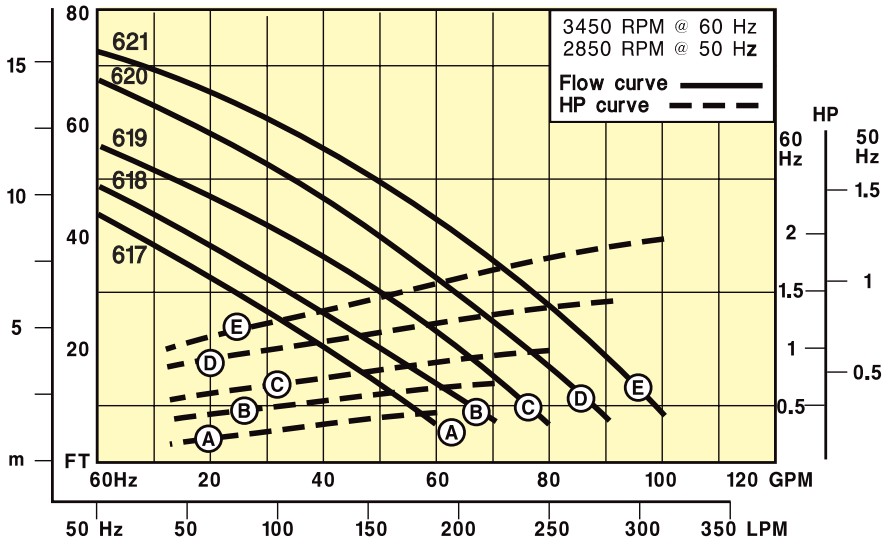




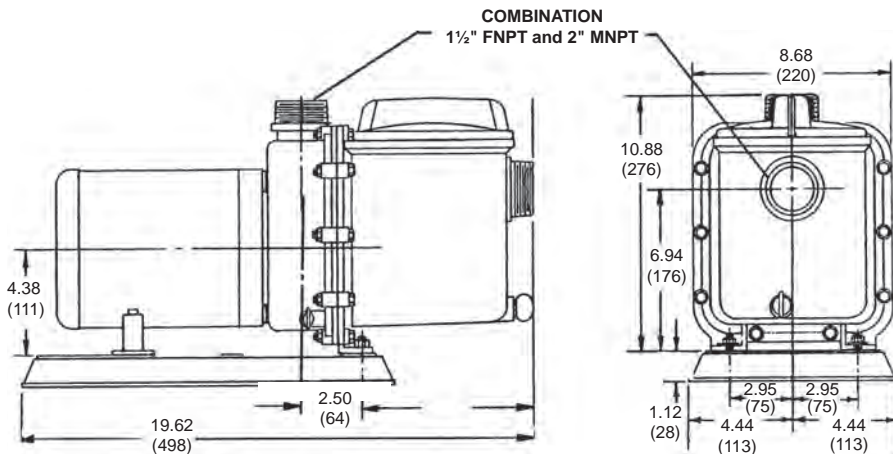
**SERIES 'G' HORIZONTAL PUMPS Specifications**

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All data based on water (specific gravity = 1.0).  
Impeller part numbers marked on curves.



**DIMENSIONS Inches (mm)**



Ports have dual thread —  
1½" FNPT and 2" MNPT on both suction and discharge.





**SERIES 'G' HORIZONTAL PUMPS Ordering Information**

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**TO ORDER, use Price Code No.**

Identify flow curve on graph that corresponds to desired performance and choose from Noryl or Ryton pumps below. Order non-metallic pump for fluids that might attack metal internals. (See a chemical resistance chart.) Required horsepower is based on water @ 1.0 specific gravity. To determine required

HP for liquids of specific gravity greater than 1.1, select performance point on flow curve, move vertically to corresponding HP curve and then horizontally to HP scale. Multiply indicated HP by specific gravity and select motor accordingly.

**Choose from:**

- A** Pumps molded of glass-reinforced Noryl with polypropylene basket strainer, ethylene propylene elastomers, 316 stainless steel internal hardware, 304 stainless steel external hardware, carbon ceramic and 316 stainless steel mechanical seal.
- B** Same as **A** but with non-metallic solution contact and ECTFE / EPDM / siliconized-graphite non-metallic mechanical seal.

- C** Pumps molded of glass-reinforced Ryton with ECTFE basket strainer, Viton elastomers, 316 stainless steel internal hardware, 304 stainless steel external hardware, carbon-ceramic and 316 stainless steel mechanical seal.
- D** Same as **C** but with non-metallic solution contact and ECTFE / Viton / siliconized-graphite non-metallic mechanical seal.

**SERIES 'G' PUMPS with electric drive, close coupled**

FLOW CURVE	PORT SIZE	MAXIMUM FLOW RATE	MAX. TDH	REQUIRED HP	A NORYL		B NON-METALLIC		CLOSE-COUPLED ELEC. MOTOR			
					MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.	ADD TO MODEL NUMBER & PRICE CODE NUMBER			
									115-230V/1/50-60	230-460V/3/50-60		
NPT	GPM @ 60 Hz (LPM @ 50 Hz)	ft. @ 60 Hz (m @ 50 Hz)	60 Hz (50 Hz)					ODP	TEFC	ODP	TEFC	
A	Comb. 1½" F and 2" M	60 (204)	44 (9)	.5 (.3)	GNOK1½/2AL-	60-61A4-	GNOK1½/2ALN-	60-61A9-	K.5C	C.5C	T.5C	D.5C
B		70 (223)	49 (10)	.75 (.4)	GNOK1½/2BL-	60-61B4-	GNOK1½/2BLN-	60-61B9-	K.75C	C.75C	T.75C	D.75C
C		80 (246)	57 (12)	1.0 (.6)	GNOK1½/2CL-	60-61C4-	GNOK1½/2CLN-	60-61C9-	K1.0C	C1.0C	T1.0C	D1.0C
D		90 (288)	68 (14)	1.5 (.9)	GNOK1½/2DL-	60-61D4-	GNOK1½/2DLN-	60-61D9-	K1.5C	C1.5C	T1.5C	D1.5C
E		100 (330)	73 (15)	2.0 (1.2)	GNOK1½/2EL-	60-61E4-	GNOK1½/2ELN-	60-61E9-	K2.0C	C2.0C	T2.0C	D2.0C
									K3.0C *	C3.0C *	T3.0C	D3.0C

(A) Noryl — For Viton elastomers, change 4 to 1 in Price Code Number and L to V in Model Number.

(B) Non-metallic — For Viton elastomers, change 9 to 8 in Price Code Number and LN to VN in Model Number.

\* 230V / 1 / 60 Hz

FLOW CURVE	PORT SIZE	MAXIMUM FLOW RATE	MAX. TDH	REQUIRED HP	C RYTON		D NON-METALLIC		CLOSE-COUPLED ELEC. MOTOR			
					MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.	ADD TO MODEL NUMBER & PRICE CODE NUMBER			
									115-230V/1/50-60	230-460V/3/50-60		
NPT	GPM @ 60 Hz (LPM @ 50 Hz)	ft. @ 60 Hz (m @ 50 Hz)	60 Hz (50 Hz)					ODP	TEFC	ODP	TEFC	
A	Comb. 1½" F and 2" M	60 (204)	44 (9)	.5 (.3)	GRYK1½/2AV-	60-81A1-	GRYK1½/2AVN-	60-81A8-	K.5C	C.5C	T.5C	D.5C
B		70 (223)	49 (10)	.75 (.4)	GRYK1½/2BV-	60-81B1-	GRYK1½/2BVN-	60-81B8-	K.75C	C.75C	T.75C	D.75C
C		80 (246)	57 (12)	1.0 (.6)	GRYK1½/2CV-	60-81C1-	GRYK1½/2CVN-	60-81C8-	K1.0C	C1.0C	T1.0C	D1.0C
D		90 (288)	68 (14)	1.5 (.9)	GRYK1½/2DV-	60-81D1-	GRYK1½/2DVN-	60-81D8-	K1.5C	C1.5C	T1.5C	D1.5C
E		100 (330)	73 (15)	2.0 (1.2)	GRYK1½/2EV-	60-81E1-	GRYK1½/2EVN-	60-81E8-	K2.0C	C2.0C	T2.0C	D2.0C
									K3.0C *	C3.0C *	T3.0C	D3.0C

(C) Ryton — For EPDM elastomers, change 1 to 4 in Price Code Number and V to L in Model Number.

(D) Non-metallic — For EPDM elastomers, change 8 to 9 in Price Code Number and VN to LN in Model Number.

\* 230V / 1 / 60 Hz

**Consult Sales Department for pedestal mounted, long coupled, pneumatic driven or engine driven models.**



# SERIES 'S' SELF-PRIMING CENTRIFUGAL PUMPS

129

P-630\_C

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## SELF-PRIMING CENTRIFUGAL PUMPS FOR TRANSFER AND RECIRCULATION OF:

### **CHEMICAL SOLUTIONS WASTE TREATMENT ACIDS / INDUSTRIAL LIQUIDS**



**CLOSE-COUPLED  
ELECTRIC**

*Also available as long coupled,  
pedestal mounted pump.  
(Consult Sales Department.)*

- **Flows to 270 U.S. GPM or 120 ft. TDH @ 60 Hz**  
(To 845 LPM or 25.0m TDH @ 50 Hz)
- **Choice of materials -**  
Glass reinforced polyester, polypropylene or Ryton® with 316 SS internal hardware  
(See a Chemical Resistant chart)
- **Non-metallic solution contact models available**
- **Will reprime to 25 ft. (7.6m) vertical\***
- **Close-coupled**  
- electric motor driven
- **Built-in check valve**
- **BSP threads available on polyester models**

5

The **Series 'S' Self-Priming Centrifugal Pump** is a chemically resistant pump for general service on water, salt water, mild acids and bases. It is offered in a choice of glass reinforced polyester, polypropylene or Ryton® construction to provide a maximum range of chemical resistance. It is available with a choice of elastomers and 316 stainless steel internal hardware or with completely non-metallic solution contact. The pump comes standard with 304 stainless external hardware.

All pumps include a built-in check valve and feature a self-cleaning double volute which allows the Series 'S' pump to self prime and lift to 25 ft.

The self priming capability and chemical resistance make this an ideal chemical transfer, waste treatment, and emergency / backup pump.

\* Based on water-like liquids at 70°F and at 3450 RPM after initial priming of pump housing.



**WASTE TREATMENT**

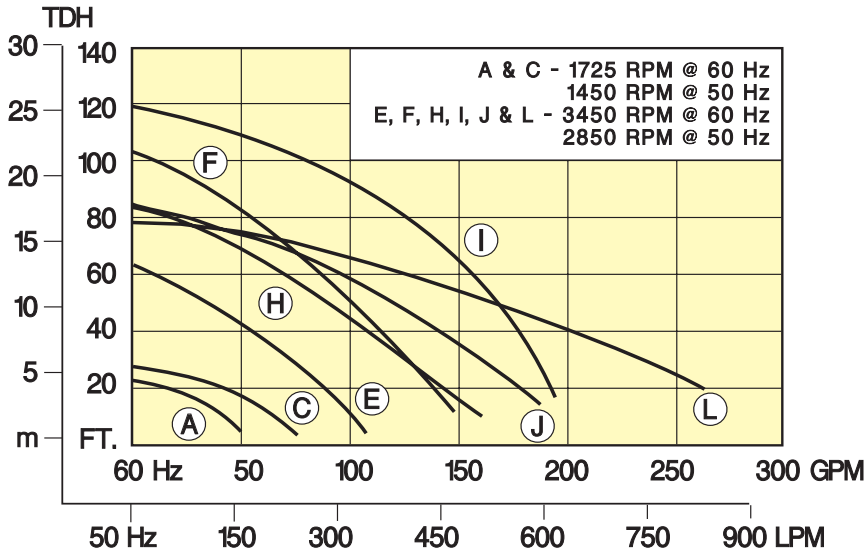


**SOLUTION TRANSFER**



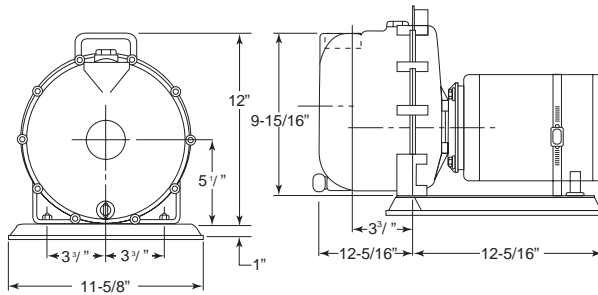
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**ELECTRIC MOTOR DRIVE**

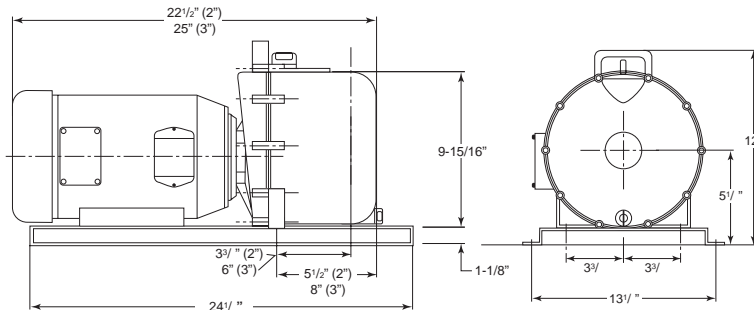


**DIMENSIONS**

**1½" & 2" Pumps  
to 3.0 HP  
(3 phase)**



**2" & 3" Pumps  
5.0 HP  
(3 phase)**





**SERIES 'S' PUMPS Ordering Information**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431

**TO ORDER, Use Price Code**

**TABLE I**

*Pump molded of glass reinforced polyester with 316 stainless steel internal fasteners, 304 SS external fasteners, EPDM "O"-rings and gasket, check valve, polypropylene baseplate, close coupled electric motor.*

FLOW	PORT SIZE	MAX. FLOW RATE		MAX. TDH		MAX. HP REQ'D		MODEL NUMBER	PRICE CODE NUMBER	ELECTRIC MOTOR 60 Hz		
		IN.	GPM @ 60 Hz	LPM @ 50 Hz	FT. @ 60 Hz	m @ 50 Hz	60 Hz /RPM			50 Hz /RPM	ADD TO MODEL & PRICE CODE NO . . .	
											115/230V/1/60	230/460V/3/60
										TEFC	TEFC	
A	1 1/2	50	157	22	4.4	0.5/1750	0.3/1450	SE1 1/2AL-	64-11A4-	G.5C	H.5C	
C	1 1/2	70	219	27	5.6	1.0/1750	0.6/1450	SE1 1/2CL-	64-11C4-	G1.0C	H1.0C	
E	2	110	344	62	13.0	1.4/3450	0.8/2850	SE2EL-	64-12E4-	C2.0C	D2.0C	
F	2	150	471	105	21.9	3.0/3450	1.7/2850	SE2FL-	64-12F4-	--	D5.0C	
H	2	155	485	82	17.1	2.6/3450	1.5/2850	SE2HL-	64-12H4-	--	D3.0C	
I	2	195	610	120	25.0	5.0/3450	2.8/2850	SE2IL-	64-12I4-	--	D5.0C	
J	2	185	579	83	17.3	4.0/3450	2.3/2850	SE2JL-	64-12J4-	--	D5.0C	
L	3	270	845	79	16.5	5.0/3450	2.8/2850	SE3LL-	64-13L4-	--	D5.0C	

**TABLE II**

*To determine pump-motor for a selected GPM and/or TDH, first select the appropriate impeller from curve on the previous page. Use Table I to identify the part size for a given flow curve. Multiply HP req'd shown in Table I by specific gravity to determine motor size. Select pump materials. Then construct Model and Price Code Numbers.*

EXAMPLE:	PUMP	+	PORT	+	IMPELLER	+	SEAL	+	MOTOR	
MODEL	SE	+	2	+	E	+	L	+	-D2.0C	=SE2EL-D2.0C
PRICE CODE NO.	64-1	+	2	+	E	+	4	+	-D2.0C	=64-12E4-D2.0C

**PUMP**

PUMP	PRICE CODE NO.
SE (polyester)	64-1
SP (polypropylene) <sup>2</sup>	64-2
SY (Ryton)	64-3

**PORT + IMPELLER**

PORT SIZE - NPT <sup>1</sup>	IMPELLER	
	MODEL	PRICE CODE NO.
1 1/2	1	A,C
2	2	A,C,E,F,H,I,J
3	3	L

**SEAL, ELASTOMERS & INTERNAL FASTENERS**

DESCRIPTION	MODEL	PRICE CODE NO.
Viton w/316 stn. steel fasteners	V	1
Buna-N w/316 stn. steel fasteners	B	2
EPDM w/316 stn. steel fasteners	L	4
Non-metallic solution contact, EPDM	LN	88
Non-metallic solution contact, VITON	VN	99

**ELECTRIC MOTORS 60 Hz<sup>3</sup>**

HP	RPM	ADD TO MODEL & PRICE CODE NO . . .	
		115/230V/1/60	230/460V/3/60
		TEFC	TEFC
.5	1750	G.5C	H.5C
.75	1750	G.75C	H.75C
1.0	1750	G1.0C	H1.0C
1.5	1750	G1.5C	H1.5C
2.0	3450	C2.0	D2.0C
3.0	3450	--	D3.0C
5.0	3450	--	D5.0C

<sup>1</sup> For BSP threads, add **B** in 4th digit of Model No. and change Price Code No. from **1 to 4, 2 to 5, 3 to 6**. Note: Impeller designation now becomes the 5th digit of model number only for BSP pumps.

<sup>2</sup> Polypropylene pump includes Ryton volute.

<sup>3</sup> For 50 Hz operation consult Sales Department.





# SERIES 'SP' HORIZONTAL PUMPS

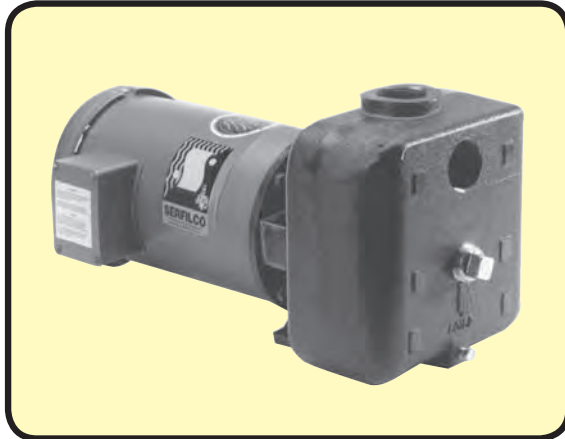
132

P-600\_C

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## Self-priming centrifugal pumps for transfer and recirculation of:

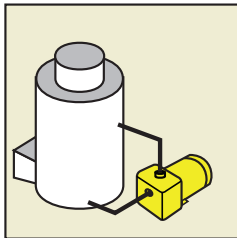
**CHEMICAL SOLUTIONS / WASTE TREATMENT  
AGRICULTURAL SOLUTIONS / GROUND WATER**



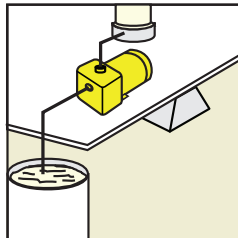
- Flows to 142 U.S. GPM or 90 ft. TDH @ 60 Hz (448 LPM or 19.1m @ 50 Hz)
- Cast iron – stainless fitted construction (See a chemical resistance chart)
- 316 SS impeller (semi-open design)
- Replaceable 316 stainless steel stub shaft
- Will reprime to 20 feet (6.1m)
- Back pull-out design

Self-priming Series 'SP' pumps are constructed of cast iron for dependable duty in a variety of applications. The pumps include a 316 stainless steel shaft, 316 stainless steel fasteners, synthetic fiber gaskets and cast iron mounting bracket. They feature a semi-open impeller which is also constructed of 316 stainless steel. Motors are standard NEMA 56C face, 3450 RPM @ 60 Hz or 2850 RPM @ 50 Hz, TEFC.

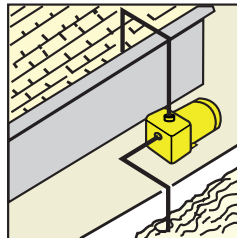
After initial prime, the Series 'SP' pump will lift up to 20 vertical feet (6.1m) and will remain primed even after shutdown. The self-priming ability, along with compact design, make Series 'SP' pumps ideal for chemical transfer, waste water treatment, emergency/backup or filter pumping.



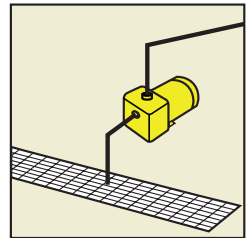
RECIRCULATION OF  
COOLING TOWERS,  
MIXING VATS



FILTRATION



LIFTING FROM PONDS,  
TANKS, SUMPS, PITS

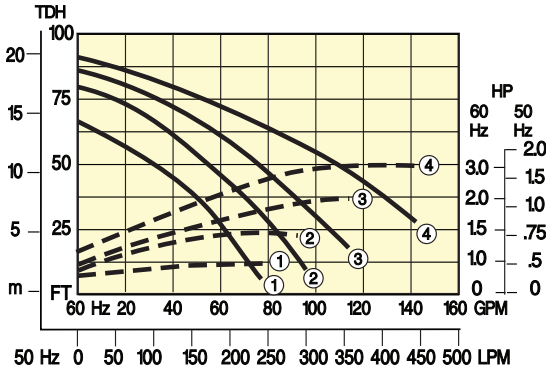


EMERGENCY STANDBY



2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

**TO ORDER, use Price Code Number**



**TABLE I**

Select pump-motor model from flow curve number providing the desired performance. Motor horsepower is non-overloading for 1.0 specific gravity and 60 Hz operation.

SP 150 PUMP-MOTOR (230-460V/3/60) TEFC		
FLOW CURVE NUMBER	MODEL NUMBER	PRICE CODE NUMBER
1	SP-150-1L(M1)-D1.0	61-0711C
2	SP-150-2L(M1)-D1.5	61-0721D
3	SP-150-3L(M1)-D2.0	61-0731E
4	SP-150-4L(M1)-D3.0	61-0741F

**TABLE II**

Determine pump-motor model for a specified GPM, TDH, mechanical seal and specific gravity. Select performance point on curve and size horsepower from corresponding numbered dotted line vertically above or below performance point.

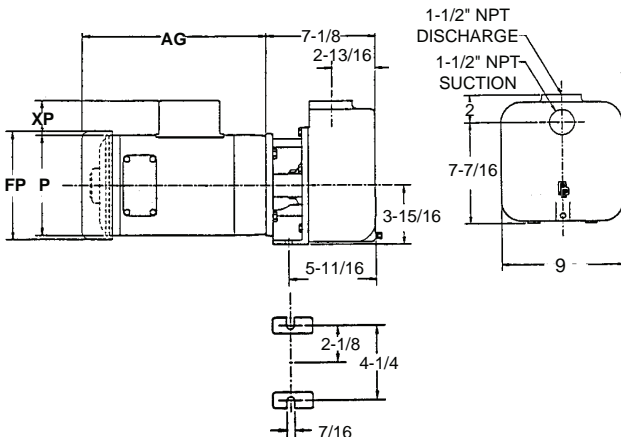
Read required horsepower at right ordinate and multiply by specific gravity. Select pump model components and Price Code Numbers from Table II.

PUMP		IMPELLER		"O"-RING & MECHANICAL SEAL		TEFC MOTOR (3450/2850)					
MODEL	PRICE CODE NO.	FLOW CURVE NUMBER	ADD TO . . .		ADD TO . . .		HP	SINGLE PHASE <sup>1</sup>		THREE PHASE <sup>1</sup>	
SP-150	61-07		MODEL	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.		ADD TO . . .		ADD TO . . .	
					MATERIAL (SOLUTION CONTACT)			MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
		1	1	1	EPDM, carbon, ceramic	L(M1)	1	-C1.0	A	-D1.0	C
		2	2	2	Viton®, carbon, ceramic	V(M2)	2	-C1.5	B	-D1.5	D
		3	3	3				2.0	-	-D2.0	E
		4	4	4				3.0	-	-D3.0	F

<sup>1</sup> Single phase - 115-208-230V/1/60 or 220-440V/1/50  
 Three phase - 208-230-460V/3/60 or 380-415V/3/50

For 50 Hz, add -50 to Model No. and add 5 to Price Code No.

**DIMENSIONS**



MOTOR HP	MOTOR END DIMENSIONS (Inches)			
	AG	FP	P	XP
3450 RPM 56C FRM				
1	9-3/4	7-3/16	6-7/8	2-1/16
1-1/2	10-1/2	7-3/16	6-7/8	2-1/16
2	11-1/8	7-3/16	6-7/8	2-1/16
3	12-3/8	7-3/16	6-7/8	2-1/16

Note: Motor dimensions will vary by model and make. Dimensions are to be used for reference only. All dimensions are rounded to the nearest sixteenth of an inch.

Specifications subject to change without notice.

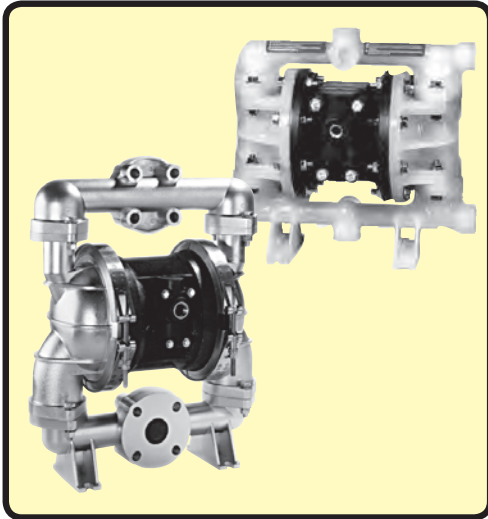




# AIR OPERATED DIAPHRAGM PUMPS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## PUMP ANYTHING THAT CAN POUR SAFELY AND RELIABLY



- **Wide selection of materials**  
SS - 316 stainless steel      PP - Polypropylene  
AL - Aluminum                      K - PVDF  
NSS - Conductive nylon      N - Nylon
- **Selection of diaphragms and elastomers**  
TF - Teflon (PTFE)  
N - Geolast/Nitrile  
L - Santroprene/EPDM  
V - Viton
- **Flows to 180 U.S. GPM (681 l/m)**  
1/4" - 2" sizes —
- **Patented lube-free air system**
- **Will not stall at slow speeds**
- **Self-priming**
- **Runs dry**

6

Here is a line of remarkably rugged and durable self-priming, double diaphragm pumps. Lube-free and non-stalling, all models will handle any product that pours, from clear water to highly viscous, abrasive and chemically aggressive materials. Proven to handle suspended solids and abrasives without damage to the product or the pump.

The unique pump design utilizes far fewer parts than other pumps on the market. This results in

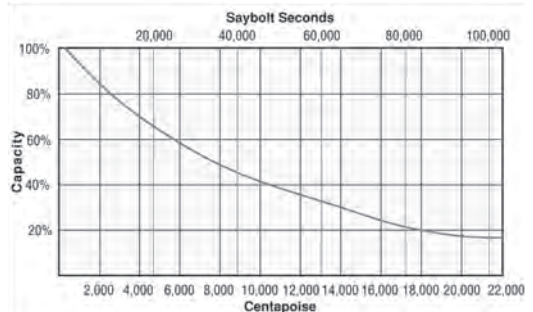
longer operating life and easier maintenance at a lower cost.

Since these pumps are driven by compressed air, there is no need for shielded electrical connections or explosion-proof motors. All models can run dry because there are no close fitting or sliding parts in the fluid section. Flow rates can be controlled to produce from zero to maximum flow simply by increasing or decreasing air flow or pressure.

### INSTALLATION

1. A lube-free, clean, dry compressed air source (or any non-flammable, compressed gas) is recommended. Use a filter that is capable of filtering out particles larger than 50 microns.
2. Pumps should be mounted in an upright position with the exception of 1/4" models which may be rotated 360° to suit the application.
3. Install a particle fluid filter on the fluid suction line when particles in the fluid exceed the maximum particle size specification of the pump or particles are sharp enough to cut the diaphragms.
4. Never restrict fluid suction lines by means of reduced pipe size (smaller than pump inlet size) or control the pump with valves on the fluid inlet side of the pump.
5. Limit fluid inlet pressure to 10 PSIG or (.68 BAR)

### HIGH VISCOSITY APPLICATIONS





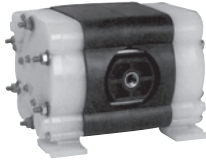


# AIR OPERATED DIAPHRAGM PUMP Specifications (Cont'd)

P-605\_U

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## 1/4" BOLTED

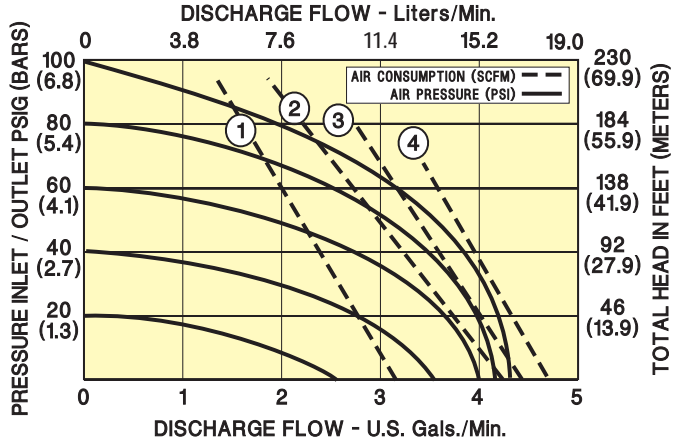


### SPECIFICATIONS

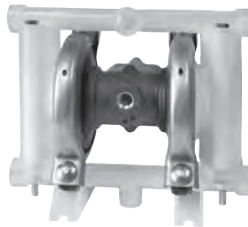
Capacity:  
 Adjustable ..... 0-4.3 GPM (16 liters/min.)  
 Maximum temperature:  
 PVDF ..... 200°F  
 (93°C)  
 Other models ..... 150°F (66°C)  
 Maximum air pressure:  
 All Models ..... 100 PSI (6.8 bars)  
 Dry lift capacity @ 100 PSI (6.8 bars): ..... 15 ft. (4.5 meters)  
 Maximum solids: ..... 1/16" (1.6 mm)  
 Air supply:  
 Inlet ..... 1/4" FNPT  
 Outlet ..... 1/4" FNPT  
 Fluid inlet / discharge: ..... 1/4" FNPT

### PLASTIC MODELS:

PPBN-1/4 PPBTF-1/4 PPBL-1/4 NSSBTF-1/4  
 NBTF-1/4 KBTF-1/4 KBL-1/4



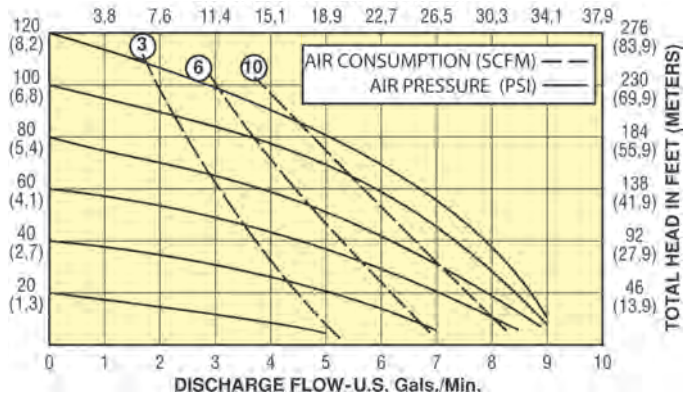
## 3/8" BAND CLAMP



### PLASTIC MODELS:

PPN-3/8 PPTF-3/8N SSTF-3/8  
 KTF-3/8 KL-3/8

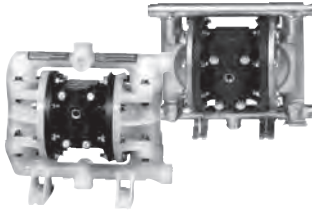
Capacity:  
 Adjustable ..... 0 - 9 GPM (34.0 liters/min.)  
 Maximum temperature:  
 PVDF model ..... 200°F (93°C)  
 Other models ..... 150°F (66°C)  
 Maximum air pressure:  
 All Models ..... 120 PSI (8.2 bars)  
 Dry lift capacity  
 Models w. PTFE Balls ..... 10ft (3 meters)  
 Models with Max-Pass™ valves ..... 17 ft (5.2 meters)  
 Maximum solids:  
 Max-Pass™ ..... 1/4" (6.4mm)  
 PPTF, NSSSTF, KTF: ..... 1/16" (3.2 mm)  
 Air supply:  
 Inlet ..... 1/4" FNPT  
 Outlet ..... 3/8" FNPT  
 Fluid inlet / discharge: ..... 3/8" FNPT





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**1/2" BOLTED**



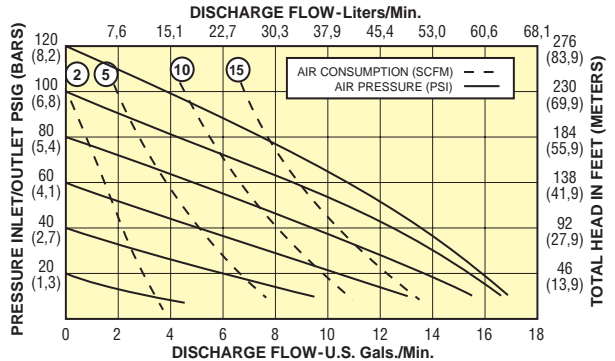
**PLASTIC MODELS: PPBN-1/2, PPBTf-1/2, PPBL-1/2, PPBV-1/2, NBTF-1/2, KBTF-1/2, KBL-1/2, KBV-1/2, NSSBTf-1/2**

**METALLIC MODELS: ALBN-1/2, ALBTf-1/2, ALBL-1/2, SSBTf-1/2, SSBL-1/2, SSBN-1/2**

**SPECIFICATIONS**

- Capacity:
  - Adjustable ..... 0-17 GPM (64.6 liters/min.)
- Maximum temperature:
  - PVDF, AL and SS models .....200°F (93°C)
  - Other models .....150°F (66°C)
- Minimum air pressure: .....20 PSI (1.4 bar)
- Maximum air pressure: .....120 PSI (8.0 bars)
- Dry lift capacity @ 120 PSI (8.0 bars): .....10 ft. (3 meters)
- Maximum solids: .....1/8" (3.2 mm)
- Air supply: .....1/4" FNPT
- Fluid inlet / discharge: .....1/2" FNPT  
(FBSP available. Specify when ordering.)

<sup>1</sup> Stock models have a side port. Optional center, top or dual ports must be specified when ordering. Fluid is not separated within the single piece manifold when dual ports are specified.



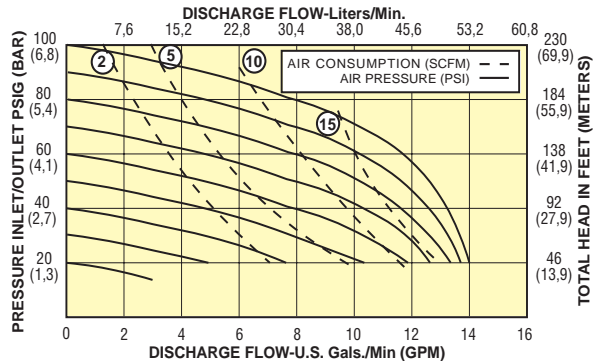
**1/2" BAND CLAMP**



**SPECIFICATIONS**

- Capacity:
  - Adjustable .....0 - 14 GPM (53.2 liters/min.)
- Maximum temperature:
  - PVDF model .....200°F (93°C)
  - Other models .....150°F (66°C)
- Minimum air pressure: .....20 PSI (1.4 bars)
- Maximum air pressure: .....100PSI (6.8 bars)
- Dry lift capacity @ 100 PSI (6.8 bars): .....10 ft. (3 meters)
- Maximum solids: .....1/8" (3.2 mm)
- Air supply: .....1/4" FNPT
- Fluid inlet / discharge: .....1/2" FNPT

**PLASTIC MODELS: PPN-1/2, PPTf-1/2, PPL-1/2, KTF-1/2**





# AIR OPERATED DIAPHRAGM PUMP Specifications (cont'd)

P-605\_U

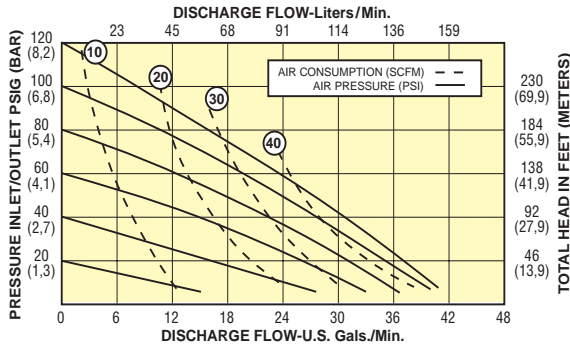
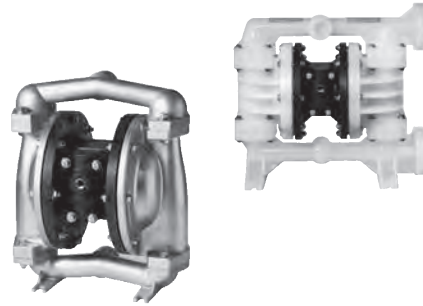
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**1"**

## BOLTED

**PLASTIC MODELS:** PPBN-1, PPBF-1, PPBL-1, PPBV-1  
KTBF-1, KBL-1, KBV-1

**METALLIC MODELS:** ALBN-1, ALBTF-1, ALBL-1,  
SSBTF-1, SSBL-1, SSBN-1



## SPECIFICATIONS

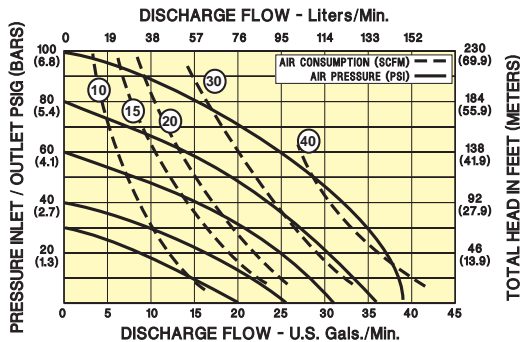
- Capacity: Adjustable ..... 0 to 41 GPM (156 liters/min.)
- Maximum temperature:
  - PVDF, AL and SS models ..... 200°F (93°C)
  - Other models ..... 150°F (66°C)
- Minimum air pressure: ..... 20 PSI (1.4 bar)
- Maximum air pressure: ..... 120 PSI (8.0 bars)
- Dry lift capacity @ 120 PSI (8.0 bars):
  - Models w/TFE balls ..... 10 ft. (3 meters)
  - Other models ..... 15 ft. (4.5 meters)
- Maximum solids: ..... 1/4" (6.4 mm)
- Air supply:
  - Inlet ..... 1/4" FNPT
  - Outlet ..... 3/8" FNPT
- Fluid inlet / discharge:
  - Plastic Models ..... 1" Flange ANSI/DIN compatible
  - Metallic Models ..... 1" NPT

**1"**

## BAND CLAMP



**PLASTIC MODELS:** PPN-1, PPTF-1, PPL-1,  
KTF-1,



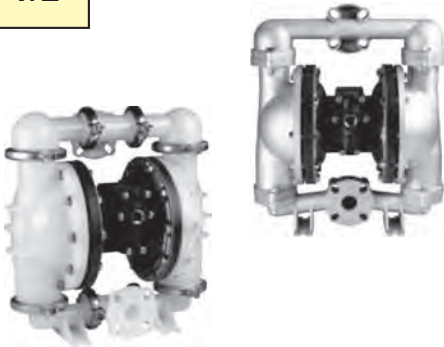
## SPECIFICATIONS

- Capacity: Adjustable.. 0 to 40 GPM (152 liters/min.)
- Maximum temperature:
  - PVDF model ..... 200°F (93°C)
  - Other models ..... 150°F (66°C)
- Maximum air pressure:
  - PVDF model ..... 70 PSI (4.8 bars)
  - Other models ..... 100 PSI (6.8 bars)
- Dry lift capacity @ 100 PSI (6.8 bars):
  - Models w/TFE balls ..... 10 ft. (3 meters)
  - Other models ..... 15 ft. (4.5 meters)
- Maximum solids: ..... 1/4" (6.4 mm)
- Air supply:
  - Inlet ..... 1/4" FNPT
  - Outlet ..... 3/4" FNPT  
(Air flow control valve on plastic pumps,  
1/4" FNPT)
- Fluid inlet / discharge: ..... 1" FNPT



**1-1/2"**

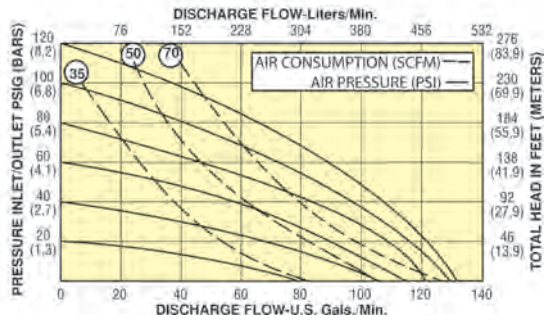
**BOLTED**



- PLASTIC MODELS:** PPBN-1 1/2, PPBF-1 1/2, PPBL-1 1/2, KBTF-1½, KBL-1½
- METALLIC MODELS:** ALBN-1 1/2, ALBF-1 1/2, ALBL-1 1/2, SSBTF-1 1/2, SSBL-1 1/2, SSBN- 1 1/2

**SPECIFICATIONS**

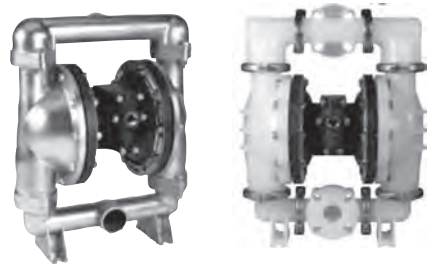
- Capacity:**  
Adjustable 0 to 130 GPM (492 liters/min.)
- Maximum temperature:**  
PVDF, AL & SS models.....200°F (93°C)  
Other models.....150°F (66°C)
- Minimum air pressure:**.....20 PSI (1.2 bars)
- Maximum air pressure:**  
All model.....120 PSI (8.2 bars)
- Dry lift capacity @ 100 PSI (6.8 bars):**  
Model w/PTFE balls.....10 ft. (3 meters)  
Other Models.....15 ft. (4.5 meters)
- Maximum solids:**.....1/4" (6.4 mm)
- Air supply:**  
Inlet.....3/4" FNPT  
Outlet.....3/4" FNPT  
(Air flow control valve on plastic pumps, 3/4" FNPT)
- Fluid inlet / discharge:**  
All Models.....1½" flange (38 mm)  
(ANSI & DIN compatible)



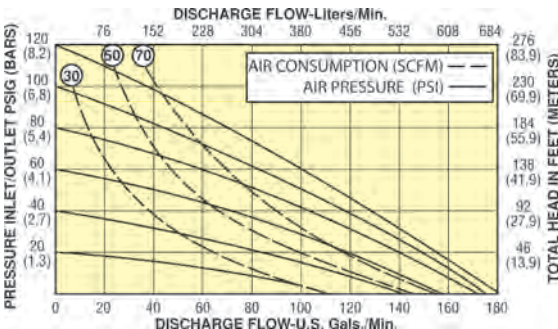
**2"**

**BOLTED**

- PLASTIC MODELS:** PPBN-2, PPBF-2, PPBL-2, KTBF-2, KBL-2
- METALLIC MODELS:**ALBN-2, ALBF-2, ALBL-2, SSBTF-2, SSBL-2, SSBN-2



**SPECIFICATIONS**



- Capacity:**  
Adjustable..0 to 180 GPM (681 liters/min.)
- Maximum temperature:**  
PVDF, AL & SS models.....200°F (93°C)  
Other models.....150°F (66°C)
- Minimum air pressure:**..... 20 PSI (1.3 bars)
- Maximum air pressure:**  
All model.....120 PSI (8.2 bars)
- Dry lift capacity @ 100 PSI (6.8 bars):**  
Models w/PTFE balls.....10 ft. (3 meters)  
Other Models.....15 ft. (4.5 meters)
- Maximum solids:**.....1/4" (6.4 mm)
- Air supply:**  
Inlet .....3/4" FNPT  
Outlet .....3/4" FNPT  
(Air flow control valve on plastic pumps, 3/4" FNPT)
- Fluid inlet / discharge:**  
Plastic Models.....2" flange (51mm)  
(ANSI & DIN compatible)  
Metal Models.....2" NPT Female



**AIR OPERATED DIAPHRAGM PUMP Specifications (cont'd)**

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**TO ORDER, Use Price Code No.**

**BOLTED MODELS**

MODEL NUMBER *	MATERIAL OF CONSTRUCTION		PRICE CODE NUMBER				
	WETTED HOUSINGS**	DIAPHRAGM ELASTOMERS/ VALVE SEATS**	1/4"	1/2"	1"	1 1/2"	2"
			0-4 GPM (16 l/m)	0-14 GPM (65 l/m)	0-41 GPM (156 l/m)	0-130 GPM (492 l/m)	0-180 GPM (681 l/m)
PPBN- * PPBTF- * PPBL- * PPBV- *	Polypropylene Polypropylene Polypropylene Polypropylene	Geolast® / Nitrile PTFE Santoprene® / EPDM Viton	55-7244B 55-7245 55-7270 —	55-7287 55-7288 55-7289 55-7290	55-7602 55-7603 55-7604 55-7605	55-7615 55-7616 55-7617 —	55-7626 55-7627 55-7628 —
NBTF- *	Nylon	PTFE	55-7246	55-7291	—	—	—
NSSBTF- *	Conductive Nylon	PTFE	55-7271	55-7292	—	—	—
KBTF- * KBL- * KBV- *	PVDF PVDF PVDF	PTFE Santoprene® / EPDM Viton	55-7247 55-7286 —	55-7293 55-7294 55-7295	55-7606 55-7607 55-7608	55-7618 55-7619 —	55-7629 55-7630 —
ALBN- * ALBTF- * ALBL- *	Aluminum Aluminum Aluminum	Geolast® / Nitrile PTFE / nylon Santoprene® / EPDM / PP	— — —	55-7296 55-7297 55-7298	55-7609 55-7610 55-7611	55-7620 55-7621 55-7622	55-7631 55-7632 55-7633
SSBTF- * SSBL- * SSBN- *	Stainless steel Stainless steel Stainless steel	PTFE Santoprene® / EPDM Geolast® / Nitrile	— — —	55-7600 55-7601 55-7299	55-7612 55-7613 55-7614	55-7623 55-7624 55-7625	55-7634 55-7635 55-7636

\* Insert pump size to complete Model Number: i.e. PPBN - 1/4

\*\* See Material notes on page 7



**BAND CLAMP MODELS**

MODEL NUMBER *	MATERIAL OF CONSTRUCTION		PRICE CODE NUMBER		
	WETTED HOUSINGS**	DIAPHRAGM ELASTOMERS/ VALVE SEATS**	3/8"	1/2"	1"
			0-9 GPM (34 l/m)	0-14 GPM (53 l/m)	0-40 GPM (152 l/m)
PPN- * PPTF- * PPL- *	Polypropylene Polypropylene Polypropylene	Geolast® / Nitrile PTFE Santoprene® / EPDM	55-7637 55-7638 55-7639	55-7120B 55-7118A 55-7248	55-7144B 55-7145A 55-7249
NSSTF- *	Conductive Nylon	PTFE	55-7640	—	—
KTF- * KL- *	PVDF PVDF	PTFE Santoprene® / EPDM	55-7641 55-7642	55-7110A —	55-7147A —

\* Insert pump size to complete Model Number: i.e. PPN-1/2

\*\* See Material notes on Page 7



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**AIR OPERATED DIAPHRAGM PUMP Specifications and ordering information**

**Material notes:**

1. Geolast is a nitrile blend and is a replacement for Buna-N or Neoprene®. Use chemical resistance information for Buna-N.
2. Santoprene is an EPDM blend and is highly resistant to some acids and bases. Use the chemical resistance information for EPDM.
3. Aluminum pumps have polypropylene valve seats, except aluminum w/ TFE models which have nylon valve seats.
4. All pumps built with TFE contain a backup diaphragm of Santoprene.
5. NSSTF pumps are constructed of 316SS filled nylon and include ground / bond lugs.
6. Air system constructed of polypropylene, except nylon and aluminum w/TFE models which have nylon air systems.

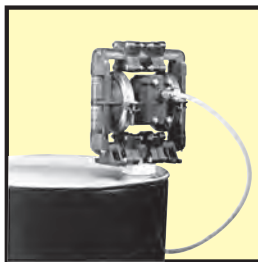
**General product notes:**

1. All pumps are lube-free and non-stalling. A clean, dry compressed air supply is all that is needed.
2. BSP thread models available. Consult Sales Department.
3. Flanges, available on 1½" and 2" sizes only, are slotted for DIN or ANSI compatibility.

**SHIPPING WEIGHTS**

HOUSING MATERIAL	SHIPPING WEIGHT LBS (kg)						
	1/4"	3/8"	1/2"	1" BOLTED	1" CLAMP	1-1/2"	2"
Polypropylene, Nylon	5 (2.3)	4 (1.7)	9 (4.1)	20 (9.1)	19 (8.6)	46 (21)	48 (22)
Conductive Nylon, PVDF	7 (3.2)	5 (2.3)	12 (5.4)	30 (13.7)	22 (9.9)	65 (29)	69 (31)
Aluminum	—	—	10 (4.5)	23 (10.5)	—	60 (27)	61 (28)
Stainless Steel	—	—	19 (8.6)	45 (20.4)	—	133 (60)	133 (60)

**OPTIONAL EQUIPMENT**



**ACCESSORY KIT for drum transfer applications**  
Turns diaphragm pump into an ideal drum pump.

Includes: 39" polypropylene or PVDF suction tube with 2" NPT polypropylene barrel adapter.

PUMP SIZE	PRICE CODE NUMBER		
	PP	PVDF	AL
1/2"	44-7236	44-7239	44-7628
1"	44-7237	44-7240	—

**AIR PRESSURE REGULATOR**

Tamper-proof design with special removable key. Maximum inlet pressure is 250 PSIG. Outlet pressure range is 5 to 125 PSIG.

INLET FNPT	CFM @ 100 PSI	PRICE CODE NO.
1/4"	20	79-0305
1/2"	50	79-0306
3/4"	120	79-0307

**REPAIR KIT**

Typically includes ball and valve seats manifold O-rings and diaphragms (may vary depending on model)

**PRICE CODE NUMBER**

Add -k to pump price code number

**GROUND-BOND CABLE KIT**

Pumping of flammable or combustible liquids from one container to another requires proper grounding and bonding to prevent static discharge and explosion hazard. Only for use with metal or conductive pumps.

DESCRIPTION	PRICE CODE NO.
Ground cables, 2-6ft Bond cable, 10 ft Ground cable, 1 ft	55-0247





# SERIES 'A', 'AA', 'B' & 'C' METERING PUMPS

142

P-607\_R

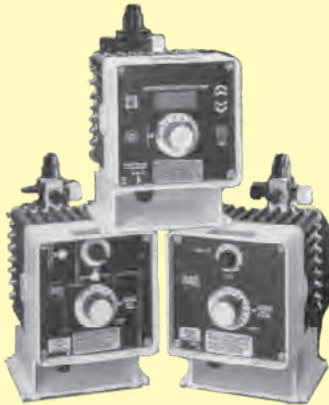
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## PRECISE CHEMICAL ADDITION FOR:

**COOLING TOWERS, BOILERS, PLATING,  
CONDENSERS, RUST INHIBITORS,  
WASTE TREATMENT, WATER TREATMENT,  
BIOCIDES AND PH / ORP ADJUSTMENTS**



**SERIES 'A' AND 'AA'**  
0 - 48 GPD



**SERIES 'B' & 'C'**  
0 - 600 GPD

- **Wide model selection**
  - Capacities to 25 GPH
  - Choice of control options
  - Standard and optional liquid ends to meet any application
- **Encapsulated electronics**

Pump electronics are enclosed in housing of corrosion-resistant polypropylene, protecting the pump from spilled chemical and corrosive atmosphere.
- **Pump status LED**

Provides visual indicator of pump operation
- **Capable of handling —**

Acids	Soaps	Wetting Agents
Caustics	Brighteners	Inhibitors
Flocculents	Detergents	Filter Aids
Chlorine	Dyes	...and many more
- **Inherent pressure relief**

Should the back pressure exceed the strength of the magnetic force developed by the power coil, the pump will stop stroking, preventing any damage and eliminating the need for a pressure relief valve.
- **Saves you money**

Power used only during discharge portion of each stroke. Minimum electrical consumption and low heat.
- **Low maintenance**

One moving unit, the armature-diaphragm assembly. No lubrication required. Modular construction provides easy replacement of components and major assemblies.
- **Free installation kit included**

Contains essential components for installation:  
Polyethylene suction & discharge tubing  
Foot valve & strainer  
Injection check valve
- **UL Listed      CE compliant**





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**CONTROL OPTIONS**

**INTERNAL CONTROL, Series A1, B1, C1**

These pumps offer the versatility of independently adjustable stroke length and stroke frequency, allowing dual manual control of pump output.

**SERIES 'A' — .003 to 2.0 GPH (.17 to 126 ml/M)**

Series A\_4, A\_5 and A\_6 provide output ranges of 100:1.

Series A\_1 provides output ranges of 83:1.

**SERIES 'B' & 'C' — .008 to 25 GPH (.05 to 1578 ml/M)**

Series B and C provide output ranges of 100:1.

**INTERNAL / EXTERNAL CONTROL, Series A7, B7, C7**

These metering pumps offer the versatility of a selector switch for either internal (manual) or external (automatic) control. Perfect for proportional treatment installations, or for use with the A/D converter or ampere-time meters where pump stroke frequency must vary linearly in response to plating ampere-hours. These pumps respond to any external

switch closure, providing automatic stroke frequency control or proportional feeding. Series B7 & C7 also include adjustable electronic pressure control as a standard feature. This reduces the electrical load to the solenoid based on pump pressure required.

**MICROPROCESSOR CONTROL, Series AA9, B9, C9**

These are programmable electronic pumps featuring microprocessor-based control which employs an LCD display and a 4-key tactile keypad. They also come with continuous memory back-up which insures the integrity of your programmed values in the event of a power failure and keypad adjustable pressure control which reduces noise, shock and vibration during operation. The pump can be run in either manual / external mode select (0-100 sph or 1-100 spm) or external modes of 4-20 mA input control, both direct or inverse. It can also multiply or divide incoming pulses from a voltage free reed switch, transistor, opto-coupler or Hall Effect sensor.

**SERIES 'A' & 'AA'**

MODEL & PRICE CODE NO.			TUBING SIZE	OUTPUT GPH		OUTPUT ml/min.		MAXIMUM PRESSURE
INTERNAL CONTROL	INTERNAL/EXTERNAL CONTROL	MICROPROCESSOR CONTROL	Inches	MIN.	MAX.	MIN.	MAX.	PSI (Bar)
A111-915NI	A711-915NI		1/4	.003	.25	.17	17	250 (17.3)
A141-915NI	A741-915NI	AA941-455NI	1/4	.005	.5	.33	33	250 (17.3)
A151-925NI	A751-925NI	AA951-495NI	3/8	.01	1.0	.63	63	110 (7.6)
A161-935NI	A761-935NI	AA961-465NI	3/8	.02	2.0	1.26	126	50 (3.4)

<b>Voltage -- Standard</b>	120 V / 1 / 50-60
<b>Optional</b>	240 V / 1 / 50-60 (To order, change 3rd digit in Price Code No. from 1 to 2)
<b>Average input power</b>	22 watts
<b>Maximum Dimensions</b>	9.25"L x 4.05"W x 8"H (235 x 103 x 203mm)
<b>Suction Lift</b>	4 feet (1.2 m)

<b>Liquid end -- Head &amp; Fittings</b>	Polypropylene
<b>Balls</b>	Ceramic
<b>Diaphragm &amp; Seal Rings</b>	PTFE copolymers
<b>Stroke Length</b>	20% minimum
<b>Stroke frequency</b>	5 to 100 strokes per minute (adjustable)

*Consult Sales Department for optional liquid end selections.*





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**SERIES 'B' & 'C'**

**SERIES 'B'**

MODEL & PRICE CODE NO.			TUBING SIZE Inches	OUTPUT GPH		OUTPUT ml/min.		MAXIMUM PRESSURE PSI (Bar)
INTERNAL CONTROL	INTERNAL/EXTERNAL CONTROL	MICROPROCESSOR CONTROL		MIN.	MAX.	MIN.	MAX.	
B111-495NI	B711-495NI	B911-495NI	3/8	.008	1.6	.50	100	150 (10.3)
B121-495NI	B721-495NI	B921-495NI	3/8	.012	2.5	.79	158	100 (6.9)
B131-465NI	B731-465NI	B931-465NI	1/2	.022	4.5	1.42	284	50 (3.4)
B141-415NI	B741-415NI	B941-415NI	1/2	.035	7.0	2.21	442	30 (2.1)

**SERIES 'C'**

MODEL & PRICE CODE NO.			TUBING SIZE Inches	OUTPUT GPH		OUTPUT ml/min.		MAXIMUM PRESSURE PSI (Bar)
INTERNAL CONTROL	INTERNAL/EXTERNAL CONTROL	MICROPROCESSOR CONTROL		MIN.	MAX.	MIN.	MAX.	
C111-465NI	C711-465NI	C911-465NI	1/2	.012	2.5	.79	158	150 (10.3)
C121-465NI	C721-465NI	C921-465NI	1/2	.02	4.0	1.26	252	100 (6.9)
C131-415NI	C731-415NI	C931-415NI	1/2	.045	9.0	2.84	568	60 (4.1)
C141-35T	C741-35T	C941-35T	1/2	.10	20.0	6.3	1262	25 (1.7)
-	C771-25T	-	1/2	.05	10.0	3.16	631	80 (5.5)
-	C781-35T	-	1/2	.125	25.0	7.9	1578	30 (2.1)

<b>Voltage -- Standard</b>	120 V / 1 / 50-60
<b>Optional</b>	240 V / 1 / 50-60 (To order, change 3rd digit in Price Code No. from 1 to 2)
<b>Average input power</b>	29 watts -- 'B' Series 44 watts -- 'C' Series 87 watts -- 'C77' Series
<b>Maximum Dimensions</b>	11.63"L x 5.72"W x 9.25"H (295 x 145 x 235 mm)
<b>Suction Lift</b>	4 feet (1.2 m)

<b>Liquid end -- Head &amp; Fittings</b>	Polypropylene
<b>Balls</b>	Ceramic
<b>Diaphragm &amp; Seal Rings</b>	PTFE copolymers
<b>Stroke Length</b>	10% minimum
<b>Stroke frequency</b>	5 to 100 strokes per minute (adjustable)

*Consult Sales Department for optional liquid end selections.*

**ACCESSORIES**

**WALL MOUNTING BRACKET ASSEMBLY**

A wall mounted pump is up and away from the chemical drum, minimizing the chance for mishap. Rugged, polyurethane coated steel bracket provides stable mounting surface. All hardware is included for mounting to stud, concrete or hollow block walls.

<b>PRICE CODE NO.</b>
34643

**SPLASH GUARDS**

Splash guards have a see through cover that protects against chemical sprays or splashes and accidental movement of the switch and adjustment knobs.



<b>DESCRIPTION</b>	<b>PRICE CODE NO.</b>
Series B & C	10583



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**FOUR-FUNCTION VALVES**

Provide positive anti-syphoning and pressure release. Assist priming, easy depressurization of discharge line and pump head without removal of tubing or loosening of fittings.

DESCRIPTION	FOR USE ON	PRICE CODE NO.
1/4" O.D. tubing, polypro./TFE	All 1/4" tubing pumps	28010
3/8" O.D. tubing, polypro./TFE	All 3/8" tubing pumps	28022
1/2" O.D. tubing, PVDF/TFE	C_3 only	34626
1/2" O.D. tubing, polypro./TFE	All other 1/2" tubing pumps	25900

NOTE: Models C\_4 are not compatible with four-function valves.

**POLYETHYLENE SOLUTION TANKS with RIGID STRUCTURAL POLYETHYLENE COVERS**

These tanks are suitable for most corrosive and non-corrosive chemical solutions; self-supporting, 5-gallon graduations. Tanks are resistant to ultraviolet light.



DESCRIPTION	PRICE CODE NO.
35 gal. (132 L) tank w/recess for mounting Series 'A' metering pump. Flooded suction design.	27400
50 gal. (189 L) tank with cover assembly	26350

**DRUM LIQUID LEVEL SWITCH**

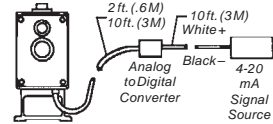
The liquid switch assembly will stop the chemical metering pump or any other pump as the level of liquid in the tank descends to just above the end of the float tube. At this point, it will also activate the customer supplied signal device. Corrosion resistant housing of glass fiber reinforced polypropylene. Chemical resistant polypropylene float. Duplex 115 plug receptacle for control of metering pump (normally closed) and low level signal device (normally open).



DESCRIPTION	PRICE CODE NO.
Electrical: 115V, 50/60Hz. Max load: 3 amps.	
For: 35 gal. (132L) tank assembly	27417
50 gal. (189L) tank assembly	26731
Electrical: 230V, 50Hz	
For: 50 gal. (189 L) tank assembly	26732

**ANALOG TO DIGITAL (A/D) CONVERTER for proportional feed**

Allows any A7, B7 or C7 metering pump to respond directly to a 4-20mA DC signal. Encapsulated electronics offer corrosion resistance to ensure trouble-free operation. Requires no external voltage supply and is ready to install - BNC connection requires no wiring for connection to pump. 100 ohm impedance allows several units to be operated from a single source for series loop control. Mounts into pump base.

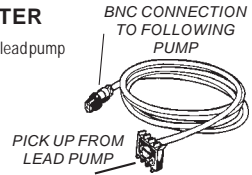


DESCRIPTION	PRICE CODE NO.
For Series AA7, B7, C7 metering pumps: 100 strokes per minute	MP-100

**PULSE TRANSMITTER**

To actuate two or more auxiliary pumps from lead pump for:

- Extra pumping capacity
- Multiple chemical pumping
- Proportional treatment
- 10ft. (3M) long.



PRICE CODE NO.
26006

**LOW LEVEL SWITCH ASSEMBLY**

This is an integral low level shut off switch for use with Series A7, B7, C7, A9, B9 and C9 metering pump. When your solution reaches a low level, the switch protects your metering pump by shutting the pump off, reducing wear caused by dry pumping action. PVC / ceramic construction.

PRICE CODE NO.
29190

**DRUM SAFETY WAND - SUCTION TUBE STRAIGHTENER**

This assembly is useful in preventing curling of the suction tube, keeping the foot valve at the bottom of the tank and providing a safer transfer of the suction line from tank-to-tank.

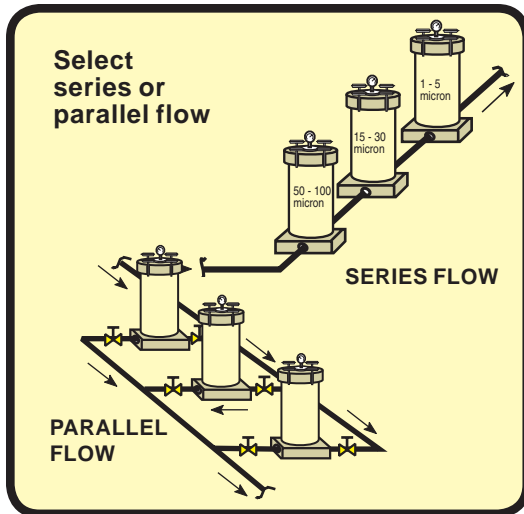
DESCRIPTION	PRICE CODE NO.
45" long, 2" NPT connection	10783
45" long, 2" buttress connection	26783





# CLARIFICATION and PURIFICATION CHAMBERS

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**Suitable for:**  
**SOLID / LIQUID SEPARATION,**  
**CARBON ADSORPTION and**  
**ION EXCHANGE RESIN**

- **Low, medium and high flow rates**
- **Recirculation or in-line**  
Parallel or series flow
- **Uninterrupted flow with low pressure drop**
- **Choice of media**  
Depth or pleated cartridges,  
cleanable sleeves,  
bags or discs,  
carbon or resin

SERFILCO recognizes the fact that not every liquid clarification requirement can be met with a pre-packaged filtration system. That is why we offer a range of standard, off-the-shelf filter chambers and a broad selection of filter media, such as bags, discs, depth and pleated cartridges, cleanable sleeves and carbon or resin purification to give you the flexibility you need to meet your clarification / purification requirements. By using different combinations of chambers and media, configured for recirculatory or in-line filtration, you can achieve the level of clarification / purification desired.

The selection of the most effective combination of elements for particle / liquid separation or purification depends upon a number of factors, including the size and nature of the particles to be removed. Determination of particle size is necessary to properly select the micron retention level of the filter media to be used. Through pilot testing or experimentation, this level can be determined. Often, the filtration efficiency of existing equipment can be improved by adding a filter chamber with coarse media upstream of the existing chamber to remove a large portion of the contaminants and thereby extend the life of the denser, more costly media in the downstream filter chamber.

The nature of the particles is also a key consideration. Are the particles "slimy", blinding off the media at the surface or will they remain porous and sand-like and develop a thick cake which, in turn, enhances the filtration / separation efficiency by removing finer and finer particles as the cake develops? The answers to these questions will lead to the choice of filter media.

The common perception is that bag filters continue to retain contaminant until they are filled to capacity and puffed up like a vacuum cleaner bag. This is generally not the reality of bag filtration. Instead, once the pores on the surface of the bag plug with fines, the bag needs to be cleaned for re-use. As a result, such a filtration system becomes very maintenance intensive.

On the other hand, systems which use depth type filter media require very little maintenance because depth type filters provide a high flow rate over more than 80% of their life before the flow rate is reduced to a level where cartridge maintenance is necessary.

The following pages identify some of the filter chambers and filter media available from SERFILCO. We have included a number of schematics to help you understand the variety of approaches that can be used to meet your clarification / purification needs.





# FILTER CHAMBER SIZING & ITS RELATIONSHIP TO SOLUTION CLARITY

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**IN ADDITION TO THE QUESTION OF IN-LINE OR RECIRCULATORY INSTALLATION OF A FILTER FOR YOUR SOLUTION, CHAMBER SIZING CAN MAKE A SIGNIFICANT CONTRIBUTION TO THE ECONOMICS OF THE FILTRATION PROCESS.**

## Chamber Sizing / Oversizing

Select a filter chamber for its solids holding capacity. The size and amount of dirt in the solution will determine the number of cartridges or surface area necessary, with one 10" (25 cm) cartridge (3.5 square feet), or 2/3 sq. ft. of surface for each 50 gallons (200 liters) of solution used as a rule of thumb. The flow rate should be 2 - 30 or more tank turnovers per hour on recirculatory filter systems, depending on the application and the clarity desired. Coarse media and high flows are desirable for high dirt load applications. Increasing the number of cartridges reduces solution flow per cartridge, improves efficiency and reduces cartridge consumption. Filter cartridge solids holding capacity is increased if flow rate (velocity) through each cartridge is decreased. Therefore, reduced flow rate or

velocity through the cartridge reduces the number of filter cartridges consumed by a given dirt load. Thus, when 2 cartridges per 50 gallons (200 L) are employed, cartridge consumption is reduced by 29% and when 4 cartridges are employed, cartridge consumption is reduced by 50 %.

Oversizing by a factor of 4 doubles the solids holding capacity per cartridge. Since the chamber holds 4 times the number of cartridges, the filter is opened only 1/8 as often, reducing the labor by 87-1/2% for cartridge changing. Increasing the size of your filter chamber is particularly worthwhile since most filter chambers are offered in larger sizes at only a slight increase in cost. Oversizing also results in a savings in downtime and prevents solution loss.

### ECONOMICS OF FILTER CHAMBER OVERSIZING

Oversizing Factor	Number of Cartridges in Chamber*	Dirt Holding Factors per Cartridge	Time Between Cartridge Change	Cartridge Consumption/ Cost Reduced by:	Labor Cost Downtime/ Solution Loss Reduced by:
1	C	D	T	0	0
2	2xC	1.4D	3T	29%	67%
3	3xC	1.7D	5T	42%	80%
4	4xC	2D	8T	50%	87½%

#### For example...

using a	instead of a	reduces cartridge consumption by
12 cartridge filter	9 cartridge filter	13%
9 " "	6 " "	18%
6 " "	3 " "	29%
9 " "	3 " "	42%
12 " "	3 " "	50%
15 " "	3 " "	55%

\* Based on average sizing [i.e. 1 - 10" (25cm) cartridge per 50 gallons (200 L)]

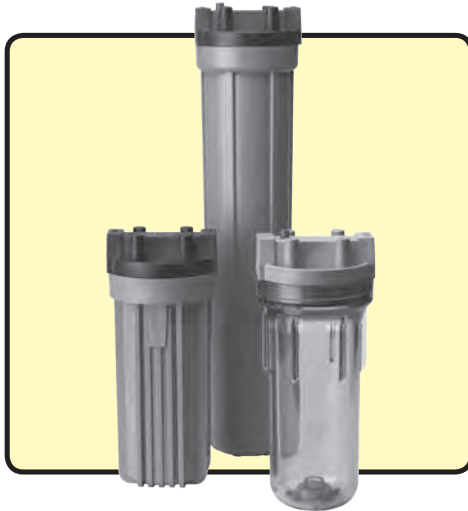




# IN-LINE PLASTIC FILTER CHAMBERS

C-101\_L

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## FOR FILTRATION & PURIFICATION OF WATER OR CHEMICALS

- Choice of construction  
Polypropylene, Nylon, Clear S.A.N.  
Buna N "O"-ring standard
- Operating Pressure to 125 psi (8.5 bar)
- For Temperatures to 165°F (71°C)
- Accepts wide range of cartridge media:  
Pleated, String-wound, Carbon, Melt-Blown

These sturdy and quality built two piece filter housings are designed to meet the need for reliable, long lasting and convenient use. Pipeline mounted cap, and body nested Buna N "O"-ring provide ease of installation and quick-change cartridge replacement. Housings pass Water Conditioning Federation's recommended standards for hydrostatic leak and burst pressures. For complete specifications, refer to table below.

All chambers accept most standard filter cartridges: wound, pleated, melt blown, carbon. Order cartridges separately.\*

- GPO** - Models constructed of glass-reinforced polypropylene.
  - GNO** - Models constructed of glass-reinforced nylon and are for high-temperature service.
  - GSO** - Models constructed of glass-reinforced polypropylene cover with a clear styrene acryl nitrile (S.A.N.) shell
- 10-3/4** – models accept 9-3/4" to 10" wound cartridge or 9-3/4" pleated, melt-blown, or carbon cartridge.
  - 10-1** – models accept 9-3/4" to 10" cartridge up to 4-5/18" diameter.
  - 20-3/4** – models accept 19-3/4" to 20" wound or 19-3/4" pleated, melt-blown, or carbon cartridge.
  - 20-1-1/2** – models accept all 20" cartridges up to 4" diameter.

MODEL	CONN.	MAX PRESSURE		MAX TEMP		VENT BUTTON	DRAIN PLUG	DIMENSIONS				WEIGHT		PRICE CODE NO.
	NPT	PSI	BAR	°F	°C			WIDTH		LENGTH		Lbs.	kg.	
								in.	mm	in.	mm			
GPO10-3/4	3/4"	125	8.5	125	52	INCL	INCL	5-1/4	133	12-1/8	307	3-1/4	1.47	78-0930 A
GPO20-3/4	3/4"	125	8.5	125	52	INCL	INCL	5-1/4	133	22-1/2	571	4-1/4	1.93	78-0931 A
GPO10-1	1"	100	6.5	100	38	INCL	INCL	7-1/4	184	13	330	4-1/2	2.04	78-1157 A
GNO10-3/4	3/4"	125	8.5	165	71	N.A.	N.A.	5-1/4	133	12-1/8	307	4-1/4	1.93	78-0932
GSO10-3/4	3/4"	125	8.5	125	52	INCL	INCL	5-1/4	133	12-3/4	323	2-1/2	1.13	78-0929 A
GSO20-1-1/2	1"or 1-1/2"	90	8.5	100	52	INCL	N.A.	7-1/2	191	22-1/2	570	7	3.18	78-0922

OPTIONAL	PRICE CODE NO.
Wall mounting bracket for 3/4" NPT models	77-0882
Wall mounting bracket for 1" NPT Models	77-0883
Viton "O"-ring at vent	22-0691
Viton "O"-ring at cover, 3/4" models only	22-0585

	ADD TO PCN
ECTFE vent plug with EPDM "O"-ring (to replace button in cover). For non-metal. solution contact	<b>B</b>
Valve-In-Cover-For GSO & GPO-3/4 models only. Plug valve built into cover isolates chamber from inlet and back flow when replacing cartridge.	<b>C</b>

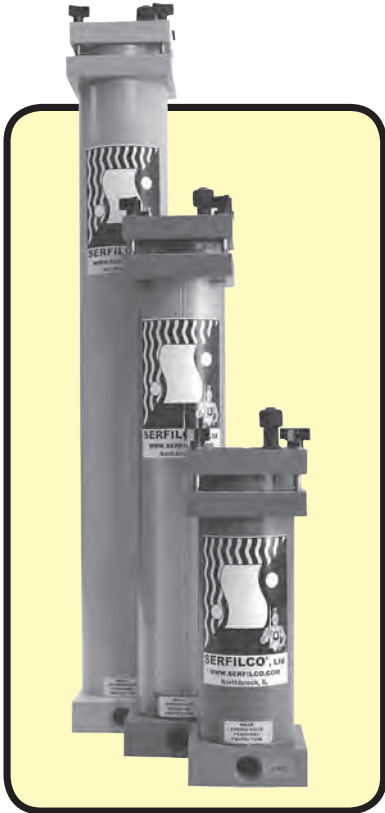
\*See bulletin M-109 for filter media.

Specifications subject to change without



# SERIES 'L' PLASTIC FILTER CHAMBERS

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## FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**ELECTROPLATING / CARBON PURIFICATION  
WATER TREATMENT / CLEANING  
PHOTOGRAPHIC / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

### FEATURES:

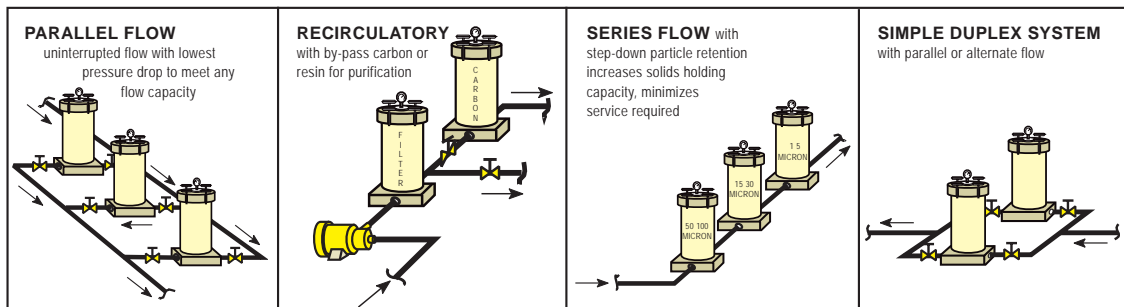
- **Non-metallic solution contact**  
CPVC, polypropylene, PVC and pure PVDF construction  
*(See a chemical resistance chart)*
- **Heavy duty construction**
  - Pressure ratings to 160 PSI (1103 KPa)  
*(See Pressure/temperature table on page 3)*
  - Clamp ring closure or optional external tie rod
- **Variety of sizes**  
From 4", 6" and 1 to 4 - 10" cartridge capacity  
(or equivalent 20", 30", or 40" lengths.)
- **Port size 3/4" NPT**  
Metric and flange available
- **"O"-ring seal at cover & vent valve**  
EPDM (standard), Viton® (optional)
- **Easy servicing, no tools required**

### FLOW RATE

Flow rates up to 34 GPM depending upon style and length of filter cartridge, solids content, viscosity, pressure drop, and degree of clarity desired. Pressure ratings of filter chambers depend upon the temperature of solutions being filtered. See Pressure/temperature table.

### For use with a variety of filter media (order separately)

- Depth wound, pleated, carbon or membrane cartridges
- Positive cartridge seal for -  
Standard - DOE . . . Double Open End  
Optional - SOE . . . Single Open End for 222 "O"-ring





**SPECIFICATIONS AND DIMENSIONS**

**Series 'L' Plastic Filter Chambers include:**

- Pressure ratings to 160 PSI
- Non - metallic solution contact
- EPDM "O" - ring standard, Viton® optional
- Clamp ring cover closure standard, tie rods optional
- Integral shell-base assembly
- Vent valve or vent plug

**PL CPVC Base & Cover, translucent PVC Shell**

PVC shell sealed to base, EPDM "O" - ring at cover, polypropylene vent valve. Cross post or CPVC tube guide\*\*. For DOE Cartridges.

**CL CPVC Base & Cover, CPVC Shell**

CPVC shell sealed to base, EPDM "O" - ring at cover, polypropylene vent valve. Cross post or CPVC tube guide\*\*. For DOE Cartridges.

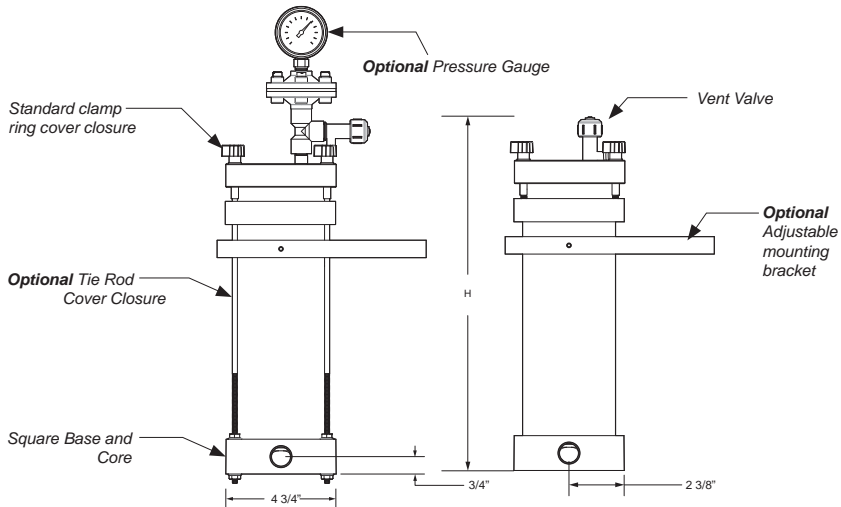
**PPL Polypropylene Base, Cover and Shell**

Polypropylene\* shell sealed to base, EPDM "O" - ring at cover, polypropylene vent valve. Polypropylene cross post or tube guide\*\*. For DOE Cartridges.  
\*glass reinforced polypropylene

**KL PVDF Base, Cover and Shell**

PVDF shell sealed to base, EPDM "O" - ring at cover and at PVDF vent plug. PVDF cross post or PVDF tube guide\*\*. For DOE Cartridges.

\*\* Tube guide on size 10" and smaller chambers; cross post on size 20" and larger chambers.



DIMENSIONS									
CHAMBER			CARTRIDGES - Max dia. 3"						
SIZE	HEIGHT in.	SHIPPING WT. lbs.	SIZE & NUMBER						SOLIDS AREA
			4"	6"	10"	20"	30"	40"	
4	7	3	1	-	-	-	-	-	1.4
6	9	4	-	1	-	-	-	-	2.1
10	13	5	-	-	1	-	-	-	3.5
20	23	7	-	-	2	1	-	-	7.0
30	33	9	-	-	3	-	1	-	10.5
40	43	11	-	-	4	2	-	1	14.0





# SERIES 'L' PLASTIC FILTER CHAMBERS

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C-105\_U

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## PRESSURE/TEMPERATURE

FLOW RATE vs. PRESS. DIFF. <sup>1</sup>		
CONN.	@ 5 PSI	@ 15 PSI
3/4"	12 GPM	24 GPM
	45 LPM	91 LPM

<sup>1</sup> With 15 micron depth wound cartridges.

MAX. PSI PRESSURE AT OPERATING TEMP. WITH TIE ROD COVER CLOSURE <sup>2</sup>			
TEMP	CL	KL	PPL & PCL
70°F	160	130	100
100°F	130	105	85
120°F	105	90	75
140°F	80	75	65
170°F	50	60	25
200°F	30	45	—

<sup>2</sup> With clamp ring cover closure 40 PSI max.

## TO ORDER, use Price Code Number

SERIES 'L' CHAMBERS			
DESCRIPTION	4, 6 & 10 models have a tube guide: 20, 30 & 40 models have a cross post.	MODEL NUMBER w/3/4" NPT CONN.	PRICE CODE NO.
PCL	CPVC base and cover, translucent PVC shell with shell sealed to base	CPCL4 3/4	78-1266AC
		CPCL6 3/4	78-1267AC
		CPCL10 3/4	78-1268AC
		CPCL20 3/4	78-1269AC
		CPCL30 3/4	78-1270AC
		CPCL40 3/4	78-1271AC
CL	CPVC base, cover, and shell with shell sealed to base	CCL4 3/4	78-0238AC
		CCL6 3/4	78-0239AC
		CCL10 3/4	78-0240AC
		CCL20 3/4	78-0241AC
		CCL30 3/4	78-0242AC
		CCL40 3/4	78-0243AC
PPL	Polypropylene base, cover, and shell with shell sealed to base	CPPL4 3/4	78-0285AC
		CPPL6 3/4	78-0286AC
		CPPL10 3/4	78-0287AC
		CPPL20 3/4	78-0288AC
		CPPL30 3/4	78-0289AC
		CPPL40 3/4	78-0290AC
KL	PVDF base, cover, and shell with shell sealed to base	CKL4 3/4	78-0465AC
		CKL6 3/4	78-0466AC
		CKL10 3/4	78-0467AC
		CKL20 3/4	78-0468AC
		CKL30 3/4	78-0469AC

## OPTIONAL EQUIPMENT

TO ORDER	DESCRIPTION	ADD to MODEL NO.	ADD to PRICE CODE NO.
Viton elastomers	Change L to V in Model Number.		-V
Mounting bracket	Adjustable: 9" x 5" PVC		44-3200-1
Cover plate	Standard on models with tie rod cover closure. (Recommended above 120°F at 75% of max. pressure)		99-1099-1
222 "O"-ring cartridge seat	For SOE (single open and flat top) cartridge. Cross post not furnished.	-2	-2
Pressure gauge 0-60 PSI	Mounted in cover with EPDM diaphragm & vent valve.	Polypropylene	-G4A
		CPVC	-G4A
	Mounted in cover with Viton diaphragm & vent plug	PVDF	-G4
Tie rod cover closure	Drop first C from Model Number and C from Price Code Number		





# SERIES 'S' PLASTIC CARTRIDGE FILTER CHAMBERS

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## FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**ELECTROPLATING / CARBON PURIFICATION  
WATER TREATMENT / CLEANING  
PHOTOGRAPHIC / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

### FEATURES:

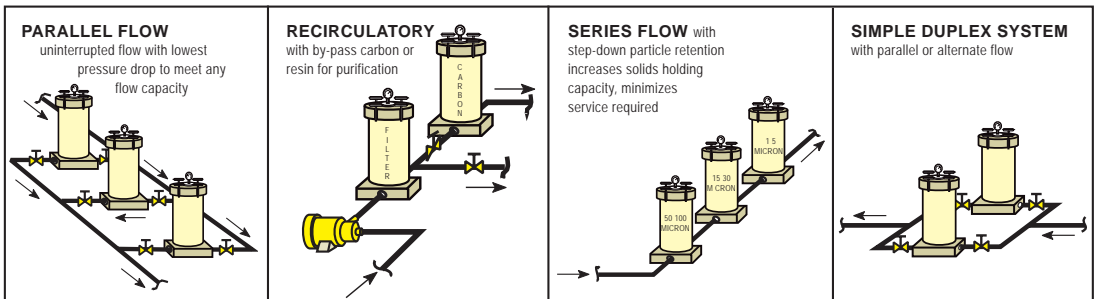
- **Non-metallic solution contact**  
CPVC, polypropylene, PVC and pure PVDF construction  
*(See a chemical resistance chart)*
- **Heavy duty construction**
  - Pressure ratings to 135 PSI (931 KPa)  
*(See Pressure/temperature table on next page)*
  - Swing bolt cover closure with tee handle
- **Variety of sizes**  
From 3 to 12 - 10" cartridge capacity  
(or equivalent 20", 30", or 40" lengths.)
- **Port size 1" NPT**  
Metric and flange available
- **"O"-ring seal at cover & vent valve**  
EPDM (standard), Viton® (optional)
- **Easy servicing, no tools required**

### FLOW RATE

Flow rates up to 68 GPM depending upon style and length of filter cartridge, solids content, viscosity, pressure drop, and degree of clarity desired. Pressure ratings of filter chambers depend upon the temperature of solutions being filtered. See Pressure/temperature table on next page.

### For use with a variety of filter media (order separately)

- Depth wound, pleated, carbon or membrane cartridges
- Positive cartridge seal for -  
Standard - DOE . . . Double Open End  
Optional - SOE . . . Single Open End for 222 "O"-ring





**SERIES 'S' PLASTIC FILTER CHAMBERS**

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**SPECIFICATIONS**

**Series 'S' Plastic Filter Chambers include:**

- Pressure ratings to 135 PSI
- Non-metallic solution contact
- EPDM "O" - ring standard, Viton® Optional
- Swing bolt cover closure w/ SS swing bolts & bracket
- Integral shell-base assembly
- Inlet to outlet at 90° or 180° aspect
- 0 - 60 PSI pressure with gauge guard and vent valve

**PL CPVC Base & Cover, PVC Shell**

PVC shell sealed to base, EPDM "O" - ring at cover. Polypropylene vent valve, cross posts and springs. For DOE Cartridges.

**CL CPVC Base, Cover, and Shell**

CPVC shell sealed to base, EPDM "O" - ring at cover. Polypropylene vent valve, cross posts and springs. For DOE Cartridges.

**PPL Polypropylene Base, Cover and Shell**

Polypropylene\* shell sealed to base, EPDM "O" - ring at cover. Polypropylene vent valve, cross posts and springs. For DOE Cartridges.

**KL PVDF Base, Cover and Shell**

PVDF shell sealed to base, EPDM "O" - ring at cover. PVDF vent valve, cartridge posts and internals. For DOE Cartridges.

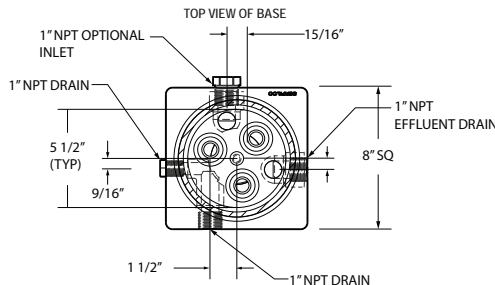
\*glass reinforced polypropylene

**PRESSURE/TEMPERATURE**

FLOW RATE vs. PRESS. DIFF. <sup>1</sup>			MAX. PSI PRESSURE AT OPERATING TEMP.							
CONN.	@ 5 PSI	@ 15 PSI	TEMP.	PL		CL		KL		PPL
1"	30 GPM 114 LPM	58 GPM 220 LPM		*with cover plate	without cover plate	*with cover plate	without cover plate	with cover plate	with cover plate	
<sup>1</sup> With 15 micron depth wound cartridges.			70°F	135	100	135	100	120	50	
			100°F	100	85	110	85	95	45	
			120°F	65	55	90	65	80	40	
			140°F	35	30	70	50	70	35	
			170°F	—	—	45	30	55	15	
			200°F	—	—	25	20	45	—	

\* See Optional for cover reinforcing plate.

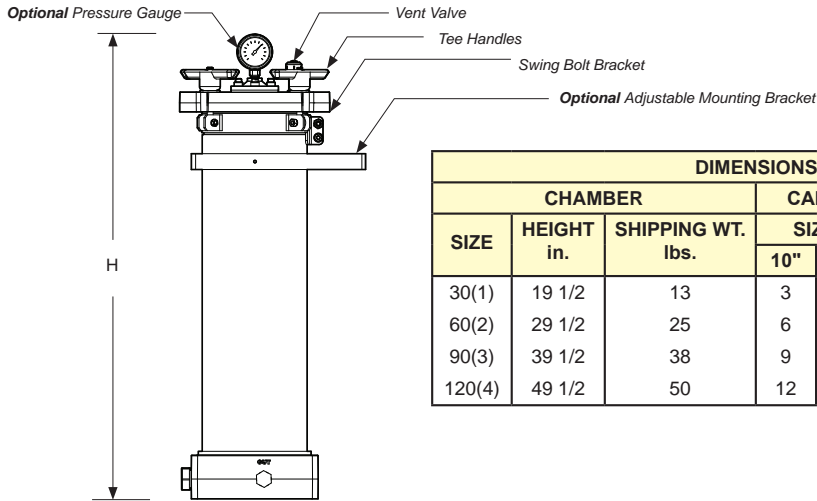
**DIMENSIONS**





# SERIES 'S' PLASTIC CARTRIDGE FILTER CHAMBERS

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DIMENSIONS							
CHAMBER			CARTRIDGES - Max dia. 2.7"				
SIZE	HEIGHT in.	SHIPPING WT. lbs.	SIZE & NUMBER				SOLIDS AREA
			10"	20"	30"	40"	
30(1)	19 1/2	13	3	-	-	-	10.5
60(2)	29 1/2	25	6	3	-	-	21.0
90(3)	39 1/2	38	9	-	3	-	31.5
120(4)	49 1/2	50	12	6	-	3	42.0

## TO ORDER, use Price Code Number

DESCRIPTION		MODEL NUMBER w/ 3/4 NPT CONN.	PRICE CODE NO.
PL	CPVC base and cover, PVC shell sealed to base	PL30(1)S-1-G3	78-1132
		PL60(2)S-1-G3	78-1133
		PL90(3)S-1-G3	78-1134
		PL120(4)S-1-G3	78-1135
CL	CPVC base, cover, and shell with shell sealed to base	CL30(1)S-1-G3	78-0250
		CL60(2)S-1-G3	78-0251
		CL90(3)S-1-G3	78-0252
		CL120(4)S-1-G3	78-0253
KL	PVDF base, cover, and shell with shell sealed to base	KL30(1)S-1-G3	78-0450 A
		KL60(2)S-1-G3	78-0451 A
		KL90(3)S-1-G3	78-0452 A
		KL120(4)S-1-G3	78-0453 A
PPL	Polypropylene base, cover, and shell with shell sealed to base	PPL30(1)S-1-G3	78-1040 A
		PPL60(2)S-1-G3	78-1041 A
		PPL90(3)S-1-G3	78-1042 A
		PPL120(4)S-1-G3	78-1043 A

## OPTIONAL EQUIPMENT

TO ORDER	DESCRIPTION	ADD to MODEL NO.	ADD to PRICE CODE NO.
Viton elastomers	Viton gaskets gauge diaphragm	Change L to V in Model Number.	-V
Mounting bracket	PVC 11" x 8" x 1" (279 x 203 x 25mm)	Use prefix S	88-0556-1
Reinforcing plate	For PL, CL models.	-	88-0597-1
222 °O°-ring cartridge seat	For SOE (single open end flat top) cartridges. (2.7" max dia.) Top seats, springs, cross posts not furnished.	-2	-2
PVDF flange connections for KL models	1" (25mm) (Specify 90° or 180° orientation)	-F	-F



# SERIES 'G' PLASTIC CARTRIDGE FILTER CHAMBERS

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C-107\_W

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**FOR : WATER TREATMENT / FOOD PROCESSING  
CLEANING / PHOTOGRAPHIC  
ELECTROPLATING / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

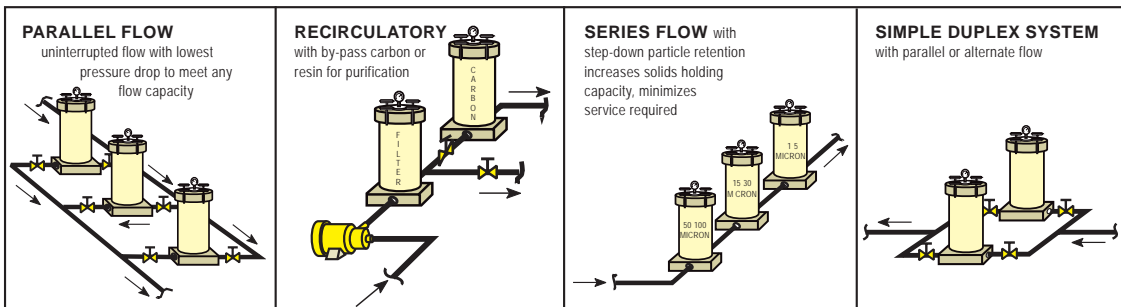
These filter chambers are designed for filtering process solutions where clarification will extend operating life and improve quality.

## FEATURES:

- **Non-metallic solution contact**  
CPVC, PVC or polypropylene construction  
(See a chemical resistance chart)  
EPDM elastomers standard, Viton® optional
- **Heavy duty construction**
  - Pressure ratings to 80 PSI (552 KPa)
  - Positive "O"-ring seal at base and cover
  - Cartridge guides with screw-on caps for positive cartridge seal
  - Stainless steel external hardware
  - 0-60 PSI pressure gauge with gauge guard and vent valve
- **Cartridge capacity**  
From 12 to 60 - 10" cartridge capacity  
(or equivalent 20", 30", or 40" lengths)
- **Easy service**  
Swing bolt cover closure with tee handles – no tools required
- **Port size 1½" NPT**  
BSP optional

## FLOW RATE

Flow rates to 125 GPM depending upon size of chamber, style of filter cartridge, solids content, viscosity, pressure drop and degree of clarity desired. Pressure ratings of filter chambers depend upon the temperature of solutions being filtered. See table.





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All chambers have cover swing bolts with tee handles, stainless steel swing bolt and hold down brackets; FRP top and bottom reinforcing plate, cartridge guides with screw-on cap, 0-60 PSI pressure

gauge with gauge guard, EPDM gaskets and drain plugs. All fasteners are stainless steel. For DOE cartridges.

**TO ORDER, USE PRICE CODE NUMER**

DESCRIPTION		CONNS.	MODEL NUMBER	PRICE CODE NUMBER	NUMBER of 10" CARTS	SOLIDS*	SHIPPING WEIGHT lbs.
<b>PL</b>	CPVC base and cover, PVC shell, CPVC vent valve and internals.	1½" NPT	PL120SIO 1½-G3A	78-1901P	12	42	82
			PL240SIO 1½-G3A	78-1902P	24	84	89
			PL360SIO 1½-G3A	78-1903P	36	126	97
			PL480SIO 1½-G3A	78-1904P	48	168	104
			PL600SIO 1½-G3A	78-1905P	60	210	112
<b>CL</b>	CPVC base, cover, shell, vent valve and internals.	1½" NPT	CL120SIO 1½-G3A	78-1901C	12	42	82
			CL240SIO 1½-G3A	78-1902C	24	84	89
			CL360SIO 1½-G3A	78-1903C	36	126	97
			CL480SIO 1½-G3A	78-1904C	48	168	104
			CL600SIO 1½-G3A	78-1905C	60	210	112
<b>PPL</b>	Polypropylene base, cover and shell, CPVC vent valve and internals.	1½" NPT	PPL120SIO 1½-G3A	78-1901PP	12	42	82
			PPL240SIO 1½-G3A	78-1902PP	24	84	89
			PPL360SIO 1½-G3A	78-1903PP	36	126	97
			PPL480SIO 1½-G3A	78-1904PP	48	168	104
			PPL600SIO 1½-G3A	78-1905PP	60	210	112

\* For each 10" length, the solids holding capacity is 3" sq ft of surface media of the same porosity

**For use with a variety of filter media (order separately)**

- Depth wound, pleated, carbon or membrane cartridges
- Positive cartridge seal for Double Open End (DOE)  
 Standard - DOE ... Double Open End  
 Optional - SOE ... Single Open End for 222 "O"-ring

**OPTIONAL**

TO ORDER	ADD TO MODEL NO.	ADD TO PRICE CODE NO.
Viton elastomers	change L to V	- V
1½" BSP connections**	- B	- B

\*\* For flange or socket connection consult factory

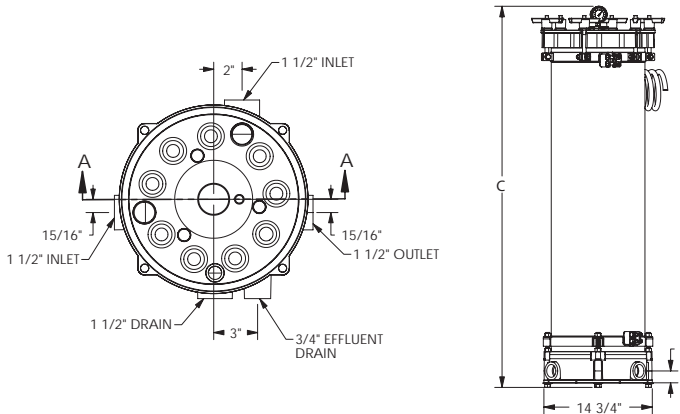
TO ORDER	ADD TO MODEL NO.	ADD TO PRICE CODE NO.
222 "O"-ring seat for SOE (Single open end flat top) cartridge. Top seats, springs and cross posts not furnished.	-2	- 2





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**DIMENSIONS**



CHAMBER MODEL	C HEIGHT in.	CARTRIDGES (Max. dia. 2-5/8") SIZE & NUMBER			
		10"	20"	30"	40"
120S-1½	21¼	12	—	—	—
240S-1½	31¼	24 or 12	—	—	—
360S-1½	41¼	36	— or 12	—	—
480S-1½	51¼	48 or 24	— or 12	—	—
600S-1½	61¼	60 or 12	+ 12	—	—

**PRESSURE / TEMPERATURE**

MAXIMUM PRESSURE AT OPERATING TEMPERATURE WITH TOP & BOTTOM REINFORCING PLATES			
TEMPERATURE	PSI <sup>1</sup>		
	PL	PPL	CL
70°F	80	75	80
100°F	75	60	75
120°F	40	50	70
140°F	25	40	55
170°F	—	15	35
200°F	—	—	30

FLOW RATE vs. PRESSURE DIFFERENTIAL <sup>2</sup>		
MODEL	@ 5 PSI	@ 15 PSI
1½" 'G'	60 GPM 227 LPM	110 GPM 416 LPM

<sup>1</sup> Maximum differential pressure from inlet to outlet (across separator plate) is 40 PSI at 68° F.

<sup>2</sup> With 15 micron depth wound cartridges.





# SERIES 'GC' PLASTIC CARTRIDGE FILTER CHAMBERS

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**For: ACID / AQUEOUS / CHEMICAL / ELECTROPLATING / WASTE TREATMENT**



These filter chambers are designed for filtering process solutions where clarification will extend operating life and improve quality.

## FEATURES:

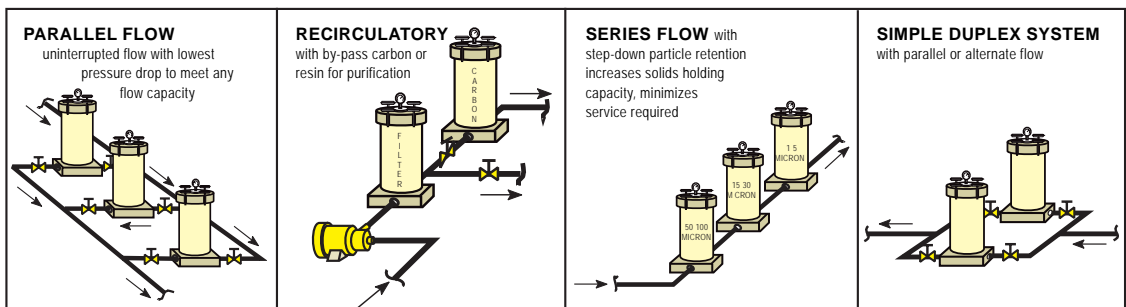
- **Non-metallic solution contact**  
PVC or CPVC with Viton® or EPDM elastomers  
*(See a chemical resistance chart)*
- **Heavy duty construction** – shell cemented to base – no leaks
- **High flow rate, low pressure drop**  
2" connections
- **High capacity** —  
12 - 20", 30", 40" or 50" filter cartridges
- **Easy to operate** – swing bolts with 'T'-handles, 60 psi gauge with guard assembly, air vent valve and drain port

## BENEFITS:

- **Will not leak at base.** Shell and base cemented together
- **Long service life** — will not rust or corrode
- **Easy to install and operate**
- **Improve finished goods quality**  
Eliminate scrap and rework

Series 'GC' chambers feature a precision CNC machined base and molded cover. The innovative base design has 2" inlet and outlet ports providing low pressure differential. The base includes 3/4" plugged drain ports for ease of maintenance. The shell is cemented to the machined base to eliminate leakage and warping. The cover includes a vent valve, 0-60 psi pressure gauge with guard assembly, and an FRP cover plate. The cover is secured with swing bolts and 'T'-handles (no tools are required to change

cartridges). The shell is 12" diameter and will hold 12 - 20", 30", 40" or 50"\* D.O.E. (double open end) style cartridges. Internals included are CPVC cross posts and polypropylene cap springs to ensure proper cartridge location and eliminate solution by-pass. The base, shell and cover are PVC or CPVC for totally non-metallic solution contact. Elastomers are EPDM or Viton and all external hardware is stainless steel.



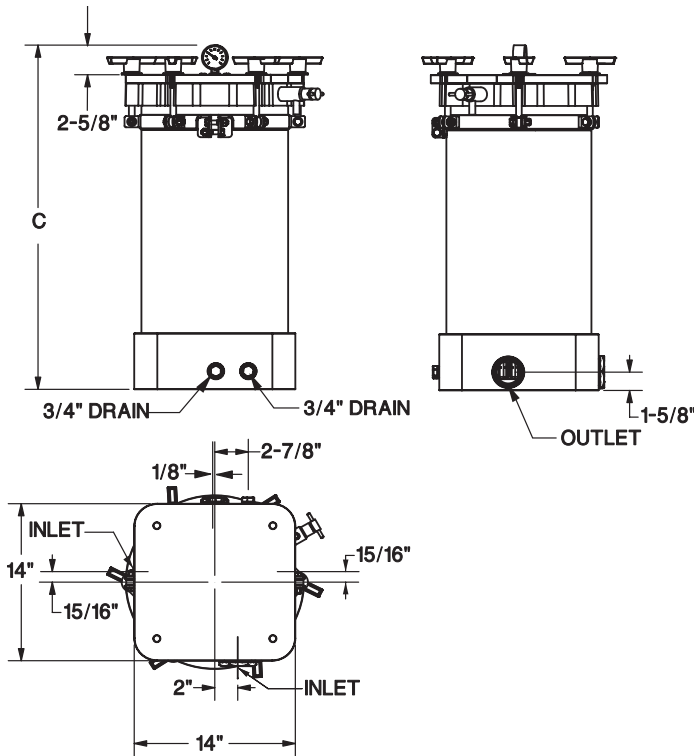




# SERIES 'GC' FILTER CHAMBERS

## Specifications, Dimensions and Ordering Information

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FLOW RATE	vs.	PRESSURE DIFFERENTIAL
115 GPM	@	5 PSI
145 GPM	@	15 PSI

MAXIMUM PSI		@ OPERATING TEMP.
PVC	CPVC	
80	80	70°F
75	75	100°F
40	70	120°F
25	55	140°F
—	35	170°F
—	30	200°F

**TO ORDER, use Price Code Number**

MATERIALS	PORT SIZE NPT	NO. CARTS.	MODEL NUMBER	DIM. 'C'	PRICE CODE NUMBER	SHIP. WT. (lbs.)
PVC/EPDM	2"	12 - 20"	PL240(2)SC 2 G3A	30-11/16"	78-1671 P	115
		12 - 30"	PL360(3)SC 2 G3A	40-11/16"	78-1672 P	125
		12 - 40"	PL480(4)SC 2 G3A	50-11/16"	78-1673 P	135
		12 - 50"	PL600(5)SC 2 G3A	60-11/16"	78-1674 P	145
		12 - 20"	CL240(2)SC 2 G3A	30-11/16"	78-1671 C	115
CPVC/EPDM	2"	12 - 30"	CL360(3)SC 2 G3A	40-11/16"	78-1672 C	125
		12 - 40"	CL480(4)SC 2 G3A	50-11/16"	78-1673 C	135
		12 - 50"	CL600(5)SC 2 G3A	60-11/16"	78-1674 C	145

SLEEVE SET (12) CPVC & POLYPROPYLENE		
LENGTH	SOLIDS AREA sq. ft.	Add PRICE CODE NO.
20	14.4	78-0201
30	21.6	78-0202
40	28.8	78-0203
50	36.0	78-0204

For Viton elastomers:  
add **-V** to Price Code Number and change **L** to **V** in Model Number

OPTIONAL	ADD TO MODEL NO.	ADD TO PRICE CODE NO.
222 "O"-ring seat for SOE (Single open end flat top) cartridge. Top seats, springs and cross posts not furnished.	- 2	- 2





# SERIES 'GH-HP' PLASTIC FILTER CHAMBERS

160

C-114\_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



**WATER TREATMENT / FOOD PROCESSING  
CLEANING / PHOTOGRAPHIC  
ELECTROPLATING / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

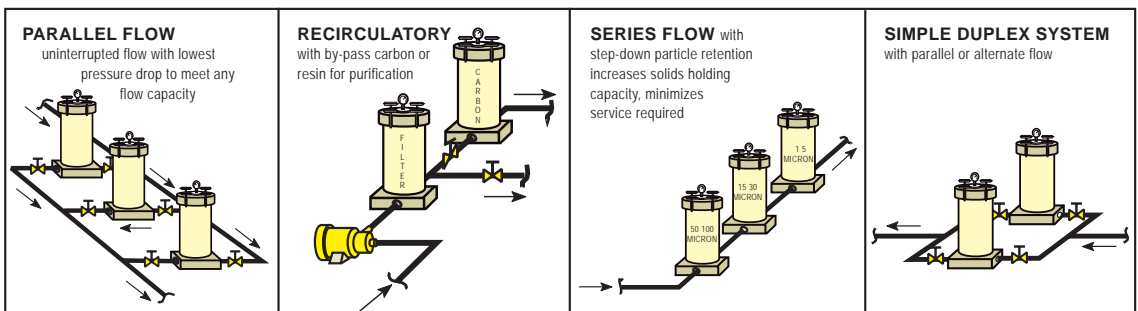
These filter chambers are designed for filtering process solutions where clarification will extend operating life and improve quality.

## FEATURES:

- **Non-metallic solution contact**  
CPVC, PVC, polypropylene or pure PVDF construction  
(See Chemical Resistance Chart)
- **Heavy duty construction**
  - High Pressure to 140 PSI (965 K Pa)  
(See Pressure/temperature table)
  - SS tie rod cover closure with tee handles
  - Pressure gauge with gauge guard and vent valve or plug
  - Cartridge guides with screw-on caps for positive cartridge seal
- **Variety of sizes are available**  
From 4 to 55 - 10" cartridge capacity  
(or equivalent 20", 30", or 40" lengths)
- **Port sizes 1½", 2" & 3" NPT or flange depending on model**

The Series 'GH-HP" Filter Chambers feature heavy duty construction to meet difficult high pressure and/or temperature applications. They utilize machined bases and covers with tie rod cover closures for extra strength.

Series 'GH-HP' chambers are offered in a wide variety of sizes with flows to 275 GPM. Materials of construction offerings include PVC, CPVC, polypropylene, and PVDF.





**SERIES 'GH-HP' CHAMBERS Specifications and Ordering information**

C-114A

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		MODEL NUMBER	PRICE CODE NUMBER	CARTRIDGE		SHIPPING WEIGHT lbs.		
				NUMBER of 10" CARTS.	SOLIDS AREA sq. ft.			
Tie rod closure with tee handles, stainless steel shell hold-down bracket, top reinforcing plate, 0-60 PSI pressure gauge and guard, EPDM gaskets, drain plugs. All fasteners are stainless steel. For DOE cartridges.								
PL	PVC base, cover and shell, CPVC vent valve and internals.	CONNS. 1½" NPT	PL50 1½-G3A-HP	78-0520	5	17.5	45	
			PL100 1½-G3A-HP	78-0521	10	35.0	55	
			PL150 1½-G3A-HP	78-0522	15	52.5	65	
			PL200 1½-G3A-HP	78-0523	20	70.0	75	
		2" NPT	PL220 2-G3A-HP	78-0321	22	77.0	94	
			PL330 2-G3A-HP	78-0322	33	115.5	101	
			PL440 2-G3A-HP	78-0323	44	154.0	109	
			PL550 2-G3A-HP	78-0324	55	192.5	116	
		3" NPT	PL330 3-G3A-HP	78-1328	33	115.5	101	
			PL440 3-G3A-HP	78-1329	44	154.0	109	
			PL550 3-G3A-HP	78-1330	55	192.5	116	
PPL	Polypropylene base, cover, and shell. Polypropylene vent valve and internals	2" Flange	PPL70 2F-G3-HP	78-1377	7	24.5	30	
			PPL140 2F-G3-HP	78-1378	14	49.0	60	
			PPL210 2F-G3-HP	78-1379	21	73.5	90	
			PPL280 2F-G3-HP	78-1380	28	98.0	120	
CL	CPVC base, cover and shell with CPVC vent valve and internals.	1½" NPT	CL50 1½-G3A-HP	78-1146A	5	17.5	45	
			CL100 1½-G3A-HP	78-1147A	10	35.0	55	
			CL150 1½-G3A-HP	78-1148A	15	52.5	65	
			CL200 1½-G3A-HP	78-1149A	20	70.0	75	
		2" NPT	CL220 2-G3A-HP	78-0111	22	77.0	94	
			CL330 2-G3A-HP	78-0112	33	115.5	101	
			CL440 2-G3A-HP	78-0113	44	154.0	109	
			CL550 2-G3A-HP	78-0114	55	192.5	116	
		3" NPT	CL330 3-G3A-HP	78-1331	33	115.5	101	
			CL440 3-G3A-HP	78-1332	44	154.0	109	
			CL550 3-G3A-HP	78-1333	55	192.5	116	
KL	PVDF cover and base, PVDF shell sealed to base. PVDF vent plug, and internals.	1½" Flange	KL40(1) 1½F-G3-HP	78-0479	4	14.0	45	
			KL80(2) 1½F-G3-HP	78-0480	8	28.0	55	
			KL120(3) 1½F-G3-HP	78-0481	12	42.0	65	
			KL160(4) 1½F-G3-HP	78-0482	16	56.0	75	
		2" Flange	KL70 2F-G3-HP	78-0454	7	24.5	55	
			KL140 2F-G3-HP	78-0455	14	49.0	115	
			KL210 2F-G3-HP	78-0456	21	73.5	175	
			KL280 2F-G3-HP	78-0457	28	98.0	230	

**PRESSURE/TEMPERATURE**

MAXIMUM PSI PRESSURE AT OPERATING TEMPERATURE							
TEMP. °F	PL		PPL	CL		KL	
	1½"	2" & 3"	2"	1½"	2" & 3"	1½"	2"
70	140	110	100	140	110	135	120
100	95	75	64	120	100	110	95
120	60	50	52	100	80	90	80
140	35	25	40	75	60	80	70
170	-	-	31	50	30	60	55
200	-	-	-	30	25	50	45

FLOW RATE vs. PRESS. DIFFERENTIAL <sup>1</sup>		
MODEL	@ 5 PSI	@ 15 PSI
1½" 'GH-HP'	70 GPM 265 LPM	125 GPM 473 LPM
2" 'GH-HP'	115 GPM 435 LPM	145 GPM 549 LPM
3" 'GH-HP'	170 GPM 643 LPM	275 GPM 1040 LPM

<sup>1</sup> With 15 micron depth wound cartridges.

**OPTIONAL**

TO ORDER ADD TO	MODEL NO.	
	PRICE CODE NO.	
Flange connections: CPVC	1½" 2" 3"	- F 78-0458 78-0459 78-1344
Viton elastomers	change L to V	- V

TO ORDER	ADD TO	
	MODEL NO.	PRICE CODE NO.
222 "O"-ring seat for SOE (Single open end flat top) cartridge.	- 2	- 2



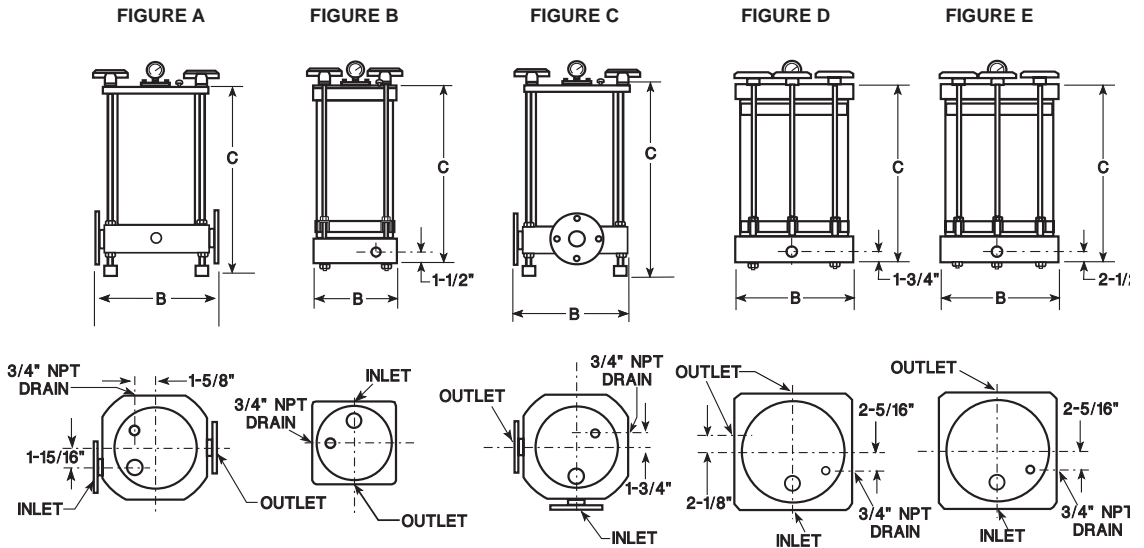


**SERIES 'GH-HP' CHAMBERS Dimensions**

C-114\_A

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**DIMENSIONS**



**TOP VIEW of BASES**

FIGURE	CHAMBER MODEL	PORT SIZE	B WIDTH in.	C HEIGHT in.	CARTRIDGES*			
					10"	20"	30"	40"
A	KL40 1½F KL80 1½F KL120 1½F KL160 1½F	1½" FLANGE	13½ INCLUDES FLANGES	21	4	-	-	-
				31	8 or 12	-	-	-
				41	16 or 12	-	4	-
				51	16 or 8	-	-	4
B	CL, PL50 1½ CL, PL100 1½ CL, PL150 1½ CL, PL200 1½	1½" NPT	10 SQUARE	20½	5	-	-	-
				30½	10 or 15	5	-	-
				40½	15	-	5	-
				50½	20 or 10	10	-	5
C	PPL, KL70 2F PPL, KL140 2F PPL, KL210 2F PPL, KL280 2F	2" FLANGE	14½ INCLUDES FLANGES	24	7	-	-	-
				34	14 or 21	7	-	-
				44	21	-	7	-
				54	28 or 14	14	-	7
D	CL, PL 2 CL, PL 2 CL, PL 2 CL, PL 2	2" NPT	15½ SQUARE	31	22 or 33	11	-	-
				41	33	-	11	-
				51	44 or 55	22	-	11
				61	55 or 11	11	11	-
E	CL, PL 3 CL, PL 3 CL, PL 3	3" NPT	15½ SQUARE	42½	33	-	11	-
				52½	44 or 55	22	-	11
				62½	55 or 11	11	11	-

\* Maximum cartridge diameter: All PPL and PL & CL 50, 100, 150 & 200 - 2-5/8 inches. All others - 2-3/4 inches.



# SERIES 'HD' PLASTIC CARTRIDGE FILTER CHAMBERS

163

C-111\_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

***ELECTRONIC MANUFACTURING,  
PHARMACEUTICALS, FOOD & BEVERAGE***



## FEATURES

- High purity non-metallic solution contact — Precision CNC machined from premium grade PVDF or natural pure polypropylene
- Proven durability and ease of service
- Standard heavy duty flange connections for ease of installation and trouble-free operation
- Standard 0-60 PSI gauge, air vent valve and drain port
- For use with standard 10", 20", 30" or 40" single open end (SOE) 222 style filter cartridges
- Flow rates to 150 GPM

## BENEFITS

- Economical — Easy installation, operation and maintenance
- Efficient — High flow rate, low pressure drop saves energy
- Improves quality of finished product — Saves money, reduces scrap and rework
- SERFILCO — worldwide leader in service, dependability and design for over 35 years

## SPECIFICATIONS

SERIES 'HD' filter chambers are precision CNC machined from high purity PVDF or natural pure polypropylene. Chambers feature a swing bolt cover closure with 'T'-handles for ease of cartridge service — no tools are required. Precision machined covers feature FRP reinforcing plate to ensure positive liquid containment. Standard 0 - 60 PSI gauge guard, vent valve and drain port are designed to simplify operation and maintenance. Standard flange connections are 1½" with rugged 316 stainless steel back plates for ease of installation and to ensure leak-free operation. All external fasteners are 316 stainless steel; standard elastomers are EPDM. Chambers are designed for use with 4 - 10", 20", 30" or 40" SOE style filter cartridges.

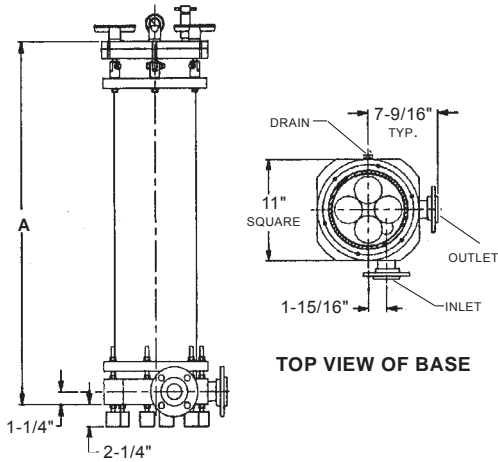




# SERIES 'HD' CHAMBER Specifications

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## DIMENSIONS



FLOW RATE vs. PSI	
70 GPM	= Δ 5 P
125 GPM	= Δ 15 P

MAX. PSI PRESSURE @ OPERATING TEMPERATURE		
TEMPERATURE	PSI	
	Polypropylene	PVDF
80°F	58	90
100°F	51	76
120°F	45	65
140°F	39	55
160°F	30	47
180°F	Not recommended	40
200°F	Not recommended	34

## SPECIFICATIONS and ORDERING INFORMATION

MODEL	MATERIAL	CONNECTIONS	NO. of SOE CARTRIDGES *	MAX. CART. LENGTH	HEIGHT A	SHIP. WT. Lbs.	TO ORDER, USE PRICE CODE NO.
PPL40(1) SH 1½F-2	Polypropylene	1½" flange	4 - 10"	10 <sup>1</sup> / <sub>8</sub> "	16½"	35	78-1650 L
PPL80(2) SH 1½F-2			4 - 20"	20 <sup>1</sup> / <sub>8</sub> "	26½"	40	78-1651 L
PPL120(3) SH 1½F-2			4 - 30"	30 <sup>1</sup> / <sub>8</sub> "	36½"	45	78-1652 L
PPL160(4) SH 1½F-2			4 - 40"	40 <sup>1</sup> / <sub>8</sub> "	46½"	50	78-1653 L
KL40(1) SH 1½F-2	PVDF	1½" flange	4 - 10"	10 <sup>1</sup> / <sub>8</sub> "	16½"	55	78-1654 L
KL80(2) SH 1½F-2			4 - 20"	20 <sup>1</sup> / <sub>8</sub> "	26½"	65	78-1655 L
KL120(3) SH 1½F-2			4 - 30"	30 <sup>1</sup> / <sub>8</sub> "	36½"	75	78-1656 L
KL160(4) SH 1½F-2			4 - 40"	40 <sup>1</sup> / <sub>8</sub> "	46½"	85	78-1657 L

NOTE: For Viton® elastomers, change L to V in Model and Price Code No.

\* Cartridges ordered separately. Refer to Bulletin M-207-2.





# SERIES 'HF' FILTER CHAMBERS

165

C-112\_C

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## HIGH FLOW FILTER CHAMBERS FOR:

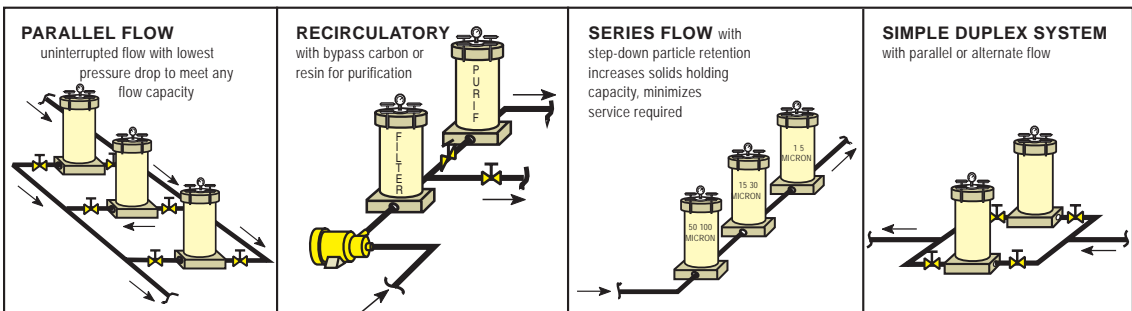
*CHEMICAL, ELECTROPLATING,  
WASTE TREATMENT, WATER TREATMENT,  
COOLING TOWER, AQUACULTURE*

### FEATURES:

- Rugged construction, non-metallic solution contact
- PVC or CPVC construction  
EPDM elastomer standard, Viton® optional
- Flows to 400 GPM
- High capacity — 26 - 20", 30", 40" or 50" filter cartridges
- Standard 0-60 psi gauge with guard, air vent valve and drain port
- Low pressure drop — 4 psi @ 200 GPM
- 'T'-handle cover closure — no tools required to change cartridges

### BENEFITS:

- Long service life — will not rust or corrode
- Continuous high flow particle removal improves your process and finished goods
- Long intervals between cartridge changes reduces maintenance cost.
- Easy to operate and install.
- Efficient to operate — low pressure differential



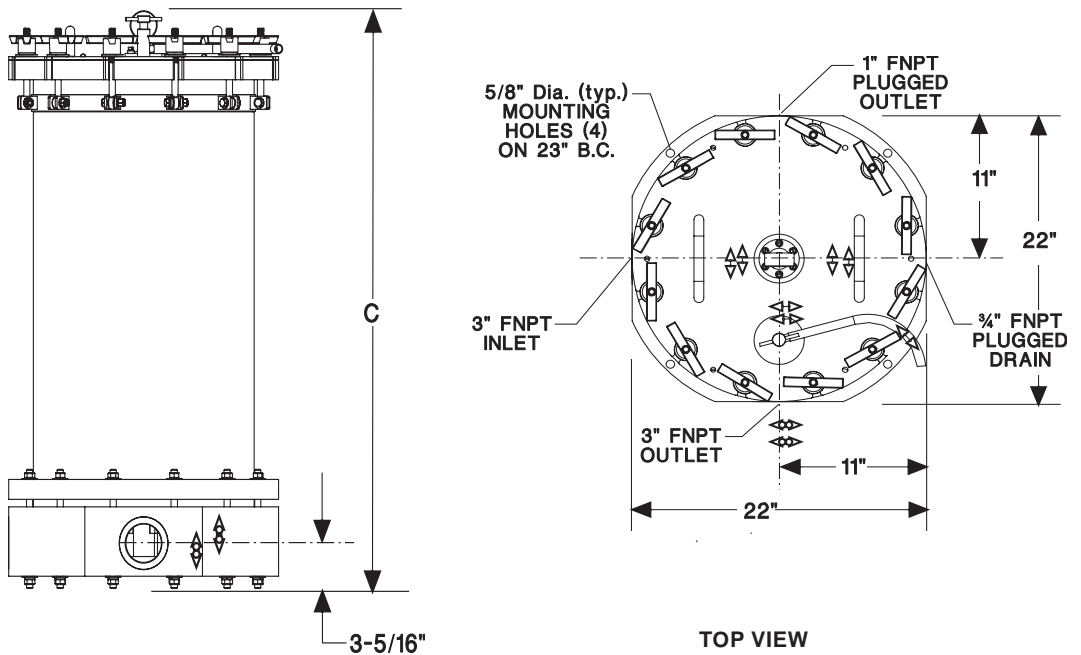


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SERIES 'HF' chambers feature precision CNC machined base and cover. The innovative base design has 3" inlet and outlet ports providing low pressure differential. Base includes a 1" plugged drain port for ease of maintenance. Cover includes vent valve, 0-60 psi pressure gauge with guard assembly, and stainless steel cover plate. Cover is secured with swing bolts and 'T'-handles (no tools are

required to change cartridges). Shell is 18" diameter and will hold 26 - 20", 30", 40" or 50"\* D.O.E. (double open end) style cartridges. CPVC cross posts with screw-on caps provide a positive cartridge seal ensuring no solution by-pass. Base, shell and cover are PVC or CPVC for totally non-metallic solution contact. Elastomers are EPDM and all external hardware is stainless steel.

**DIMENSIONS**



TO ORDER, use Price Code Number				
MODEL NUMBER <sup>1</sup>	NO. CARTS.	SHIP. WT. (lbs.)	DIMENSION 'C'	PRICE CODE NUMBER
PL520(2)SH-3-G3A	26 - 20"	215	38" (965 mm)	78-1662
PL780(3)SH-3-G3A	26 - 30"	235	48" (1219 mm)	78-1663
PL1040(4)SH-3-G3A	26 - 40"	255	58" (1473 mm)	78-1664
PL1300(5)SH-3-G3A	26 - 50" <sup>2</sup>	275	68" (1595 mm)	78-1665

MAXIMUM TEMPERATURE	MAXIMUM PSI
140°F PVC 180°F CPVC	50
FLOW RATE vs. PSI	
200 GPM = 4 ØP 310 GPM = 10 ØP	

<sup>1</sup> Listed model is PVC. For CPVC change **P** to **C** in model number and add **C** to price code number. For Viton® elastomers change **L** to **V** in model number and add **-V** to price code number  
<sup>2</sup> 50" lengths are achieved by pairing a 20" cartridge with a 30" cartridge or a 10" cartridge with a 40" cartridge.





# SERIES 'WT' PLASTIC CARTRIDGE FILTER CHAMBERS

167

C-103\_T

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



**WATER TREATMENT / D.I. WATER  
R.O. & U.F. PREFILTER  
BRACKISH WATER/SEA WATER  
WASTE TREATMENT / INDUSTRIAL LIQUIDS**

### FEATURES:

- **Non-metallic solution contact**  
PVC construction  
with EPDM "O"-ring (Viton® optional)  
(See a chemical resistance chart)
- **Heavy Duty construction**
  - Rated 125 PSI at 70°F (8.5 BAR @ 21°C.)
  - Cartridge guides with screw-on caps for positive cartridge seal
- **Cartridge capacity**  
From 7 to 28-10" cartridge capacity  
(or equivalent 20", 30", or 40" lengths)
- **Quick opening for easy servicing**
- **2" NPT connections**  
1/2" NPT drain and 1/4" NPT vent  
Choice of outlet direction

The Series 'WT' Plastic Filter Chamber is designed for total corrosion resistance, versatility of use, high flow rates at low pressure drop and ease of cartridge replacement. Each model holds seven of 10", 20", 30" or 40" filter cartridges and offers a choice of depth wound, pleated or carbon media. Quick opening eye nut-swing bolt closure allows

ease of cartridge exchange without tools, spillage or chamber draining. Cartridges are securely sealed by means of cartridge guides with screw-on caps. Standard location of outlet is opposite inlet as illustrated above. Outlet may also be provided at 90° increments to offer the most convenient arrangement for piping.



**TO ORDER, use Price Code Number**

DESCRIPTION	MODEL NUMBER	PRICE CODE NUMBER
Floor standing unit constructed of high luster white PVC. Includes EPDM "O"-ring, stainless steel swing bolt cover closure with eye nuts and vinyl coated bracket. Inlet/outlet connections are 2" NPT with 1/2" NPT drain and 1/4" NPT vent plug.	PL70S-2	78-1290
	PL140S-2	78-1291
	PL210S-2	78-1292
	PL280S-2	78-1293



**SERIES 'WT' PLASTIC FILTER CHAMBERS (cont'd)**

C-103\_T

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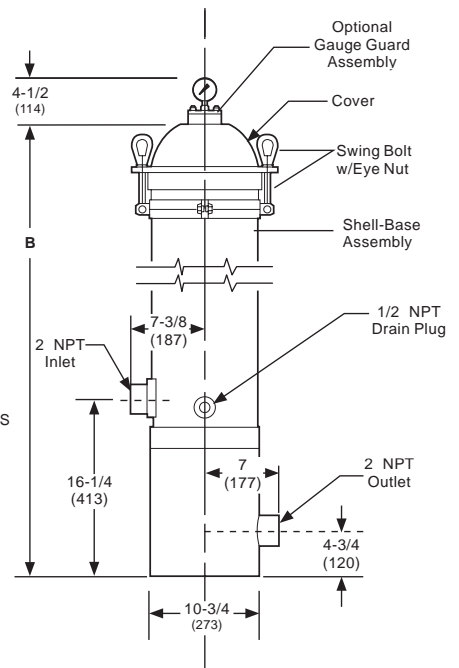
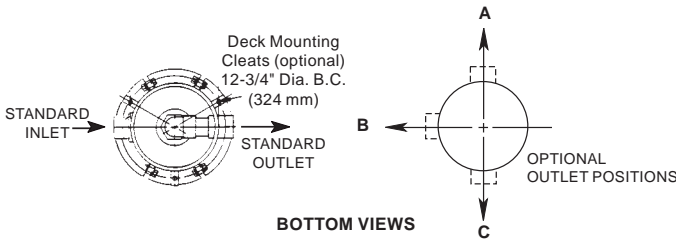
**OPTIONAL**

DESCRIPTION	ADD to MODEL NO.	ADD TO OR SEPARATE PRICE CODE NO.
Pressure gauge, 0-160 PSI, on polypropylene gauge guard with diaphragm and CPVC vent valve	-G7	78-0078
Optional outlet direction	-A B or C	-A, B or C
Viton "O"-ring, change L to V in Model Number		-V
Flange connections, 2" PVC	-F	78-1122
Deck anchor cleats (set of three)	-D	78-1124A

**DIMENSIONS**

FLOW RATE * @ PRESSURE DIFFERENTIAL			
GPM	LPM	PSI	Bar
35	132	1	.07
70	265	1	.07
105	397	2	14
140	530	2	14

\* Using 10 micron polypropylene depth cartridges, 5 GPM/10" length.



The use of a standpipe or pulsation dampener is recommended when operating with high pressure pumps or quick closing valves, due to the possibility of damage by water hammer.

**SPECIFICATIONS**

MODEL NUMBER	HEIGHT B		SHIPPING WT.		CARTRIDGE CAPACITY		SOLIDS DEPTH AREA	MAXIMUM FLOW		MAXIMUM PSI AT OPERATING TEMP.		
	Inches	mm	Lbs.	Kg.	10 inch	Unit length	Sq. ft.	U.S. GPM	LPM	Temp.	Max. PSI	
PL70S-2	29-3/8	746	55	25	7	7 of 10"	24.5	70	265	ALL MODELS	70°F	125
PL140S-2	39-3/8	1000	60	27	14	7 of 20"	49.0	100	378		100°F	77
PL210S-2	49-3/8	1254	65	29	21	7 of 30"	73.5	140	530		120°F	50
PL280S-2	59-3/8	1508	75	34	28	7 of 40"	98.0	140	530		140°F	28

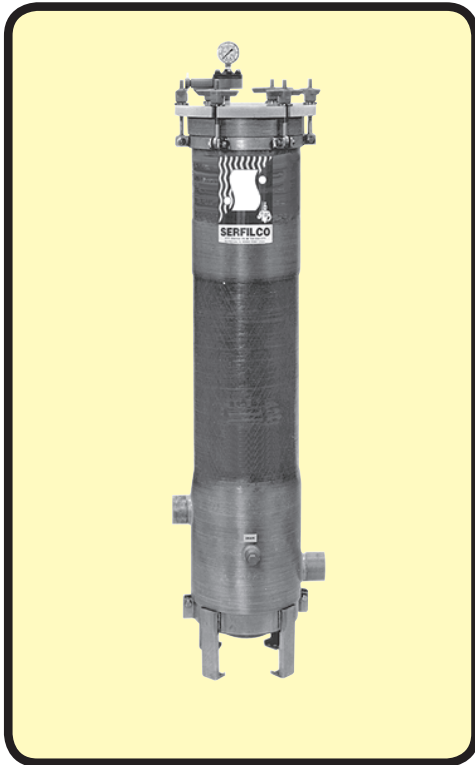


# SERIES 'FRP' PLASTIC CARTRIDGE FILTER CHAMBERS

169

C-108\_M

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



**HIGH FLOW RATES AND HIGH  
OPERATING PRESSURES FOR:**  
**WATER / DEIONIZED WATER**  
**SEA WATER / BRACKISH WATER**  
**INDUSTRIAL LIQUIDS / CHEMICALS**  
**OEM-REVERSE OSMOSIS &  
ULTRA-FINE PREFILTER**

- **Non-metallic solution contact**  
Epoxy resin and CPVC  
(See a chemical resistance chart)
- **Heavy duty construction**  
Filament-wound fiberglass and epoxy vessel with  
integral domed bottom
- **Rated to 125 PSI from 32°F to 200°F**  
(862 kPa from 0°C to 93°C)
- **Chamber capacity**  
8-40" or 32-10" cartridges
- **High flow rates to 320 U. S. GPM**  
(1211 LPM) at low PSI differential
- **2" or 3" FNPT connections standard**  
Optional ANSI 150 PSI flanges
- **Quick cartridge change**  
Easy cartridge change, no tools required

For use with a variety of filter media<sup>1</sup>:

- Depth wound, pleated, carbon and membrane cartridges
- Positive cartridge seal for -  
DOE . . . Double Open End  
SOE . . . Single Open End with 120 "O"-ring

Series 'FRP' Filter Chambers provide economical particulate removal and extend the useful life of solutions through clarification. They are constructed of thermoset plastic resin reinforced with continuous filament wound fiberglass to offer the strongest FRP composite obtainable. No pigments or fillers are used, making these chambers suitable for a wide range of liquids. Standard models have EPDM "O"-rings (Viton® optional) and CPVC internals for non-metallic solution contact.

All 'FRP' models include CPVC tube guides which accept full 40" length cartridges. They also accept

carbon cartridges. An optional CPVC cross post set can be ordered for stacking 10" or 20" DOE cartridges.

'FRP' chambers use vinyl coated 316 stainless steel springs and CPVC cartridge seats to provide positive seating. Stainless steel swing bolts and polyester T-handles facilitate quick opening of cover closure. Chambers include 304 stainless steel mounting legs. Models have FNPT inlet and outlet connections. Optional flange connections available.

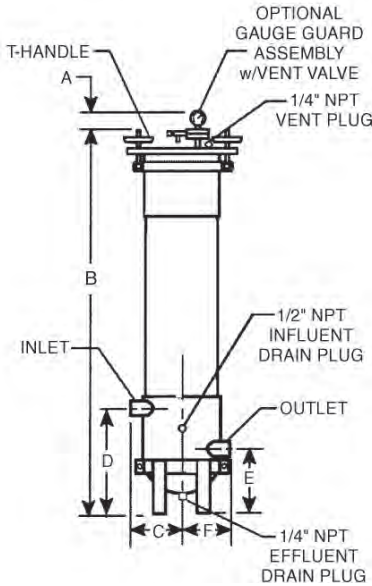
<sup>1</sup> Cartridges must be ordered separately.  
Refer to Filter Media.





Series 'FRP' filter chambers (cont'd)

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DIMENSIONS - Inches (mm)							
MODEL	A	B	C	D	E	F	PORT
							SIZE FNPT
<b>FRP320S</b>	3 (76)	57-1/2 (1460)	7-1/4 (184)	15-1/8 (384)	9-1/8 (232)	7-3/4 (197)	2" or 3" IN & OUT

**TO ORDER, use Price Code Number**

DIMENSIONS - Inches (mm)							
MODEL	FNPT CONNS.	NUMBER OF CARTRIDGES (Ordered separately)	FLOW RATE* @PRESS. DIFF. U.S. GPM		MAXIMUM FLOW RATE	SHIP. WT.	PRICE CODE NUMBER
			2 PSI	5 PSI	U.S. GPM	lbs.	
<b>FRP320S-2</b>	2"	8-40" or 32-10"	100	190	250	68	77-9969

\* Using clean 10 micron Maxi-Depth wound filter cartridges.

**OPTIONAL, use Price Code Number**

DESCRIPTION	ADD TO MODEL NO.	ADD TO OR USE SEPARATE PRICE CODE NO.
Pressure gauge, 0-160 PSI, on polypropylene gauge guard with diaphragm and CPVC vent valve	-G4A	99-0740
Pressure gauge with Viton diaphragm	-G4AV	99-0740V
Viton "O"-ring	-V	-V
Flange connections, 150 PSI ANSI		
2" CPVC for 180°F (82°C) maximum temperature		78-0459
2" PVC for 140°F (60°C) maximum temperature	-F	78-1122
3" CPVC for 180°F (82°C) maximum temperature		78-1344
3" PVC for 140°F (60°C) maximum temperature		78-1234
Cross post set (to stack 10" or 20" cartridges, in place of standard tube guides,	—	77-9917
Modification to accept 120 "O"-ring (internal) SOE cartridges	-120	77-9934



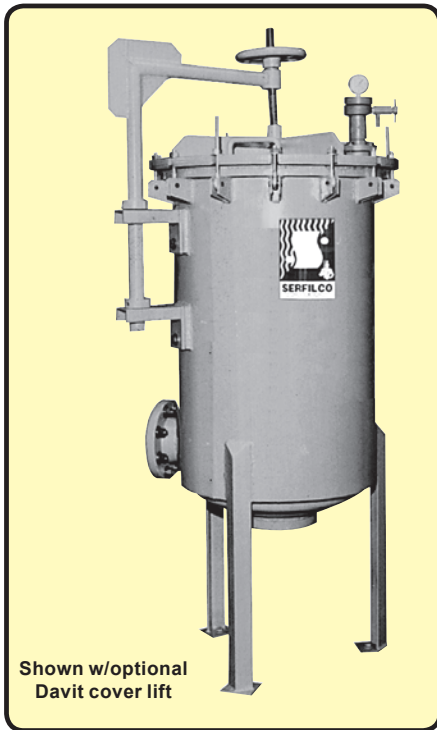


# SERIES 'Y' RUBBER LINED STEEL CARTRIDGE FILTER CHAMBERS

171

C-203\_J

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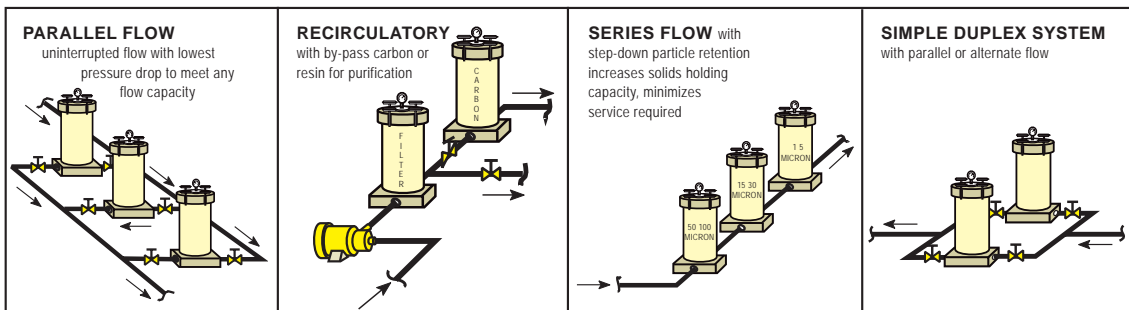
Shown w/optional Davit cover lift

## FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**CHEMICAL / ELECTROPLATING  
R.O. PRE-FILTER / WATER TREATMENT  
WASTE TREATMENT / COOLING TOWER**

- **Non-metallic solution**  
Rubber or Hypalon lined steel construction
- **Heavy duty construction**  
75 PSI ASME code design standard  
150 PSI code design optional
- **Large cartridge capacity & wide range of sizes**  
24-445 of 10" cartridges  
to 1557 sq. ft. dirt holding capacity
- **High flow rates to 2225 GPM**
- **Easy to service**  
Removable cage assembly

**SERIES 'Y' Filter Chambers** are made of carbon steel with vulcanized rubber or Hypalon® lining to provide non-metallic solution contact for use as a prefilter ahead of reverse osmosis membranes, for filtration of electroplating and other chemical solutions and for many other applications. Consult a chemical resistance chart, Bulletin TC-101, and Sales Department for chemical compatibility.

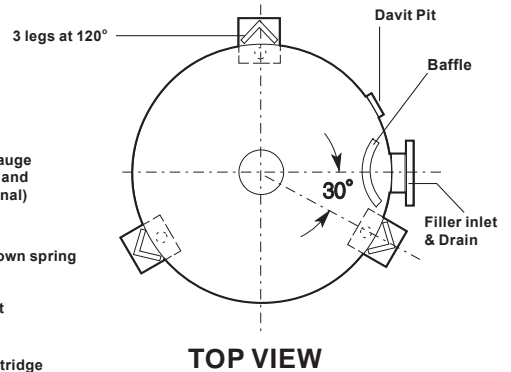
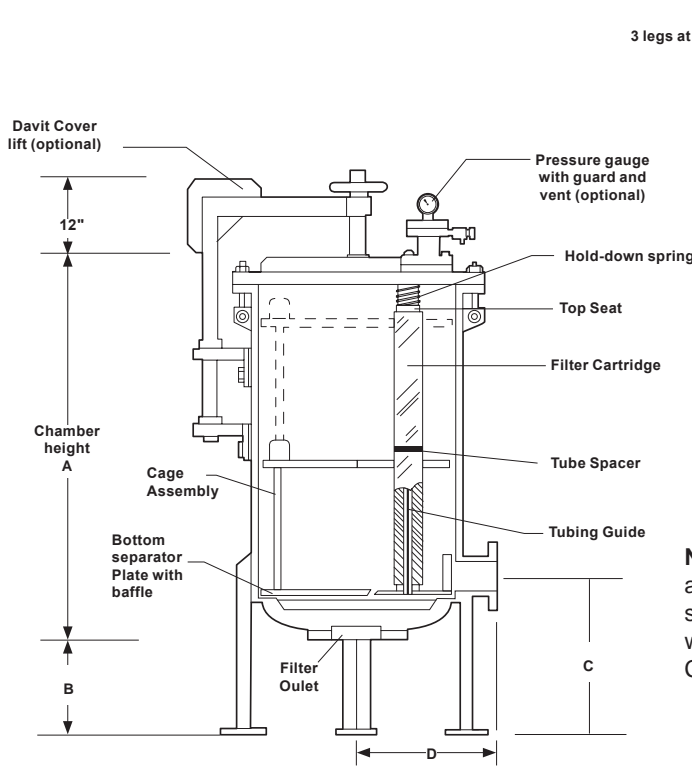




**SERIES 'Y' RUBBER LINED STEEL FILTER CHAMBERS (Cont'd)**

C-203\_J

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**Note:** Inlet and outlet connections are available in optional sizes, locations and styles. Chamber may also be customized with optional vents, drains or gauge ports. Consult Sales Department.

MODEL	A		B		C		D*		SHIP WT	
	in	mm	in	mm	in	mm	in	mm	lbs	kg
_240-2	32	813	14	356	22	559	12	305	350	159
_360-2	42	1067							375	170
_520-2	32	813	15						360	163
_780-2	42	1067							390	177
_B540-4	45	1143	15	381	26	660	14.5	368	600	272
_870-4									650	295
_B900-4	65	1651	15	381	26	660	14.5	368	800	363
_1050-4	45	1143							850	386
_1450-4									9000	408
_1750-4									1000	454
B1800-6	65	1651	20	508	32.6	829	18	457	1200	544
_3000-6									1400	635
_B3000-8					35.9	889	20	508	1500	680
_4450-8					39	991	26	660	1800	816
_B4450-8								1950	885	

\* w/ rubber lining





**SERIES Y' RUBBER LINED STEEL FILTER CHAMBERS (Cont'd)**

C-203\_J

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'Y' Filter Chambers are constructed of rubber or Hypalon® lined carbon steel, providing non-metallic solution contact. A 75 PSI ASME code design, non-stamped, is standard with 150 PSI code design optional. ASME code stamp for either pressure rating is also optional.

The chamber is provided with a removable internal cage assembly for ease of cartridge service and chamber cleanout. Standard chambers are for double open end (DOE) cartridges with 222 'O-ring' SOE cartridge seats optional. Models with "B" designation provide maximum spacing between cartridges.

The lining material serves as full cover, separator plate and flange gasket. Standard internals are PVC. External steel surfaces are painted with two part epoxy gray enamel and external fasteners are stainless steel.

**SPECIFICATIONS and ORDERING INFORMATION**

MODEL	CHAMBER DIA (in)	FLANGE SIZE (in)	NO. OF 10"	NO. OF COLUMNS	SOLIDS CAPACITY (sq. ft)	MODEL PREFIX	
						YR RUBBER	YH HYPALON
						PRICE CODE	PRICE CODE
_240-2	18	2	24	12	84	78-0002	78-0036 A
_360-2			36	12	126	78-0003	78-0037 A
_520-2			52	26	182	78-0004	78-0038 A
_780-2			78		273	78-0005	78-0039 A
_B540-4	22	4	54	18	189	78-0006	78-0040 A
_870-4			87	29	305	78-0007	78-0041 A
_B900-4			90	18	315	78-0008	78-0042 A
_1050-4			105	35	368	78-0009	78-0043 A
_1450-4			145	29	508	78-0010	78-0044 A
_1750-4			175	35	613	78-0011	78-0045 A
_B1800-6	28	6	180	36	630	78-0012	78-0046 A
_3000-6			300	60	1050	78-0013	78-0047 A
_B3000-8	32	8	300	60	1050	78-0014	78-0048 A
_4450-8			445	89	1558	78-0015	78-0049 A
_B4450-8			445	89	1558	78-0016	78-0050 A

**OPTIONAL**

DESCRIPTION	ADD TO MODEL NO.	PRICE CODE NUMBER			
		18"	22" dia	28" dia.	32" dia.
Davit cover lift	-D	78-0066	78-0066	78-0067	78-0068
150 PSI ASME code design - non stamped	-150	78-0084			
ASME code stamp	-X	78-0073			
Pressure gauge/guard vent valve assembly CPVC	-GS				
222 "O"- Ring cartridge seats for SOE cartridges	-2	add - 2			





# SERIES 'YW' METAL CARTRIDGE FILTER CHAMBERS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



## FOR HIGH FLOW RATE APPLICATIONS WATER , CHEMICAL, PETROLEUM

- **Flow rates to 13,000 GPM**  
(49,200 LPM)
- **Choice of construction**
  - Carbon steel
  - Rubber lined carbon steel
  - Stainless steel
- **ASME code design**
- **Pressure to 300 psi**
- **Flanged drain and vent ports**
- **Davit cover lift standard**
- **2-part epoxy paint on carbon steel**

**SERFILCO Series 'YW' Filter Chambers** are designed to meet the unique requirements of the municipal and desalination markets. They provide high flow rates to 13,000 GPM for pre-filtration ahead of reverse osmosis membranes and are designed for use with either double open end or single open end filter cartridges.

Chambers for use with salt water are typically manufactured of rubber lined steel with non-metallic internal components, however all carbon steel or stainless steel chambers are also available depending on the application. All chambers are designed and manufactured to meet specification requirements including ASME code, with or without code stamp, and pressures from 75 psi to 300 psi as required.

### CHAMBER CAPABILITIES

MODEL <sup>1</sup>	CHAMBER DIAMETER (in)	FLANGE SIZE (in)	NUMBER OF COLUMNS	TOTAL NUMBER OF 10" CARTRIDGES <sup>2</sup>	MAXIMUM FLOW (GPM)	PRICE CODE NO.
YWR 4450-10	32	10	89	445	2225	78-0600
YWR 5300-10	36	10	106	530	2650	78-0601
YWR 7900-12	42	12	158	790	3950	78-0602
YWR 10950-14	48	14	219	1095	5475	78-0603
YWR 13500-16	54	16	270	1350	6750	78-0604
YWR 16800-18	60	18	336	1680	8400	78-0605
YWR 20800-20	66	20	416	2080	10400	78-0606
YWR 26000-24	72	24	520	2600	13000	78-0607

<sup>1</sup> Rubber lined steel chamber

<sup>2</sup> Using 50" length, 2 1/2" diameter cartridges

Specifications subject to change without notice







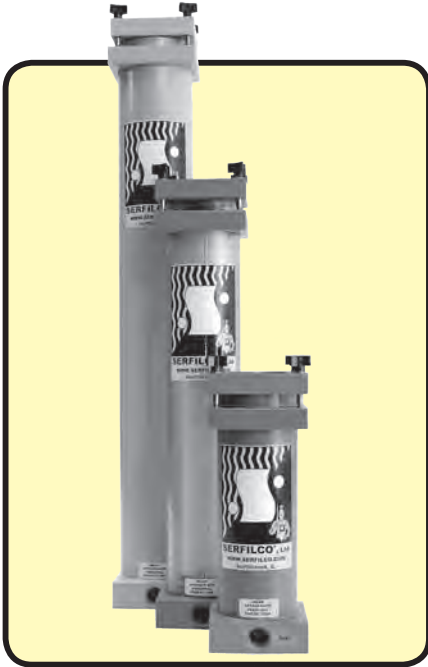
# SERIES 410-430 BAG FILTER CHAMBERS

175

C-309

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## FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS



### FEATURES:

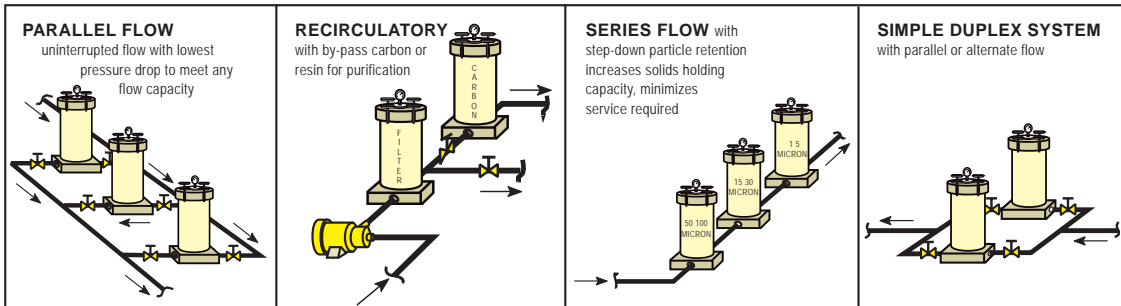
- **Non-metallic solution contact**  
PVC, CPVC, polypropylene or PVDF construction  
EPDM elastomers standard (Viton® optional)
- **Sizes to 2.25 square feet (0.23 sq/m)**  
For flow rates to 20 GPM (75 LPM)
- **Top inlet – bottom outlet design**
- **Easy to service**  
Clamp ring cover closure – No tools required
- **Port size**  
3/4" hose quick-connect coupling x 3/4" FNPT
- **Polypropylene filter bags**  
1, 5, 10, 25, 50 & 100 micron

The Series 410 - 430 Bag Filter Chambers are designed for filtering various process solutions where clarification will extend operating life and improve quality. These chambers provide surface area of 0.75 to 2.25 sq. ft. and are designed for small tanks or small filtration applications.

The 410-430 Bag Filter Chambers feature non-metallic solution contact and are offered in a choice of materials of construction to meet a wide variety of applications. The design

is based on our proven 'L' chamber with molded base and cover and clamp closure. Depending on the application and the solution being filtered, these chambers are capable of handling 100 PSI pressure at ambient conditions and 200 F at lower pressures.

Because of their size, these chambers can provide a more economical solution for smaller filtration applications.





**SERIES 410-430 - Specifications and Ordering Information**

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DESCRIPTION		MODEL NUMBER	PRICE CODE NUMBER
<b>PCL</b>	CPVC base and cover, translucent PVC shell sealed to base, EPDM 'O'-ring. Clamp ring cover closure.	CPCL10BFS-3/4	78-1280
		CPCL20BFS-3/4	78-1281
		CPCL30BFS-3/4	78-1282
<b>CL</b>	CPVC base and cover, CPVC shell sealed to base, EPDM 'O'-ring. Clamp ring cover closure.	CCL10BFS-3/4	78-1280C
		CCL20BFS-3/4	78-1281C
		CCL30BFS-3/4	78-1282C
<b>PPL</b>	Polypropylene base and cover, polypropylene shell sealed to base, EPDM 'O'-ring. Clamp ring cover closure.	CPPL10BFS-3/4	78-1280PP
		CPPL20BFS-3/4	78-1281PP
		CPPL30BFS-3/4	78-1282PP
<b>KL</b>	PVDF base and cover, PVDF shell sealed to base, EPDM 'O'-ring. Clamp ring cover closure.	CKL10BFS-3/4	78-1280K
		CKL20BFS-3/4	78-1281K
		CKL30BFS-3/4	78-1282K

For Viton elastomers change L to V in model Number and add -V to Price Code Number

SERIES NUMBER	SURFACE AREA		PORTS	MAXIMUM FLOW RATE		HEIGHT				SHIPPING WEIGHT	
	ft. <sup>2</sup>	m <sup>2</sup>		GPM	LPM	A		B		lbs	kg
						in	mm	in	mm		
410	0.75	0.10	3/4"	20	75	0	0	0	0	5	2
420	1.5	0.15	3/4"	20	75	0	0	0	0	7	3
430	2.25	0.20	3/4"	20	75	0	0	0	0	9	4

POLYPROPYLENE FILTER BAGS (EPDM seal rings)						
NOMINAL MICRON RATING	FOR 410 CHAMBERS		FOR 420 CHAMBERS		FOR 430 CHAMBERS	
	PRICE CODE NO	MODEL NUMBER	PRICE CODE NO	MODEL NUMBER	PRICE CODE NO	MODEL NUMBER
1	88-1730-1	FB-PP01 x .75	88-1731-1	FB-PP01 x 1.50	88-1732-1	FB-PP01 x 2.25
5	88-1730-5	FB-PP05 x .75	88-1731-5	FB-PP05 x 1.50	88-1732-5	FB-PP05 x 2.25
10	88-1730-10	FB-PP10 x .75	88-1731-10	FB-PP10 x 1.50	88-1732-10	FB-PP10 x 2.25
25	88-1730-25	FB-PP25 x .75	88-1731-25	FB-PP25 x 1.50	88-1732-25	FB-PP25 x 2.25
50	88-1730-50	FB-PP50 x .75	88-1731-50	FB-PP50 x 1.50	88-1732-50	FB-PP50 x 2.25
100	88-1730-100	FB-PP100 x .75	88-1731-100	FB-PP100 x 1.50	88-1732-100	FB-PP100 x 2.25





# SERIES 630 & 640 BAG FILTER CHAMBERS

177

C-307\_A

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Swing bolt cover  
closure with tee  
handles

## FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**WATER TREATMENT / FOOD PROCESSING  
CLEANING / PHOTOGRAPHIC  
ELECTROPLATING / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

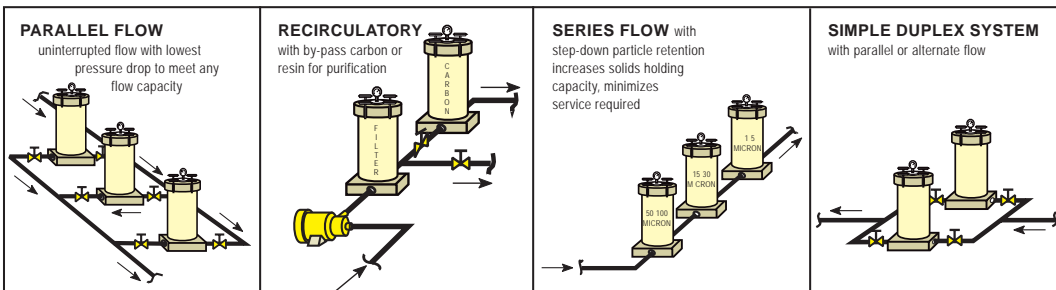
- **Non-metallic solution contact**  
PVC, CPVC, polypropylene or PVDF construction  
EPDM elastomers standard (Viton® optional)
- **Sizes to 5.0 square feet (0.5 sq/m)**  
For flow rates to 40 GPM (151 LPM)
- **Bottom inlet – bottom outlet design**  
Allows chamber to be hard piped  
Change bags without disconnecting piping
- **Easy to service**  
Swing bolt / tie rod cover closure with tee handles
- **Port sizes 1" FNPT**
- **Polypropylene filter bags**  
1, 5, 10, 25, 50 & 100 micron

The Series 630 and 640 Bag Filter Chambers are designed for filtering various process solutions where clarification will extend operating life and improve quality.

These chambers are redesigned to make them easy to operate and convenient to service. The design features a bottom inlet and bottom outlet which allows these chambers to be hard piped and allows the user

to change bags without disconnecting any hoses or piping.

The Series 630 and 640 Bag Filter Chambers feature non-metallic solution contact and are offered in a choice of materials of construction to meet a wide variety of applications. The single bag design provides filter area to 5.0 sq. ft. and micron retention Ratings of 1 to 100.





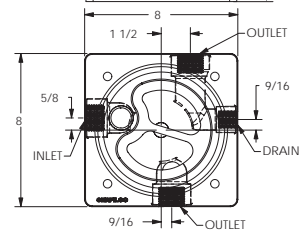
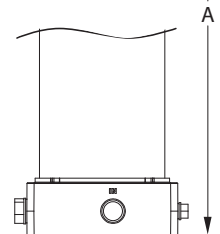
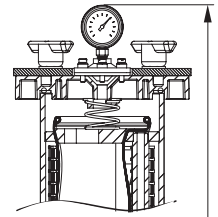
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EPDM elastomers and pressure gauge with gauge guard are standard.

DESCRIPTION		TEE HANDLE	
		MODEL NUMBER	PRICE CODE NUMBER
PL	PVC shell sealed to base, CPVC base and cover. SS swing bolts with tee handles. Polypropylene vent valve.	PL630BFS-1-G3	78-1773P
		PL640BFS-1-G3	78-1774P
CL	CPVC shell sealed to base, CPVC base and cover. SS swing bolts with tee handles. Polypropylene vent valve.	CL630BFS-1-G3	78-1773C
		CL640BFS-1-G3	78-1774C
PPL	Polypropylene shell sealed to base. Glass reinforced polypropylene base and cover. SS swing bolts with tee handles. Polypropylene vent valve.	PPL630BFS-1-G3	78-1773PP
		PPL640BFS-1-G3	78-1774PP
KL	PVDF shell sealed to base. PVDF base and cover. SS swing bolts with tee handles. PVDF vent plug.	KL630BFS-1-G3	78-1773K
		KL640BFS-1-G3	78-1774K

For Viton elastomers change L to V in model Number and add -V to Price Code Number

SERIES NUMBER	SURFACE AREA		PORTS	MAXIMUM FLOW RATE		HEIGHT		SHIPPING WEIGHT	
	ft. <sup>2</sup>	m <sup>2</sup>		NPT	GPM	LPM	A		lbs
630	3.5	.3	1"	40	151	39.5	1003	38	17
640	5.0	.5	1"	40	151	49.5	1257	50	23



NOMINAL MICRON RATING	POLYPROPYLENE FILTER BAGS (EPDM seal rings)			
	FOR 630 CHAMBERS		FOR 640 CHAMBERS	
	PRICE CODE NO	MODEL NUMBER	PRICE CODE NO	MODEL NUMBER
1	88-0832G	FB-PP01 x 3.5	88-1476F	FB-PP01x5
5	88-0832A	FB-PP05 x 3.5	88-1476A	FB-PP05x5
10	88-0832B	FB-PP10 x 3.5	88-1476B	FB-PP10x5
25	88-0832C	FB-PP25 x 3.5	88-1476C	FB-PP25x5
50	88-0832E	FB-PP50 x 3.5	88-1476E	FB-PP50x5
100	88-0832D	FB-PP100 x 3.5	88-1476D	FB-PP100x5





# SERIES 1235 & 1255 BAG FILTER CHAMBERS

179

C-308\_A

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## FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**WATER TREATMENT / FOOD PROCESSING  
CLEANING / PHOTOGRAPHIC  
ELECTROPLATING / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

### FEATURES:

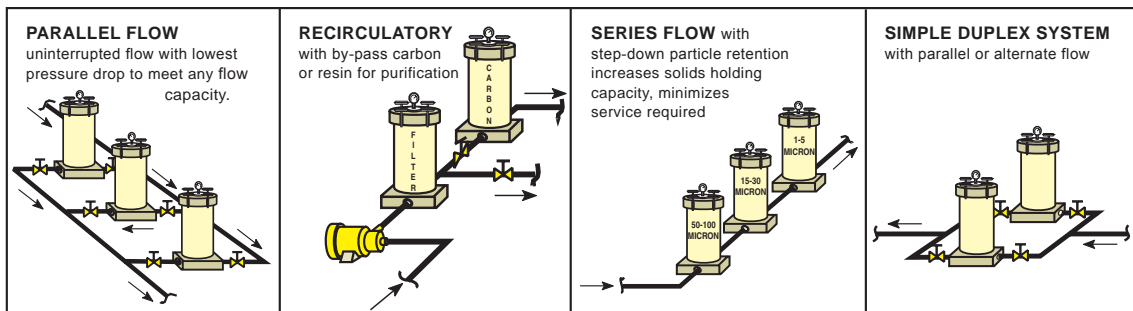
- **Non-metallic solution contact**  
PVC, CPVC, or polypropylene construction  
EPDM elastomer standard, Viton® optional
- **Sizes to 19.5 square feet (1.8 sq/m)**  
For flow rates to 100 GPM (378 LPM)
- **Bottom Inlet – bottom outlet design**  
Allows chamber to be hard piped  
Change bags without disconnecting piping
- **Easy to service**  
Swing bolt cover closure with tee handles
- **Port size 1 ½" NPT**
- **Polypropylene filter bags**  
1, 5, 10, 25, 50 & 100 micron



The Series 1235 and 1255 Bag Filter Chambers are designed for filtering various process solutions where clarification will extend operating life and improve quality. These chambers have been redesigned to make them easier to operate and more convenient to service. The new design features a bottom inlet and bottom outlet, which allows these chambers to be hard, piped and allows the user to change bags without disconnecting any hoses or piping. Additionally the new design utilizes multiple 4" flanged bags

which provides greater surface area for the same size chamber.

As before the Series 1235 and 1255 Bag Filter Chambers feature non-metallic solution contact and are offered in a choice of materials of construction to meet a wide variety of applications. The new design provides filter area to 19.5 sq. ft. and micron retention ratings of 1 to 100.





# SERIES 1235 & 1255 BAG FILTER CHAMBER

## Specification and Ordering Information

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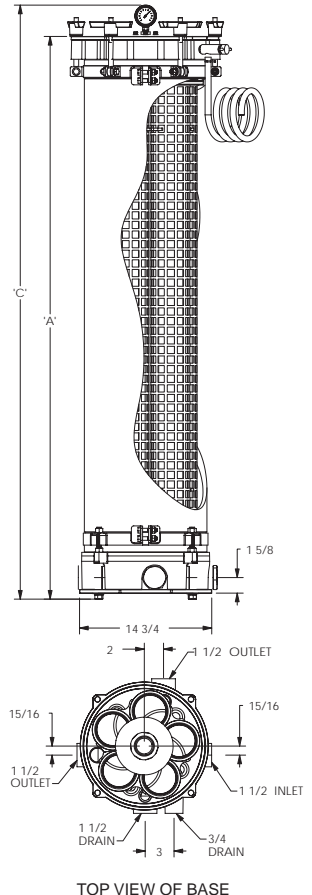
Chambers hold five individual 4" flanged bags. All chambers have cover swing bolts with tee handles, stainless steel swing bolt bracket; FRP top and bot-

tom reinforcing plate, 0-60 PSI pressure gauge with gauge guard, EPDM gaskets and drain plugs. All fasteners are stainless steel.

DESCRIPTION		MODEL NUMBER	PRICE CODE NUMBER
<b>PL</b>	PVC shell. CPVC base and cover	PL1235BFS – 1 ½ - G3A	78-1733 P
		PL1255BFS – 1 ½ - G3A	78-1735 P
<b>CL</b>	CPVC shell, base and cover.	CL1235BFS – 1 ½ - G3A	78-1733 C
		CL1255BFS – 1 ½ - G3A	78-1735 C
<b>PPL</b>	Polypropylene shell. Glass reinforced polypropylene base and cover.	PPL1235BFS – 1 ½ - G3A	78-1733 PP
		PPL1255BFS – 1 ½ - G3A	78-1735 PP

For Viton elastomers change **L** to **V** model Number and add **-V** to Price Code Number

SERIES NUMBER	SURFACE AREA		PORTS	MAXIMUM FLOW RATE		HEIGHT				SHIPPING WEIGHT	
	ft. <sup>2</sup>	m <sup>2</sup>		GPM	LPM	A		C		lbs	kg
						in	mm	in	mm		
1230	12.0	1.1	1 1/2"	80	303	38.4	975	41.9	1064	100	45
1250	19.5	1.8	1 1/2"	100	454	58.4	1483	61.9	1572	115	52



POLYPROPYLENE FILTER BAGS (4" Flanged)				
NOMINAL MICRON RATING	FOR 1235 CHAMBERS		FOR 1255 CHAMBERS	
	PRICE CODE NO	MODEL NUMBER	PRICE CODE NO	MODEL NUMBER
1	88-3613F	FB-PP01x2.4	88-3615F	FB-PP01x3.9
5	88-3613A	FB-PP05x2.4	88-3615A	FB-PP05x3.9
10	88-3613B	FB-PP10x2.4	88-3615B	FB-PP10x3.9
25	88-3613C	FB-PP25x2.4	88-3615C	FB-PP25x3.9
50	88-3613E	FB-PP50x2.4	88-3615E	FB-PP50x3.9
100	88-3613D	FB-PP100x2.4	88-3615D	FB-PP100x3.9

TOP VIEW OF BASE



# SERIES 'G' PLASTIC DISC FILTER CHAMBERS

181

C-303\_A

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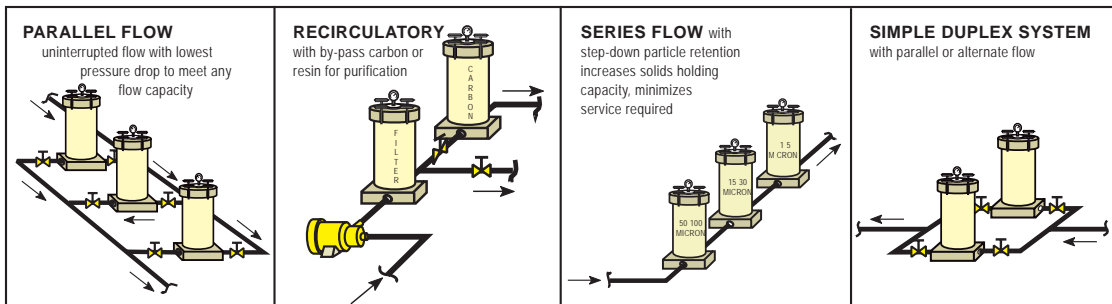
**FOR : WATER TREATMENT / FOOD PROCESSING  
CLEANING / PHOTOGRAPHIC  
ELECTROPLATING / PHARMACEUTICAL  
CHEMICAL / PETROCHEMICAL / BEVERAGE**

- **Non-metallic solution contact**  
PVC, CPVC or polypropylene construction  
EPDM elastomers standard, Viton® optional
- **Heavy duty construction**  
Pressure and temperature capabilities to meet wide variety of applications
- **High flow rates**  
Up to 6000 GPH (22,700 l/h)
- **High capacity —**  
15, 30, 45 ft<sup>2</sup> (1.4, 2.8, 4.2 m<sup>2</sup>) solids area
- **Ease of Service**  
SS Swing bolt cover closure  
Stack assembly for quick media change
- **Choice of filter media:**
  - **Cellulose discs for 5, 10, 20 & 40 micron filtration**  
Use alone or with filter aid and/or powdered carbon
  - **Carbon discs for purification**  
Interchangeable with filter discs

These disc filter chambers are designed for quality filtration of plating and other chemical solutions. The large surface area with I.D. and O.D. edge seals on all filter discs assures optimum performance and clarity of solution being filtered. Disc filters may be used with a precoat of filter aid alone or with a mixture of filter aid and powdered carbon. Carbon discs are also available and may be installed in total or in partial to accomplish the proper degree

of organic removal. Some applications may allow filtration without a media precoat. Chambers include a drip pan to catch run-off liquid when servicing discs.

Disc chambers are serviced by lifting the cover and disc stack assembly from the chamber, facilitating a cleaner change-out and less solution loss than with other designs. No messy "floating" of the disc is required when changing the disc media.





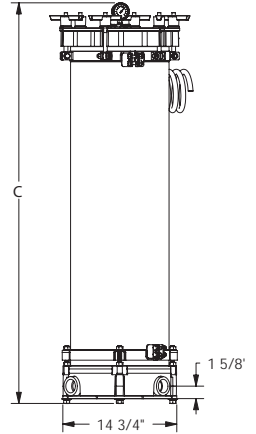
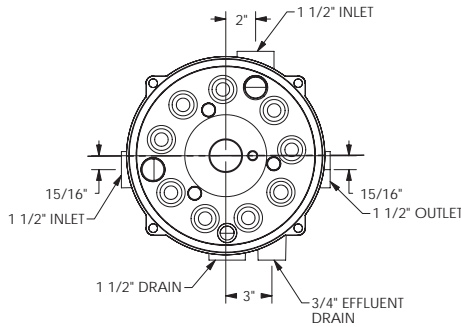
**SERIES 'G' DISC FILTER CHAMBERS**

C-303\_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

SOLIDS AREA sq. ft.	NO. OF DISCS	DIM. 'C'
15	31	20-15/16
30	65	30-15/16
45	99	40-15/16

MAXIMUM PSI		@ OPERATING TEMP.
PVC	CPVC	
80	80	70°F
75	75	100°F
40	70	120°F
25	55	140°F
—	35	170°F
—	30	200°F



TO ORDER, use Price Code Number								
MATERIALS	NO. OF DISCS	AREA		MODEL NUMBER	MAX FLOW		PRICE CODE NUMBER	SHIP. WT. (lbs.)
		ft <sup>2</sup>	m <sup>2</sup>		GPH	LPH		
PVC/EPDM	31	15	1.4	PL15DFO-1½-G3A	3000	11,355	78-1721 P	77
	65	30	2.8	PL30DFO-1½-G3A	4500	17,033	78-1722 P	92
	99	45	4.1	PL45DFO-1½-G3A	6000	22,710	78-1723 P	107
CPVC/EPDM	31	15	1.4	CL15DFO-1½-G3A	3000	11,355	78-1721 C	77
	65	30	2.8	CL30DFO-1½-G3A	4500	17,033	78-1722 C	92
	99	45	4.1	CL45DFO-1½-G3A	6000	22,710	78-1723 C	107
Polypropylene EPDM	31	15	1.4	PPL15DFO-1½-G3A	3000	11,355	78-1721 PP	77
	65	30	2.8	PPL30DFO-1½-G3A	4500	17,033	78-1722 PP	92
	99	45	4.1	PPL45DFO-1½-G3A	6000	22,710	78-1723 PP	107

For Viton® elastomers change L to V in Model Number add -V to Price Code Number



FILTER DISCS FOR SERIES 'G' CHAMBERS (ordered separately) packaged in quantities of 100		
DISC MODEL NUMBER	MICRON RATING	PRICE CODE NUMBER
CE 5 x 10	5	78-1612
CE 10 x 10	10	78-1613
CE 20 x 10	20	78-1614
CE 40 x 10	40	78-1615
C x 10 CARBON	10	78-1616





# SERIES 'M' STEEL AND STAINLESS STEEL CARTRIDGE FILTER CHAMBERS

183

C-201\_P

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**FOR FILTRATION AND PURIFICATION OF:**  
**WATER / PHOTOGRAPHIC / SOLVENTS / CHEMICALS**  
**PHARMACEUTICAL / OILS / WASTE TREATMENT**

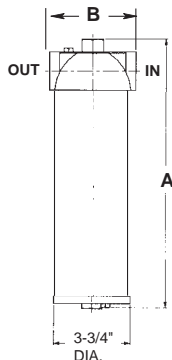
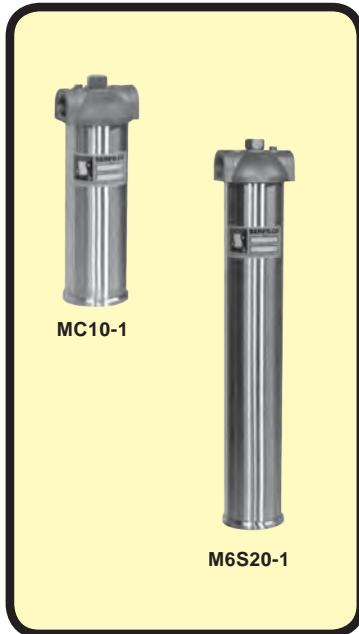
## SINGLE CARTRIDGE CHAMBERS

**STEEL** - Painted two-part epoxy gray on exterior.

MODEL	MATERIAL	MAXIMUM PRESSURE	PORT SIZE	NO. FILTER CARTRIDGES	PRICE CODE NO.
MC10-½	Carbon steel and cast iron, 304 stainless steel centering spring Buna N shell gasket <sup>1</sup>	250 PSI	½" NPT	1	78-1500
MC10-¾			¾" NPT	1	78-1501
MC10-1			1" NPT	1	78-1502
MC20-¾			¾" NPT	2	78-1503
MC20-1			1" NPT	2	78-1504
MC30-¾			¾" NPT	3	78-1505
MC30-1	1" NPT	3	78-1506		

## STAINLESS STEEL

M4S10-¾	304 stainless steel, Buna N shell gasket <sup>1</sup>	250 PSI	¾" NPT	1	78-1507
M4S10-1			1" NPT	1	78-1508
M4S20-¾			¾" NPT	2	78-1509
M4S20-1			1" NPT	2	78-1510
M4S30-¾			¾" NPT	3	78-1511
M4S30-1	1" NPT	3	78-1512		
M6S10-¾	316 stainless steel, Buna N shell gasket <sup>1</sup>	250 PSI	¾" NPT	1	78-1513
M6S10-1			1" NPT	1	78-1514
M6S20-¾			¾" NPT	2	78-1515
M6S20-1			1" NPT	2	78-1516
M6S30-¾			¾" NPT	3	78-1517
M6S30-1			1" NPT	3	78-1518



<sup>1</sup> Fiber gasket at vent, drain and center nut.

Viton® elastomers: Add **-V** to Model and suffix **V** to Price Code No.

MODEL NO.	DIMENSIONS (In.)		SHIP WT. (lbs.)
	A	B	
M <sup>c</sup> 10-½	12 <sup>7</sup> / <sub>8</sub>	4	6
M <sup>c</sup> 10-¾	12 <sup>7</sup> / <sub>8</sub>	4	6
M <sup>c</sup> 10-1	13 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	7
M <sup>c</sup> 20-¾	23	4	8
M <sup>c</sup> 20-1	23 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	9
M <sup>c</sup> 30-¾	33	4	11
M <sup>c</sup> 30-1	33 <sup>1</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>4</sub>	12

\* C for carbon steel, 4S for 304SS or 6S for 316SS





**SERIES 'M' Filter Chambers (cont'd)**

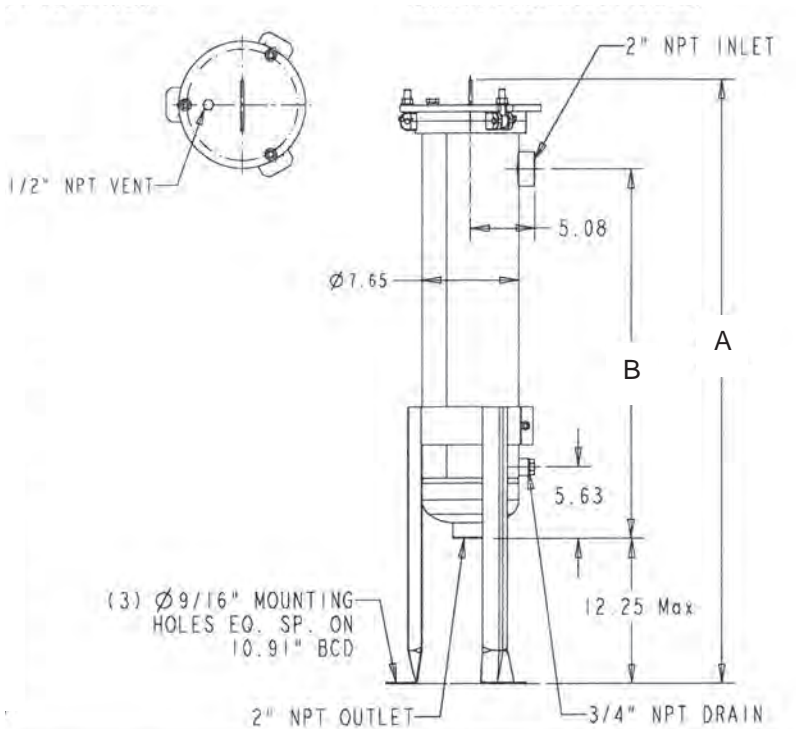
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**MULTIPLE CARTRIDGE CHAMBERS**

STEEL - Painted two-part epoxy gray on exterior.					
MODEL	MATERIAL	MAXIMUM PRESSURE	PORT SIZE	NO. FILTER CARTRIDGES	PRICE CODE NO.
S50(1)-2	Carbon steel with mounting legs Buna N gasket	100 PSI	2" MNPT	5	78-0882
S100(2)-2				10	78-0883
S150(3)-2				15	78-0884

STAINLESS STEEL					
MODEL	MATERIAL	MAXIMUM PRESSURE	PORT SIZE	NO. FILTER CARTRIDGES	PRICE CODE NO.
SS50(1)-2	304 stainless steel w/mounting legs Buna N gasket	100 PSI	2" MNPT	5	78-0885
SS100(2)-2				10	78-0886
SS150(3)-2				15	78-0887

Viton® elastomers: Add -V to Model and suffix V to Price Code Number.



MODEL NO.	DIMENSIONS (in.)		SHIP WT. (lbs.)
	A	B	
(S)S50(1)-2	38	19	57
(S)S100(2)-2	48	29	67
(S)S150(3)-2	58	39	77



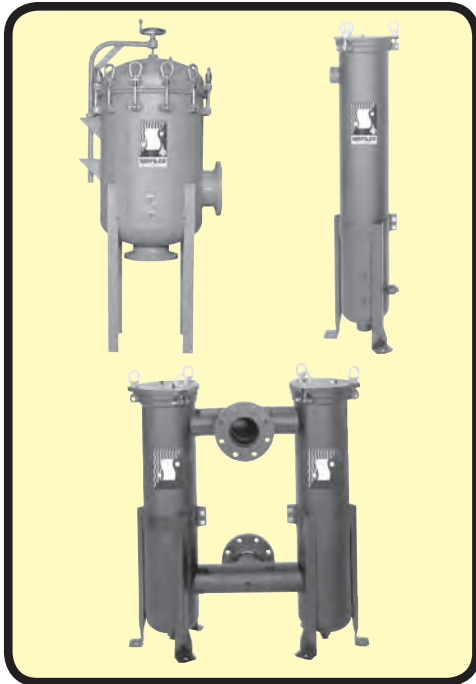


# SERIES 'K' METAL CARTRIDGE & BAG FILTER CHAMBERS

185

C-207\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431



## PROCESS WATER / CLEANERS PARTS WASHERS / CHEMICALS

- Carbon steel, 304 or 316 stainless steel construction
- Large capacity
  - 448 cartridge
  - 26.4 sq.ft multi-bag
- 150 PSI OR 300 PSI pressure rating
- Swing bolt cover closure
- Consult Sales Department for options

The Series 'K' Metal Filter Chambers provide excellent value and are available in either a cartridge or bag design and with a choice of carbon steel, 304 or 316 stainless steel construction. Cartridge chambers range in size from a single 10" cartridge to 448-10" cartridge capacity. Bag chambers are from 0.5 sq. ft. to 26.4 sq. ft. of surface area.

These chambers are ideal for either recirculatory or single pass filtration in either series or parallel flow configurations. They are offered in a wide range of sizes, styles and options to meet most applications that require a metal filter chamber.

## CARTRIDGE CHAMBERS

### SINGLE, 3 & 6 - ROUND CARTRIDGE CHAMBERS

#### FEATURES:

- Carbon steel or stainless steel construction
- EPDM elastomers standard (Viton® optional)
- Swing bolt cover closure with eye nuts
- 300 PSI pressure rating (single)  
150 PSI pressure rating  
(3-round and 6-round)
- 316 SS internals
- Differential, drain, and vent ports
- Adjustable support legs
- 2-part epoxy finish on carbon steel





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**TO ORDER, use Price Code Number**

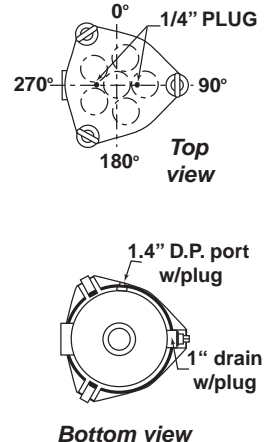
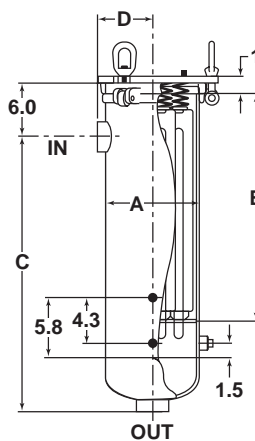
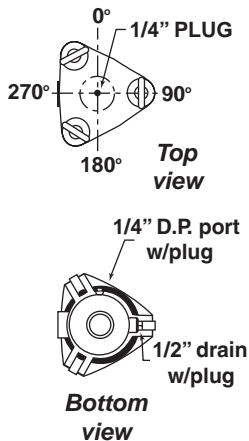
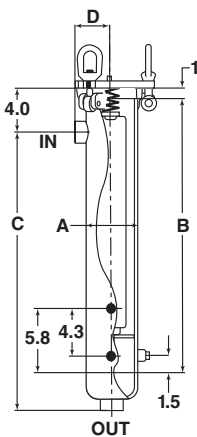
MODEL NUMBER <sup>1,2</sup>	NUMBER OF 10" CARTS.	CONN. SIZE	PRICE CODE NO. <sup>1,2</sup>	DIMENSIONS (in)				SHIP WT. (lbs)
				A	B	C	D	
<b>SINGLE CARTRIDGE CHAMBERS</b>								
KCS10S-1	1	1" NPT	78-1850	4.5	12.5	14.7	3.5	34
KCS20S-1	2		78-1851	4.5	22.5	24.7	3.5	42
KCS30S-1	3		78-1852	4.5	32.5	34.7	3.5	50
KCS40S-1	4		78-1853	4.5	42.5	44.7	3.5	58
<b>3-ROUND CHAMBERS</b>								
KCS60(2)S-1/2	6	1 1/2" NPT	78-1854	6.6	24.5	23.8	4.1	85
KCS90(3)S-1/2	9		78-1855	6.6	34.5	33.8	4.1	110
KCS120(4)S-1/2	12		78-1856	6.6	44.5	43.8	4.1	135
<b>6-ROUND CHAMBERS</b>								
KCS120(2)S-2	12	2" NPT	78-1857	8.6	24.5	23.8	5.4	120
KCS180(3)S-2	18		78-1858	8.6	34.5	33.8	5.4	145
KCS240(4)S-2	24		78-1859	8.6	44.5	43.8	5.4	170

<sup>1</sup> Model and Price Code Number shown for carbon steel construction.  
 - for 304 SS change **first S** in Model No. to **4SS** and add **S4** to Price Code No.  
 - for 316 SS change **first S** in Model No. to **6SS** and add **S6** to Price Code No.

<sup>2</sup> For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.

**SINGLE**

**3-ROUND and 6-ROUND**





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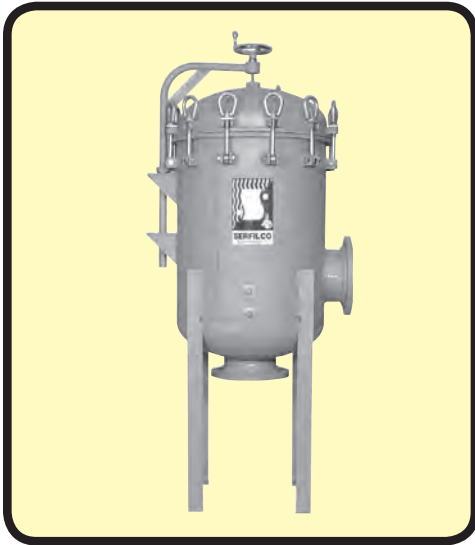
## MULTI-ROUND CARTRIDGE CHAMBERS

### FEATURES:

- Carbon steel or stainless steel construction
- EPDM elastomers standard (Viton optional)
- Bearing assisted davit assembly
- Swing bolt cover closure with eye nuts
- 150 PSI pressure rating
- 316 SS internals
- Differential, drain and vent ports
- Heavy duty support legs
- 2-part epoxy finish on carbon steel

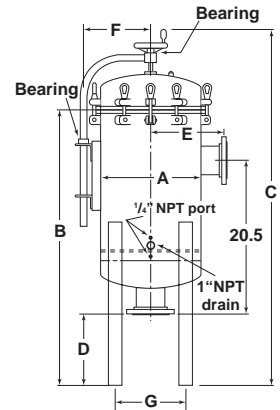
Consult Sales Department for options

Filter cartridges ordered separately  
see Bulletin M-109



### TO ORDER, use Price Code Number

MODEL NUMBER <sup>1,2</sup>	NO. OF 10" CARTS.	DIA. A (in)	CONN. SIZE FLANGE	PRICE CODE NO. <sup>1,2</sup>	DIMENSIONS (in)			SHIP WT (lbs)
					B	C	D	
KCS330(3)S-3F	33	12	3"	78-1860	54.7	70.9	10.0	410
KCS440(4)S-3F	44	12	3"	78-1861	64.7	80.9	12.5	420
KCS600(3)S-4F	60	16	4"	78-1862	55.7	71.9	10.0	480
KCS800(4)S-4F	80	16	4"	78-1863	65.7	81.9	12.5	490
KCS1040(4)S-4F	104	18	4"	78-1864	66.2	81.4	12.5	545
KCS1500(3)S-6F	150	24	6"	78-1865	57.2	73.4	12.5	635
KCS2000(4)S-6F	200	24	6"	78-1866	67.2	83.4	16.5	645
KCS2340(3)S-6F	234	30	6"	78-1867	57.9	74.1	12.5	705
KCS3360(3)S-8F	336	36	8"	78-1868	60.5	76.4	16.5	1010
KCS4480(4)S-8F	448	36	8"	78-1869	70.5	86.4	20.7	1150



<sup>1</sup> Model and Price Code Number shown for carbon steel construction.

- for 304 SS change **first S** in Model No. to **4SS** and add **S4** to Price Code No.

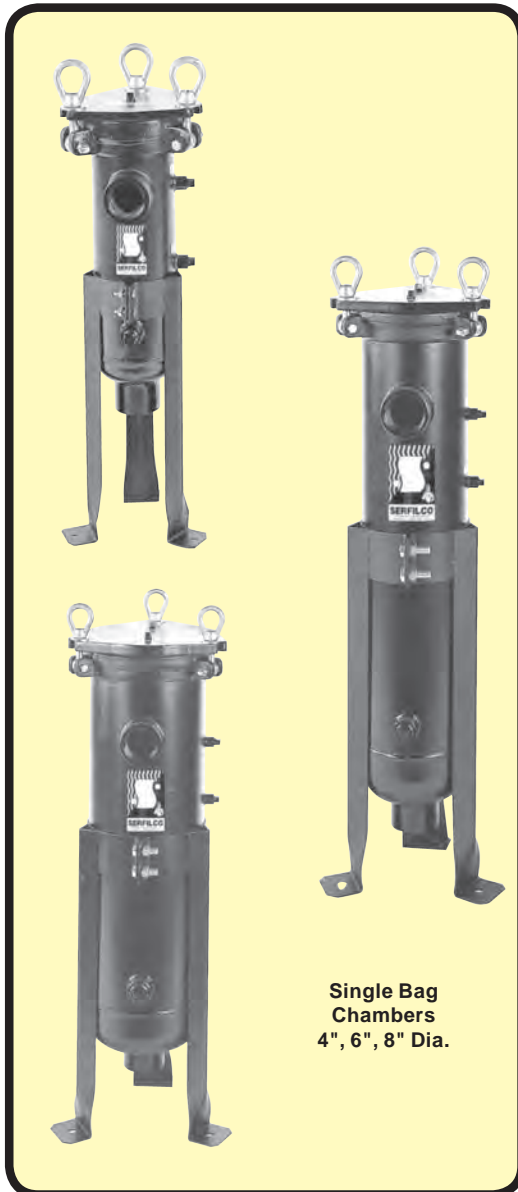
- for 316 SS change **first S** in Model No. to **6SS** and add **S6** to Price Code No.

<sup>2</sup> For Viton elastomers add **-V** to Model No.

and **V** to Price Code No.

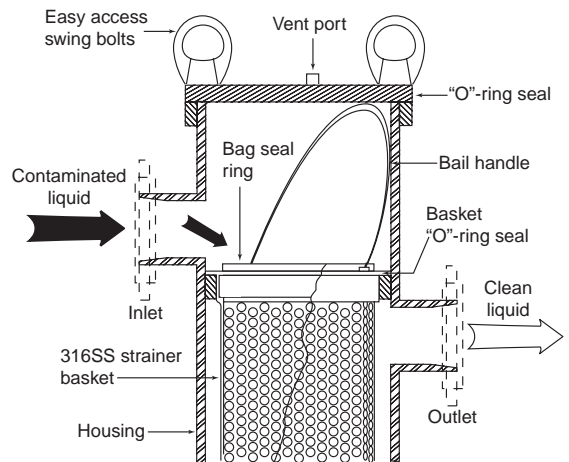
DIA. A	E	F	G
12"	11.0	9.2	10.0
16"	13.0	10.8	11.5
18"	14.0	11.8	12.0
24"	17.0	14.8	16.5
30"	20.0	17.8	20.8
36"	25.0	20.8	24.7



**BAG CHAMBERS****SINGLE BAG CHAMBERS****FEATURES:**

- Carbon steel or stainless steel construction
- EPDM elastomers standard (Viton optional)
- Swing bolt cover closure with eye nuts
- 300 PSI pressure rating (4" dia.)  
150 PSI pressure rating (6" & 8" dia.)
- 316 SS strainer basket
- Differential, drain and vent ports
- Adjustable support legs
- 2-part epoxy paint on carbon steel

Consult Sales Department for options  
Filter bags ordered separately

**KBS6 & KBS8**



**SERIES 'K' METAL FILTER CHAMBERS**

C-207\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**SPECIFICATIONS**

Housing lid has a 3-bolt swing closure with a vent port. Connections are as noted with standard side inlet and bottom outlet.

Housing is supplied with two differential pressure ports to measure the differential pressure across the filter bag. A two-part epoxy finish is applied on the carbon steel vessels to maximize the life of the housing; stainless steel vessels are supplied with a

satin finish. Basket material is constructed of 316 stainless steel with 9/64" perforations to act as a strainer or to accept a liquid filter bag. Basket for KBS6 and KBS8 chamber seats onto an "O"-ring in the basket support. Adjustable tripod leg assembly is supplied with housing.

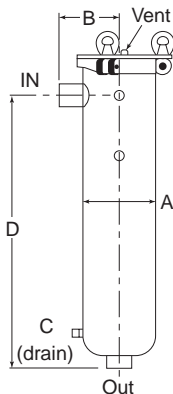
KBS4 chamber is rated at 300 PSI. KBS6 and KBS8 chambers are rated at 150 PSI.

**TO ORDER, use Price Code Number**

MODEL NUMBER <sup>1,2</sup>	SURFACE AREA (sq. ft.)	DIA. A (in)	BASKET SIZE (in)	CONN. SIZE	PRICE CODE NO. <sup>1,2</sup>
KBS406-1	0.5	4.5	3.9 x 6 (#3)	1" NPT	78-1800
KBS412-1	1.0	4.5	3.9 x 12 (#4)	1" NPT	78-1801
KBS618-11/2	2.0	6.6	5 x 18 (#8)	1 1/2" NPT	78-1802
KBS630-11/2	3.4	6.6	5 x 30 (#9)	1 1/2" NPT	78-1803
KBS815-2	2.3	8.6	6.7 x 15 (#1)	2" NPT	78-1804
KBS830-2	4.4	8.6	6.7 x 30 (#2)	2" NPT	78-1805

<sup>1</sup> Model and Price Code Number shown for carbon steel construction.  
 - for 304 SS change **S** in Model No. to **4SS** and add **S4** to Price Code No.  
 - for 316 SS change **S** in Model No. to **6SS** and add **S6** to Price Code No.

<sup>2</sup> For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.



**Threaded (NPT)  
Bottom outlet**

MODEL NUMBER	DIMENSIONS (in)			SHIP WT. (lbs)
	B	C	D	
KBS406-1	3.0	0.5	12.3	35
KBS412-1	3.0	0.5	17.5	40
KBS618-1 1/2	4.2	.75	25.3	90
KBS630-1 1/2	4.2	.75	35.2	115
KBS815-2	5.3	1.0	24.7	115
KBS830-2	5.3	1.0	36.2	135

Side outlet and flanged connections also available

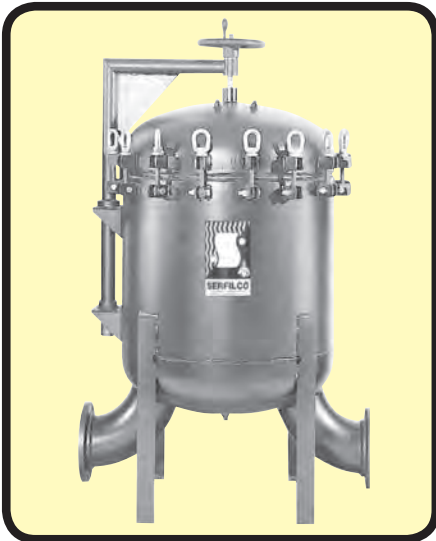




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## MULTI-ROUND BAG CHAMBERS

### FEATURES:



- Carbon steel or stainless steel construction
- EPDM elastomers standard (Viton optional)
- Uses multiple #2 size bags
- Bearing assisted davit assembly
- Swing bolt cover closure with eye nuts
- 150 PSI pressure rating
- 316 SS strainer basket
- Differential, drain and vent ports
- Heavy duty support legs
- 2-part epoxy finish on carbon steel

Consult Sales Department for options

Filter bags ordered separately

**TO ORDER, use Price Code Number**

MODEL NUMBER <sup>1,2</sup>	SURF. AREA <sup>3</sup> (sq.ft)	NUMBER OF BASKETS	DIA. A (in)	CONN. SIZE FLANGE	PRICE CODE NO. <sup>1,2</sup>	DIMENSIONS (in)						SHIP WT. (lbs)
						B	C	D	E	F	G	
KBS1830-3F	8.8	2	18	3"	78-1810	43.0	59.0	5.8	11.0	11.9	12.0	435
KBS2230-4F	13.2	3	24	4"	78-1811	52.0	70.0	6.5	14.5	15.0	16.5	555
KBS2430-4F	17.6	4	24	4"	78-1812	52.5	70.0	6.5	14.5	15.0	16.5	590
KBS3030-6F	26.4	6	30	6"	78-1813	50.5	71.0	8.0	19.1	18.0	20.8	850

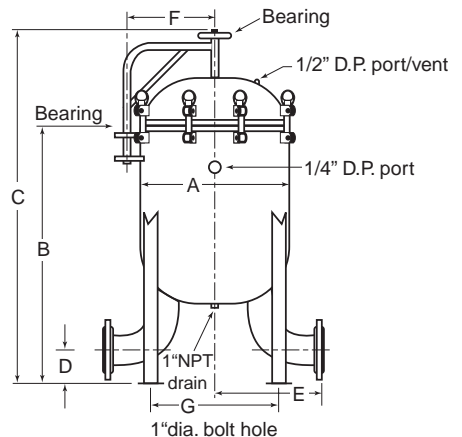
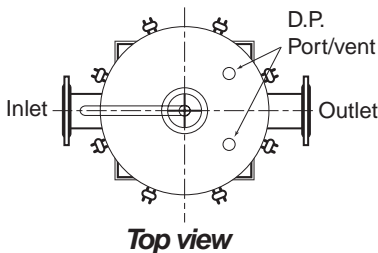
<sup>1</sup> Model and Price Code Number shown for carbon steel construction.

- for 304 SS change **S** in Model No. to **4SS** and add **S4** to Price Code No.

- for 316 SS change **S** in Model No. to **6SS** and add **S6** to Price Code No.

<sup>2</sup> For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.

<sup>3</sup> Basket size 6.7" x 30" (#2)





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## TWIN CAPACITY BAG CHAMBER



### FEATURES:

- 2 Model KBS830 housings with common connections
- Increased flow rates
- Lower differential pressure
- Carbon steel or stainless steel construction

MODEL NUMBER <sup>1,2</sup>	SURF. AREA <sup>3</sup> (sq.ft)	CONN. SIZE	PRICE CODE NO. <sup>1,2</sup>
KBS882-3F	8.8	3" FNPT	78-1806

<sup>1</sup> Model and Price Code Number shown for carbon steel construction.

- for 304 SS change **S** in Model No. to **4SS**

and add **S4** to Price Code No.

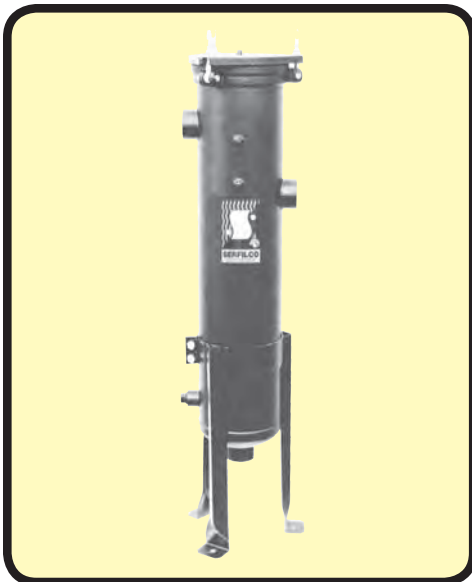
- for 316 SS change **S** in Model No. to **6SS** and

add **S6** to Price Code No.

<sup>2</sup> For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.

<sup>3</sup> Basket size 6.7" x 30" (#2)

## OEM 100 PSI BAG CHAMBER



Our OEM, 100 PSI liquid bag housing offers a superb quality vessel for lower pressure applications. The vessel has a dome base and includes all of the favorable features of our standard 150 PSI vessel.

### FEATURES:

- Carbon steel or 304 stainless steel construction
- 100 PSI pressure rating
- Low pressure drop with #12 size bag
- Strainer basket
- Side and bottom outlets

MODEL NUMBER <sup>1,2</sup>	SURF. AREA <sup>3</sup> (sq.ft)	CONN. SIZE	PRICE CODE NO. <sup>1,2</sup>
KBS100-2	5.5	2" NPT	78-1807

<sup>1</sup> Model and Price Code Number shown for carbon steel construction.

- for 304 SS change **S** in Model No. to **4SS**

and add **S4** to Price Code No.

<sup>2</sup> For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.

<sup>3</sup> Basket size 8" x 30" (#12)





**SERIES 'K' METAL FILTER CHAMBERS**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**INITIAL and REPLACEMENT FILTER BAGS**



- Polypropylene felt bags
- Heavy duty handle
- Carbon steel ring
- Other bags available (consult sales dept.)

# 3 SIZE BAG 0.5 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K3S	88-1565 A
10	FB-K010K3S	88-1565 B
25	FB-K025K3S	88-1565 C
50	FB-K050K3S	88-1565 D
100	FB-K0100K3S	88-1565 E

# 4 SIZE BAG 1.0 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K4S	88-1566 A
10	FB-K010K4S	88-1566 B
25	FB-K025K4S	88-1566 C
50	FB-K050K4S	88-1566 D
100	FB-K0100K4S	88-1566 E

# 8 SIZE BAG 2.0 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K8S	88-1567 A
10	FB-K010K8S	88-1567 B
25	FB-K025K8S	88-1567 C
50	FB-K050K8S	88-1567 D
100	FB-K0100K8S	88-1567 E

# 1 SIZE BAG 2.3 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K1S	88-1568 A
10	FB-K010K1S	88-1568 B
25	FB-K025K1S	88-1568 C
50	FB-K050K1S	88-1568 D
100	FB-K0100K1S	88-1568 E

# 9 SIZE BAG 3.4 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K9S	88-1569 A
10	FB-K010K9S	88-1569 B
25	FB-K025K9S	88-1569 C
50	FB-K050K9S	88-1569 D
100	FB-K0100K9S	88-1569 E

# 2 SIZE BAG 4.4 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K2S	88-1570 A
10	FB-K010K2S	88-1570 B
25	FB-K025K2S	88-1570 C
50	FB-K050K2S	88-1570 D
100	FB-K0100K2S	88-1570 E

# 12 SIZE BAG 5.5 sq.ft		
MICRON RATING	MODEL	PRICE CODE NUMBER
5	FB-K05K12S	88-1571 A
10	FB-K010K12S	88-1571 B
25	FB-K025K12S	88-1571 C
50	FB-K050K12S	88-1571 D
100	FB-K0100K12S	88-1571 E





# FILTRATION AND PURIFICATION GUIDE FOR METAL FINISHING SOLUTIONS

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TF-139\_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

PROCESS	pH	TEMPERATURE °F	TURNOVERS / HOUR	SURFACE AREA ft. <sup>2</sup> /per 100 GAL.	MEDIA FIBER / CORE	MICRON DENSITY	CARBON TREATMENT	MATERIALS	
								PREFERRED	ALTERNATE
Anodizing, Decorative	<1.0	60 - 80	2 - 4X	7.0 - 10.5	Polypro / Polypro	10 - 20	N / A	CPVC / Viton	PVDF / Viton
Anodizing, Hard	<1.0	30 - 35	2 - 4X	7.0 - 10.5	Polypro / Polypro	10 - 20	N / A	CPVC / Viton	PVDF / Viton
Nickel Acetate Seal	5.5	190 - 200	2 - 3X	7.0 - 10.5	Polypro / SS	10 - 20	N / A	PVDF / Viton	316SS / Viton
Brass, Bronze (CN)	>10.0	100 - 140	2 - 4X	7.0 - 10.5	Polypro / SS	10 - 20	N / A	PP / EPDM	PVC / EPDM
Cadmium (CN)	>10.0	80 - 100	2 - 4X	7.0 - 10.5	Polypro / Polypro	10 - 20	N / A	CPVC / EPDM	PP / EPDM
Cadmium, Sulfate	1.0	70 - 90	2 - 4X	7.0 - 10.5	Polypro / Polypro	10 - 20	N / A	CPVC / EPDM	PP / EPDM
Cadmium, Chloride	7.5	70 - 90	2 - 4X	7.0 - 10.5	Polypro / Polypro	10 - 20	N / A	CPVC / EPDM	PP / EPDM
Cleaner, Soak	>10.0	90 - 200	2 - 4X	10.5 - 17.5	Polypro / Polypro	15 - 50	N / A	316SS / EPDM	PP / EPDM
Cleaner, Electro	> 8.0	50 - 90	2 - 4X	10.5 - 17.5	Polypro / Polypro	15 - 75	N / A	PP / EPDM	PVC / EPDM
Chromium (Hex.)	<1.0	100 - 140	2 - 3X	7.0 - 10.5	HI-PERF	10 - 20	N / A	CPVC / Viton	PVDF / HYPALON
Chromium (Tri.)	2.5	70 - 80	2 - 4X	10.5 - 14.0	Polypro / Polypro	5 - 15	Periodic	CPVC / EPDM	PVC / EPDM
Copper (CN)	12.0	70 - 140	2 - 4X	7.0 - 10.5	Polypro / SS	10 - 20	Periodic	PP / EPDM	CPVC / EPDM
Copper, Sulfate	<1.0	70 - 80	2 - 6X	10.5 - 14.0	Polypro / Polypro	5 - 15	Periodic	CPVC / EPDM	PP / EPDM
Copper, Fluoroborate	<1.0	70 - 90	2 - 4X	7.0 - 10.5	Polypro / Polypro	5 - 15	Periodic	CPVC / EPDM	PP / EPDM
Copper, Pyrophosphate	8.0	110 - 140	2 - 5X	7.0 - 10.5	Polypro / Polypro	5 - 15	Periodic	PP / EPDM	CPVC / EPDM
Copper, Electroless	13.0	80 - 120	4 - 10X	7.0 - 10.5	Polypro / Polypro	1 - 10	N / A	CPVC / EPDM	PP / EPDM
Gold, Acid	3.5 - 5.0	80 - 120	3 - 6X	7.0 - 10.5	Polypro / Polypro	1 - 10	Periodic	PP / EPDM	CPVC / EPDM
Gold, Neutral	6.0 - 7.0	80 - 120	3 - 6X	7.0 - 10.5	Polypro / Polypro	1 - 10	Periodic	PP / EPDM	CPVC / EPDM
Gold, Alkaline (CN)	8.0 - 12.0	100 - 140	3 - 5X	7.0 - 10.5	Polypro / Polypro	5 - 15	Periodic	PP / EPDM	CPVC / EPDM
Iron, Chloride	3.0	120 - 140	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / EPDM	PP / EPDM
Lead, Fluoborate	1.0	90 - 100	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	N / A	CPVC / EPDM	PVDF / Viton
Nickel, Watts	4.0 - 5.0	120 - 160	2 - 5X	7.0 - 10.5	Polypro / Polypro	5 - 15	Periodic	CPVC / EPDM	PP / EPDM
Nickel, Woods	2.0	120 - 140	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / EPDM	PVC / EPDM
Nickel, Sulfamate	4.0	100 - 130	2 - 5X	7.0 - 10.5	Polypro / Polypro	5 - 15	Periodic	CPVC / EPDM	PP / EPDM
Nickel, Electroless	4.0 - 6.0	180 - 200	6 - 12X	7.0 - 10.5	Polypro / Polypro	1 - 10	N / A	CPVC / Viton	PVDF / Viton
Nickel, Electroless	>10.0	120 - 190	6 - 12X	7.0 - 10.5	Polypro / Polypro	1 - 10	N / A	CPVC / Viton	—
Palladium, Amine	8.0 - 9.0	80 - 120	3 - 5X	7.0 - 10.5	Polypro / Polypro	1 - 10	N / A	PP / EPDM	—
Palladium - Nickel	8.0 - 9.0	80 - 120	3 - 5X	7.0 - 10.5	Polypro / Polypro	1 - 10	N / A	PP / EPDM	—
Rhodium	1.0	100 - 120	3 - 5X	7.0 - 10.5	Polypro / Polypro	1 - 10	Periodic	CPVC / EPDM	PP / EPDM
Silver (CN)	12.0	70 - 85	3 - 5X	7.0 - 10.5	Polypro / Polypro	5 - 15	Periodic	PP / EPDM	CPVC / EPDM
Tin, Sulfuric	<1.0	70 - 85	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / Viton	PVC / Viton
Tin, MSA	2.0	70 - 120	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / Viton	PP / Viton
Tin, Alkaline	12.0	140 - 160	2 - 3X	10.5 - 14.0	Polypro / Polypro	20 - 30	N / A	PP / EPDM	—
Tin - Nickel	2.5	140 - 160	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / Viton	PP / EPDM
Tin - Lead, MSA	2.0	70 - 100	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / Viton	PP / EPDM
Tin - Lead, Fluoborate	1.0	70 - 100	2 - 3X	7.0 - 10.5	Polypro / Polypro	10 - 20	Periodic	CPVC / EPDM	PVC / EPDM
Zinc, Chloride	5.0 - 6.0	70 - 120	3 - 5X	14.0 - 17.5	Polypro / Polypro	20 - 30	Periodic	CPVC / EPDM	PVC / EPDM
Zinc - Cobalt	5.0 - 6.0	70 - 100	3 - 5X	14.0 - 17.5	Polypro / Polypro	20 - 30	Periodic	CPVC / EPDM	PVC / EPDM
Zinc, Alkaline	>13.0	70 - 100	2 - 4X	10.5 - 14.0	Polypro / Polypro	20 - 30	N / A	PP / EPDM	316SS / EPDM
Zinc (CN)	>13.0	70 - 100	2 - 4X	10.5 - 14.0	Polypro / SS	20 - 30	N / A	PP / EPDM	316SS / EPDM

## NOTES:

- Use information as a guide only. Contact SERFILCO Sales Department for specific recommendations.
- Maximum temperature for materials:  
**PLASTICS:** PVC - 130°F; PP - 150°F; CPVC - 180°F; PVDF - 200°F  
**ELASTOMERS:** EPDM - 180°F; Viton® - 200°F; Hypalon® - 200°F
- Surface area is measured in sq. ft. and based on depth wound cartridges (each 2½" diameter x 10" long unit = 3.5 sq. ft. in equivalent dirt loading).
- Increasing the surface area improves efficiency and prolongs the time interval between media change.
- Increased turnover allows the use of coarser media to increase solids holding capacity.
- For best results, **continuous** filtration should be used in every application.
- Periodic carbon treatment is most efficient when using optional carbon filtration chamber.
- Above 180°F consider using steel or stainless steel.  
 PP or Polypro = Polypropylene      N / A = Not applicable  
 SS = Stainless Steel





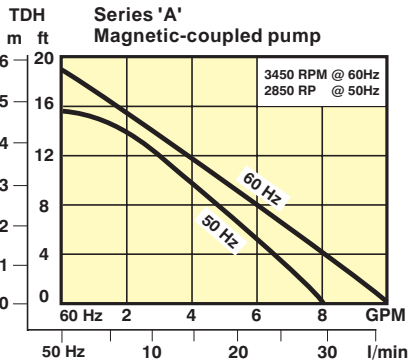
# LABMASTER<sup>®</sup> FILTRATION SYSTEMS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## KEEP PROCESS FLUIDS CLEAN For Tanks to 100 Gallons



**COMPACT, ECONOMICAL & DEPENDABLE  
FILTRATION**



- **Non-metallic solution contact**  
Select materials of construction for compatibility with solutions, operating temperature and pressure.

**PCL** - Clear PVC (Polyvinyl Chloride) with PP (Polypropylene) pump

**PPL** - Polypropylene

**CL** - CPVC - Chlorinated Polyvinyl Chloride

**KL** - PVDF - Polyvinylidene Fluoride

- **Flow rate 345 GPH @ 60 Hz**

MADE IN USA



2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**LABMASTER Filtration Systems** are compact, corrosion resistant and extremely simple to operate. Choice of construction materials allows use with most liquids, including harsh chemicals at elevated temperatures.

**Seal-less Magnetic-Coupled Pump**

Systems utilize Series 'A' magnetic-coupled pumps and are available in a variety of engineered plastics to suit chemistry and temperature, including PP, CPVC and PVDF.

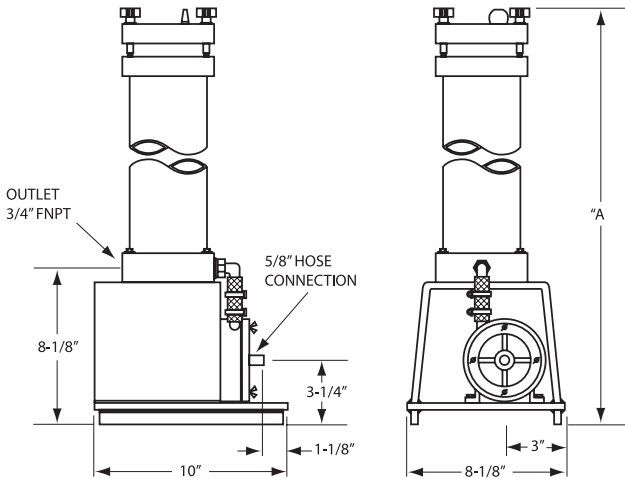
**Filter Chamber**

Choice of 10", 20" or 30" size chamber. Constructed of clear PVC, PP, CPVC or PVDF. Standard elastomers are EPDM (FKM with PVDF). Chambers accept depth wound, pleated, and carbon cartridges.

**TO ORDER**

LABMASTER SYSTEM NO.				FLOW RATE U.S. GPH	MEDIA	SOLIDS AREA Sq. Ft.	"A" DIM. Inches	SHIPPING WEIGHT Lbs.
PCL	PPL	CL	KL					
PCL1A6	PPL1A6	CL1A6	KL1A6	345	1 - 10"	3.5	21¾	23
PCL2A6	PPL2A6	CL2A6	KL2A6	345	2 - 10"	7.0	31¾	30
PCL3A6	PPL3A6	CL3A6	KL3A6	345	3 - 10"	10.5	41¾	37

**DIMENSIONS**



**OPTIONAL**

DESCRIPTION	ADD TO SYSTEM NO.
Viton elastomers on filter chamber and pump	V
Optional motor 230V/1/50-60	change 6 to 5 in system number

DESCRIPTION	PRICE CODE NO.
Hose Kit (Includes priming kit)	PVC & CPVC: 99-1600 PP: 99-1601
Priming kit	99-0160
Filter Media - order separately. Refer to Bulletin M-109 (cartridge) or M-305 (carbon).	





# LABMASTER® 'LX' FILTRATION SYSTEMS

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F-212\_E

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## COMPACT, ECONOMICAL FILTRATION AND PURIFICATION

*Flow rates to 600 GPH @ 60 Hz*



The SERFILCO Labmaster 'LX' Series is engineered to provide reliable, high performance filtration in a small package.

These compact pump and filter systems are popular for use on small tank production in the electronics industry and in precious metal plating, as well as for laboratory and pilot plant runs.

Featuring SERFILCO's non-metallic, leak-proof Series 'X' magnetic coupled pumps and industry proven Series 'L' filter chambers, these systems provide high flow and high turnover rates, assuring continuous particle removal. Labmaster 'LX' systems are available with or without a carbon or resin purification chamber.

- **Seal-less magnetic drive pumps**

Labmaster 'LX' filtration systems feature highly efficient seal-less magnetic coupled pumps for total solution containment and reliable performance to 1.3 S.G. The pumps are available in polypropylene or PVDF.

- **Filter chamber**

Constructed of clear PVC, CPVC, polypropylene or PVDF to ensure chemical and temperature compatibility in a wide range of applications.

The standard chamber accepts double open end (DOE) depth wound, pleated, melt blown, and carbon cartridges. A 222 "O"-ring seat for single open end (SOE) cartridges is available.

- **Simple carbon or resin treatment**

The systems are also available with optional purification chambers in polypropylene, PVC or CPVC with reusable ABS canister offering a low-cost, but effective method of continuously or periodically removing organic impurities from plating baths and other chemical solutions.



2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

SPECIFICATIONS

Standard Labmaster 'LX' systems include:

- System flow rates to 600 GPH
- Series 'X' magnetic coupled pump good to 1.3 S.G.
- Series 'L' filter chamber — for 10", 20" or 30" cartridges
- Corrosion resistant PVC hooded mounting base
- EPDM elastomers standard
- Stainless steel external fasteners
- Polypropylene vent valve or PVDF vent plug
- Order hose kit separately

CAUTION: Do not use vinyl hose when system is to be used at 150°F (66°C) or higher.

PCL Polypropylene pump, clear PVC chamber\*

Systems for mild acid (non-fluoride) and alkalis including electroless copper and gold.

CL Polypropylene pump and CPVC filter chamber\*

Systems for nickel sulfamate, acid copper, copper cyanide, zinc chloride and most fluoborate baths

PPL Polypropylene pump and filter chamber\*

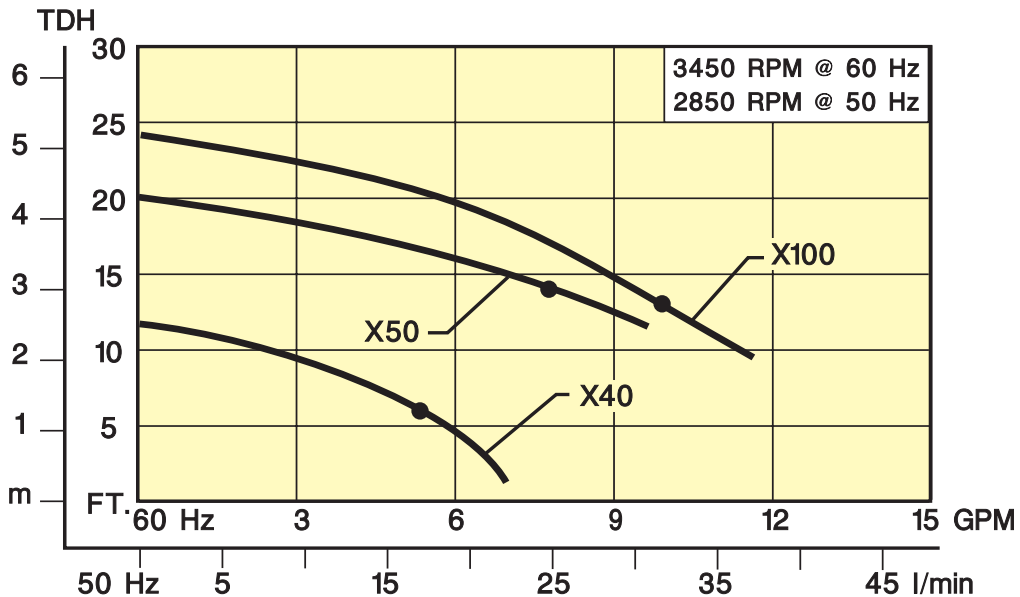
Systems for nickel sulfamate, acid copper, copper cyanide, and zinc chloride.

KL PVDF pump and filter chamber\*

Systems for electroless nickel and nickel acetate seal.

\* Consult a chemical resistance guide to confirm material /solution compatibility.

PERFORMANCE





**LABMASTER 'LX' FILTRATION SYSTEMS Ordering Information**

F-212\_E

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**TO ORDER, use System Number**

SYSTEM NO.				MEDIA <sup>2</sup> No - length.	PUMP			CONNS. <sup>1</sup>	SHIPPING WEIGHT (lbs.)
PCL	PPL	CL	KL <sup>1</sup>		MODEL	HP <sup>3</sup>	FLOW <sup>4</sup>		
PCL1X40	PPL1X40	CL1X40	KL1X40	1 - 10"	X40	1/40	330	5/8" hose barb	25
PCL2X40	PPL2X40	CL2X40	KL2X40	1 - 20"					30
PCL3X40	PPL3X40	CL3X40	KL3X40	1 - 30"					35
PCL1X50	PPL1X50	CL1X50	KL1X50	1 - 10"	X50	1/15	465	3/4" hose barb	25
PCL2X50	PPL2X50	CL2X50	KL2X50	1 - 20"					30
PCL3X50	PPL3X50	CL3X50	KL3X50	1 - 30"					35
PCL1X100	PPL1X100	CL1X100	KL1X100	1 - 10"	X100	1/10	600	3/4" hose barb	25
PCL2X100	PPL2X100	CL2X100	KL2X100	1 - 20"					30
PCL3X100	PPL3X100	CL3X100	KL3X100	1 - 30"					35

<sup>1</sup> PVDF systems have NPT connections.

<sup>2</sup> Order filter media separately

<sup>3</sup> Standard motors are 100-110V/1/50-60 with 6 ft. cord and 60 Hz plug. Optional 230V/1/50-60 motor available.

<sup>4</sup> U.S. GPH @ 60 Hz, see flow curve.

**ACCESSORIES**

DESCRIPTION	ADD TO SYSTEM NO.
Viton elastomers on filter chamber and pump	V
Optional motor 230V/1/50-60	-5

DESCRIPTION	PRICE CODE NO.	
	X40	X50 & X100
Hose Kit (Includes priming kit)	PVC & CPVC 99-1600	99-1602
	PP 99-1601	99-1603
Filter Media - order separately. Refer to Bulletin M-109 (cartridge) or M-305 (carbon)		

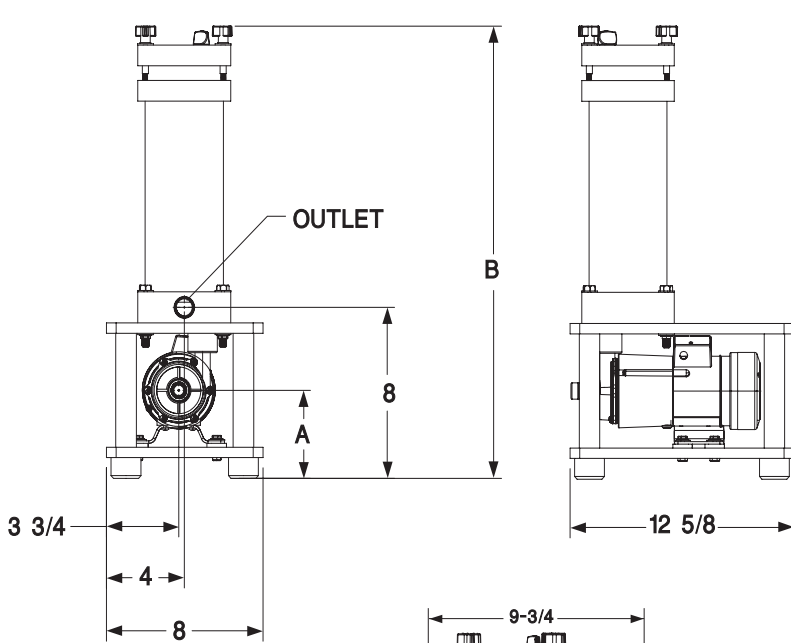
CARBON PURIFICATION CHAMBER with flow control valve, hose & drain	PRICE CODE NO.	
	CPVC	PVC
Includes ABS mini-canister / CPVC or clear PVC chamber for 0.9 lbs. granular carbon 10" canister 2.1 lbs. granular carbon 20" canister 3.2 lbs. granular carbon 30" canister	O-C1CM O-C2CM O-C3CM	O-P1CM O-P2CM O-P3CM
Includes CPVC or clear PVC chamber for 1.2 lbs. granular carbon 2.5 lbs. granular carbon 3.8 lbs. granular carbon	O-C1C O-C2C O-C3C	O-P1C O-P2C O-P3C
Includes CPVC or clear PVC chamber for 0.6 lbs. 10" carbon cartridge 1.2 lbs. 20" carbon cartridge 1.8 lbs. 30" carbon cartridge	O-C1CC O-C2CC O-C3CC	O-P1CC O-P2CC O-P3CC





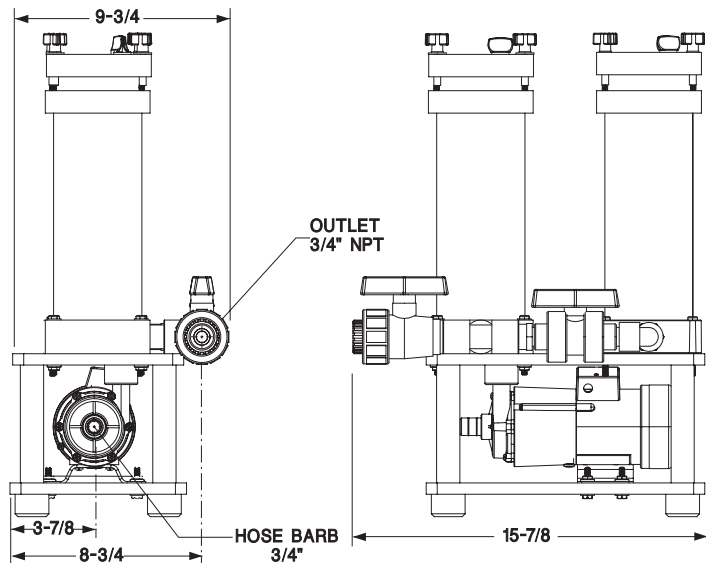


**DIMENSIONS**



SYSTEM NO.	A	B
1 X 40	3 3/4"	21 1/2"
2 X 40		31 1/2"
3 X 40		41 1/2"
4 X 40		51 1/2"
1 X 50	4"	21 1/2"
2 X 50		31 1/2"
3 X 50		41 1/2"
4 X 50		51 1/2"
1 X 100	4"	21 1/2"
2 X 100		31 1/2"
3 X 100		41 1/2"
4 X 100		51 1/2"

**LABMASTER 'LX'  
FILTRATION SYSTEMS  
with OPTIONAL CARBON  
PURIFICATION CHAMBER**





## COMPACT, ECONOMICAL FILTRATION AND PURIFICATION

- **Flow rates to 2400 GPH @ 60 Hz**  
(7400 LPH @ 50 Hz)
- **Non-metallic solution contact**  
Select materials of construction for compatibility with solutions, operating temperature and pressure.

**SPACE-SAVER Systems** are compact, corrosion resistant and extremely simple to operate. Choice of construction materials allows use with most liquids, including harsh chemicals at elevated temperatures. Standard elastomers are EPDM with CPVC or polypropylene systems, and Viton with PVDF systems.

- **Choice of pump**

### ***Seal-less magnetic drive pump:***

Series 'B' seal-less magnetic coupled pumps provide total solution containment and reliable performance. The pumps are CPVC, polypropylene, or PVDF.

### ***Mechanical Seal Pumps:***

Series 'HC' or 'HK' direct drive pumps are available with either single or double mechanical seals. The pumps are CPVC or PVDF.

- **Filter Chamber**

Series 'S', three cartridge chamber, is available in CPVC, polypropylene, or PVDF.

- **Simple carbon or resin treatment**

Space-saver systems are also available with optional carbon purification chambers for carbon cartridges or fillable canisters.



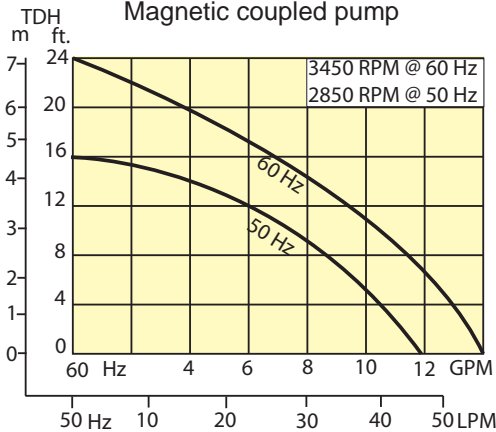
2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**Standard SPACE-SAVER systems include:**

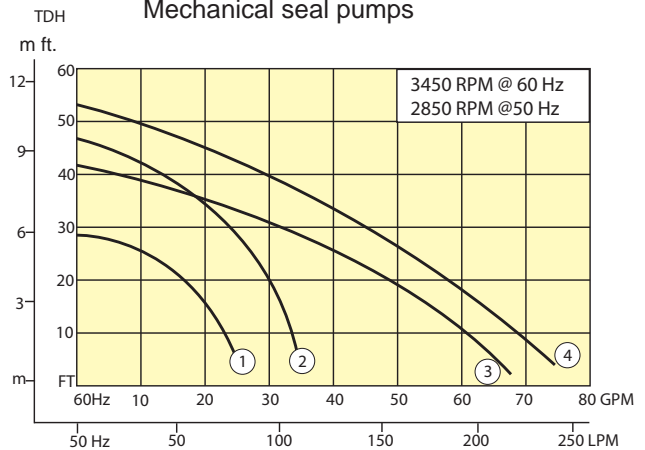
- Non-metallic solution contact
- Corrosion resistant mounting base.
- Stainless steel or corrosion resistant external hardware and fasteners.
- Vent valve assembly
- Pressure gauge guard assembly included with all cartridge / sleeve systems.
- Systems 1 HP and up 230-460V/3/50-60 Hz, others 115-230V/1/50-60 Hz.
- Optional hose kits available (See Bulletin A-215)

**FLOW CURVES**

**Series 'B'**  
Magnetic coupled pump



**Series 'HC' & 'HK'**  
Mechanical seal pumps



**TO ORDER, use System Number**

**Systems with magnetic drive pump and CPVC, polypropylene or PVDF filter chamber**

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @60Hz	LPH @50 Hz									
CS6B6	600	2000	B	1/6	10	8	S	3-20"	21	¼ H X 1	73
CS9B6	600	2000	B	1/6	10	8	S	3-30"	31.5	¼ H X 1	75
CS12B6	600	2000	B	1/6	10	8	S	3-40"	42	¼ H X 1	78

<sup>1</sup> Listed system includes CPVC chamber and pump  
 To order system with polypropylene chamber and pump, change the C to PP in system No.  
 To order system with PVDF chamber and pump, change the C to K in system No.





**STANDARD CARTRIDGE / SLEEVE FILTRATION SYSTEMS**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**TO ORDER, use System Number**

**Systems with CPVC or PVDF direct drive pump and CPVC or PVDF filter chamber**

System Number <sup>1</sup>	Flow Rate		Pump Series	Pump HP <sup>2</sup>	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @60Hz	LPH @50 Hz									
CS6HC103	1200	3700	HC	1/3	12	10	S	3-20"	21	1 X 1	56
CS9HC103	1200	3700	HC	1/3	12	10	S	3-30"	31.5	1 X 1	66
CS12HC103	1200	3700	HC	1/3	12	10	S	3-40"	42	1 X 1	76
CS9HC208	1800	5600	HC	3/4	20	16	S	3-30"	31.5	1 X 1	120
CS12HC208	1800	5600	HC	3/4	20	16	S	3-40"	42	1 X 1	140
CSH9HK310	2400	7400	HK	1.0	18	14	S	3-30"	31.5	1 ½ X 1 1/4	125
CSH12HK310	2400	7400	HK	1.0	18	14	S	3-40"	42	1 ½ X 1 1/4	135
CSH9HK415	3000	9500	HK	1.5	23	18	S	3-30"	31.5	1 ½ X 1 1/4	130

<sup>1</sup> Listed system includes CPVC chamber and pump  
 To order system with PVDF chamber and pump, change the C to K in system No.  
<sup>2</sup> To order pump with double mechanical seal - change HC to HCD or HK to HKD in System No.

**OPTIONAL**

VITON ELASTOMERS	ADD TO SYSTEM NO.
Filter chamber and pump	V

DESCRIPTION	PRICE CODE NO.
<b>MOTOR STARTERS - NEMA 4X Watertight push button</b>	
115 - 230V/1/50-60 230 - 460V/3/50-60	O-MS1P O-MS3P
Add <b>-S</b> to Motor Starter PCN when ordering motor starter for use with DRI-STOP® Pump Protector. <i>example:</i> O-MS1P-S <b>Important: Specify operating voltage.</b>	
<b>DRI-STOP® PUMP PROTECTOR</b>	
DRI-STOP 2R <sup>3</sup> DRI-STOP 3 <sup>4</sup>	O-2DS2R O-DS3C
<sup>3</sup> DRI-STOP 2R for use with double mechanical seal pumps. <sup>4</sup> DRI-STOP 3 for use with magnetic drive or single mechanical seal pumps.	
<b>OPERATING VOLTAGE</b>	
1 horsepower & above - Single phase Under 1 horsepower - Three phase	O-1PH O-3PH

DESCRIPTION	PRICE CODE NO.	
<b>CARBON PURIFICATION CHAMBER with flow control valve, hose &amp; drain</b> Order carbon media from Bulletin M-305	<b>CPVC</b>	<b>PP</b>
Includes ABS mini-canister / CPVC chamber for 2.1 lbs granular carbon 20" canister 3.2 lbs. granular carbon 30" canister	O-C2CM O-C3CM	- -
Includes PVC canister / CPVC chamber for 7.5 lbs. granular carbon 5" x 28" canister (PVC canister / PVC chamber - O-1528)	O-1528C	-
Includes CPVC or polypropylene chamber for 1.2 lbs 20" carbon cartridge 1.8 lbs 30" carbon cartridge 3.0 lbs 5" x 28" Maxi-carb cartridge	O-C2CC O-C3CC O-1528M	O-P2CC O-P3CC O-PP1528M
<b>50 Hz OPERATION</b>		
Single Phase @ 50 Hz Three phase @ 50 Hz	O-150H O-350H	

6

**Important:**

Filter media is ordered separately. Refer to Bulletin M-109 (cartridges & sleeves) or M-305 (carbon)

**CAUTION:** Do not use vinyl hose when system is to be used at 150°F (66°C)  
 System suction and discharge should be hard piped.  
 Refer to Bulletin A-213 for installation fittings



# SPACE-SAVER® 'SX' FILTRATION SYSTEMS

203

F-213\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

## COMPACT, HIGH FLOW FILTRATION, CARBON OR RESIN PURIFICATION

*Flow rates to 1200 GPH @ 60 Hz*



The SERFILCO Space-Saver 'SX' Series is engineered to provide reliable, high performance filtration in a small package.

These compact pump and filter systems are popular for use on small to medium size tank production in the electronics industry and in precious metal plating.

Featuring SERFILCO's new, non-metallic, leak-proof Series 'X' magnetic coupled pumps and industry proven Series 'S' filter chambers, these systems provide high flow and high turn-over rates, assuring continuous particle removal. Space-Saver 'SX' systems are available with or without a carbon or resin purification chamber.

- **Seal-less magnetic drive pumps**  
Space-Saver 'SX' filtration systems feature highly efficient seal-less magnetic coupled pumps for total solution containment and reliable performance. The pumps are available in polypropylene or ETFE.
- **Filter chamber**  
Constructed of PVC, CPVC, polypropylene or PVDF to ensure chemical and temperature compatibility in a wide range of applications.

The standard chamber accepts double open end (DOE) depth wound, pleated, melt blown, cleanable sleeve and carbon cartridges. A 222 "O"-ring seat for single open end (SOE) cartridges is optional.

- **Simple carbon or resin treatment**  
Space-Saver 'SX' systems are also available with optional purification chambers in PVC or CPVC with reusable ABS canister offering a low-cost, but effective method of continuously or periodically removing organic impurities from plating baths and other chemical solutions.





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**SPECIFICATIONS**

**Standard SPACE-SAVER 'SX' systems include:**

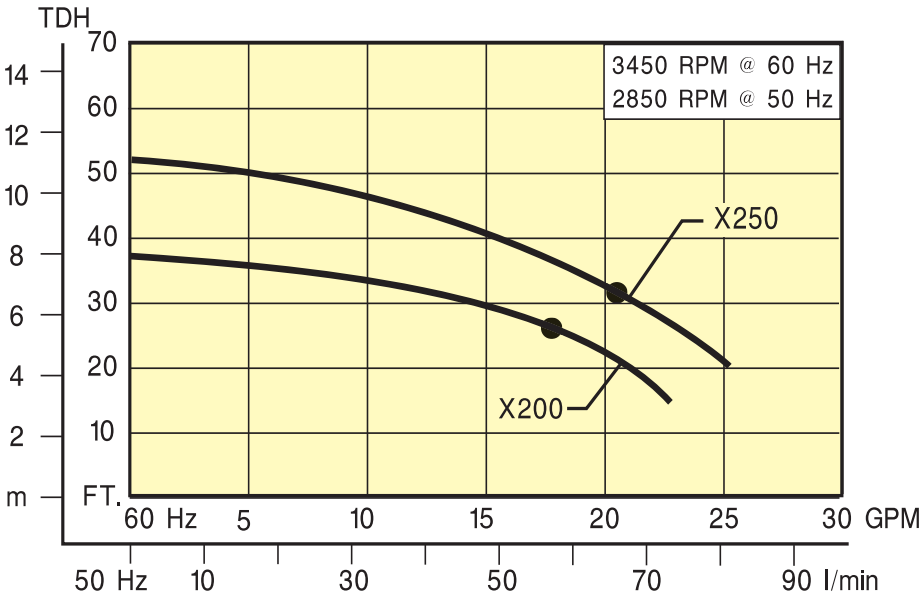
- System flow rates to 1200 GPH
- Series 'X' magnetic coupled pump with 1" NPT connections
- Series 'S' filter chamber with 0 - 30 PSI pressure gauge and guard assembly.
- EPDM elastomers standard
- Corrosion resistant PVC hooded mounting base
- Stainless steel external fasteners
- Polypropylene vent valve or PVDF vent plug

PS PVC chamber with polypropylene pump \*  
 PPS Polypropylene chamber and pump \*

CS CPVC chamber and polypropylene pump \*  
 KS PVDF chamber and ETFE pump \*

\* Consult a chemical resistance guide to confirm material / solution compatibility.

**PERFORMANCE**



- Realistic system flow





**SPACE-SAVER 'SX' FILTRATION Ordering Information**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**TO ORDER, use System Number**

SYSTEM NO.				MEDIA <sup>1</sup> No - lgth.	PUMP			CONNS.	SHIPPING WEIGHT (lbs.)
PS	PPS	CS	KS		MODEL	HP <sup>2</sup>	FLOW <sup>3</sup>		
PS3X200	PPS3X200	CS3X200	KS3X200	3 - 10"	X200	1/5	1000	1" NPT	40
PS6X200	PPS6X200	CS6X200	KS6X200	3 - 20"					45
PS9X200	PPS9X200	CS9X200	KS9X200	3 - 30"					50
PS12X200	PPS12X200	CS12X200	KS12X200	3 - 40"					55
PS3X250	PPS3X250	CS3X250	KS3X250	3 - 10"	X250	1/3	1200	1" NPT	45
PS6X250	PPS6X250	CS6X250	KS6X250	3 - 20"					50
PS9X250	PPS9X250	CS9X250	KS9X250	3 - 30"					55
PS12X250	PPS12X250	CS12X250	KS12X250	3 - 40"					60

<sup>1</sup> Order filter media separately.

<sup>2</sup>

<sup>3</sup> Optional 230V/1/50-60 motor available.

<sup>3</sup>

**ACCESSORIES**

DESCRIPTION	ADD TO SYSTEM NO.
Viton elastomers on filter chamber and pump	V
Optional motor 230V/1/50-60	-5

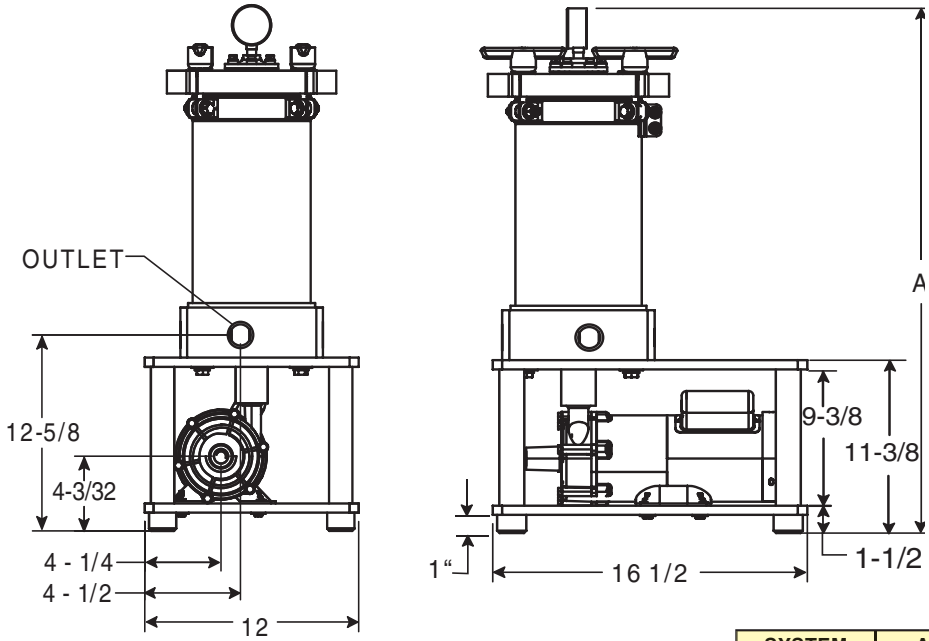
CARBON PURIFICATION CHAMBER <sup>4</sup> with flow control valve, hose & drain	PRICE CODE NO.	
	CPVC	PVC
Includes ABS mini-canister / CPVC or clear PVC chamber for 0.9 lbs. granular carbon 10" canister 2.1 lbs. granular carbon 20" canister 3.2 lbs. granular carbon 30" canister	O-C1CM O-C2CM O-C3CM	O-P1CM O-P2CM O-P3CM
Includes CPVC or clear PVC chamber for 1.2 lbs. bulk granular carbon 2.5 lbs. bulk granular carbon 3.8 lbs. bulk granular carbon	O-C1C O-C2C O-C3C	O-P1C O-P2C O-P3C
Includes CPVC or clear PVC chamber for 0.6 lbs. 10" carbon cartridge 1.2 lbs. 20" carbon cartridge 1.8 lbs. 30" carbon cartridge	O-C1CC O-C2CC O-C3CC	O-P1CC O-P2CC O-P3CC

<sup>4</sup> Order carbon media from Bulletin M-305

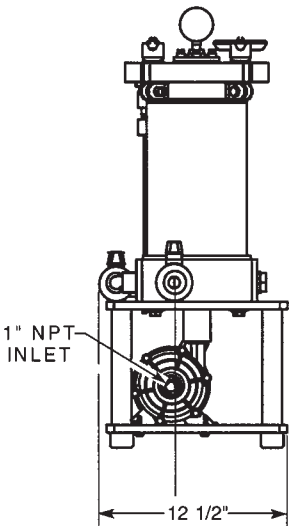
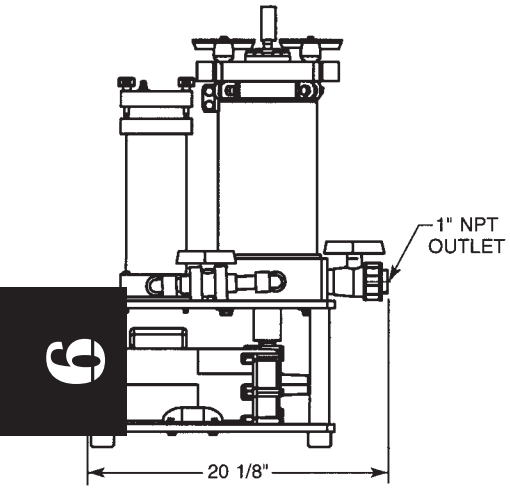




**DIMENSIONS**



SYSTEM SIZE	A
10"	30 <sup>3/8</sup> "
20"	40 <sup>3/8</sup> "
30"	50 <sup>3/8</sup> "
40"	60 <sup>3/8</sup> "



**SPACE-SAVER 'SX'  
FILTRATION SYSTEMS  
with OPTIONAL CARBON  
PURIFICATION CHAMBER**





# SPACE-SAVER® 'SM' FILTRATION SYSTEMS

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F-214\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## COMPACT, HIGH FLOW FILTRATION DRY RUN CAPABILITY

*Flow rates to 3200 GPH @ 60 Hz*



**For use with process liquids requiring —**  
non-metallic solution contact, positive containment,  
high level of solution clarity, minimal downtime and  
maintenance. Especially suitable for:

**PRINTED CIRCUIT BOARD PROCESSING,  
ELECTROPLATING, CLEANERS, RINSES**

The SERFILCO Space-Saver 'SM' Series is engineered to provide reliable, high performance filtration in a small package.

These systems feature our Series 'M' extended dry run magnetic coupled pump and industry proven, rugged design, Series 'S' filter chamber. The system package includes a corrosion resistant PVC hooded mounting base which protects the pump and motor and supports the filter chamber at a convenient height for cartridge changing.

Systems are available in CPVC, PVC or polypropylene with a polypropylene pump, or in PVDF with a PVDF pump. EPDM elastomers are standard. External hardware is stainless steel.

### **Standard Space-Saver 'SM' systems include:**

- Series 'M' magnetic coupled pumps *which can run dry without damage!*
- Corrosion resistant PVC hooded mounting base
- Series 'S' filter chamber with 0 - 60 PSI pressure gauge and guard assembly
- EPDM elastomers standard
- Filter chamber bottom inlet for low pressure drop
- Stainless steel external fasteners and a polypropylene vent valve or PVDF vent plug
- Hard piping and wet testing prior to shipment





**SPACE-SAVER 'SM' FILTRATION Specifications and Performance**

F-214\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**SPECIFICATIONS**

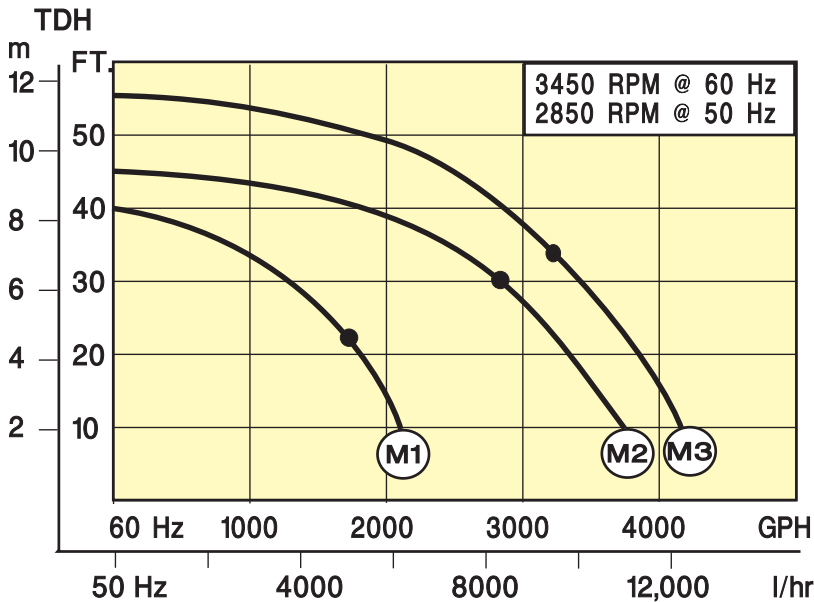
SYSTEM SIZE	FLOW RATE		PUMP HP <sup>1</sup>	PUMP MAX. PSI	CART. CHANGE PSI	MEDIA <sup>2</sup> SOLIDS AREA	Sq. ft. SUCT. / DISCH.	CONNECTIONS Inches HOSE KIT	PRICE CODE NO.
	GPH	LPH							
J6M105	1,700	5,100	½	17	15	3 - 20"	21	1 x 1 FNPT	99-1608
J9M105						3 - 30"	31.5		
J12M105						3 - 40"	42		
J6M208	2,700	8,100	¾	19	17	3 - 20"	21	1½ x 1¼ FNPT <sup>3</sup>	99-1610
J9M208						3 - 30"	31.5		
J12M208						3 - 40"	42		
J6M310	3,200	9,600	1.0	24	21	3 - 20"	21	1½ x 1¼ FNPT <sup>3</sup>	99-1610
J9M310						3 - 30"	31.5		
J12M310						3 - 40"	42		

<sup>1</sup> Less than 1.0 HP — single phase standard  
1.0 HP and above — three phase standard

<sup>2</sup> Order media separately. Refer to Bulletin M-109.

<sup>3</sup> PVDF systems 1½" X 1" FNPT

**PERFORMANCE**



- Realistic system flow



**SPACE-SAVER 'SM' FILTRATION Ordering Information**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**TO ORDER, use System Number**

SYSTEM NUMBER				DIMENSIONS L x W x H Inches	SHIPPING WEIGHT Lbs.
PS	PPS	CS	KS		
PSJ6M105	PPSJ6M105	CSJ6M105	KSJ6M105	24 x 13 x 41	100
PSJ9M105	PPSJ9M105	CSJ9M105	KSJ9M105	24 x 13 x 51	110
PSJ12M105	PPSJ12M105	CSJ12M105	KSJ12M105	24 x 13 x 61	120
PSHJ6M208	PPSHJ6M208	CSHJ6M208	KSJ6M208	24 x 13 x 41	105
PSHJ9M208	PPSHJ9M208	CSHJ9M208	KSJ9M208	24 x 13 x 51	115
PSHJ12M208	PPSHJ12M208	CSHJ12M208	KSJ12M208	24 x 13 x 61	125
PSHJ6M310	PPSHJ6M310	CSHJ6M310	KSJ6M310	24 x 13 x 41	110
PSHJ9M310	PPSHJ9M310	CSHJ9M310	KSJ9M310	24 x 13 x 51	120
PSHJ12M310	PPSHJ12M310	CSHJ12M310	KSJ12M310	24 x 13 x 61	130

**PS** PVC chamber and polypropylene pump \*  
**PPS** polypropylene chamber and pump \*

**CS** CPVC chamber and polypropylene pump \*  
**KS** PVDF chamber and pump \*

\* Consult a chemical resistance guide to confirm material / solution compatibility.

**ACCESSORIES**

VITON ELASTOMERS	ADD TO SYSTEM NO.
Filter chamber and pump	V

DESCRIPTION	PRICE CODE NO.
<b>MOTOR STARTERS - NEMA 4X Watertight push button</b>	
115 - 230V/1/50-60 230 - 460V/3/50-60	<b>O-MS1P</b> <b>O-MS3P</b>
Add -S to Motor Starter PCN when ordering motor starter for use with DRI-STOP Pump Protector. i. e. O-MS1P-S <b>Important: Specify operating voltage.</b>	
<b>OPERATING VOLTAGE</b>	
1 horsepower & above - Single phase Under 1 horsepower - Three phase	O-1PH O-3PH
<b>50 Hz OPERATION</b>	
Single phase @ 50 Hz Three phase @ 50 Hz	O-150H O-350H

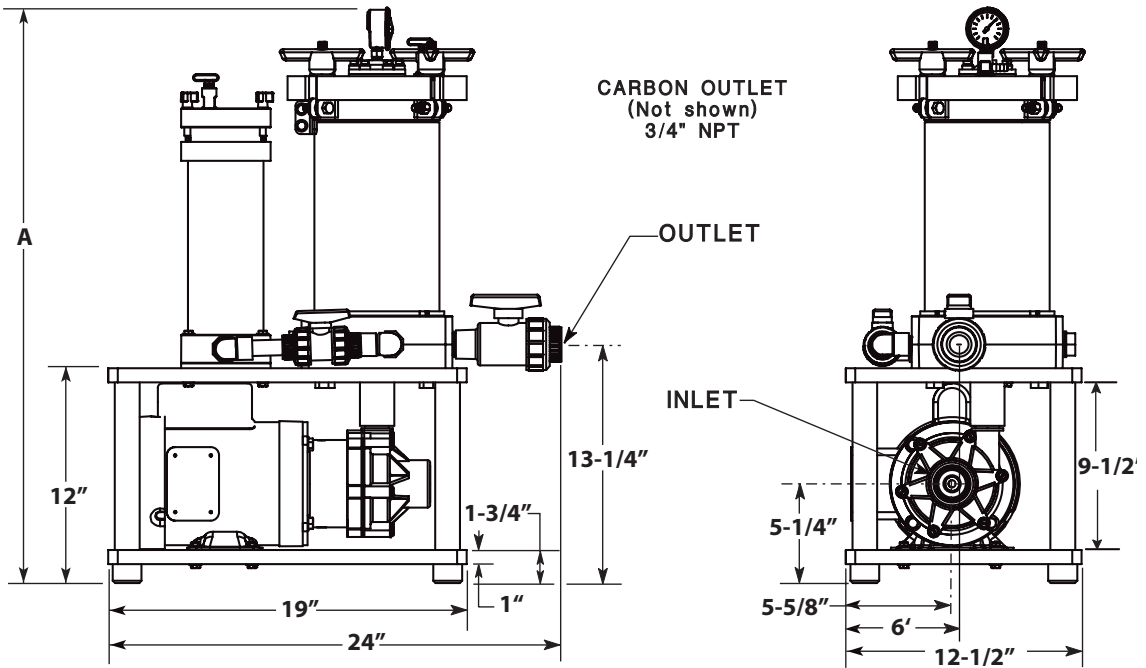
DESCRIPTION	PRICE CODE NO.	
<b>CARBON PURIFICATION CHAMBER with flow control valve, hose &amp; drain</b> Order carbon media from Bulletin M-305	CPVC	PVC
Includes ABS mini-canister / CPVC or clear PVC chamber for 2.1 lbs. granular carbon 20" canister 3.2 lbs. granular carbon 30" canister	O-C2CM O-C3CM	O-P2CM O-P3CM
Includes PVC canister / CPVC or clear PVC chamber for 7.5 lbs. granular carbon 5" x 28" canister	O-1528C	O-1528
Includes CPVC or clear PVC chamber for 1.2 lbs 20" carbon cartridge 1.8 lbs 30" carbon cartridge 3.0 lbs 5" x 28" Maxi-carb cartridge	O-C2CC O-C3CC O-1528M	O-P2CC O-P3CC —





**DIMENSIONS**

*Shown with optional purification chamber*



SYSTEM SIZE	DIMENSION 'A'
J6	41"
J9	51"
J12	61"



# SPACE-SAVER 'J' FILTRATION SYSTEMS

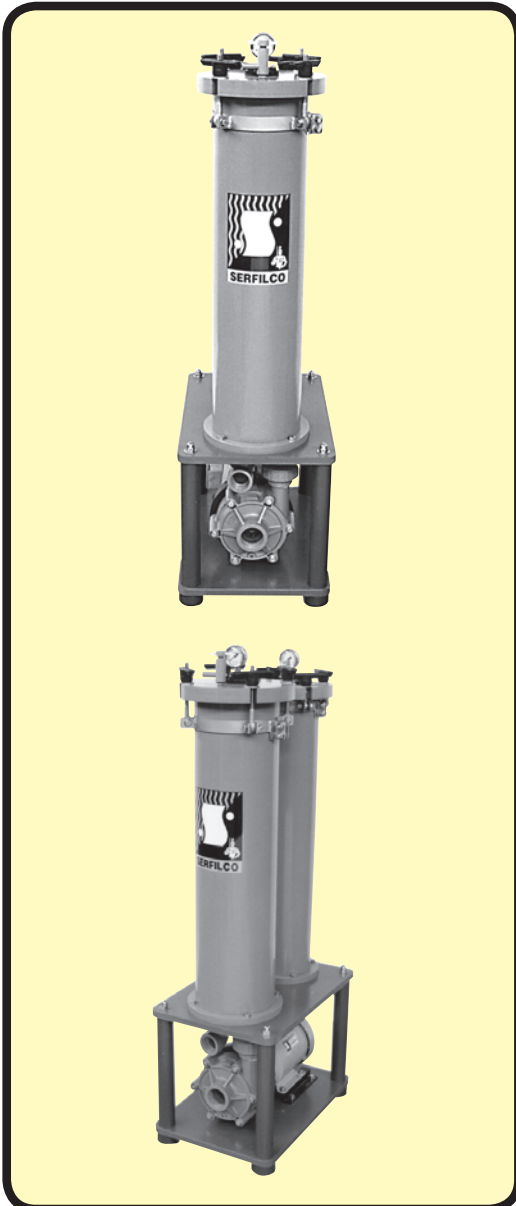
211

F-215\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## COMPACT, HIGH FLOW FILTRATION, CARBON OR RESIN PURIFICATION

*Flow rates to 6000 GPH*



The SERFILCO Space-Saver 'J' Series is engineered to provide reliable, high performance filtration in a small package.

These compact pump and filter systems are popular for use on medium sized production tanks in the electronics and metal finishing industries.

Featuring SERFILCO's non-metallic, leak-proof magnetic coupled pumps and industry proven Series 'J' filter chambers, these systems provide high flow and high turnover rates, assuring continuous particle removal. Space-Saver 'J' systems are available with or without a carbon or resin purification chamber.

- **Choice of pump**

- *Seal-less magnetic drive pumps:*

- Highly efficient seal-less magnetic coupled pumps provide total solution containment and reliable performance. The pumps are polypropylene with EPDM "O"-ring.

- *Mechanical seal pumps:*

- Single or double mechanical seals constructed of CPVC with EPDM elastomers and the highest grade, longest lasting silicon carbide seal faces.

- **Filter chamber**

- Constructed of PVC or CPVC with EPDM elastomers to ensure chemical and temperature compatibility.

- The standard chamber accepts double open end (DOE) depth wound, pleated, melt blown, cleanable sleeve and carbon cartridges. A 222 "O"-ring seat for single open end (SOE) cartridges is available.

- **Simple carbon or resin treatment**

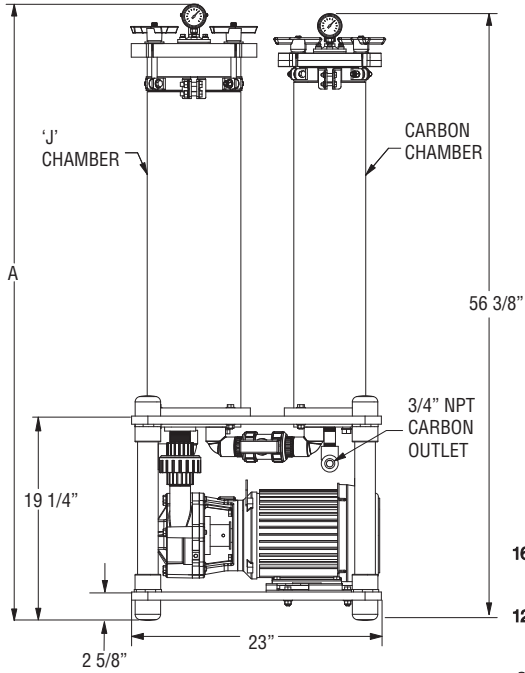
- Space-Saver 'J' systems are also available with optional purification chambers in PVC or CPVC with reusable PVC canister offering a low-cost, but effective method of continuously or periodically removing organic impurities from plating baths and other chemical solutions.



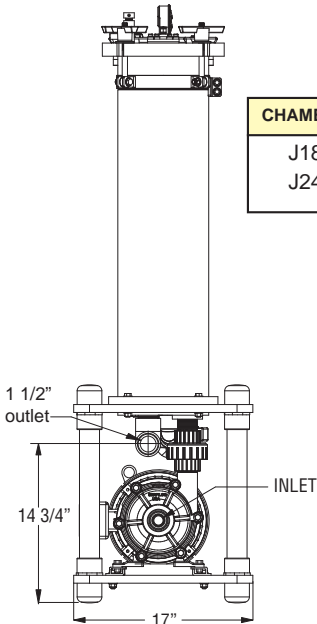


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**DIMENSIONS**

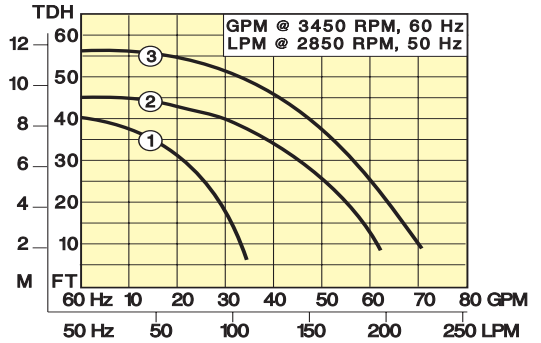


CHAMBER	A
J18	57 1/8"
J24	67 1/8"

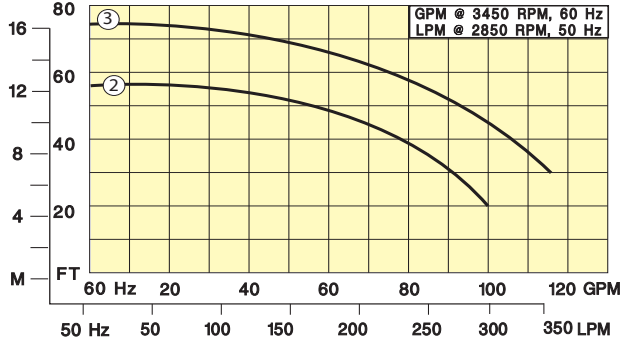


**FLOW CURVES**

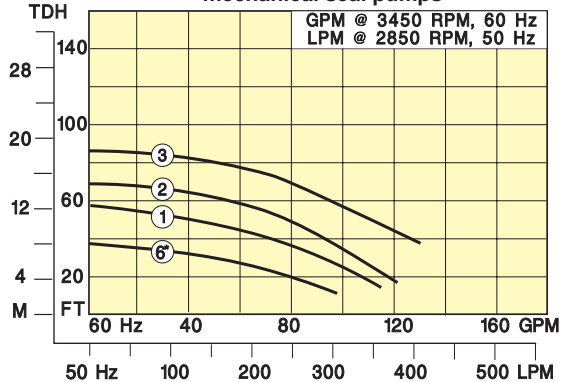
**MODELS M 1, 2 & 3**  
magnetic coupled pumps



**MODELS FE 2 & 3**  
magnetic coupled pumps



**MODELS HE 6, 1, 2 & 3**  
mechanical seal pumps



\* 1.0 HP 'HE' pump is 1725 RPM @ 60 Hz, 1450 RPM @ 50 Hz



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**All Space-Saver 'J' systems include the following standard features:**

- Non-metallic solution contact
- Stainless steel external fasteners
- Swing bolt chamber closures
- EPDM elastomers standard
- Corrosion resistant PVC hooded base
- Corrosion resistant vent valve
- Industrial duty SERFILCO pump
- Hard piping and wet testing prior to shipping
- Glycerin filled stainless steel pressure gauge
- Silicon carbide seals on mechanical seal pumps
- Filter chamber bottom inlet for low pressure drop

*Systems with polypropylene magnetic drive pump and CPVC or PVC<sup>1</sup> filter chamber*

System Number	Flow Rate		Pump Series	Pump HP <sup>3</sup>	Pump Max. PSI	Cartridge Change PSI	Filter Chamber Series	Media	Solids Area (sq. ft.)	Suction / Disch. Connections (inches)	Shipping Weight (lbs.)
	GPH @ 60 Hz	LPH @ 50 Hz									
CJ18M105	1,800	5,700	M	½	20	16	J	6 - 30"	63	1 x 1 FNPT	130
CJ24M105	1,800	5,700	M	½	20	16	J	6 - 40"	84	1 x 1 FNPT	140
CJ18M208	2,700	8,500	M	¾	24	20	J	6 - 30"	63	1½ x 1½ FNPT	135
CJ24M208	2,700	8,500	M	¾	24	20	J	6 - 40"	84	1½ x 1½ FNPT	145
CJ18M310	3,600	11,300	M	1.0	28	23	J	6 - 30"	63	1½ x 1½ FNPT	145
CJ24M310	3,600	11,300	M	1.0	28	23	J	6 - 40"	84	1½ x 1½ FNPT	155
CJ18FE215	4,700	14,800	FE	1.5	25	24	J	6 - 30"	63	2 x 1½ FNPT	155
CJ24FE215	4,700	14,800	FE	1.5	25	24	J	6 - 40"	84	2 x 1½ FNPT	165
CJ18FE320	5,000	17,300	FE	2.0	32	30	J	6 - 30"	63	2 x 1½ FNPT	170
CJ24FE320	5,000	17,300	FE	2.0	32	30	J	6 - 40"	84	2 x 1½ FNPT	180

*Systems with CPVC single or double seal<sup>2</sup> direct drive pump and CPVC or PVC<sup>1</sup> filter chamber*

System Number	Flow Rate		Pump Series	Pump HP <sup>3</sup>	Pump Max. PSI	Cartridge Change PSI	Filter Chamber Series	Media	Solids Area (sq. ft.)	Suction / Disch. Connections (inches)	Shipping Weight (lbs.)
	GPH @ 60 Hz	LPH @ 50 Hz									
CJ18HE610	3,000	9,500	HE	1.0 <sup>4</sup>	16	14	J	6 - 30"	63	2 x 1½ FNPT	155
CJ24HE610	3,000	9,500	HE	1.0 <sup>4</sup>	16	14	J	6 - 40"	84	2 x 1½ FNPT	165
CJ18HE115	4,500	14,200	HE	1.5	24	19	J	6 - 30"	63	2 x 1½ FNPT	155
CJ24HE115	4,500	14,200	HE	1.5	24	19	J	6 - 40"	84	2 x 1½ FNPT	165
CJ18HE220	5,500	17,300	HE	2.0	29	26	J	6 - 30"	63	2 x 1½ FNPT	145
CJ24HE220	5,500	17,300	HE	2.0	29	26	J	6 - 40"	84	2 x 1½ FNPT	155
CJ18HE330	6,000	18,900	HE	3.0	36	32	J	6 - 30"	63	2 x 1½ FNPT	150
CJ24HE330	6,000	18,900	HE	3.0	36	32	J	6 - 40"	84	2 x 1½ FNPT	160

<sup>1</sup> Listed system includes CPVC chamber. To order system with PVC chamber, change the **C** to **P** in System No.

<sup>2</sup> To order pump with double mechanical seal, change **HE** to **HED** in System No.

<sup>3</sup> Less than 1.0 HP — single phase standard. 1.0 HP and above — three phase standard.

<sup>4</sup> 1.0 HP 'HE' pump is 1725 RPM @ 60 Hz, 1450 RPM @ 50 Hz





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**OPTIONAL**

<b>CARBON PURIFICATION CHAMBER</b>		
<b>DESCRIPTION</b>		<b>ADD TO END OF SYSTEM NO.</b>
Includes integral carbon chamber and flow control valve. Carbon outlet 3/4" NPT	PVC chamber, Single 5" x 28" canister, 7.5 lbs. capacity CPVC chamber, Single 5" x 28" canister, 7.5 lbs. capacity CPVC chamber, Single 5" x 28" Maxi-Carb cartridge, 3.0 lbs. carbon	P C M

Order carbon media from Bulletin M-305.

<b>VITON® ELASTOMERS</b>	<b>ADD TO END OF SYSTEM NO.</b>
Filter chamber and pump	V

<b>MOTOR STARTERS</b>		
<b>NEMA 4X Watertight push button (mounted and wired)</b>		<b>PRICE CODE NO.</b>
Add <b>-S</b> to motor starter Price Code No. when ordering motor starter for use with DRI-STOP® Pump Protector <b>IMPORTANT:</b> Specify operating voltage	115 - 230V/1/50-60 230 - 460V/3/50-60	O-MS1P O-MS3P

<b>DRI-STOP® PUMP PROTECTOR</b>	
DRI-STOP 2R for use with double mechanical seal pump.	O-2DS2R
DRI-STOP 3 for use with magnetic drive or single mechanical seal pump.	O-DS3C

<b>OPERATING VOLTAGE</b>	
1 horsepower and above - Single phase Under 1 horsepower - Three phase	O-1PH O-3PH

<b>50 Hz OPERATION</b>	
Single phase @ 50 Hz Three phase @ 50 Hz	O-150H O-350H







# SUPER SPACE-SAVER FILTRATION SYSTEMS

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F-205\_J

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



- System PPG36HE115**
- 12-30" cartridge filter chamber
  - 1.5 HP single seal pump
  - Optional motor starter
  - 5,000 GPH

## **COMPACT, ECONOMICAL FILTRATION AND PURIFICATION**

- **Flow rates to 8500 GPH @ 60 Hz  
(26,800) LPH @ 50 Hz**
- **Non-metallic solution contact**  
Polypropylene  
CPVC  
PVC  
PVDF systems available
- **Choice of pump: magnetic coupled, single  
or double mechanical seal  
Self-priming available**

Super Space-Saver Filtration Systems have gained wide approval for recirculatory purification of most electroplating and chemical process solutions.

Choose a basic filtration system with your choice of media, pump and filter chamber. Then select from a wide variety of optional equipment to customize your system.

Call us and we'll help you select the perfect system for your application.

**The following pages contain a representative sampling of standard Super Space-Saver systems.**

## **SUPER SPACE-SAVER SYSTEMS include the following standard features:**

- Non-metallic solution contact
- Stainless steel external fasteners
- Swing bolt chamber closures
- EPDM elastomers standard, Viton optional
- Corrosion resistant hooded base
- Flow control valve between pump and filter
- Drain valve on filter chamber
- Industrial duty SERFILCO pump
- Hard piping and wet testing prior to shipping
- Corrosion resistant vent valve
- Silicon carbide seals on mechanical seal pumps
- Glycerin filled 316 SS pressure gauge and guard assembly

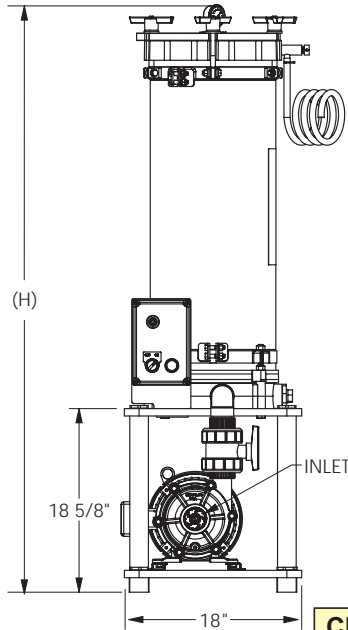




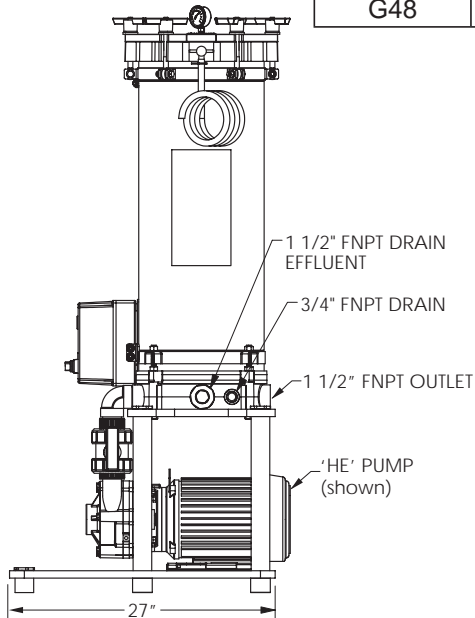
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**DIMENSIONS**

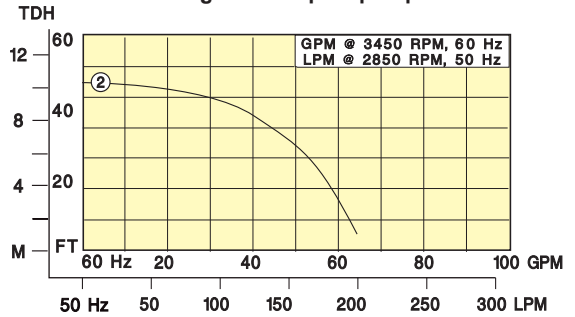
**FLOW CURVES**



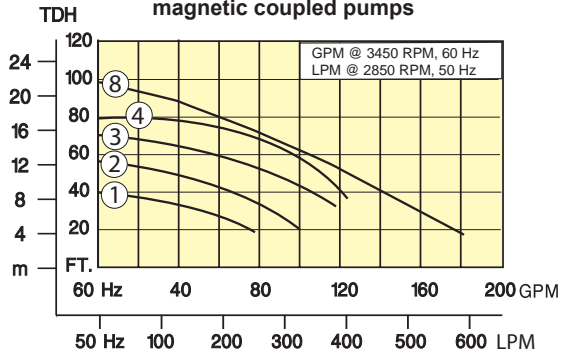
CHAMBER	H
G24	50"
G36	60"
G48	70"



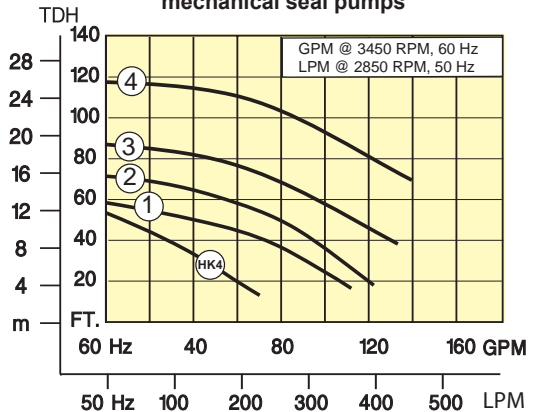
**MODEL M 2**  
magnetic coupled pump



**MODELS FE 1, 2, 3, 4, & F8**  
magnetic coupled pumps



**MODELS HK 4, HE 1, 2, 3 & 4**  
mechanical seal pumps





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*CPVC or Polypropylene direct drive<sup>2</sup> pump with CPVC, PVC or Polypropylene<sup>1</sup> filter chamber*

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft)	Suct. / Disch. FNPT Conns. (inches) <sup>3</sup>	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz										
CG24HK415	3,000	9,400	HK	1.5	23	19	G	12 - 20"	84	1 1/2 x 1 1/2	27 x 18 x 50	180
CG36HK415	3,000	9,400	HK	1.5	23	19	G	12 - 30"	126	1 1/2 x 1 1/2	27 x 18 x 60	190
CG48HK415	3,000	9,400	HK	1.5	23	19	G	12 - 40"	168	1 1/2 x 1 1/2	27 x 18 x 70	205
CG24HE115	4,200	13,200	HE	1.5	24	20	G	12 - 20"	84	2 x 1 1/2	27 x 18 x 50	205
CG36HE115	4,200	13,200	HE	1.5	24	20	G	12 - 30"	126	2 x 1 1/2	27 x 18 x 60	215
CG48HE115	4,200	13,200	HE	1.5	24	20	G	12 - 40"	168	2 x 1 1/2	27 x 18 x 70	230
CG24HE220	5,400	17,000	HE	2.0	27	24	G	12 - 20"	84	2 x 1 1/2	27 x 18 x 60	215
CG36HE220	5,400	17,000	HE	2.0	27	24	G	12 - 30"	126	2 x 1 1/2	27 x 18 x 60	225
CG48HE220	5,400	17,000	HE	2.0	27	24	G	12 - 40"	168	2 x 1 1/2	27 x 18 x 70	240
CG24HE330	6,500	20,500	HE	3.0	36	33	G	12 - 20"	84	2 x 1 1/2	27 x 18 x 50	220
CG36HE330	6,500	20,500	HE	3.0	36	33	G	12 - 30"	126	2 x 1 1/2	27 x 18 x 60	230
CG48HE330	6,500	20,500	HE	3.0	36	33	G	12 - 40"	168	2 x 1 1/2	27 x 18 x 70	245
CG36HE450	8,500	26,800	HE	5.0	51	48	G	12 - 30"	126	2 x 1 1/2	27 x 18 x 60	245
CG48HE450	8,500	26,800	HE	5.0	51	48	G	12 - 40"	168	2 x 1 1/2	27 x 18 x 70	260

<sup>1</sup> Listed system includes CPVC chamber: To order system with PVC chamber - Change **C** to **P** in System No.  
For polypropylene systems, change **C** to **PP** in System Number. For PVDF systems, consult Sales Department.  
<sup>2</sup> To order pump with double mechanical seal - Change **HK** to **HKD** or **HE** to **HED** in System No.  
<sup>3</sup> Series 'HK' pump has 1 1/2" MNPT connection.  
Systems are 230-460/3/50-60

**OPTIONAL**

OPTIONAL ELASTOMERS	PRICE CODE NO.
Viton elastomers	O-GV
<b>MOTOR STARTERS - NEMA 4X Watertight push button</b>	
230 - 460V/3/50-60	O-MS3P
Add <b>-S</b> to Motor Starter PCN when ordering motor starter for use with DRI-STOP Pump Protector. i. e. O-MS1P- <b>S</b> <b>Important: Specify operating voltage.</b>	
<b>DRI-STOP® PUMP PROTECTOR</b>	
DRI-STOP 2R for use with double mechanical seal pumps	O-2DS2R
DRI-STOP 3 for use with magnetic drive or single mechanical seal pumps.	O-DS3C
<b>50 Hz OPERATION</b>	
Three phase @ 50 Hz	O-350H





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*Polypropylene magnetic drive pump with CPVC, PVC or Polypropylene<sup>1</sup> filter chamber*

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft)	Suct./Disch FNPT Conns. (inches)	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @60Hz	LPH @50 Hz										
CG24M210	3,000	9,500	M	1.0	20	16	G	12 - 20"	84	1 ½ x 1 ½	27 x 18 x 50	185
CG36M210	3,000	9,500	M	1.0	20	16	G	12 - 30"	126	1 ½ x 1 ½	27 x 18 x 60	195
CG48M210	3,000	9,500	M	1.0	20	16	G	12 - 40"	168	1 ½ x 1 ½	27 x 18 x 70	210
CG24FE110	3,900	12,300	FE	1.0	18	16	G	12 - 20"	84	2 x 1 ½	27 x 18 x 50	205
CG36FE110	3,900	12,300	FE	1.0	18	16	G	12 - 30"	126	2 x 1 ½	27 x 18 x 60	215
CG48FE110	3,900	12,300	FE	1.0	18	16	G	12 - 40"	168	2 x 1 ½	27 x 18 x 70	230
CG24FE215	4,700	14,800	FE	1.5	25	24	G	12 - 20"	84	2 x 1 ½	27 x 18 x 50	215
CG36FE215	4,700	14,800	FE	1.5	25	24	G	12 - 30"	126	2 x 1 ½	27 x 18 x 60	225
CG48FE215	4,700	14,800	FE	1.5	25	24	G	12 - 40"	168	2 x 1 ½	27 x 18 x 70	240
CG24FE320	6,000	18,900	FE	2.0	32	30	G	12 - 20"	84	2 x 1 ½	27 x 18 x 50	225
CG36FE320	6,000	18,900	FE	2.0	32	30	G	12 - 30"	126	2 x 1 ½	27 x 18 x 60	235
CG48FE320	6,000	18,900	FE	2.0	32	30	G	12 - 40"	168	2 x 1 ½	27 x 18 x 70	245
CG36FE430	6,900	21,800	FE	3.0	35	21	G	12 - 30"	126	2 x 1 ½	27 x 18 x 60	250
CG48FE430	6,900	21,800	FE	3.0	35	21	G	12 - 40"	168	2 x 1 ½	27 x 18 x 70	260
CG36F850	8,500	26,800	F2x2	5.0	42	34	G	12 - 30"	126	2 x 1 ½	27 x 18 x 60	250
CG48F850	8,500	26,800	F2x2	5.0	42	34	G	12 - 40"	168	2 x 1 ½	27 x 18 x 60	260

*Polypropylene magnetic drive pump with CPVC, PVC or Polypropylene<sup>1</sup> filter chamber*

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft)	Suct./Disch FNPT Conns. (inches)	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @60Hz	LPH @50 Hz										
CG24FES215	3,900	12,300	FES	1.5	22	16	G	12 - 20"	84	1 ½ x 1 ½	27 x 18 x 50	210
CG36FES215	3,900	12,300	FES	1.5	22	16	G	12 - 30"	126	1 ½ x 1 ½	27 x 18 x 60	220
CG48FES215	3,900	12,300	FES	1.5	22	16	G	12 - 40"	168	1 ½ x 1 ½	27 x 18 x 70	235
CG24FES320	4,700	14,800	FES	2.0	29	24	G	12 - 20"	84	1 ½ x 1 ½	27 x 18 x 50	220
CG36FES320	4,700	14,800	FES	2.0	29	24	G	12 - 30"	126	1 ½ x 1 ½	27 x 18 x 60	230
CG48FES320	4,700	14,800	FES	2.0	29	24	G	12 - 40"	168	1 ½ x 1 ½	27 x 18 x 70	245
CG24FES430	6,000	18,900	FES	3.0	35	30	G	12 - 20"	84	1 ½ x 1 ½	27 x 18 x 50	230
CG36FES320	6,000	18,900	FES	3.0	35	30	G	12 - 30"	126	1 ½ x 1 ½	27 x 18 x 60	240
CG48FES430	6,000	18,900	FES	3.0	35	30	G	12 - 40"	168	1 ½ x 1 ½	27 x 18 x 70	250

<sup>1</sup> Listed system includes CPVC chamber. To order system with PVC chamber — change **C** to **P** in System Number  
 For polypropylene systems, change **C** to **PP** in System Number.  
 For PVDF systems, consult Sales Department



# GUARDIAN<sup>®</sup> FILTRATION SYSTEMS

219

F-301\_K

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- **Flow rates to 8500 GPH @ 60Hz**  
(31,500 LPH @ 50Hz)
- **Non-metallic solution contact**  
PVC, CPVC, polypropylene or PVDF systems available
- **Choice of pump:** magnetic coupled, single or double mechanical seal, self-priming
- **Choice of media:** cartridge, disc, bag  
(See Bulletin F-155 for disc systems  
and Bulletin F-513 for bag systems)

The following pages contain a representative sampling of standard Guardian systems. Consult Sales Department for additional selections.

Guardian Filtration Systems have gained wide approval for recirculatory purification of most electroplating and chemical process solutions. They have proven to be a reliable workhorse for over three decades. With hundreds of systems in service around the globe, you can be confident a Guardian Filtration System will improve the

clarity of your process solutions, increase production quality, and reduce process cost.

Choose a basic filtration system with your choice of media, pump and filter chamber. Then select from a wide range of optional equipment to customize your system. Call us and we'll help you select the perfect system for your application.

## Guardian systems include the following standard features:

- Non-metallic solution contact
- Stainless steel external fasteners
- Swing bolt chamber closures
- EPDM elastomers standard, Viton optional
- Corrosion resistant PVC base
- Flow control valve between pump and filter
- Drain valve on filter chamber
- Industrial duty SERFILCO pump
- Hard piping and wet testing prior to shipping
- Corrosion resistant vent valve
- Silicon carbide seals on mechanical seal pumps
- Glycerin filled 316 SS pressure gauge and guard assembly





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**CPVC single or double seal<sup>2</sup> direct drive pump and CPVC or PVC filter chamber<sup>1</sup>**

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft.)	Suct. / Disch FNPT Conns. (inches)	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz										
CG24HE115H	4,200	13,200	HE	1.5	24	20	G	12 - 20"	84	2 x 1½	50 x 24 x 32	205
CG36HE115H	4,200	13,200	HE	1.5	24	20	G	12 - 30"	126	2 x 1½	50 x 24 x 42	215
CG48HE115H	4,200	13,200	HE	1.5	24	20	G	12 - 40"	168	2 x 1½	50 x 24 x 52	230
CG36HE220H	5,400	17,000	HE	2.0	27	24	G	12 - 30"	126	2 x 1½	50 x 24 x 42	225
CG48HE220H	5,400	17,000	HE	2.0	27	24	G	12 - 40"	168	2 x 1½	50 x 24 x 52	240
CG60HE220H	5,400	17,000	HE	2.0	27	24	G	12 - 50"	210	2 x 1½	50 x 24 x 62	250
CG36HE330H	6,500	20,500	HE	3.0	36	32	G	12 - 30"	126	2 x 1½	50 x 24 x 42	235
CG48HE330H	6,500	20,500	HE	3.0	36	32	G	12 - 40"	168	2 x 1½	50 x 24 x 52	245
CG60HE330H	6,500	20,500	HE	3.0	36	32	G	12 - 50"	210	2 x 1½	50 x 24 x 62	255
CG36HE450H	8,500	26,800	HE	5.0	50	45	G	12 - 30"	126	2 x 1½	50 x 24 x 42	250
CG48HE450H	8,500	26,800	HE	5.0	50	45	G	12 - 40"	168	2 x 1½	50 x 24 x 52	260
CG60HE450H	8,500	26,800	HE	5.0	50	45	G	12 - 50"	210	2 x 1½	50 x 24 x 62	270
CG96HE450H	8,500	26,800	HE	5.0	50	45	(2)G	24 - 40"	336	2 x 2	66 x 24 x 52	395
CG120HE450H	8,500	26,800	HE	5.0	50	45	(2)G	24 - 50"	420	2 x 2	66 x 24 x 62	425
CG96HE575H	10,000	21,500	HE	7.5	60	45	(2)G	12 - 40"	336	2 x 2	66 x 24 x 52	440
CG120HE575H	10,000	21,500	HE	7.5	60	45	(2)G	12 - 50"	420	2 x 2	66 x 24 x 62	470

<sup>1</sup> Listed system includes CPVC chamber. To order system with PVC chamber — change the first C to P in System No. and Model No.  
<sup>2</sup> To order pump with double mechanical seal — change HE to HED in System.

**Polypropylene magnetic drive pump and CPVC, PVC or polypropylene filter chamber<sup>1</sup>**

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft.)	Suct. / Disch FNPT Conns. (inches)	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz										
CG24M210H	3,000	13,200	M	1.0	20	16	G	12 - 20"	84	1½ x 1½	50 x 24 x 32	185
CG36M210H	3,000	13,200	M	1.0	20	16	G	12 - 30"	126	1½ x 1½	50 x 24 x 42	195
CG48M210H	3,000	13,200	M	1.0	20	16	G	12 - 40"	168	1½ x 1½	50 x 24 x 52	210
CG36FE110	3,900	12,300	FE	1.0	18	16	G	12 - 30"	126	2 x 1½	50 x 24 x 42	215
CG48FE110	3,900	12,300	FE	1.0	18	16	G	12 - 40"	168	2 x 1½	50 x 24 x 52	230
CG60FE110	3,900	12,300	FE	1.0	18	16	G	12 - 50"	210	2 x 1½	50 x 24 x 62	240

<sup>1</sup> Listed system includes CPVC chamber. To order system with PVC chamber — change the first C to P in System No. and Model No.  
 For polypropylene systems, change the first C to PP in system No. For PVDF systems consult Sales Dept.



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**Polypropylene magnetic drive pump and CPVC, PVC or polypropylene filter chamber <sup>1</sup> (Cont.)**

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft.)	Suct. / Disch FNPT Conns. (inches)	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz										
CG36FE215H	4,700	14,800	FE	1.5	25	24	G	12 - 30"	126	2 x 1 1/2	50 x 24 x 42	225
CG48FE215H	4,700	14,800	FE	1.5	25	24	G	12 - 40"	168	2 x 1 1/2	50 x 24 x 52	240
CG60FE215H	4,700	14,800	FE	1.5	25	24	G	12 - 50"	210	2 x 1 1/2	50 x 24 x 62	250
CG36FE320H	6,000	18,900	FE	2.0	32	30	G	12 - 30"	126	2 x 1 1/2	50 x 24 x 42	235
CG48FE320H	6,000	18,900	FE	2.0	32	30	G	12 - 40"	168	2 x 1 1/2	50 x 24 x 52	245
CG60FE320H	6,000	18,900	FE	2.0	32	30	G	12 - 50"	210	2 x 1 1/2	50 x 24 x 62	255
CG48F850H	8,500	26,800	F2x2	5.0	45	33	G	12 - 40"	168	2 x 1 1/2	50 x 24 x 52	260
CG60F850H	8,500	26,800	F2x2	5.0	45	33	G	12 - 50"	210	2 x 1 1/2	50 x 24 x 62	270
CG96F850H	8,500	26,800	F2x2	5.0	45	33	(2)G	24 - 40"	336	2 x 2	66 x 24 x 52	395
CG120F850H	8,500	26,800	F2x2	5.0	45	33	(2)G	24 - 50"	420	2 x 2	66 x 24 x 62	425
CG96F910H	10,000	31,500	F2x2	10.0	53	42	(2)G	24 - 40"	336	2 x 2	66 x 24 x 52	460
CG120F910H	10,000	31,500	F2x2	10.0	53	42	(2)G	24 - 50"	420	2 x 2	66 x 24 x 62	490

**Polypropylene Self-priming magnetic drive pump and CPVC, PVC or polypropylene filter chamber <sup>1</sup>**

System Number	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Cartridge Change PSI	Filter Series	Media	Solids Area (sq. ft.)	Suct. / Disch FNPT Conns. (inches)	Overall Dimensions (in.) (L x W x H)	Ship. Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz										
CG24FES110H	3,000	13,200	FES	1.0	19	16	G	12 - 20"	84	1 1/2 x 1 1/2	50 x 24 x 32	200
CG36FES110H	3,000	13,200	FES	1.0	19	16	G	12 - 30"	126	1 1/2 x 1 1/2	50 x 24 x 42	210
CG48FES110H	3,000	13,200	FES	1.0	19	16	G	12 - 40"	168	1 1/2 x 1 1/2	50 x 24 x 52	220
CG36FES215H	3,900	12,300	FES	1.5	22	16	G	12 - 30"	126	1 1/2 x 1 1/2	50 x 24 x 42	210
CG48FES215H	3,900	12,300	FES	1.5	22	16	G	12 - 40"	168	1 1/2 x 1 1/2	50 x 24 x 52	220
CG60FES215H	3,900	12,300	FES	1.5	22	16	G	12 - 50"	210	1 1/2 x 1 1/2	50 x 24 x 62	230
CG36FES320H	4,700	14,800	FES	2.0	29	24	G	12 - 30"	126	1 1/2 x 1 1/2	50 x 24 x 42	220
CG48FES320H	4,700	14,800	FES	2.0	29	24	G	12 - 40"	168	1 1/2 x 1 1/2	50 x 24 x 52	230
CG60FES320H	4,700	14,800	FES	2.0	29	24	G	12 - 50"	210	1 1/2 x 2 1/2	50 x 24 x 62	240
CG36FES430H	6,000	18,900	FES	3.0	35	30	G	12 - 30"	126	1 1/2 x 1 1/2	50 x 24 x 42	230
CG48FES430H	6,000	18,900	FES	3.0	35	30	G	12 - 40"	168	1 1/2 x 1 1/2	50 x 24 x 52	240
CG60FES430H	6,000	18,900	FES	3.0	35	30	G	12 - 50"	210	1 1/2 x 1 1/2	50 x 24 x 62	250

Listed system includes CPVC chamber. To order system with PVC chamber — change the first **C** to **P** in System No. and Model No.  
For polypropylene systems, change the first **C** to **PP** in System No. For PVDF systems consult Sales Dept.





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**Customize your Guardian with the following options**

<b>SLURRY TANK and VALVES</b>			
	<b>SURFACE AREA (sq. ft.)</b>	<b>SLURRY CAPACITY (gal.)</b>	<b>PRICE CODE NO.</b>
<b>SV4</b> For chemical mixing, pump priming or precoating. Includes polyethylene tank w/CPVC frame, CPVC piping and four CPVC ball valves and tank strainer.	84	7	O-2084
	126	11	O-2072
	168 +	18	O-2090
<b>SV6</b> Same as above, plus backwash and bypass valves.	84	7	O-2085
	126	11	O-2073
	168 +	18	O-2091

<b>MOTOR STARTERS</b>		
<b>NEMA 4X Watertight push button (mounted and wired)</b>		<b>PRICE CODE NO.</b>
Add -S to motor starter Price Code No. when ordering motor starter for use with DRI-STOP® Pump Protector <b>IMPORTANT:</b> Specify operating voltage	115 - 230V/1/50-60 230 - 460V/3/50-60	O-MS1P O-MS3P
<b>DRI-STOP® PUMP PROTECTOR</b>		
DRI-STOP 2R for use with double mechanical seal pump.		O-2DS2R
DRI-STOP 3 for use with magnetic drive or single mechanical seal pump.		O-DS3C

<b>CARBON PURIFICATION CHAMBER</b>		
Includes extended base, adapter kit, flow control valve and drain valve.		
<b>DESCRIPTION</b>	<b>CARBON CAPACITY</b>	<b>PRICE CODE NO.</b>
PVC chamber and internal canister(s) for use with granular carbon. For CPVC chamber, add C to end of Price Code No.	Single 5" x 28" canister, 7.5 lbs. capacity Triple 5" x 28" canister, 22.5 lbs. capacity Triple 5" x 48" canister, 42 lbs capacity	O-1528 O-3528 O-3548

Order carbon media from Bulletin M-305.

<b>PORTABLE</b>	<b>PRICE CODE NUMBER</b>
Two fixed wheels, two swivel casters, pull handle	O-2042
<b>OPERATING VOLTAGE 50 Hz</b>	
Single phase @ 50 Hz Three phase @ 50 Hz Specify operating voltage	O-150H O-350H
<b>ELASTOMERS</b>	
Viton Elastomers	O-4V





## COMPACT, ECONOMICAL FILTRATION AND PURIFICATION

### SPACE-SAVER



### SUPER SPACE-SAVER



### GUARDIAN

- **Flow rates to 6000 GPH @ 60 Hz**  
(19000 LPH @ 50 Hz)
- **Non-metallic solution contact**  
Select materials of construction for compatibility with solutions, operating temperature and pressure.

**Bag Systems** are corrosion resistant and extremely simple to operate. Choice of construction materials allow use with most liquids, including harsh chemicals at elevated temperatures.

- **Choice of pump**  
Seal-less magnetic drive pumps:  
Series 'B' seal-less magnetic coupled pumps are available in CPVC, polypropylene or PVDF with EPDM "O"-rings. Series 'M' and 'FE' pumps are polypropylene or PVDF with EPDM "O"-rings.

Mechanical Seal Pumps:  
Series 'HC', 'HK' or 'HE' direct drive pumps are available with either single or double mechanical seals. The pumps are CPVC or PVDF with EPDM "O"-rings

Self Priming Pumps:  
Series 'FES' magnetic coupled self priming pumps are available in polypropylene or PVDF with EPDM "O"-rings.

- **Filter Chamber**  
Space-Saver systems utilize Series 630 & 640 single bag chambers with surface area up to 5.0 sq. ft. Super Space-Saver and Guardian system utilize Series 1235 & 1255 multi-bag chambers with surface area up to 19.5 sq. ft. All bag chambers feature a bottom in bottom out design which simplifies bag changes.



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**Standard BAG FILTRATION systems include:**

- Non-metallic solution contact
- Corrosion resistant mounting base.
- Industrial duty SERFILCO pump
- Stainless steel or corrosion resistant external hardware and fasteners.
- Vent valve assembly
- Glycerin filled 316 SS pressure gauge and guard assembly
- Systems 1 HP and up 230-460V/3/50-60 Hz, others 115-230V/1/50-60 Hz.
- Flow control valve between pump and filter (Super Space-Saver and Guardian)

**TO ORDER, use System Number**

**SPACE-SAVER SYSTEMS**

**Systems with magnetic drive pump and PVC, CPVC, polypropylene or PVDF filter chamber**

System Number <sup>1</sup>	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Filter Series	Bag Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @60Hz	LPH @50 Hz							
CSBF3.5B6	600	2,000	B	1/6	10	630	3.5	3/4 H X 1	75
CSBF5B6	600	2,000	B	1/6	10	640	5.0	3/4 H X 1	80
CSBF3.5M108	1,700	5,100	M	3/4	17	630	3.5	1 x 1	90
CSBF5M108	1,700	5,100	M	3/4	17	640	5.0	1 x 1	90
CSBF5M210	2,700	8,100	M	1.0	20	640	5.0	1 1/2 x 1	95

<sup>1</sup>Listed system includes CPVC chamber and pump  
 To order system with PVC chamber and CPVC pump, change the C to P in system No.  
 To order system with polypropylene chamber and pump, change the C to PP in system No.  
 To order system with PVDF chamber and pump, change the C to K in system No.

**Systems with CPVC or PVDF direct drive pump and PVC, CPVC or PVDF filter chamber**

System Number <sup>1</sup>	Flow Rate		Pump Series	Pump HP <sup>2</sup>	Pump Max. PSI	Filter Series	Bag Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @60Hz	LPH @50 Hz							
CSBF3.5HC103	900	2,800	HC	1/3	12	630	3.5	1 x 1	62
CSBF5HC103	900	2,800	HC	1/3	12	640	5.0	1 x 1	85
CSBF5HC208	1,600	5,000	HC	3/4	20	640	5.0	1 x 1	95
CSB5HK310	2,500	7,900	HK	1.0	18	640	5.0	1 1/2 x 1	105

<sup>1</sup>Listed system includes CPVC chamber and pump  
 To order system with PVC chamber and CPVC pump, change the C to P in system No.  
 To order system with PVDF chamber pump, change the C to K in system No.  
<sup>2</sup>To order pump with double mechanical seal - change HC to HCD or HK to HKD in System No.

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431**TO ORDER, use System Number****SUPER SPACE-SAVER  
OR GUARDIAN SYSTEMS*****Polypropylene magnetic drive pump with CPVC, PVC, or Polypropylene<sup>2</sup> filter chamber***

System Number <sup>1, 2</sup>	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Filter Series	Bag Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz							
CGBF12M210	3,000	9,500	M	1.0	20	1235	12.0	1 1/2 x 1 1/2	195
CGBF19M210	3,000	9,500	M	1.0	20	1255	19.5	1 1/2 x 1 1/2	210
CGBF12FE110	3,500	11,100	FE	1.0	18	1235	12.0	2 x 1 1/2	215
CGBF19FE110	3,500	11,100	FE	1.0	18	1255	19.5	2 x 1 1/2	230
CGBF12FE215	4,500	14,200	FE	1.5	25	1235	12.0	2 x 1 1/2	225
CGBF19FE215	4,500	14,200	FE	1.5	25	1255	19.5	2 x 1 1/2	240
CGBF12FE320	5,500	17,400	FE	2.0	32	1235	12.0	2 x 1 1/2	235
CGBF19FE320	5,500	17,400	FE	2.0	32	1255	19.5	2 x 1 1/2	250

<sup>1</sup> Listed system includes CPVC chamber and pump

To order system with PVC chamber and CPVC pump, change the C to P in system No.

To order system with polypropylene chamber and pump, change the C to PP in system No.

<sup>2</sup> Listed system is a Super Space-Saver

For a Guardian System (mounted on a flat base) add H to System No.

***CPVC or Polypropylene direct drive<sup>2</sup> pump with CPVC, PVC, or Polypropylene filter chamber***

System Number <sup>1, 2</sup>	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Filter Series	Bag Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz							
CGBF12HK415	2,500	7,900	HK	1.5	23	1235	12.0	1 x 1 1/2	190
CGBF19HK45	2,500	7,900	HK	1.5	23	1255	19.5	1 1/2 x 1 1/2	205
CGBF12HE115	9,000	12,600	HE	1.5	24	1235	12.0	2 X 1/2	215
CGBF19HE115	4,000	12,600	HE	1.5	24	1255	19.5	2 x 1 1/2	230
CGBF12HE220	5,000	15,800	HE	2.0	27	1235	12.0	2 x 1 1/2	225
CGBF19HE220	5,000	15,800	HE	2.0	27	1255	19.5	2 x 1 1/2	240
CGBF12HE330	6,000	1,900	HE	3.0	36	1235	12.0	2 x 1 1/2	230
CGBF19HE330	6,000	1,900	HE	3.0	36	1255	19.5	2 x 1 1/2	245

<sup>1</sup> Listed system includes CPVC chamber and pump

To order system with PVC chamber and CPVC pump, change the C to P in system No.

To order system with polypropylene chamber and pump, change the C to PP in system No.

<sup>2</sup> Listed system is a Super Space-Saver

For a Guardian System (mounted on a flat base) add H to System No.





**BAG FILTRATION SYSTEM Specifications and Ordering Information**

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**Polypropylene self-priming magnetic drive pump with CPVC, PVC or Polypropylene<sup>1</sup> filter chamber**

System Number <sup>1,2</sup>	Flow Rate		Pump Series	Pump HP	Pump Max. PSI	Filter Series	Bag Area (sq. ft)	Suct./Disch FNPT Connections (inches)	Shipping Weight (lbs)
	GPH @60Hz	LPH @50 Hz							
CGBF12FES215	3,500	11,100	FES	1.5	22	1235	12.0	1 x 1 1/2	220
CGBF19FES215	3,500	11,100	FES	1.5	22	1255	19.5	1 1/2 x 1 1/2	235
CGBF12FES320	4,500	14,200	FES	1.5	29	1235	12.0	1 1/2 x 1 1/2	230
CGBF19FES320	4,500	14,200	FES	2.0	29	1255	19.5	1 1/2 x 1 1/2	245
CGBF12FES430	5,500	17,400	FES	3.0	35	1235	12.0	1 1/2 x 1 1/2	240
CGBF19FES430	5,500	17,400	FES	3.0	35	1255	19.5	1 1/2 x 1 1/2	240

<sup>1</sup> Listed system includes CPVC chamber and pump  
 To order system with PVC chamber and CPVC pump, change the C to P in system No.  
 To order system with polypropylene chamber and pump, change the C to PP in system No.  
<sup>2</sup> Listed system is a Super Space-Saver  
 For Guardian System (mounted on a flat base) add H to System No.

**IMPORTANT:** Filter media is ordered seperately. Refer to Bulletin C-307 for 630 & 640 chambers or Bulletin C-308 for 1235 & 1255 chambers.

**OPTIONAL**

DESCRIPTION	PRICE CODE NO.
<b>MOTOR STARTERS - NEMA 4X Watertight push button</b>	
115 - 230V/1/50-60 230 - 460V/3/50-60 Add -S to Motor Starter PCN when ordering motor starter for use with DRI-STOP® Pump Protector. i. e. O-MS1P-S <b>Important: Specify operating voltage.</b>	O-MS1P O-MS3P
<b>DRI-STOP® PUMP PROTECTOR</b>	
DRI-STOP 2R for use with double mechanical seal pumps. DRI-STOP 3 for use with magnetic drive or single mechanical seal pumps.	O-2DS2R O-DS3C

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DESCRIPTION	PRICE CODE NO.	DESCRIPTION	PRICE CODE NO.
<b>VITON ELASTOMERS</b>		<b>OPERATING VOLTAGE</b>	
Series 'S' chambers	O-SV	1 horsepower & above - Single phase	O-1PH
Series 'G' chambers	O-GV	Under 1 horsepower - Three phase	O-3PH
<b>PRIMING CHAMBER</b>		<b>50 Hz OPERATION</b>	
Pump Series B & HC - polypropylene	O-PC4	Single Phase @ 50 Hz	O-150H
Pump Series HK - Noryl / PVC	O-PC6	Three phase @ 50 Hz	O-350H



# GUARDIAN® DISC FILTRATION SYSTEMS

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F-155\_H

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

*For Plating & PCB Manufacturing or wherever efficient particle removal is required*



- **Flow rates to 8500 GPH @ 60Hz**  
(26,800 LPH @ 50Hz)
- **Non-metallic solution contact**  
PVC, CPVC, polypropylene
- **Standard slurry tank with valves**  
Prime pump, mix and add chemicals, rinse or pre-coat filters
- **Quiet, efficient centrifugal pumps —**  
Single seal, double seal or magnetic-coupled  
Handles most electroplating chemical applications

**SERFILCO's Guardian Disc Filtration Systems** incorporate all the latest pump, filter and media technology with proven non-metallic materials and manufacturing techniques to provide a truly superior filtration system for your dollar.

Guardian disc filtration systems include many standard features not available on competitive models. Standard systems are built on a rugged corrosion resistant "fork lift

friendly" PVC mounting base. The systems include mechanical seal or magnetic-coupled pump and slurry tank with valves. Piping, valves and connections are all CPVC hard pipe with EPDM "O"-rings.

Even with all these features and benefits, the Guardian disc filtration system is competitively priced.

## FEATURES

### PUMP:

Industry proven Series 'M', Series 'FE' or Series 'F' magnetic coupled pumps are constructed of glass reinforced polypropylene with EPDM 'O'-rings. The Series 'HE' direct drive pump, which is constructed of CPVC with EPDM elastomers, is available with either single or double mechanical seals and features silicon carbide seal faces.

All pump motors are chemical service, continuous duty, TEFC. 3/4" HP systems are 115-230V/1/50-60 Hz while systems 1 HP and above are 230-460V/3/50-60 Hz. All motors have a 1.15 service factor.

### FILTER:

The industry proven Series 'G' filter chamber features PVC or all CPVC construction with EPDM elastomers at all connections to assure solution containment. The cover closure uses convenient T-handles with stainless steel hardware.

In addition, a 0-60 psi gauge with guard and gasketed vent valve assembly are standard. The chamber base also includes additional drain ports for convenient servicing.

### FILTER DISCS:

Molded high purity polypropylene discs are designed for optimum performance and high dirt loading area. Disc column has a positive O.D. seal and twist lock for easy disc removal. Disc media is available in 5, 10, 20 or 40 micron rating. Carbon impregnated discs are also available.

### SLURRY TANK:

The standard polyethylene slurry tank is properly sized for each system and includes all accessory valves to easily accomplish several tasks. The slurry tank and valve package can be used for:

- pre-coat filter aid and / or carbon
- solution make-up or additions
- pump priming

In addition, slurry tanks are adequately sized to store solution during chamber maintenance.





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**Systems with polypropylene magnetic drive pump and CPVC or PVC<sup>1</sup> filter chamber**

SYSTEM NUMBER	FLOW RATE		PUMP SERIES	PUMP HP <sup>2</sup>	PUMP MAX. PSI	NO. OF DISCS	SURFACE AREA		SUCT./DISCH. CONNS.	OVERALL DIM. (In.) (l x w x h)	SHIP. WEIGHT (lbs)
	GPH @ 60 Hz	LPH @ 50 Hz					ft. <sup>2</sup>	m <sup>2</sup>			
CGD15M210H	3000	9450	M	1.0	24	31	15	1.4	1½ x 1½	50 x 24 x 25	185
CGD30M210H	3000	9450	M	1.0	24	65	30	2.8	1½ x 1½	50 x 24 x 35	195
CGD45M315H	4500	14,175	M	1.5	28	99	45	4.2	1½ x 1½	50 x 24 x 45	205
CGD60FE320H	6000	17,300	FE	2.0	32	130	60	5.6	2 x 1½	66 x 24 x 35	325
CGD90FE430H	6900	18,900	FE	3.0	35	198	90	8.4	2 x 1½	66 x 24 x 45	345
CGD90F850H	8500	26,800	F	5.0	45	198	90	8.4	2 x 1½	66 x 24 x 45	355

**Systems with CPVC single or double seal<sup>3</sup> direct drive pump and CPVC or PVC<sup>1</sup> filter chamber**

CGD15HE610H	3000	9450	HE	1.0	16	31	15	1.4	2 x 1½	50 x 24 x 25	185
CGD30HE610H	3000	9450	HE	1.0	16	65	30	2.8	2 x 1½	50 x 24 x 35	195
CGD45HE115H	4500	14,175	HE	1.5	24	99	45	4.2	2 x 1½	50 x 24 x 45	205
CGD60HE220H	5500	17,300	HE	2.0	29	130	60	5.6	2 x 1½	66 x 24 x 35	325
CGD90HE330H	6000	18,900	HE	3.0	36	198	90	8.4	2 x 2½	66 x 24 x 45	345
CGD90HE450H	8500	26,800	HE	5.0	50	198	90	8.4	2 x 2½	66 x 24 x 45	355

<sup>1</sup> Listed system includes CPVC chamber.

To order system with PVC chamber — change the **C** to **P** in System No. and Model No.

<sup>2</sup> 1.0 HP and above — three phase standard.

<sup>3</sup> To order pump with double mechanical seal — change **HE** to **HED** in System No.

**FILTER DISC MEDIA AND OPTIONS**  
Use Price Code Number to order

FILTER DISC MODEL NUMBER	MICRON RATING	PRICE CODE NUMBER (carton of 100)
CE 5 x 10	5	78-1612
CE 10 x 10	10	78-1613
CE 20 x 10	20	78-1614
CE 40 x 10	40	78-1615
C x 10 Carbon	10	78-1616

**PORTABLE OPTION**

Pull handle, 2 wheels on axle, and two swivel casters.

**PRICE CODE NO.**

O-2042

Filter disc media ordered separately.

**CARBON PURIFICATION CHAMBER OPTIONS**

For continuous or batch carbon treatment. Choose carbon capacity of 7.5 to 42 lbs. Carbon chamber option includes a larger system base (24" x 66"), piping and flow control valve. Chamber is PVC with swing bolt cover closure. Internal canisters are PVC, elastomers are EPDM. For use with granular carbon.

CAPACITY	CANISTER	PRICE CODE NO.
7.5 lbs.	single 5" x 28"	O-1528
22.5 lbs.	triple 5" x 28"	O-3528
42 lbs.	triple 5" x 48"	O-3548

Order carbon media from Bulletin M-305

OPTIONAL	ADD TO SYSTEM NO.
Viton® elastomers on filter chamber and pump	v

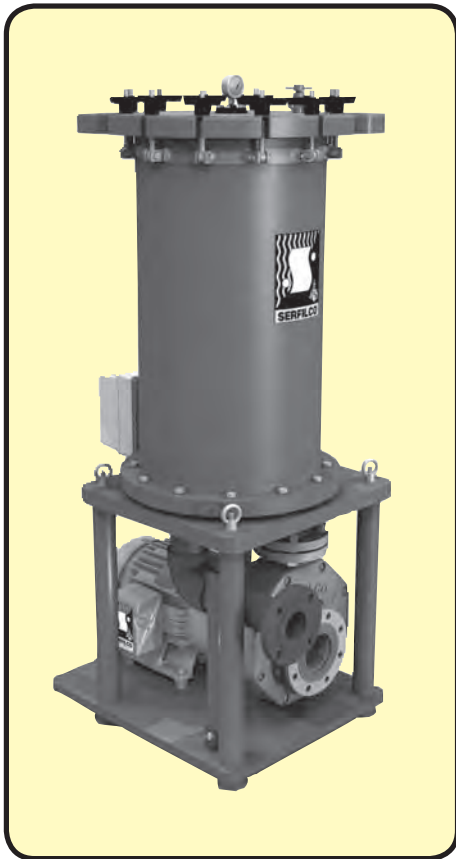


# MEGA-FLO<sup>®</sup> FILTRATION SYSTEMS

229

F-304\_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



**COMPACT, HIGH FLOW, EFFICIENT AND DURABLE SYSTEMS DESIGNED TO HANDLE A VARIETY OF SOLUTIONS**

***METAL FINISHING, CHEMICAL, WATER AND WASTE TREATMENT, FUME SCRUBBER, COOLING TOWER RESERVOIR AND MORE!***

## FEATURES

- **High flow rate — 8,500 - 21,000 GPH**
- **Non-metallic, corrosion resistant**  
PVC construction  
CPVC construction  
PP high temperature polypropylene construction  
*(See a chemical resistance guide.)*
- **High capacity — to 130 cartridge**  
(455 sq. ft. of solids holding capacity)
- **Optional carbon chamber to 84 lb capacity**
- **Optional 30 gallon slurry tank**
- **Standard NEMA 4X motor starter with overload protection**

## BENEFITS

- **Easy cartridge change out**
- **Improve finished goods and process quality, minimize scrap and rework**
- **Reduce chemical consumption by maintaining solution quality**

**MEGA-FLO Filtration Systems** are compact, high flow, high capacity systems which are corrosion resistant, easy to install and simple to operate.

You can choose PVC, CPVC or PP high temperature polypropylene construction.

Systems are available with a single or double mechanical seal pump or with a magnetic coupled polypropylene pump to meet almost any application. Double seal pumps are recommended for use with solutions having ferrous metal particles, excessive abrasives and for solutions which crystallize when cooled. In addition, the double water flush seal pump is an excellent choice for applications requiring dry-run operation.

Filter chambers feature rugged machined construction with oversized ports for low pressure differential. Low pressure drop and high surface area (solids holding capacity) mean long periods of high flow, continuous dirt removal between cartridge changes.

Select a system which will provide 7.0-10.5 square ft. of solids holding area per 100 gallons of solution. Flow rate should be 2 - 10 tank turnovers per hour. Coarse media and high flows are desirable for high dirt load applications. Increasing the number of cartridges reduces solution flow per cartridge, improves efficiency and reduces cartridge consumption.





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**Standard MEGA-FLO systems include:**

- PVC, CPVC or polypropylene construction.
- Corrosion resistant mounting base.
- Stainless steel external hardware and fasteners.
- Swing bolt chamber closure.
- Flange connections.
- PSI gauge guard assembly and vent valve.
- NEMA4X watertight motor starter with overload protection.
- 230-460V/3/50-60 Hz, TEFC motors

**SYSTEM:** MEGA-FLO filtration systems are built on a rugged hooded base assembly which protects the pump motor and supports the filter chamber. This design allows maximum filtration performance while requiring minimal floor space.

**PUMP:** Your choice — Series 'HE', 'HF' or 'F'. Series 'HE' and 'HF' single or double seal pumps are available in CPVC or PPP polypropylene. Both 'HE' and 'HF' pumps feature EPDM elastomers and silicon carbide seals. Double seal pumps include pump protector.

Series 'F' 2 x 2 magnetic-coupled pumps are constructed of glass reinforced polypropylene with Viton® 'O'-ring.

All pump motors are chemical service, continuous duty, TEFC with two-part epoxy paint. Motors are 230-460V/3/50-60Hz with 1.15 service factor.

**FILTER:** Choice of PVC, CPVC or polypropylene construction. Accommodates 130 cartridges for PVC or CPVC and 110 cartridges for PP. Rugged machined shell, base and cover provide non-metallic solution contact.

The cover includes a stainless steel reinforcing plate and lift handles. The chamber includes a 0 - 60 PSI gauge guard assembly, vent valve assembly and EPDM elastomers.

**POLYPROPYLENE CHAMBER WITH MAGNETIC DRIVE OR MECHANICAL SEAL PUMP**

SYSTEM NUMBER	FLOW GPH @ 60 Hz	MEDIA	PUMP HP	PUMP TYPE **	FLANGE CONNS. SUCT. x DISCH.	DIMENSIONS L x W x H	SHIPPING WEIGHT Lbs.
<b>66 CARTRIDGE SYSTEMS (231 s. f. *)</b>							
PPJ66F2750	8,500	22 - 30"	5.0	F	3" x 3"	30" x 24" x 70"	300
PPJ66HE450	9,000	22 - 30"	5.0	HE	3" x 3"	30" x 24" x 70"	300
PPJ66HF175	12,000	22 - 30"	7.5	HF	3" x 3"	30" x 24" x 70"	315
PPJ66HF210	18,000	22 - 30"	10.0	HF	3" x 3"	30" x 24" x 70"	340
<b>88 CARTRIDGE SYSTEMS (308 s. f. *)</b>							
PPJ88F2750	8,500	22 - 40"	5.0	F	3" x 3"	30" x 24" x 80"	320
PPJ88HE450	9,000	22 - 40"	5.0	HE	3" x 3"	30" x 24" x 80"	320
PPJ88HF175	12,000	22 - 40"	7.5	HF	3" x 3"	30" x 24" x 80"	335
PPJ88HF210	18,000	22 - 40"	10.0	HF	3" x 3"	30" x 24" x 80"	360
<b>110 CARTRIDGE SYSTEMS (385 s. f. *)</b>							
PPJ110F2750	8,500	22 - 20" + 30"	5.0	F	3" x 3"	30" x 24" x 90"	340
PPJ110HE450	9,000	22 - 20" + 30"	5.0	HE	3" x 3"	30" x 24" x 90"	340
PPJ110HF175	12,000	22 - 20" + 30"	7.5	HF	3" x 3"	30" x 24" x 90"	355
PPJ110HF210	18,000	22 - 20" + 30"	10.0	HF	3" x 3"	30" x 24" x 90"	380
PPJ110HF315	21,000	22 - 20" + 30"	15.0	HF	3" x 3"	30" x 24" x 90"	405

\* s. f. is square feet of surface area or solids holding capacity using Valuound or Maxi-Depth filter cartridges. (See Bulletin M-109.) Order cartridges separately.

\*\* To order double seal pump, change **HE** to **HED** or **HF** to **HFD** in Price Code Number.





**PVC OR CPVC<sup>1</sup> CHAMBER WITH MAGNETIC DRIVE OR MECHANICAL SEAL PUMP**

SYSTEM NUMBER	FLOW GPH @ 60 Hz	MEDIA	PUMP HP	PUMP TYPE **	FLANGE CONNS. SUCT. x DISCH.	DIMENSIONS L x W x H	SHIPPING WEIGHT Lbs.
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**52 CARTRIDGE SYSTEMS (182 s. f. \*)**

PJ52F2750	8,500	26 - 20"	5.0	F	3" x 3"	30" x 24" x 56"	280
PJ52F2910	12,000	26 - 20"	10.0	F	3" x 3"	30" x 24" x 56"	295
PJ52HE450	9,000	26 - 20"	5.0	HE	3" x 3"	30" x 24" x 56"	280
PJ52HF175	12,000	26 - 20"	7.5	HF	3" x 3"	30" x 24" x 56"	295
PJ52HF210	18,000	26 - 20"	10.0	HF	3" x 3"	30" x 24" x 56"	320
PJ52HF315	21,000	26 - 20"	15.0	HF	3" x 3"	30" x 24" x 56"	345

**78 CARTRIDGE SYSTEMS (273 s. f. \*)**

PJ78F2750	8,500	26 - 30"	5.0	F	3" x 3"	30" x 24" x 66"	300
PJ78F2910	12,000	26 - 30"	10.0	F	3" x 3"	30" x 24" x 66"	315
PJ78HE450	9,000	26 - 30"	5.0	HE	3" x 3"	30" x 24" x 66"	300
PJ78HF175	12,000	26 - 30"	7.5	HF	3" x 3"	30" x 24" x 66"	315
PJ78HF210	18,000	26 - 30"	10.0	HF	3" x 3"	30" x 24" x 66"	340
PJ78HF315	21,000	26 - 30"	15.0	HF	3" x 3"	30" x 24" x 66"	365

**104 CARTRIDGE SYSTEMS (364 s. f. \*)**

PJ104F2750	8,500	26 - 40"	5.0	F	3" x 3"	30" x 24" x 76"	320
PJ104F2910	12,000	26 - 40"	10.0	F	3" x 3"	30" x 24" x 76"	335
PJ104HE450	9,000	26 - 40"	5.0	HE	3" x 3"	30" x 24" x 76"	320
PJ104HF175	12,000	26 - 40"	7.5	HF	3" x 3"	30" x 24" x 76"	335
PJ104HF210	18,000	26 - 40"	10.0	HF	3" x 3"	30" x 24" x 76"	360
PJ104HF315	21,000	26 - 40"	15.0	HF	3" x 3"	30" x 24" x 76"	385

**130 CARTRIDGE SYSTEMS (455 s. f. \*)**

PJ130F2750	8,500	26 - 20" + 30"	5.0	F	3" x 3"	30" x 24" x 86"	340
PJ130F2910	12,000	26 - 20" + 30"	10.0	F	3" x 3"	30" x 24" x 86"	355
PJ130HE450	9,000	26 - 20" + 30"	5.0	HE	3" x 3"	30" x 24" x 86"	340
PJ130HF175	12,000	26 - 20" + 30"	7.5	HF	3" x 3"	30" x 24" x 86"	355
PJ130HF210	18,000	26 - 20" + 30"	10.0	HF	3" x 3"	30" x 24" x 86"	380
PJ130HF315	21,000	26 - 20" + 30"	15.0	HF	3" x 3"	30" x 24" x 86"	405

<sup>1</sup> Listed systems include PVC chamber. To order system with CPVC chamber — change **P** to **C** in system number  
 \* s. f. is square feet of surface area or solids holding capacity using Valuound or Maxi-Depth filter cartridges.  
 (See Bulletin M-109.) Order cartridges separately.

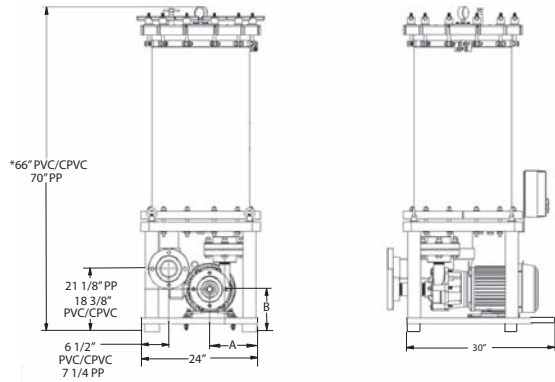
\*\* To order double seal pump, change **HE** to **HED** or **HF** to **HFD** in Price Code Number.



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PUMP / HP	A	B
'HE' / 5.0	12-1/4"	8"
'F' / 5.0	12-3/16"	7-3/4"
'F' / 10.0	12-3/16"	7-3/4"
'HF' / 7.5	9-1/2"	8-3/4"
'HF' / 10.0	9-1/2"	8-3/4"
'HF' / 15.0	9-1/2"	8-3/4"

\* Overall height dimension reflects 30" chamber. Add 10" for 40" chamber, add 20" for 50" chamber and subtract 10" for 20" chamber.

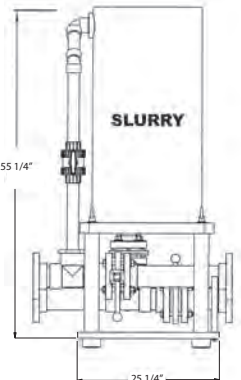
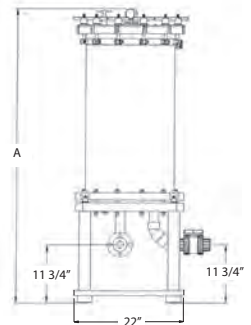


**OPTIONS**

**Carbon Purification Chambers:** Providing a convenient, economical and efficient means of continuous or periodic organic removal, these chambers feature PVC, CPVC or polypropylene construction for bulk granular carbon. PVC chamber has PVC internal canisters while CPVC and PP chambers have polypropylene canisters. Chambers include flow control valve, EPDM elastomers and all piping. Order carbon separately (See Bulletin M-305).

CARBON CAPACITY lbs.	FLOW RATE GPM <sup>3</sup>	CANISTERS no. / size <sup>4</sup>	PRICE CODE NO.			A (in.)
			PVC	CPVC	PPP	
21 lbs. <sup>1</sup>	10	3 / 5" x 28"	O-3430 P	O-3430 C	O-3430 PP	40-11/16
36 lbs. <sup>1</sup>	17	3 / 5" x 48"	O-3431 P	O-3431 C	O-3431 PP	60-11/16
49 lbs. <sup>2</sup>	23	7 / 5" x 28"	O-3432 P	O-3432 C	O-3432 PP	59-3/4
84 lbs. <sup>2</sup>	39	7 / 5" x 48"	O-3433 P	O-3433 C	O-3433 PP	79-3/4

- <sup>1</sup> Chamber mounted on MEGA-FLO base (add 16" to length)
- <sup>2</sup> Stand alone component as shown
- <sup>3</sup> Maximum recommended flow U.S. GPM
- <sup>4</sup> PP canisters are less than 5" dia with 15% less capacity.



**Slurry Tank:** Useful for chemical mixing / additions, precoating or pump priming, this chamber is constructed of PVC, CPVC or polypropylene and has a 30 gallon capacity. Includes 4 valves and all necessary piping.

FOR USE WITH PUMP TYPE:	MAXIMUM LIFT	PRICE CODE NO.		
		PVC	CPVC	PP
'HE'	4 ft.	88-3420-3P	88-3420-3C	88-3420-3PP
'F'		88-3429-3P	88-3429-3C	88-3429-3PP
'HF'		88-3430-3P	88-3430-3C	88-3430-3PP



# SENTRY® FILTRATION PURIFICATION SYSTEMS

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F-404\_B

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## FOR THOSE WHO DEMAND THE FINEST IN PARTICLE RETENTION

*ELECTROPLATING / CHEMICAL / PCB  
PETROCHEMICAL / WATER TREATMENT  
PHARMACEUTICAL / PHOTOGRAPHIC*

### FEATURES:

- **Flow rates: 7,200 to 19,000 GPH @ 60 Hz**
- **Non-metallic solution contact**  
Rubber lined steel chambers with  
magnetic-coupled polypropylene pumps  
or CPVC mechanical seal pumps  
(See a chemical resistance chart)
- **Cartridge or horizontal disc**
- **Solids loading area:**  
**420, 630 or 840 sq. ft. using cartridges**  
**60, 78 or 105 sq. ft. using discs**

### OPTIONAL —

**Slurry tank** with 3 additional flow control valves  
for pump priming, precoating and . . .

**Carbon purification chamber** for organics removal

These filtration systems include design features gained through more than 50 years of experience in developing chemically resistant pumps, filter chambers and systems. High flow rates to quickly remove particles, together with large surface area for solids loading are combined to provide extended operating life of solutions and improve product quality. A wide choice of media is available to best serve your application. Optional carbon chamber and slurry tank make the system extremely versatile.

Sentry filtration systems are engineered to provide efficient removal of particles or organic impurities from a wide range of chemical and plating solutions to 160°F. Chambers and pumps feature non-metallic solution contact. All external steel surfaces are painted two-part epoxy grey enamel. All internals are CPVC.

**The following pages contain a representative  
sampling of available standard systems.**

System shown with  
optional 1528  
carbon chamber



System shown with  
optional 3548  
carbon chamber  
and SV3-60 slurry tank





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**CHOOSE YOUR SYSTEM**

**FIRST, SELECT**

**Seal-less Magnetic-Coupled Pump**

Systems may be selected with magnetic-coupled pumps which provide protection from vapor and liquid leaks. Pumps are available in polypropylene to meet a variety of chemical and temperature applications.

**OR SELECT**

**Single or Double Seal Pump**

Systems with mechanical seals should be selected whenever excessive abrasives or ferrous metal particles are present. Standard single and double seal pumps are CPVC and feature silicon carbide (SiC) seal faces with EPDM elastomers.

**THEN SELECT**

**Filter Chamber for solids holding capacity\***

Chambers are constructed of rubber lined steel for acid solutions. They accept Maxi-Depth® wound, pleated, cleanable sleeve, or carbon cartridges. \*\*

Chambers allow for simultaneous filtration and purification by using carbon cartridges. A separate purification chamber with flow control valve is available.

\* Select a system which will provide 3.5 - 7.0 square ft. of solids holding area per 50 gallons of solution. Flow rate should be 2-10 tank turnovers per hour, depending on clarity desired. Coarse media and high flows are desirable for high dirt load applications. Increasing the number of cartridges reduces solution flow per cartridge, improves efficiency and reduces cartridge consumption. System comes complete with flow control valve between pump and filter chamber. When unit is de-energized, flow control valve may be closed to maintain prime during media change.

\*\* Chambers provided with the following Series 'CR' systems are for cartridges.

To specify system for use with discs –

Change CR1200 in System No. to DR60

Change CR1800 in System No. to DR78

or Change CR2400 in System No. to DR105



Sentry disc chamber with cover removed

**RUBBER LINED CHAMBER with MAGNETIC DRIVE POLYPROPYLENE PUMP**

Pump includes fluoride-resistant ceramic spindle with EPDM elastomers.

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. 1	SOLIDS AREA 2 Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200F650	7200	30	120	420	F, 5, CR	2"	48 x 48 x 64	1300
CR1800F650	7200	30	180	630			48 x 48 x 72	1400
CR2400F650	7200	30	240	840			48 x 48 x 87	1600

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. 1	SOLIDS AREA 2 Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200F850	9600	45	120	420	F, 5, CR	2"	48 x 48 x 64	1325
CR1800F850	9600	45	180	630			48 x 48 x 72	1425
CR2400F850	9600	45	240	840			48 x 48 x 87	1625

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. 1	SOLIDS AREA 2 Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200F910	12000	55	120	420	F, 10.0, CR	3"	48 x 48 x 64	1365
CR1800F910	12000	55	180	630			48 x 48 x 72	1465
CR2400F910	12000	55	240	840			48 x 48 x 87	1665





# SENTRY FILTRATION / PURIFICATION SYSTEMS

## with single or double mechanical seal pumps\*

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### RUBBER LINED CHAMBER with DIRECT DRIVE CPVC PUMP

Pump includes silicon carbide mechanical seal with EPDM elastomers.

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. <sup>1</sup>	SOLIDS AREA <sup>2</sup> Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200HE330	7500	36	120	420	HE, 3, CR	2"	48 x 48 x 64	1300
CR1800HE330	7500	36	180	630			48 x 48 x 72	1400
CR2400HE330	7500	36	240	840			48 x 48 x 87	1600

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. <sup>1</sup>	SOLIDS AREA <sup>2</sup> Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200HE450	8500	50	120	420	HE, 5, CR	2"	48 x 48 x 64	1325
CR1800HE450	8500	50	180	630			48 x 48 x 72	1425
CR2400HE450	8500	50	240	840			48 x 48 x 87	1625

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. <sup>1</sup>	SOLIDS AREA <sup>2</sup> Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200HE575	9600	60	120	420	HE, 7.5, CR	2"	48 x 48 x 64	1365
CR1800HE575	9600	60	180	630			48 x 48 x 72	1465
CR2400HE575	9600	60	240	840			48 x 48 x 87	1665

SYSTEM NUMBER	FLOW RATE GPH @ 60Hz	MAX. PUMP PSI	NO. OF CARTS. <sup>1</sup>	SOLIDS AREA <sup>2</sup> Sq. ft.	PUMP, HP, CHAMBER	SUCT./ DISCH. CONN.	DIMS. L x W x H Inches	SHIP. WT. Lbs.
CR1200H875	15000	27	120	420	H, 7.5, CR	3"	48 x 48 x 72	1475
CR1800H875	15000	27	180	630			48 x 48 x 87	1675
CR2400H510	19000	50	240	840	H, 10, CR		48 x 48 x 87	1750



**NOTE:**

\* To order pump with double mechanical seal - Change **HE** to **HED** or **H** to **HD** in System No.

<sup>1</sup> No. of 10" cartridges. Order separately. See Bulletin M-109.

<sup>2</sup> With Maxi-Depth cartridges. See Bulletin M-109.

### SENTRY systems include:

- Stationary steel mounting base coated with corrosion resistant 2-part epoxy paint.
- Motors are 230-460V/3/50-60, TEFC, 1725 or 3450 RPM. Systems wired for 230V/3/60 unless otherwise specified.
- Piping is solvent sealed CPVC, with EPDM "O"-rings at threaded connections.
- 0-60 PSI pressure gauge with gauge guard.
- Two flow control valves — one between pump and filter, second at filter discharge.
- Ball valves are solvent sealed CPVC at filter inlet and outlet.
- Capped tee on filter inlet and outlet for drains or field installation of bulk carbon.
- CPVC vent valve assembly.
- 1" drain valve on filter.

### Available for all models:

Granular carbon purification chamber installed on filter discharge with flow control valve is an available option. This allows filtered solution to pass through the activated carbon on a convenient "ON-OFF" basis before returning to the process tank. In addition to pump priming and chemical mixing, optional slurry tank with three additional valves allows precoating of media with filter aid and/or carbon. See Optional on the next page.

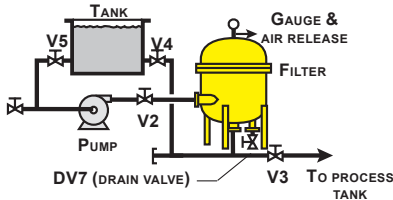




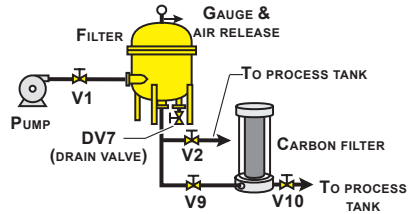
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**OPTIONS**

DESCRIPTION	PRICE CODE NO.
<b>MOTOR STARTERS - NEMA 4X Watertight push button</b>	
230 - 460V/3/50-60 (3 - 7.5 H.P.) 230 - 460V/3/50-60 (10 - 15 H.P.) NOTE: Specify operating voltage O-MS3P-S is required for any size system ordered with a DRI-STOP® Pump Protector.	O-MS3P O-MS3P-S
<b>DRI-STOP® PUMP PROTECTOR</b>	
DRI-STOP 2R for use with double mechanical seal pumps.	O-2DS2R
DRI-STOP 3 for use with magnetic drive or single mechanical seal pumps.	O-DS3C
<b>DAVIT COVER LIFT</b>	
For Model: DR78 / CR180 DR105 / CR240	78-1603 78-1604
<b>SLURRY TANK and VALVES</b>	
For chemical mixing, pump priming or precoating. Includes polyethylene tank, three additional CPVC flow control valves, steel frame. Completely piped and assembled with filter and pump on a standard base.  30 gal. slurry w/3 add'l valves 60 gal. slurry w/3 add'l valves	O-SV3-30 O-SV3-60



DESCRIPTION	PRICE CODE NO.
<b>CARBON PURIFICATION CHAMBER</b> Order carbon media from Bulletin M-305.	
Includes adapter kit, flow control valve, drain valve and 10 ft. of nylon reinforced vinyl hose, PVC chamber and internal canister(s) for use with granular carbon.	
Single 5" x 28" canister, 7.5 lbs. capacity	O-1528
Triple 5" x 28" canister, 22.5 lbs. capacity	O-3528
Triple 5" x 48" canister, 42 lbs capacity	O-3548
Chamber for single 5" x 28" Maxi-Carb cartridge (3.0 lbs. carbon)	
Polypropylene CPVC	O-PP1528M O-1528M



<b>Standard Sentry with two flow control valves</b>	

**DISC MEDIA**

<b>SENTRY FILTRATION SYSTEMS</b>			
<b>CARTRIDGE</b>		<b>DISC</b>	
MODEL	SOLIDS AREA Square feet	MODEL	SOLIDS AREA Square feet
CR1200	420	DR60	60
CR1800	630	DR78	78
CR2400	840	DR105	105

<b>FILTER DISCS, CELLULOSE</b> Packaged in carton of 250		
DISC MODEL	MICRON RATING	PRICE CODE NO.
CE5x24	5	78-1420
CE10x24	10	78-1421
CE20x24	20	78-1422
CE40x24	40	78-1423



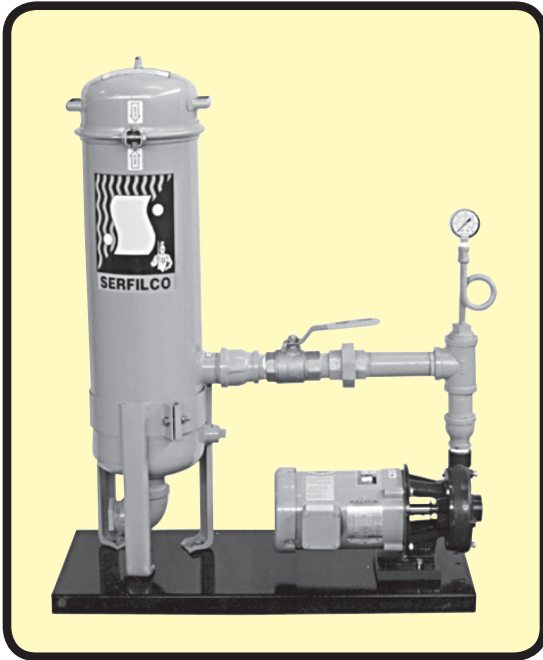
# SERIES 'M' FILTRATION SYSTEMS

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F-211\_D

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**STAINLESS STEEL OR STEEL**  
**FOR: CLEANERS, RINSES, QUENCH, CUTTING AND HYDRAULIC OILS**



## FEATURES

- High flow rates to 9,000 GPH
- Wide selection of standard systems including self-priming models
- Filter area from 15 to 60 square feet
- Uses standard 10", 20" or 30" double open end (DOE) cartridges
- Rugged construction, all hard piped and mounted on a vinyl coated steel base
- Compact! More flow and surface area than many systems of similar dimensions
- Easy to operate — standard flow control valve, pressure gauge and vent valve assembly

## BENEFITS

- Improve finished goods quality, minimize scrap and rework
- Extend process solution life with continuous dirt removal
- Minimize downtime for tank maintenance and sludge removal with high flow, large surface area
- Protect heaters and other in-tank equipment
- Economical to operate — highly durable and efficient cast centrifugal pumps and low PSI drop chambers with easy cartridge change
- Low installation cost — pre-packaged systems offer more flow and surface area than competitive models

## SPECIFICATIONS

### SYSTEM:

Models consist of a filter chamber, a cast centrifugal single or double seal pump, TEFC motor, flow control valve, piping, vent valve and pressure gauge, all mounted on a rugged vinyl coated steel base.

### PUMP:

The Series 'HCI' (cast iron) and 'HSS' (cast 316 stainless steel) horizontal pumps feature a compact, close-coupled design. A high efficiency, semi-open impeller minimizes clogging and, since the components are cast, there are no welds to break. Also, cast construction provides corrosion resistance that is superior to welded styles.

The self-priming Series 'SP' pumps are constructed of cast iron for dependable duty in a variety of applications. The pumps include a 316 stainless steel shaft, 316 stainless steel fasteners, and cast iron mounting bracket.

They feature a semi-open impeller which is also constructed of 316 stainless steel.

Standard pump elastomers are EPDM. Viton® is available. Motors are TEFC, 208-230-460V, 3Ø, 3450 RPM @ 60 Hz or 380-415V, 3Ø, 2850 RPM @ 50 Hz. Specify operating voltage when ordering.

### FILTER CHAMBER:

Constructed of 304 stainless steel or carbon steel with an external coat of 2-part epoxy grey paint. The chamber gasket is Buna-N. Chamber features 100 PSI design with oversized inlet and outlet connections to minimize pressure drop. Available for 5 - 10", 20" or 30" double open end cartridges providing 17.5, 35 or 52.5 square feet of dirt holding capacity respectively. Single bolt V-clamp cover closure allows quick and easy media change.





## Specifications and Ordering Information

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SPECIFICATIONS and ORDERING INFORMATION								
SYSTEM NUMBER <sup>1</sup>	FLOW GPH @ 60 Hz	MAX. PUMP PSI	PUMP HP	MEDIA	SURFACE AREA Sq. Ft. <sup>4</sup>	CONNECTIONS SUCTION x DIS-CHARGE <sup>2</sup>	DIMENSIONS L x W x H	SHIPPING WEIGHT. Lbs.

### STAINLESS STEEL or STEEL SYSTEMS<sup>3</sup>

SS10HSS110H	2,500	21	1.0	5 - 20"	35	1 ¼" x 2"	30" x 13" x 39"	150
SS15HSS110H	2,500	21	1.0	5 - 30"	52.5	1 ¼" x 2"	30" x 13" x 49"	160
SS10HSS315H	3,500	30	1.5	5 - 20"	35	1 ¼" x 2"	30" x 13" x 39"	155
SS15HSS315H	3,500	30	1.5	5 - 30"	52.5	1 ¼" x 2"	30" x 13" x 49"	165
SS10HSS420H	4,000	34	2.0	5 - 20"	35	1 ¼" x 2"	30" x 13" x 39"	170
SS15HSS420H	4,000	34	2.0	5 - 30"	52.5	1 ¼" x 2"	30" x 13" x 49"	180
SS10HSS520H	4,500	40	2.0	5 - 20"	35	1 ¼" x 2"	30" x 13" x 39"	170
SS15HSS520H	4,500	40	2.0	5 - 30"	52.5	1 ¼" x 2"	30" x 13" x 49"	180
SS10HSS715H	5,500	20	1.5	5 - 20"	35	2" x 2"	30" x 13" x 39"	165
SS15HSS715H	5,500	20	1.5	5 - 30"	52.5	2" x 2"	30" x 13" x 49"	175
SS15HSS820H	7,500	30	2.0	5 - 30"	52.5	2" x 2"	30" x 13" x 49"	190
SS15HSS930H	9,000	36	3.0	5 - 30"	52.5	2" x 2"	30" x 13" x 49"	195

### STEEL SYSTEMS (SELF-PRIMING)

S10SP10H	3,500	24	1.0	5 - 20"	35	1 ½" x 2"	30" x 13" x 39"	160
S15SP10H	3,500	24	1.0	5 - 30"	52.5	1 ½" x 2"	30" x 13" x 49"	170
S10SP15H	4,500	32	1.5	5 - 20"	35	1 ½" x 2"	30" x 13" x 39"	180
S15SP15H	4,500	32	1.5	5 - 30"	52.5	1 ½" x 2"	30" x 13" x 49"	190
S10SP20H	6,500	34	2.0	5 - 20"	35	1 ½" x 2"	30" x 13" x 39"	185
S15SP20H	6,500	34	2.0	5 - 30"	52.5	1 ½" x 2"	30" x 13" x 49"	195
S10SP30H	7,500	37	3.0	5 - 20"	35	1 ½" x 2"	30" x 13" x 39"	195
S15SP30H	7,500	37	3.0	5 - 30"	52.5	1 ½" x 2"	30" x 13" x 49"	205

<sup>1</sup> To order double mechanical water flush seal, change **HSS** to **HSSD** or **HCI** to **HCID** in System No.

<sup>2</sup> FNPT x FNPT.

<sup>3</sup> To order steel system, change **SS** to **S** and **HSS** to **HCI** in System No.

<sup>4</sup> With 2 ½" diameter nominal string wound filter cartridges. Order media separately. Refer to Bulletin M-109.

6

## OPTIONAL EQUIPMENT

DESCRIPTION	PRICE CODE NO.
<b>MOTOR STARTER - Assembled &amp; installed</b> <i>Specify operating voltage.</i> Watertight NEMA 4X magnetic push-button with overload protection. For Start / Stop operation	O-MS3P
As above, but includes low voltage control circuit required for use with Dri-Stop 2R	O-MS3P-S

DESCRIPTION	PRICE CODE NO.
<b>Dri-Stop® 2R</b> Recommended for use with double mechanical water flush seal pump. Automatically de-energizes pump motor when cooling water flow is interrupted. Eliminates costly dry run repairs. Requires MS3P-S motor starter, electric and water source.	O-2DS2R





## STEEL OR STAINLESS STEEL CONSTRUCTION

### FEATURES

- Flow rates **1,500 - 9,000 GPH @ 60 Hz**  
(7,875 - 28,350 LPH @ 50 Hz)
- Heavy duty cast **316 SS** or cast iron centrifugal single or double seal pumps **1.0 - 5.0 HP** (.75 - 3.2 kW)
- Heavy duty filter chambers carbon steel, **304SS** or **316SS** (rated to 150 PSI)
- High filter surface area  
(to 280 sq. ft solids loading area)
- Flow control valve between pump and filter chamber
- Differential, drain and vent ports standard on filter system chamber
- For use with stainless steel or polypropylene media (See Bulletins M-109 and M-309.)



The SERFILCO KNIGHT filtration systems feature the most durable pumps and filter chambers in our product line. They are designed to provide years of trouble-free service in demanding applications. The KNIGHT systems are intended for use where thermoplastic systems are unsuitable due to chemical and / or temperature limitations.

### SYSTEM:

Models offer a choice of 304 or 316 stainless steel filter chamber with a cast centrifugal 316SS pump, or a carbon steel filter chamber with cast iron pump. Systems include a flow control valve between pump and filter, piping and 0-60 PSI pressure gauge, all mounted on a rugged vinyl coated steel base plate.

### FILTER CHAMBER:

The series 'K' filter chamber is available in carbon steel, 304 stainless steel, or 316 stainless with an EPDM cover gasket (Viton optional). The chamber is 150 PSI design with quick swing closure, and also includes differential, drain and vent parts.

### PUMP:

The series 'HSS', cast 316 stainless steel, or 'HCI', cast iron, centrifugal pumps feature a compact, close-coupled design. A high efficiency, semi-open impeller minimizes clogging, and since the components are cast, there are no welds to break. Also, cast construction provides corrosion resistance that is superior to welded styles.

The pump is available with a single seal or with a double seal which uses external liquid as a flush. Motors are TEFC, 208-230-460V, 3 $\phi$ , 3450 RPM, 60 Hz.



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The following systems and specifications depict a representative sampling of the Knight product line. Standard systems are shown for stainless steel or carbon steel construction. Stainless steel systems have a 304SS or 316SS filter chamber with a 316SS pump. Carbon steel systems have a carbon steel filter chamber with a cast iron pump. EPDM elastomers are standard for both.

Consult Sales Department for systems with self-priming pumps or for special systems featuring titanium pumps, Teflon lined chambers and special seals for use with external applications such as black oxide.

**SPECIFICATIONS AND ORDERING INFORMATION**

**304 stainless steel chamber with 316SS pump- single mechanical seal**

SYSTEM NUMBER <sup>1,2,3</sup>	FLOW		MAX. PUMP PSI	PUMP HP	MEDIA	SURFACE AREA sq. ft.*	CONNECTIONS SUCTION X DISCHARGE	DIMENSIONS L x W x H	SHIPPING WEIGHT lbs.
	GPH@ 60 Hz	LPH@ 50 Hz							
K4S6HSS110 K4S9HSS110 K4S12HSS110	1,500	4,725	21	1.0	3 - 20 " 3 - 30 " 3 - 40 "	21 32 42	1¼" NPT x 1½" NPT	30 x 13 x 37" 30 x 13 x 47" 30 x 13 x 57"	145 170 195
K4S12HSS215 K4S18HSS215	2,500	7,875	26	1.5	6 - 20 " 6 - 30 "	42 63	1¼" NPT x 2" NPT	33 x 18 x 37" 33 x 18 x 47"	180 205
K4S18HSS420 K4S24HSS420	3,500	11,025	30	2.0	6 - 30 " 6 - 40 "	63 84	1¼" NPT x 2" NPT	33 x 18 x 47" 33 x 18 x 57"	215 240
K4S18HSS620 K4S24HSS620	4,500	14,175	19	2.0	6 - 30 " 6 - 40 "	63 84	2" NPT x 2" NPT	33 x 18 x 47" 33 x 18 x 57"	225 250
K4S33HSS730 K4S44HSS730	7,500	23,625	28	3.0	11 - 30 " 11 - 40 "	116 154	2" NPT x 3" F	50 x 18 x 73" 50 x 18 x 83"	540 550
K4S44HSS950 K4S60HSS950 K4S80HSS950	9,000	28,350	32	5.0	11 - 40 " 20 - 30 " 20 - 40 "	154 210 280	2" NPT x 3" F	50 x 18 x 83" 50 x 18 x 74" 50 x 18 x 84"	550 610 620

<sup>1</sup> For Viton elastomers, add - V to System Number.

<sup>2</sup> For 316 stainless steel filter chamber change K4s to K6s in System Number.

<sup>3</sup> For double mechanical seal pump change HSS to HSSD in System Number.

\* with 2½" diameter nominal string wound cartridges. Order media separately. Refer to Bulletins M-109 and M-309.

Motors are TEFC, 230-460V/3Ø/60 Hz. Consult Sales Dept. for explosion-proof, 50 Hz or 1Ø motors.



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**Carbon steel chamber with cast iron pump – single mechanical seal**

SYSTEM NUMBER <sup>1,2</sup>	FLOW		MAX. PUMP PSI	PUMP HP	MEDIA	SURFACE AREA sq. ft.*	CONNECTIONS SUCTION X DISCHARGE	DIMENSIONS L x W x H	SHIPPING WEIGHT lbs.
	GPH@ 60 Hz	LPH@ 50 Hz							
KS6HCl110 KS9HCl110 KS12HCl110	1,500	4,725	21	1.0	3 - 20 " 3 - 30 " 3 - 40 "	21 32 42	1 1/4" NPT x 1 1/2" NPT	30 x 13 x 37" 30 x 13 x 47" 30 x 13 x 57"	145 170 195
KS12HCl215 KS18HCl215	2,500	7,875	26	1.5	6 - 20 " 6 - 30 "	42 63	1 1/4" NPT x 2" NPT	33 x 18 x 37" 33 x 18 x 47"	180 205
KS18HCl420 KS24HCl420	3,500	11,025	34	2.0	6 - 30 " 6 - 40 "	63 84	1 1/4" NPT x 2" NPT	33 x 18 x 47" 33 x 18 x 57"	215 240
KS18HCl620 KS24HCl620	4,500	14,175	19	2.0	6 - 30 " 6 - 40 "	63 84	2" NPT x 2" NPT	33 x 18 x 47" 33 x 18 x 57"	225 250
KS33HCl730 KS44HCl730	7,500	23,625	28	3.0	11 - 30 " 11 - 40 "	116 154	2" NPT x 3" F	50 x 18 x 73" 50 x 18 x 83"	510 520
KS44HCl950 KS60HCl950 KS80HCl950	9,000	28,350	39	5.0	11 - 40 " 20 - 30 " 20 - 40 "	154 210 280	2" NPT x 3" F	50 x 18 x 83" 50 x 18 x 74" 50 x 18 x 84"	520 580 590

<sup>1</sup> For Viton elastomers, add -V to System Number.

<sup>2</sup> For double mechanical seal pump change HCl to HClD in System Number.

\* with 2 1/2" diameter nominal string wound cartridges. Order media separately. Refer to Bulletins M-109 and M-309.

Motors are TEFC, 230-460V/3Ø/60 Hz. Consult Sales Dept. for explosion-proof, 50 Hz or 1Ø motors.

**OPTIONAL EQUIPMENT**

DESCRIPTION	PRICE CODE NO.
<b>MOTOR STARTER - Assembled &amp; installed</b> <b>Specify operating voltage.</b> Watertight NEMA 4X magnetic push-button with overload protection. For Start / Stop operation	O-MS3P
As above, but includes low voltage control circuit required for use with Dri-Stop 2R	O-MS3P-S

DESCRIPTION	PRICE CODE NO.
<b>Dri-Stop® 2R</b> Recommended for use with double mechanical water flush seal pump. Automatically de-energizes pump motor when cooling water flow is interrupted. Eliminates costly dry run repairs. Requires MS3P-S motor starter, electric and water source.	O-2DS2R





# ADMIRAL<sup>®</sup> FILTRATION SYSTEMS

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F-501\_P

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## COMPACT, ECONOMICAL FILTRATION AND PURIFICATION

### FOR IN-TANK OR OUT-OF-TANK INSTALLATION

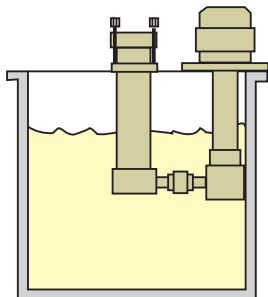
Admiral filtration systems are available for a wide range of tank sizes from laboratory scale to large production requirements. Corrosion resistance is achieved by the use of a variety of engineering plastics such as CPVC, PVC, PP and PVDF with stainless steel external parts.

- **Flow rates to 7000 GPH**  
(31,500 LPH @ 50Hz)
- **Non-metallic solution contact**  
PVC, CPVC, Polypropylene or PVDF systems available  
EPDM elastomers (Viton optional)
- **Runs dry without damage**
- **Rugged construction designed for minimum maintenance**

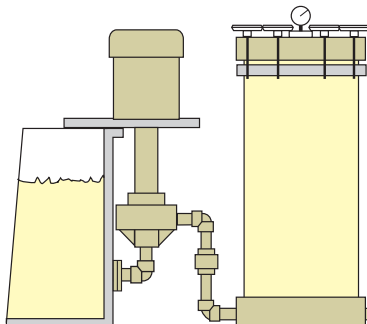
#### NOTE:

Hose, pipe and fittings required to connect the pump to the filter chamber and plumb to the tank must be ordered separately. Request Bulletin A-213.

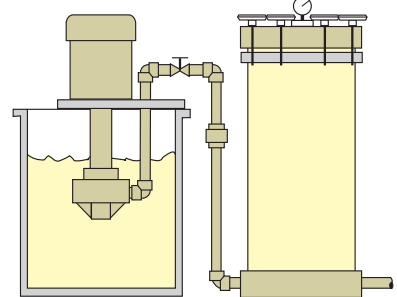
## TYPICAL INSTALLATIONS



PUMP AND FILTER IN TANK



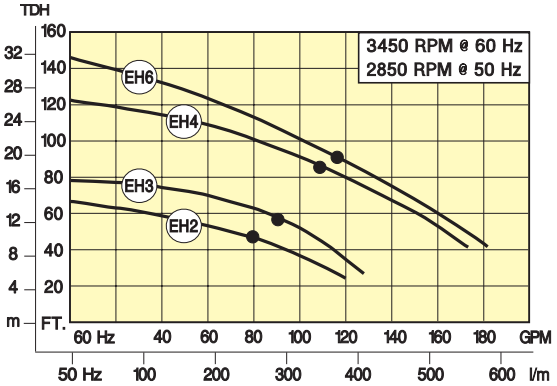
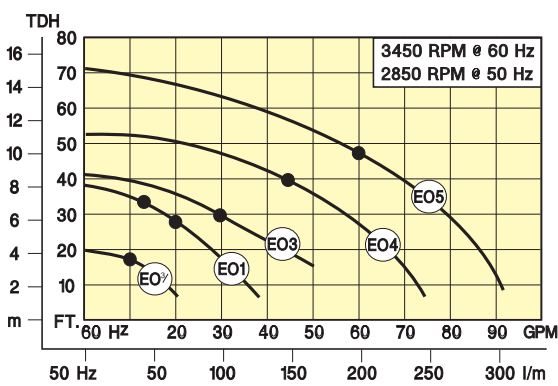
PUMP AND FILTER OUT OF TANK



PUMP IN TANK AND  
FILTER OUT OF TANK



**PERFORMANCE**



● Realistic flow points

**SPECIFICATIONS**  
To order, use System No.

**CPVC filter chamber with CPVC pump <sup>1</sup>**

SYSTEM NUMBER	PUMP SERIES & CURVE	SYSTEM		FILTER CHAMBER		MOTOR <sup>2</sup> HP	IN/ OUT (In. NPT)	WEIGHT Lbs.
		GPH	LPH	SERIES	CARTRIDGES			
CLEO1/8 CL2EO1/8	EO3/4	600	1,900	L	1 - 10" 1 - 20"	1/8	1 x 3/4	25 30
CL2EO103 CL3EO103	EO1	900	2,800	L	1 - 20" 1 - 30"	0.3	11/4 x 1	45 50
CS3EO103 CS6EO103	EO1	1,200	3,750	S	3 - 10" 3 - 20"	0.3	11/4 x 1	55 65
CS6EO308 CS9EO308 CS12EO308	EO3	1,800	5,600	S	3 - 20" 3 - 30" 3 - 40"	0.75	11/4 x 1	70 80 90
CSH9EO410 CSH12EO410	EO4	2,700	7,500	S	3 - 30" 3 - 40"	1.0	11/2 x 11/4	85 95

<sup>1</sup> For PVC chamber, change first **C** to **P** in System Number.  
For polypropylene system, change first **C** to **PP** in System Number.  
For PVDF system consult Sales Department.

<sup>2</sup> Motors less than 1.0 HP are 115-230/1/50-60, TEFC.  
Motors 1.0 HP and above are 230-460/3/60 or 190-380-415/3/50, TEFC.





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**SPECIFICATIONS**  
To order, use System No.

**CPVC filter chamber with CPVC pump <sup>1</sup>**

SYSTEM NUMBER	PUMP SERIES & CURVE	SYSTEM		FILTER CHAMBER		MOTOR <sup>2</sup> HP	IN / OUT (In. NPT)	WEIGHT Lbs.
		GPH	LPH	SERIES	CARTRIDGES			
CG12EO515 CG24EO515	EO5	3,600	11,300	G	12 - 10" 12 - 20"	1.5	1 1/2 x 1 1/2	160 170
CG24EH220 CG36EH220	EH2	4,800	15,000	G	12 - 20" 12 - 30"	2.0	2 x 1 1/2	205 215
CG24EH330 CG36EH330 CG48EH330	EH3	5,400	16,800	G	12 - 20" 12 - 30" 12 - 40"	3.0	2 x 1 1/2	225 235 245
CG36EH450 CG48EH450 CG60EH450	EH4	6,600	19,600	G	12 - 30" 12 - 40" 12 - 20" + 12 - 30"	5.0	2 x 1 1/2	235 245 255
CG48EH675 CG60EH675	EH6	7,000	21,800	G	12 - 40" 12 - 20" + 12 - 30"	7.5	2 x 2	255 265

<sup>1</sup> For PVC chamber, change first **C** to **P** in System Number. <sup>2</sup> Motors are 230-460/3/60 or 190-380-415/3/50, TEFC.  
For polypropylene system, change first **C** to **PP** in System Number.  
For PVDF system consult Sales Department.

**ACCESSORIES**

VITON ELASTOMERS	ADD TO SYSTEM NO.
Filter chamber and pump	V

DESCRIPTION	PRICE CODE NO
<b>MOTOR STARTER - NEMA 4X Watertight push button</b>	
115 - 230V/1/50-60	O-MS1P
230 - 460V/3/50-60	O-MS3P
<b>Important: Specify operating voltage.</b>	
<b>OPERATING VOLTAGE</b>	
1 horsepower & above - Single phase	O-1PH
Under 1 horsepower - Three phase	O-3PH

DESCRIPTION	PRICE CODE NO.	
	CPVC	PVC
<b>CARBON PURIFICATION CHAMBER with flow control valve, hose &amp; drain</b> Order carbon media from Bulletin M-305		
Includes ABS mini-canister / CPVC or clear PVC chamber for		
0.9 lbs. granular carbon 10" canister	O-C1CM	O-P1CM
2.1 lbs. granular carbon 20" canister	O-C2CM	O-P2CM
3.2 lbs. granular carbon 30" canister	O-C3CM	O-P3CM
Includes PVC canister / CPVC or PVC chamber for		
7 lbs. granular carbon 1-528 canister	O-1528C	O-1528
21 lbs. granular carbon 3-528 canister	O-3528C	O-3528

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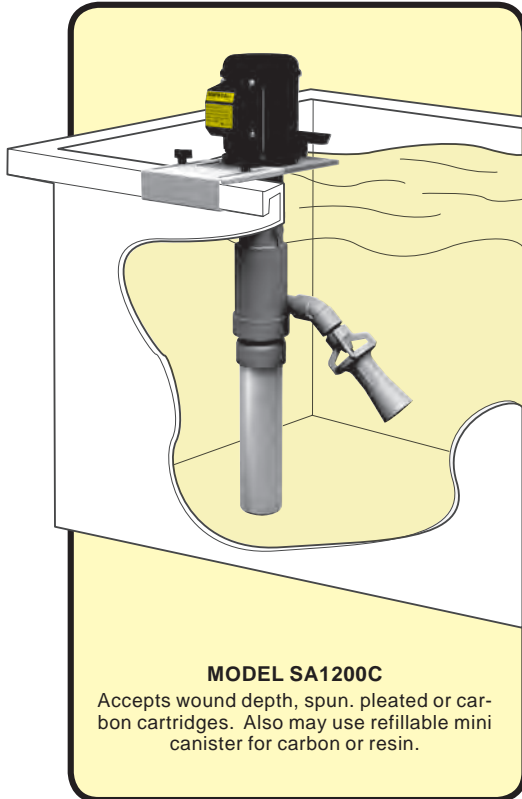
# SUB-ADMIRAL<sup>®</sup> IN-TANK FILTRATION SYSTEMS

245

F-506\_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## FILTRATION OR PURIFICATION WITH HIGH AGITATION FOR SMALL, MEDIUM AND LARGE TANKS



### MODEL SA1200C

Accepts wound depth, spun, pleated or carbon cartridges. Also may use refillable mini canister for carbon or resin.

- **Non-metallic solution contact**  
CPVC or polypropylene construction.  
(See a chemical resistance chart)
- **Polypropylene discharge eductor**  
Provides high rate of agitation with filtration.
- **High filtration rate without eductor**  
Flows to 2,500 GPH @ 60 Hz (7800 LPH @ 50 Hz)
- **In-tank filtration**  
No floorspace required  
Leakproof
- **Easy cartridge charge**
- **Vertical cantilever pump**  
Seal less  
Runs dry

The **Sub-Admiral Filter System** is supplied with an eductor to create additional circulation without requiring a larger pump or more horsepower. One GPM of filter discharge through the eductor nozzle induces an additional four GPM of solution through the eductor. With aggressive agitation and filtration, most processes will operate more efficiently and provide greater consistency in quality. The Sub-Admiral System may also be configured without the eductor to achieve a maximum filtration rate.

The **Sub-Admiral Filter System** includes a seal-less cantilever pump, eductor and suction extension and is field serviceable. Pump has no bearings and thus can run dry. May also be used for transferring liquids with or without the filter.



**GENERAL SPECIFICATIONS**

The **Sub-Admiral In-Tank Filtration Systems** feature a pump with a cantilevered, sleeved stainless steel shaft which eliminates bearings and seals, resulting in a pump that can run dry without damage. A vapor seal between the rotating shaft and the support column helps protect the motor. The mounting plate has the pump mounted off-center to allow clearance when mounting to the tank flange.

Standard models constructed of CPVC or polypropylene, for non-metallic solution contact.

Standard elastomers are EPDM. Most models feature pump motors that are chemical duty design. Eductors are molded of polypropylene and threaded to the pump discharge port. They provide 5 gallons of clean agitation for each gallon discharged from the pump.

All systems are provided with mounting bracket and handle for easy installation and removal.

<b>MODEL SA1200 Model EO 3/4 Pump - Single Column</b>						
SYSTEM NUMBER	MODEL	MATERIAL	LENGTH		SHIP WT.	
			w/ 10"	w/ 20"	Lbs.	Kg
C11EO	SA1200C	CPVC & EPDM	20"	30"	Lbs.	Kg
PP11EO	SA1200 PP	PP & EPDM			11	5

<b>MODEL SA3000 Model EO 1 Pump - Twin Column</b>						
SYSTEM NUMBER	MODEL	MATERIAL	LENGTH		SHIP WT.	
			w/ 10"	w/ 20"	Lbs.	Kg
C21EO	SA1300C	CPVC & EPDM	27"	37"	Lbs.	Kg
PP21EO	SA1300 PP	PP & EPDM			31	16.4

All motors are 115/203V/1/50-60

For Viton "O"-ring add -V to System Number.

\* Lengths shown are from underside of mounting plate to bottom of cartridges.

Filter cartridges ordered separately.  
See Bulletin M-109 and Bulletin M-305

**10**

<b>PERFORMANCE</b>						
MODEL	HORSEPOWER	DISCHARGE NPT	NO CARTS	W/O EDUCTOR	WITH EDUCTOR	
				FILTER GPH	FILTER GPH	AGT GPH
SA1200	1/8	3/4"	1-20"	1200	650	3250
SA3000	1/3	1"	2-20"	2500	1350	6750





# ADMIRAL<sup>®</sup> 'EOL' FILTRATION SYSTEMS

247

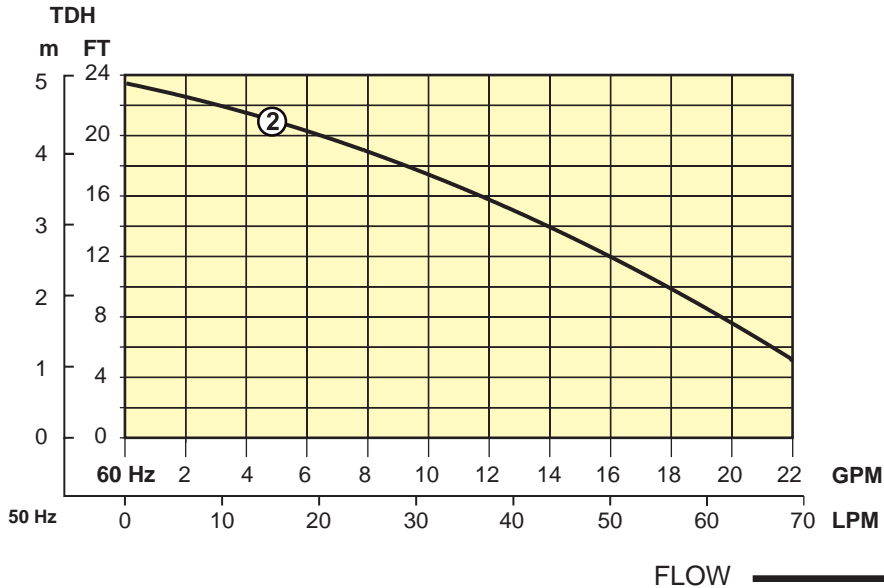
F-514

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*For Acid, Aqueous or Alkaline Solutions*



- **Flow rates to 1,000 GPH**
- **Non-metallic solution contact**  
Select materials of construction for compatibility with solutions, operating temperature and pressure.
- **PCL** - Clear PVC with CPVC pump  
**PPL** - Polypropylene  
**CL** - CPVC  
**KL** - PVDF  
EPDM elastomers standard; Viton optional
- **Runs dry without damage**
- **Compact, lightweight**
- **For 10", 20", or 30" cartridge lengths**
- **For in-tank or out-of-tank mounting**



10



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**ADMIRAL 'EOL' Filtration Systems** consist of a vertical, dry-run capable pump and a single column filter chamber all mounted in a compact configuration using a common mounting plate.

**PUMP:**

The Series 'EO-3/4' pump is a vertical cantilever design without bearings or seals and can run dry without damage. Materials of construction are either CPVC, polypropylene or PVDF. The pump features a TFE vapor seal to protect the motor and a compound impeller which prevents liquid pumping up the column while providing efficient performance at low horsepower. Motors are 115-230V/1/50-60 Hz, TEFC with 8 ft. cord and plug.

**FILTER CHAMBER:**

Choice of 10", 20" or 30" size chamber. Constructed of clear PVC, PP, CPVC, or PVDF. Standard elastomers are EPDM (FKM with PVDF). Chambers accept depth wound, pleated, cleanable sleeve and carbon cartridges and requires no tools for cartridge changing. The

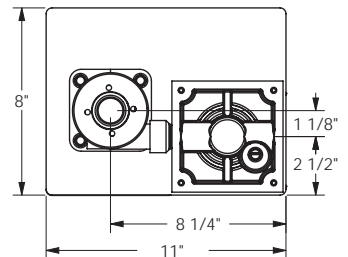
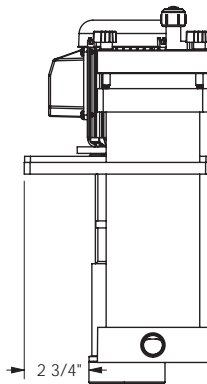
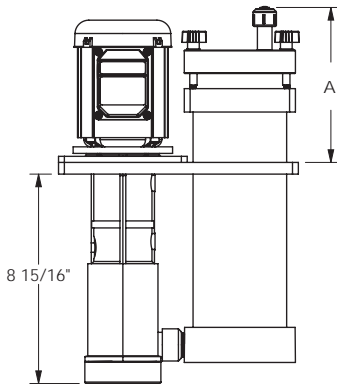
**TO ORDER, use System Number**

SYSTEM NUMBER				MEDIA No - lgth.	DIM A. (Inches)	PUMP			CONNS.	SHIPPING WEIGHT (lbs.)
PVC	PP	CPVC	PVDF			MODEL	HP	MAX (U.S. GPH) *		
PLL1EO	PPL1EO	CL1EO	KL1EO	1 - 10"	6 5/8"	EO 3/4	1/8	1000	1" X 3/4"	17
PLL2EO	PPL2EO	CL2EO	KL2EO	1 - 20"	16 5/8"					19
PLL3EO	PPL3EO	CL3EO	KL3EO	1 - 30"	26 5/8"					21

\* See flow curve

† Order filter media separately. Refer to Bulletin M-109.

OPTIONAL	ADD TO SYSTEM NO.
Viton® elastomers on filter chamber and pump	V



TOP VIEW



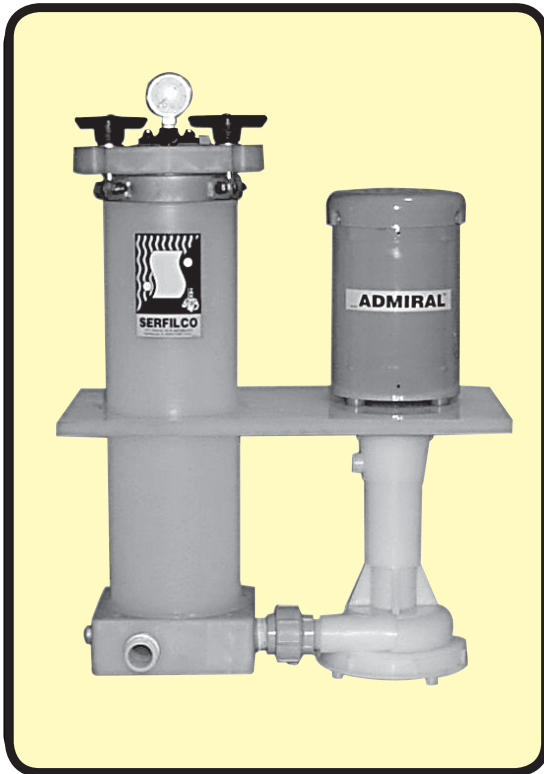
# ADMIRAL 'EOS' FILTRATION SYSTEMS

249

F-510\_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

*For acid, alkaline or aqueous solutions*



## FEATURES

- Flow rates from 1800 to 4200 GPH
- Non-metallic solution contact  
Polypropylene, CPVC or PVDF with EPDM elastomers. Viton® elastomers optional.
- Runs dry without damage
- High filter surface area  
3 – 20", 30" or 40" cartridges
- Compact package
- Designed for reservoir installation
- Economical OEM replacement

## BENEFITS

- Improve finish goods quality, eliminate scrap and rework
- Reduce chemical consumption by maintaining solution quality
- Minimize downtime and maintenance with dry-run capable Series 'EO' pump and high surface area Series 'S' chamber
- Higher continuous flow and filter area than competitive systems
- Easy media change – no tools required

## SPECIFICATIONS

### SYSTEM:

ADMIRAL 'EOS' filtration systems consist of a vertical, dry-run capable pump, and a three column filter chamber for 3 – 20", 30" or 40" filter cartridges. The pump includes a suction strainer and is mounted with the chamber in a compact configuration using a common mounting plate. Systems are available in polypropylene, CPVC or PVDF.

### FILTER:

Industry proven for ease of service and reliability, the Series 'S' filter chamber will accommodate a variety of filter media including string wound, pleated, melt-blown or carbon cartridges. The ruggedly constructed chamber features a low pressure drop for long intervals of continuous high flow. The chamber includes a swing bolt cover closure with 'T'-handles, so no tools are required and cartridge changing is quick and convenient. Also included is a 0 - 30 psi gauge with guard and vent plug. The chamber features totally non-metallic solution contact and stainless steel external hardware.

### PUMP:

The Series 'EO' pump benefits from proven design features gained through over 50 years of experience in developing chemically resistant vertical pumps.

The unique design of this pump includes a fully sleeved stainless steel shaft threaded into a chemical duty motor. This eliminates weak shaft connections, pump bearings, spindles, bushings and liners, resulting in a chemical duty pump which can run dry indefinitely, providing years of trouble-free service.

A labyrinth and a TFE vapor seal between the rotating shaft and the support column protect the motor. The compound impeller prevents liquid from rising in the column, even at maximum TDH, while the fully enclosed bottom impeller provides efficient flow performance at low horsepower.

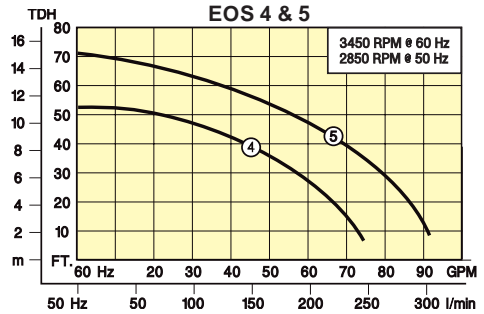
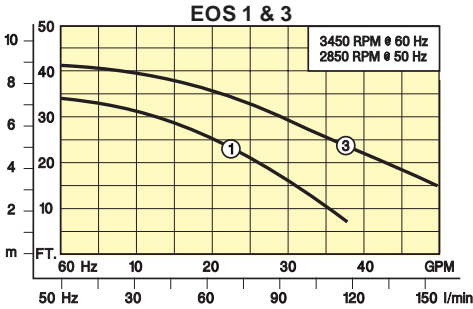
All models are injection molded of polypropylene, CPVC or 100% pure PVDF. The stainless steel shaft is fully sleeved with the same material from which the pump is constructed. Fasteners are stainless steel. The chemical duty motor has a stainless steel nameplate and is dual range 50 and 60 Hz.

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ADMIRAL 'EOS' FILTRATION SYSTEM Flow Curves

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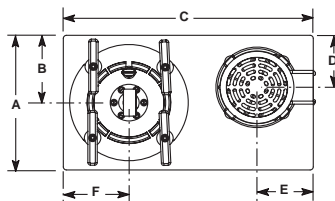
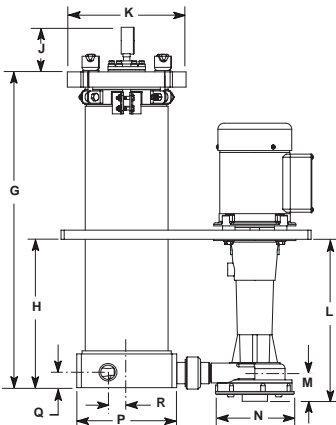
MODEL	DIMENSIONS (Inches)																CONNECTIONS
	A	B	C	D	E	F	G*	H	J	K	L	M	N	P	Q	R	
EOS 1 & 3	11	5½	20	4¼	4½	5¼	25⅞	12⅞	3⅝	9½	13⅜	2⅝	6⅝	8 sq.	1¼	1½	¼" FNPT x 1" FNPT
EOS 4 & 5	12	7	22	5	5⅝	5⅝	25⅞	12⅞	3⅝	9½	13⅜	2⅝	8⅝	8 sq.	1¼	1½	1½" FNPT x 1½" FNPT

\* 35⅞ for 9 cartridge models, 45⅞ for 12 cartridge models.

FLOW **	HP	MEDIA SYSTEM	NUMBER			SHIPPING WT. Lbs.
			POLYPROPYLENE	CPVC	PVDF	
<b>6 CARTRIDGE SYSTEMS (21 s. f. *)</b>						
1800	.33	3 - 20" or 6 - 10"	PPS6EO1	CS6EO1	KS6EO1	55
2400	.75		PPS6EO3	CS6EO3	KS6EO3	60
3300	1.0		PPS6EO4	CS6EO4	KS6EO4	65
4200	1.5		PPS6EO5	CS6EO5	KS6EO5	70
<b>9 CARTRIDGE SYSTEMS (31.5 s. f. *)</b>						
1800	.33	3 - 30" or 9 - 10"	PPS9EO1	CS9EO1	KS9EO1	55
2400	.75		PPS9EO3	CS9EO3	KS9EO3	60
3300	1.0		PPS9EO4	CS9EO4	KS9EO4	65
4200	1.5		PPS9EO5	CS9EO5	KS9EO5	70
<b>12 CARTRIDGE SYSTEMS (42 s. f. *)</b>						
1800	.33	3 - 40" or 12 - 10"	PPS12EO1	CS12EO1	KS12EO1	55
2400	.75		PPS12EO3	CS12EO3	KS12EO3	60
3300	1.0		PPS12EO4	CS12EO4	KS12EO4	65
4200	1.5		PPS12EO5	CS12EO5	KS12EO5	70

\* s. f. is square feet of surface area or dirt holding capacity with Valuwoound or Maxi-Depth (Bulletin M-109) filter cartridges. Order cartridges separately.  
 \*\* Flow is GPH @ 60 Hz.

OPTIONAL	ADD TO SYSTEM NO.
Viton® elastomers on filter chamber and pump	V



TOP VIEW



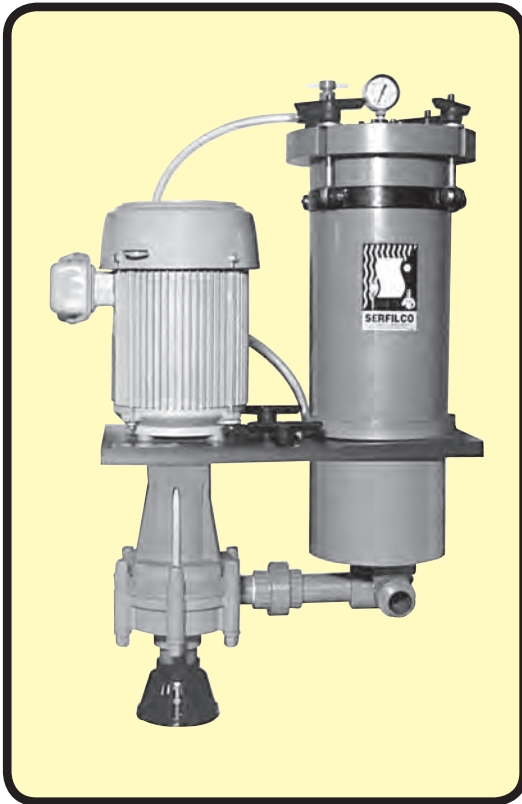
# ADMIRAL® 'EHJ' FILTRATION SYSTEMS

251

F-508\_C

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

## ***Electroplating, printed circuit board, fume scrubber***



### **FEATURES**

- Flow rates from 5,800 to 10,000 GPH
- Non-metallic solution contact  
CPVC with EPDM elastomers  
Viton® elastomers optional
- Runs dry without damage
- High filter surface area —  
6-20", 30" or 40" cartridges
- Handles temperatures to 180°F  
*(See a chemical resistance chart)*
- Compact package
- Designed for reservoir installation
- Economical OEM replacement

### **BENEFITS**

- Improve finished goods quality, eliminate scrap and rework
- Reduce chemical consumption by maintaining solution quality
- Minimize downtime and maintenance with dry-run 'EH' pump
- Higher continuous flow and filter area than original equipment systems
- Easy cartridge change — no tools required

### **SPECIFICATIONS**

#### **SYSTEM:**

ADMIRAL 'EHJ' filtration systems consist of a CPVC pump and filter chamber, assembled on a 2-piece modular PVC mounting plate. The mounting plate is joined with a rabbet joint and secured with 316 stainless steel hardware. The pump discharge and filter inlet are connected by a union fitting. This arrangement allows simplified installation and convenient pump removal for reservoir or pump maintenance. The standard mounting plate is 22" x 12" overall. Custom plates are available.

#### **FILTER:**

Innovative design with oversized inlet and outlet allows extended intervals of high flow operation with minimal pressure drop. The chamber is constructed of CPVC with EPDM elastomers and is available with 6 - 20", 30" or 40" cartridge capacity. Chamber includes swing bolt cover closure with 'T'-handles, therefore, no tools are required for easy cartridge changing. Also included is a 0 - 60 psi gauge with guard assembly and a vent valve assembly designed to direct vent mist back to the reservoir. Chamber features totally non-metallic solution contact and stainless steel external hardware.

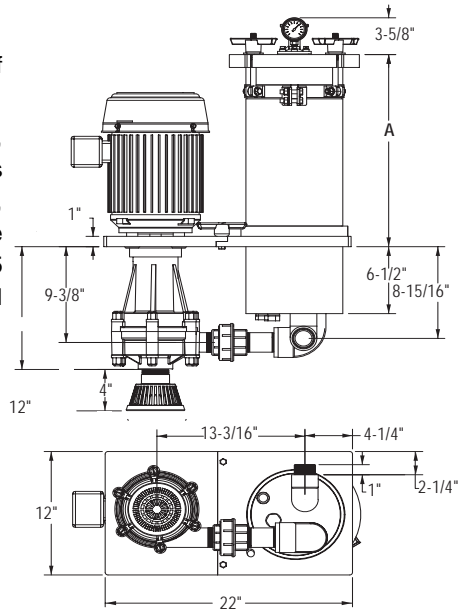
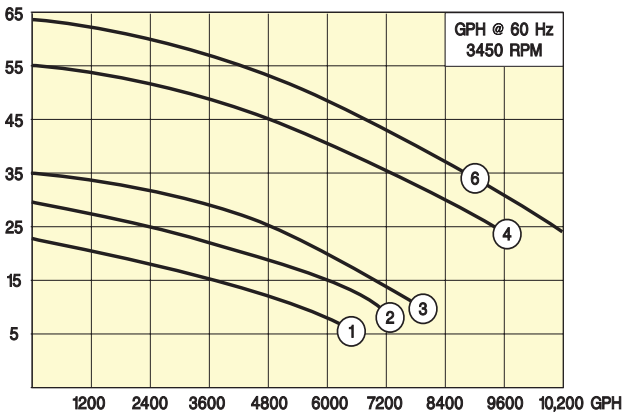


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**PUMP:**

Industry leading Series 'EH' pumps will provide years of quiet, efficient, trouble-free operation.

Constructed of CPVC with standard EPDM elastomers, TFE vapor seal and polyethylene suction strainer. These pumps provide totally non-metallic solution contact. The cantilever shaft, Series 'EH' pump will even run dry without damage. Motors are 1.5 to 7.5 HP, 230-460V/3φ/50-60Hz, 2850/3450 RPM with 1.15 service factor. They are chemical service, TEFC with oversized bearings, two-part epoxy paint and stainless steel tag.



DIMENSIONS	
MEDIA LENGTH	HEIGHT A
20"	18-5/8"
30"	28-5/8"
40"	38-5/8"

SPECIFICATIONS and ORDERING INFORMATION							
CURVE NO.	ORDER NUMBER	FLOW GPH @ 60 Hz	MEDIA *	SURFACE AREA Ft. <sup>2</sup>	PUMP HP	DISCHARGE CONNECTION	SHIPPING WEIGHT Lbs.
1	CJ12EH115	5,800	6 - 20"	42	1.5	1½" MNPT	125
	CJ18EH115		6 - 30"	63			135
2	CJ12EH220	6,300	6 - 20"	42	2.0	1½" MNPT	130
	CJ18EH220		6 - 30"	63			140
3	CJ12EH330	6,900	6 - 20"	42	3.0	1½" MNPT	150
	CJ18EH330		6 - 30"	63			160
	CJ24EH330		6 - 40"	84			170
4	CJ12EH450	8,800	6 - 20"	42	5.0	1½" MNPT	155
	CJ18EH450		6 - 30"	63			165
	CJ24EH450		6 - 40"	84			175
6	CJ12EH575	10,000	6 - 20"	42	7.5	1½" MNPT	170
	CJ18EH575		6 - 30"	63			180
	CJ24EH575		6 - 40"	84			190

\* NOTE: Order filter cartridges separately. Refer to Filter Media.

Specifications subject to change without notice.

OPTIONAL	ADD TO SYSTEM NO.
Viton® elastomers on filter chamber and pump	V

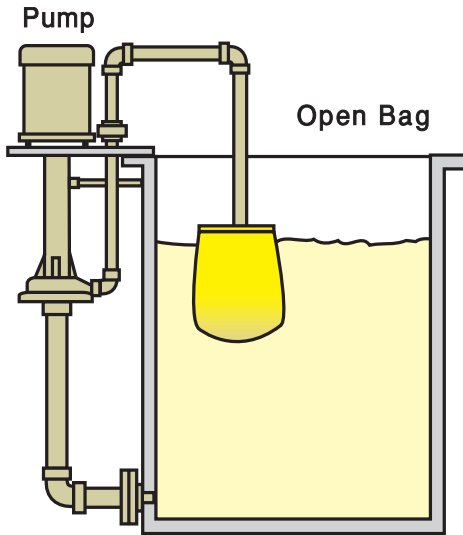


# OPEN BAG FILTER SYSTEMS

253

F-509\_E

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*Typical arrangement with  
vertical seal-less pump*

## BAG FILTER ASSEMBLIES

Open bag filters are ideal for applications where quick change reusability of a gravity filter is desired. The filter bags are attached to a manifold with cam-lock quick-disconnect couplings for minimal downtime when servicing and they can be repeatedly washed and reused for fast, long-lasting payback on the cost of their installation. Bag filters are available in CPVC or PVDF materials and single or multiple bag assemblies.

Bags are available in retention ratings from coarse filtration at 100 micron to fine filtration at 1 micron.

**BAG FILTER SYSTEM**  
TO ORDER, use System Number

### CPVC PUMP and FILTER ASSEMBLY<sup>1</sup>

SYSTEM NUMBER <sup>1</sup>	FLOW RATE GPH	NO. OF BAGS	PUMP SERIES	FILTER AREA Sq. Ft.	MOTOR HP MOTOR HT.	& PUMP LENGTH SHIPPING	WEIGHT Lbs.
CB.5EO3/4	720	1	EO	0.5	1/8	6" & 9-1/2"	16
CB1EO3/4	770	2		1.0			21
CB2.2EO1	1200	1	EO	2.2	1/3	8-1/2" & 13-1/4"	43
CB4.4EO1	1500	2		4.4			48
CB2.2EO3	2400	1	EO	2.2	3/4	9-1/2" & 13-1/4"	48
CB4.4EO3	2700	2		4.4			53
CB2.2EO4	3200	1	EO	2.2	1.0	10-1/2" & 13-1/4"	48
CB4.4EO4	3400	2		4.4			53

<sup>1</sup> To order PVDF system, change **C** to **K** in System Number. CPVC system includes quick-connect coupling, 6 ft. vinyl wire reinforced hose, pump and motor and bag assembly. Hose is not included with PVDF systems which require hard piping. All motors are 1-phase TEFC, except for 1.0 HP, which is 3-phase. The 1-phase motors include 8 ft. of 3-wire cord and plug, wired for 115 volt operation unless otherwise requested.

Consult pump bulletins P-312 and P-300 for additional pump specifications. Order bags separately from chart on page 2. Twin bag assemblies include two ball valves.



**CAUTION:** Do not use vinyl hose when system is to be used at 150°F (66°C) or higher. System suction and discharge should be hard piped. Refer to Bulletin A-213 for installation fittings.

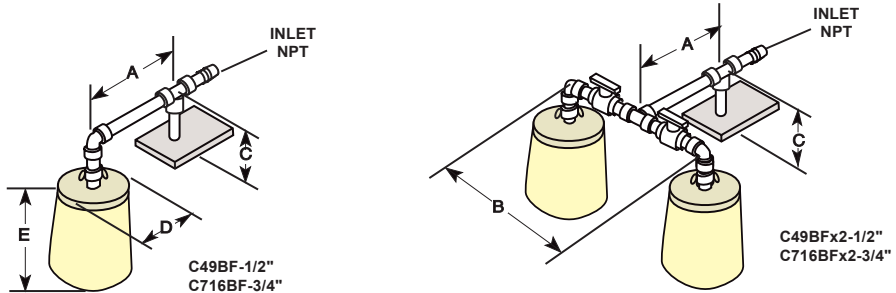


# OPEN BAG FILTERS

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## BAG FILTER ASSEMBLY

Bag Filter Assembly includes quick-connect coupling, mounting bracket, piping and pipe fittings. Twin bag assemblies include two ball valves. Note: PVDF systems are supplied without hose adapter; assembly requires hard piping.



## TO ORDER, use Price Code Number<sup>1</sup>

MODEL <sup>1</sup>	PRICE CODE NUMBER	BAG FILTER AREA <sup>2</sup> Sq. Ft.	PIPE SIZE (NPT INLET)	NUMBER OF BAGS	DIMENSIONS (inches)					SHIPPING WEIGHT Lbs.
					A	B	C	D	E	
C49BF-1/2	88-1010 A	.5	1/2"	1	8	—	6 3/4	4	9	5
C49BFx2-1/2	88-1013 A	1.0	1/2"	2	8	12	6 3/4	4	9	10
C716BF-3/4	88-1580	.5	3/4"	1	8	—	7	7	16	5
C716BFx2-3/4	88-1580-2	1.0	3/4"	2	8	12	7	7	16	10
C716BF-3/4	88-1011 A	2.2	3/4"	1	8 1/4	—	7	7	16	8
C716BFx2-3/4	88-1012 A	4.4	3/4"	2	8 1/4	12	7	7	16	13
C716BF-1 1/2	88-1581	2.2	1"	1	8 1/4	—	7	7	16	8
C716BFx2-1 1/2	88-1581-2	4.4	1"	2	8 1/4	12	7	7	16	13
C716BF-1 1/2	88-1582	2.2	1 1/2"	1	8 1/4	—	7	7	16	8
C716BFx2-1 1/2	88-1582-2	4.4	1 1/2"	2	8 1/4	12	7	7	16	13

<sup>1</sup> To order PVDF assembly — change **C** to **K** in Model Number and add K to Price Code No.

<sup>2</sup> Order bags separately from chart below

## INITIAL and REPLACEMENT BAGS w/polypropylene "O"-ring

MATERIAL	MICRON	.5 SQ. FT.	PRICE CODE NO.	2.2 SQ. FT. PRICE	CODE NO.
Polypropylene	1	FB-PP01x.5	88-0849 F	FB-PP01x2	88-0848 F
	5	FB-PP05x.5	88-0849 A	FB-PP05x2	88-0848 A
	10	FB-PP10x.5	88-0849 B	FB-PP10x2	88-0848 B
	25	FB-PP25x.5	88-0849 C	FB-PP25x2	88-0848 C
	50	FB-PP50x.5	88-0849 D	FB-PP50x2	88-0848 D
	100	FB-PP100x.5	88-0849 E	FB-PP100x2	88-0848 E





# TITAN FILTRATION SYSTEMS

F-455\_N

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## *Automatic, Permanent media, High flow systems for —* **Filtering Metal Finishing Process Solutions and Cleaners, and for Polishing Clarified Treated Waste Treatment Streams**

### FEATURES

- *Produces sparkling clean solutions*
- *Automatic, microprocessor controlled —*  
Markedly reduces operating and maintenance costs
- *Permanent media —* Eliminates media disposal and replacement
- *High flows — 50 to 500 GPM*
- *Corrosion resistant —* Chambers are PVC lined or hard rubber lined steel with PVC or CPVC piping and pumps for process solutions. Systems for non-corrosive solutions are suitably designed with high quality materials as well.
- **CE** *Conforming*

### BENEFITS

- *Dramatically reduces media and disposal costs.*
- *Improves finished goods and process quality, significantly increases yields, practically eliminates scrap and rework.*
- *Reduces chemical consumption by maintaining solution quality.*
- *Minimizes solution maintenance with high flow, continuous particle removal.*
- *Satisfy regulatory requirements by polishing clarifier overflow.*



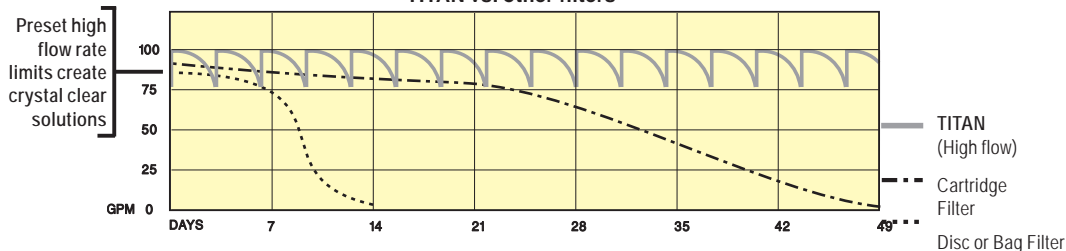
Unique to any other filtration system available, the TITAN series is the result of SERFILCO's ongoing commitment to developing "up flow" and "down flow" permanent media filtration technology.

The combination of high flow permanent media, automatic operation and proven success makes the SERFILCO TITAN superior to any other filter available.

Easy to install and operate, manufactured with high quality corrosion resistant materials, TITAN systems will provide years of trouble-free operation.

Hundreds of customers around the world have achieved dramatic improvement in quality while reducing costs using the automatic permanent media TITAN.

### TITAN vs. other filters





2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

The SERFILCO TITAN is a series of automatic backwash systems which use permanent filter media of a specific size, shape and density that creates a filter bed through which contaminated solution is fed at controlled limits of flow and pressure. Microprocessor control automatically maintains constant design flow without compacting particles onto the media bed.

The automatic cycle, programmed for optimum use of backwash fluid, responds automatically to a preset minimum flow rate. Prior to the automatic backwash cycle, process solutions are purged from the system with low pressure air. During the backwash cycle, particles exit the chamber without media migration. The process occurs within minutes, resulting in an extremely efficient backwash for each filter cycle. Re-establishment of the filtration cycle returns the system to design flow.

TITAN systems are specifically designed for use with most aqueous process solutions including cleaners, plating and other metal finishing solutions, and treated final effluents. Each TITAN system incorporates a corrosion resistant filter chamber for use with permanent media and has electrically

actuated valves, an efficient centrifugal pump, a digital electronic flow meter, pre-wired control panel and pre-programmed microprocessor. Automatic control components are housed in a NEMA 12 enclosure, factory wired and test cycled for all microprocessor programs.

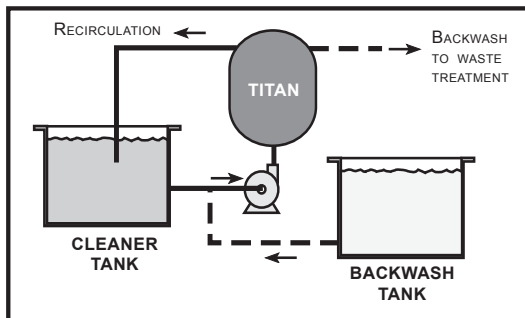
Cleaner models have a steel chamber, piping and valves and a cast iron single seal pump. Metal finishing models have PVC lined or hard rubber lined steel chambers with PVC piping and valves. Models designated ALK have single seal cast iron pumps; models designated AC have double seal CPVC pumps. Treated waste models have PVC lined steel chambers with PVC piping and valves. Models W-50, W-100, W-150 have double seal CPVC pumps. Models W-200 and larger have single seal cast iron pumps.

All units are skid-mounted, though large sizes have the chamber located separately. External metallic surfaces are painted with two coats of a two-part epoxy enamel. All fasteners are stainless steel. Prior to shipment, all units are wet tested to insure piping integrity, flow rate and complete system operation. Media is purchased and shipped separately. If required, backwash and recirculation tanks are also available from SERFILCO.

## FILTRATION SYSTEMS FOR CLEANERS

Designed specifically for cleaners and parts washers.

- **AQUEOUS SOLUTIONS and CLEANERS to 190°F**  
Extend cleaner life almost indefinitely  
Drastically decrease costly dumps



SEQUENCE OF OPERATION

- A. Filtration
- B. Air purge solution back to cleaner tank
- C. Backwash with clean water
- D. Air purge backwash to waste treatment

MODEL	MAX. FLOW* GPM	HP	SYSTEM DIMENSIONS (In.)		CONNS. IN & OUT (NPT)	SHIP. WT. (Lbs.)	PRICE CODE NO.
			L x W x H	FILTER DIA. **			
CLN50	50	1.0	42 x 54 x 78	24	1½"	950	S-2934 1
CLN100	100	3.0		36			S-2934 2

\* Full flow, flooded suction, no discharge restriction (U.S. GPM @ 60 Hz)

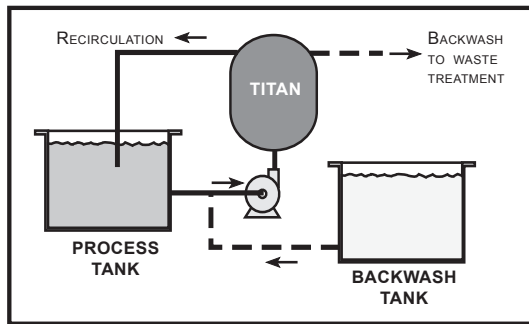
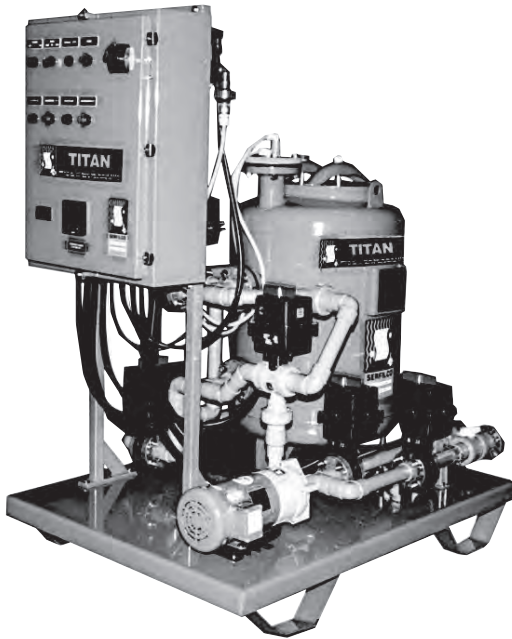
\*\* Chamber is mounted on system base.



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- **FOR ACID OR ALKALINE SOLUTIONS –** acid or alkaline zinc, and bright nickel plating solutions, anodizing and phosphating solutions
- **OPTIONAL CARBON PURIFICATION**

Designed specifically for metal finishing solutions. Improve finished goods quality, minimize scrap and rework, reduce chemical consumption and maintain a crystal clear bath, with high flow, automatic, permanent media TITAN systems.



*SEQUENCE OF OPERATION*

- Filtration
- Air purge solution back to process tank
- Backwash with clean water
- Air purge backwash to waste treatment

MODEL MAX.	FLOW* GPM	HP	SYSTEM DIMENSIONS (Inches)		CONNS. IN & OUT (NPT)	SHIP. WT. (Lbs.)	PRICE CODE NO.
			L x W x H	FILTER DIA.			
P50 AC P50 ALK	50	1.5	42 x 54 x 78	24 **	1½"	900	S-2926 1 S-2926 2
P70 AC P70 ALK	70	3.0	48 x 64 x 78	36 **	2"	1250	S-2933 1 S-2933 2
P150 AC P150 ALK	150	5.0	48 x 64 x 78	42 ***	3"	1650	S-2930 1 S-2930 2
P200 AC P200 ALK	200	7.5	48 x 64 x 78	48 ***	3"	1900	S-2931 1 S-2931 2
P300 AC P300 ALK	300	10.0	48 x 64 x 78	60 ***	4"	2800	Consult Sales Dept.

\* Full flow, flooded suction, no discharge restriction (U.S. GPM @ 60 Hz)  
 \*\* Filter chamber mounted on system base  
 \*\*\* Free standing chamber





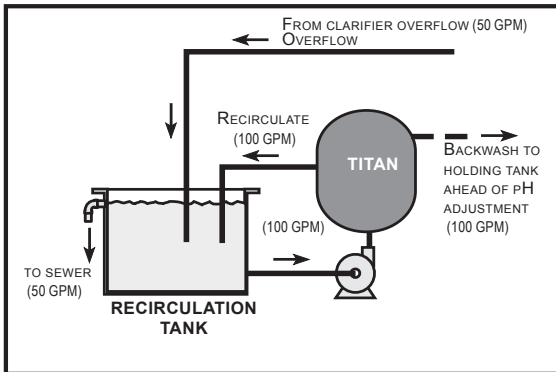
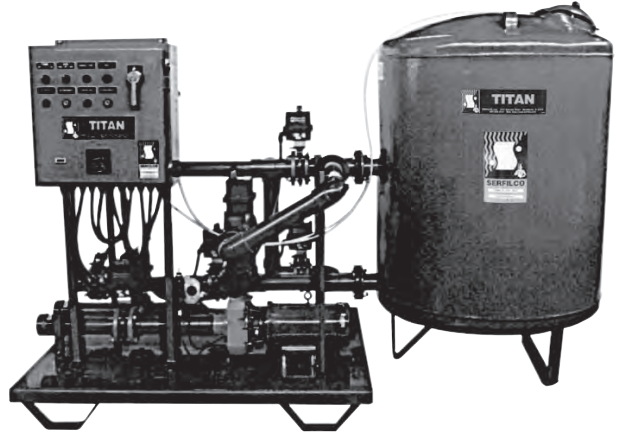
**TITAN FILTRATION SYSTEMS For Treated Waste**

F-455\_N

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- **TREATED WASTE**  
**Flow rates to 500 GPM**  
 Capture low ppm suspended solids exiting in clarifier overflow.
- **OPTIONAL CARBON PURIFICATION**

Designed specifically for aqueous and treated waste applications. Satisfy regulatory requirements easily and economically with flow rates to 500 GPM. A TITAN filtration system continuously recirculating clarifier overflow will capture escaping solids and can achieve 0.5 ppm with proper recirculation. In fact, polished water can be re-used in non-critical rinses.



*SEQUENCE OF OPERATION*

- A. Filtration
- B. Air scrub
- C. Backwash to waste treat with polished water from recirculation tank

MODEL	MAX. FLOW* GPM	FLOW FROM CLARIFIER (GPM)	HP	SYSTEM DIMENSIONS (In.)		CONNS. IN & OUT	SHIP. WT. (Lbs.)	PRICE CODE NO.
				L x W x H	FILTER DIA.			
W50	50	10 - 25	1.5	42 x 54 x 78	24 **	1½" NPT	850	S-2920
W100	100	26 - 50	3.0		36 **	2" NPT	1150	S-2921
W150	150	51 - 75	5.0	42 x 54 x 78	42 ***	3" NPT	1600	S-2931
W200	200	76 - 100			48 ***	3" NPT	1850	S-2922
W300	300	101 - 150	7.5	42 x 54 x 78	60 ***	4" Flange†	2400	S-2923
W400	400	151 - 200	10.0		66 ***	4" Flange†	2800	S-2924
W500	500	201 - 250	15.0	48 x 64 x 78	72 ***	6" Flange	3300	S-2925

\* Full flow, flooded suction, no discharge restriction (U.S. GPM @ 60 Hz)

\*\* Filter chamber mounted on system base

\*\*\* Free standing filter chamber

† 4" flanges also have interior 4" NPT threads.





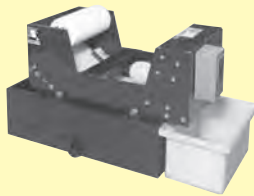
# SERIES 'DF' FILTRATION SYSTEMS

259

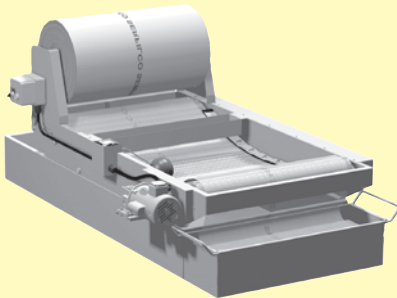
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12

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MODEL DF-1.5



MODEL DF-11

## AUTOMATIC DISPOSABLE FABRIC FILTRATION SYSTEMS FOR:

**PHOSPHATING / PARTS WASHERS**  
**MACHINE TOOL COOLANTS**  
**INDUSTRIAL WASTE WATER**  
**PROCESS OR COOLING WATER**  
**WATER WALL SPRAY BOOTHS**  
**TREATED PLATING WASTE**

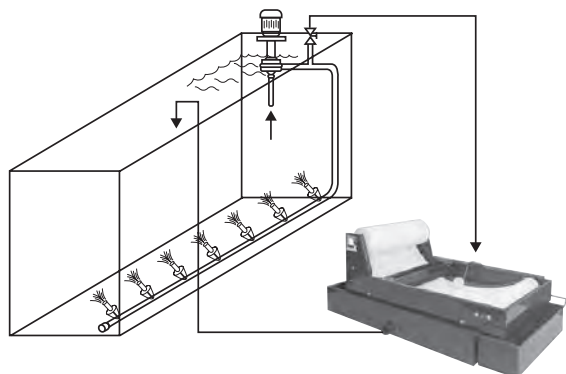
- **Unattended operation**  
Automatically indexing media allows continuous filtration, even with varying input or solids content.
- **Choice of materials**  
Carbon steel or 316 stainless steel
- **Sizes for any application**  
From 1.5 to 113 sq. ft. of filter surface area  
Flow rates to 650 GPM @ 80 micron
- **Low operating cost**

### SYSTEM OPERATION

This system is totally automatic and responds to wide variations in flow rate and solids concentration. Pump the contaminated solution to the diffuser tray which distributes flow across the full width of the filter bed. Particle separation starts immediately via gravity flow through the media to the clean reservoir below the conveyor frame. Filtered solution can then gravity drain to waste or be returned to the process via a pump.

Gravity flow allows gentle accumulation and settling of solids on the filter fabric. The concave configuration of the media bed accommodates the flow rate and maximizes solids loading on the fabric. As the media gradually becomes laden with solids, the solution level will slowly rise until the float switch activates the convey or drive motor. Consumed fabric is advanced to the sludge box as fresh media is simultaneously indexed to the solution flow.

### TYPICAL INSTALLATION





### SPECIFICATIONS

#### SERIES S

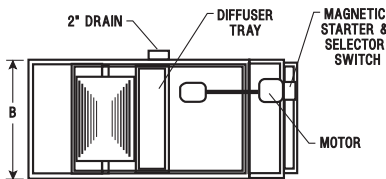
**CARBON STEEL** reservoir, frame, shafts, bearings and sprockets. Models 1.5 to 16.5 feature a 316 stainless steel conveyor belt. Larger models have galvanized belt with optional 304 or 316 stainless steel. Units are coated with corrosion resistant 2-part epoxy paint.

#### SERIES SS

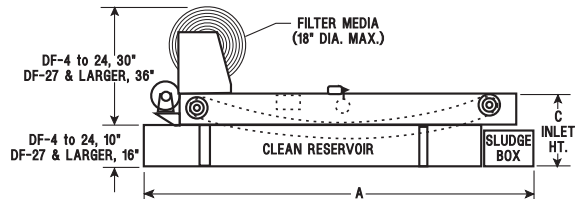
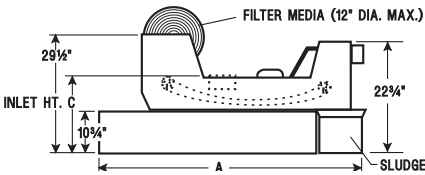
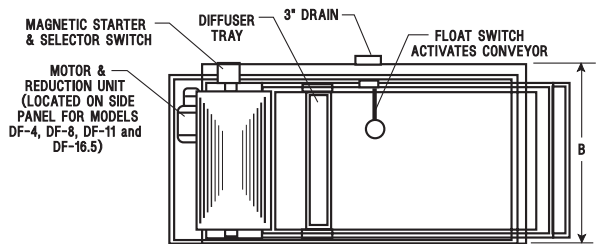
**316 STAINLESS STEEL** reservoir, frame, shafts, bearings, sprockets and conveyor belt. Non-wetted surfaces such as fabric bracket, motor bracket and gear reducer are carbon steel.

All units include: float switch, sludge box (HDPE on Models 1.5 and 4), filtrate reservoir which serves as a support for mounting the conveyor frame, drain, single phase drive motor and starter. Standard edge seals are PVC, 140°F maximum. EPDM and silicon rubber edge seals are optional. Order filter media separately.

**Model DF-1.5**



**Models DF-4 to DF-113**



FILTER MODEL	FILTER AREA	TANK CAPACITY	115V/1/60 DRIVE MOTOR	OVERALL DIMENSIONS (INCHES)			INLET HEIGHT (INCHES)	MEDIA WIDTH	APPROX. SHIPPING WEIGHT	FABRIC MICRON RATING				
				LENGTH	WIDTH	HEIGHT				5	10	25	40	80
	SQ. FT.	GAL.	HP	A	B	C	IN.	LBS.	GPM FLOW RATE					
DF-1.5	1.5	20	1/15	55	21.5	35.5	17	13	225	2	3	4	6	9
DF-4	4	49	1/3	75	28	40	19	16.5	320	5	6	10	14	23
DF-8	8	90	1/3	71	50	40	19	33	580	10	12	20	28	45
DF-11	11	115	1/3	90	50	40	19	33	760	14	17	28	39	62
DF-16.5	16.5	160	1/3	90	67	40	19	50	1025	20	25	42	58	93
DF-19	19	160	1/3	89	62	40	18	50	1025	24	29	48	67	108
DF-24	24	200	1/3	104	62	40	18	50	1420	30	36	60	84	136
DF-27	27	400	1/2	136	68	52	30	50	2400	34	41	68	95	153
DF-29	29	500	1/2	162	68	52	30	50	3110	36	44	73	102	164
DF-40	40	600	1/2	194	68	52	30	50	3750	50	60	100	140	226
DF-57	57	900	3/4	259	68	52	30	50	5250	71	80	143	200	323
DF-96	96	1370	3/4	380	68	52	30	50	7700	120	144	240	336	544
DF-113	113	1575	1	427	68	52	30	50	8655	142	160	286	400	646



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**TO ORDER, use Price Code Number**

FILTER AREA (SQUARE FEET)	SERIES S		SERIES SS	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
1.5	DFS-1.5-S	49-1414	DFS-1.5-SS	49-1413A
4	DFS-4-S	49-1000	DFS-4-SS	49-1038A
8	DFS-8-S	49-1003	DFS-8-SS	49-1040A
11	DFS-11-S	49-1006	DFS-11-SS	49-1042A
16.5	DFS-16.5-S	49-1007	DFS-16.5-SS	49-1043A
19	DF-19-S	49-0015	DF-19-SS	49-0048A
24	DF-24-S	49-0018	DF-24-SS	49-0050A
27	DF-27-S	49-0021	DF-27-SS	49-0052A
29	DF-29-S	49-0024	DF-29-SS	49-0054A
40	DF-40-S	49-0027	DF-40-SS	49-0056A
57	DF-57-S	49-0030	DF-57-SS	49-0058A
96	DF-96-S	49-0074	—	—
113	DF-113-S	49-0075	—	—

**OPTIONAL EQUIPMENT**

DESCRIPTION	PRICE CODE NO.
FLOAT ACTIVATED LEVEL CONTROL SWITCH FOR RESERVOIR PUMP NEMA 1. For single phase motors to 1½ HP @ 115V or 2 HP @ 230VAC. Used as a pilot device on three phase magnetic motor starters. Complete with float ball and mounted in reservoir tank for pump-down operation. Separate motor starter is required for 3-phase motor (see below).	49-0162
RESERVOIR PUMP INSTALLATION AND WIRING	49-0173
MOTOR STARTER FOR RESERVOIR PUMP 3 phase with transformer (HAND-OFF-AUTO) 1 phase with transformer (HAND-OFF-AUTO)	O-MS3S O-MS1S
EDGE SEALS  Models 1.5 - 8 Models 11 - 16.5 Models 19 - 113	EPDM 200°F max.  49-0500 A 49-0651 A N/A
	SILICON RUBBER 300°F max.  49-0500 B 49-0651 B C/F
CONVEYOR BELTS For Series DF-19S through DF-113S (Standard belts are galvanized steel.) 304 stainless steel 316 stainless steel	ADD TO MODEL  -304 -316
	ADD TO PRICE CODE NO.  B C

**RESERVOIR PUMPS (not installed)**

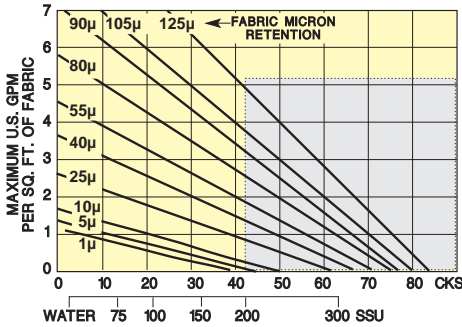
FLOW		HORSEPOWER		CAST IRON		POLYPROPYLENE		CPVC	
GPM @ TDH (ft.)		CI	PP & CPVC	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
5	11	1/8	1/8	SCI 1.5	49-0149-1	EO3/4PP	39-3122B	EO3/4C	39-3222B
15	11	1/4	—	SCI 4	49-0150	—	—	—	—
24	20	1/2	1/3	SCI 8	49-0151	EOPP1	39-1121 A	EOC1	39-1221 A
40	24	3/4	3/4	SCI 15	49-0153	EOPP3	39-1123 C	EOC3	39-1223 C
75	20	1	1	SCI 24	49-0156	EOPP4	39-2124 J	EOC4	39-2224 J
115	35	2	2	SCI 29	49-0158 A	EHP2	45-0623	EHC2	45-0123
145	25	3	5	SCI 40	49-0159	EHP5	45-0645	EHC5	45-0145
200	35	5	7 - 1/2	SCI 57	49-0160 A	EFP5	45-2254	EFC5	45-2054

**NOTE:** Motors less than 1 HP are 1 phase, 1 HP and up are 3 phase. 3 phase motors require a separate motor starter.



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**FLOW RATE CHART**



**FABRIC SELECTION CHART**

APPLICATION	MICRON									
	125	105	90	80	55	40	25	10	5	1
Paint spray booth - water Zinc & iron phosphating	•	•	•	•	•	•	•			
Caustic washing solutions Waste treat - metal hydroxide	•	•	•	•	•	•	•	•	•	•
Grinding - steel Grinding - cast iron	•	•	•	•	•	•	•	•	•	
Grinding - aluminum Grinding - carbide			•	•	•	•	•	•	•	
Belt grinding - steel Belt grinding - zinc	•	•	•	•	•	•	•			
Grinding - hard plastics Grinding - soft plastics		•	•	•	•	•	•			
Grinding - steel roll Grinding - brass		•	•	•	•	•	•	•		
Grinding - bronze Grinding - aluminum		•	•	•	•	•	•	•	•	
Lapping (Oil 30 - 100) Honing (Oil 20 - 100)					•	•	•	•	•	•
Quenching Grinding - aluminum		•	•	•	•	•	•	•	•	•
Belt grinding - steel Belt polishing - zinc copper	•	•	•	•	•	•	•	•	•	
Belt grinding - steel Thread grinding - steel	•	•	•							
Flute - tap die grinding Crush & form grinding	•	•	•							
Machine tool turning/milling			•	•	•	•	•			

**SIZING INSTRUCTIONS:**

1. Select the desired micron retention fabric from the Fabric Selection Chart.
2. Using the Flow Rate Chart, determine the flow per square foot for the selected viscosity.
3. Divide the total flow (GPM) you desire by the number obtained in step 2. The resultant is the size, in square feet of filter area required.

**DISPOSA-FABRIC MEDIA, use Price Code No. to order**

MODEL NO. *	MICRON	-13" WIDTH*			-16 1/2" WIDTH*			-33" WIDTH			-50" WIDTH*			
		YARDS PER ROLL	PRICE CODE NO.	WEIGHT (LBS)	YARDS PER ROLL	PRICE CODE NO.	WEIGHT (LBS)	YARDS PER ROLL	PRICE CODE NO.	WEIGHT (LBS)	YARDS PER ROLL	PRICE CODE NO.	WEIGHT (LBS)	
PE	SF-W125	125	100	P-49-0257 1B	2	500	49-0090 1B	13	500	49-0091 1B	26	500	49-0092 1B	40
	SF-W105	105	100	49-0258 1B	2	500	49-0093 1B	13	500	49-0094 1B	26	500	49-0095 1B	40
	SF-W090	90	100	49-0259 1B	2	500	49-0165 1B	13	500	49-0166 1B	26	500	49-0167 1B	40
RAYON/PE	SF-W080	80	100	49-0260 B	3	500	49-0099 B	15	500	49-0100 B	30	500	49-0101 B	46
	SF-W040	40	100	49-0263 B	3	500	49-0108 B	15	500	49-0109 B	30	500	49-0110 B	46
	SF-W025	25	100	49-0264 B	3	500	49-0111 B	15	500	49-0112 B	30	500	49-0113 B	46
	SF-W010	10	50	49-0266 B	3	200	49-0114 B	12	200	49-0115 B	24	200	49-0116 B	37
	SF-W005	5	50	49-0267 B	3	200	49-0117 B	15	200	49-0118 B	30	200	49-0119 B	46
	SF-W001	1	50	49-0268 B	4	200	49-0120 B	18	200	49-0121 B	36	200	49-0122 B	55

\* Add width to Model No. - Example: SF-W125-13"





## DISPOSABLE FABRIC FILTER

### Typical Applications Include:

- STRAINING** - Paints & varnishes
- FILTERING** - Chemicals, cutting and grinding fluids, oil
- PILOT TESTING** - Waste treatment, phosphating

Simply place the **ROLL-A-FILTER** on top of an open drum or recirculating tank and pour or route the liquid to be filtered into the filter tray. When the filter fabric accumulates enough solids, as indicated by the liquid pool, pull it forward, tear/cut it off and discard. The handles on the filter media support basket provide an easy and clean method of lifting and discarding the sludge laden media.

All units are made of heavy gauge steel, and are designed with integral clean catch basin with center discharge hole. Units conveniently install over sumps to eliminate frequent cleanout.

- **Steel construction coated with chemically resistant, oven cured two-part epoxy paint.**
- **Heavy duty perforated steel filter media support basket with handles**
- **Rugged steel support frame and sloped bottom basin**
- **Safe tear bar / cutting guide**
- **Models RAF-2S & -3S conveniently fit standard 55 gallon drums**

### TO ORDER

MODEL NUMBER	NOMINAL DIMENSIONS L x W x H	MEDIA WIDTH	FILTERING AREA	SHIPPING WEIGHT	PRICE CODE NO.
	Inches				
RAF-2S	28 x 19 x 5	18	2-1/3	19	79-0278
RAF-3S	28 x 25 x 5	24	3-1/4	34	79-0279
RAF-4S	47 x 25 x 5	24	6	46	79-0280
RAF-5S	47 x 37 x 5	36	9	61	79-0281
RAF-6S	59 x 37 x 5	36	12	74	79-0282

Note: Flow capacities vary greatly depending on liquid and volume of solids.

### DISPOSABLE FABRIC MEDIA (Order separately)

	PART NUMBER	APPROXIMATE MICRON RATING	APPLICATION	APPROXIMATE MICRON RATING	PRICE CODE NUMBER		
					18"	24"	36"
PE	W105	105	Straining paint / Coarse filtration	150	49-0175-1	49-0176-1	49-0177-1
	W090	90	Fine straining / Paint Filtration / Light oil	150	49-0178-1	49-0179-1	49-0180-1
RAYONIFE	W080	80	Coarse Filtration	150	49-0181	49-0182	49-0183
	W040	40	Medium filtration	150	49-0187	49-0188	49-0189
	W025	25	Fine filtration	150	49-0190	49-0191	49-0192
	W010	10	Very fine filtration	75	49-0193	49-0194	49-0195
	W005	5	Ultra fine filtration	75	49-0240	49-0241	49-0242
	W001	1	Ultra fine filtration	75	49-0243	49-0244	49-0245



# SERIES 'CB' CARTRIDGE / BAG FILTRATION SYSTEM

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## *For recirculating filtration on a reservoir*

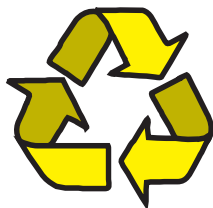
- COMPLETELY PRE-ENGINEERED AND ASSEMBLED
- QUICK CHANGE REUSABLE FILTER MEDIA MEANS FAST PAYBACK
- PERMITS WATER REUSE
- PREVENTS NOZZLE PLUGGING
- PROVIDES BETTER CLEANING
- PREVENTS POLLUTION
- NO BACKWASH REQUIRED
- AVAILABLE WITH AUTOMATIC ON / OFF PUMP CONTROL

The Cartridge / Bag system is a 2-stage liquid-solid separation system designed to provide high solids loading capabilities for applications requiring recirculating filtration of a process reservoir. Typical applications include the removal of particles from glass and plastic in bottle washing operations and the removal of board fiber, wheel grit, copper and other metals from water used in PC board deburring and scrubbing equipment.

The first stage employs a primary filter tank containing 8 gravity flow filter bags to collect bulk particles separated from rinse water. This stage provides 17.6 ft.<sup>2</sup> of filter surface area and is capable of filtering particles from 100 micron to 5 micron, depending upon the micron rating of the filter bags selected. The filter bags are

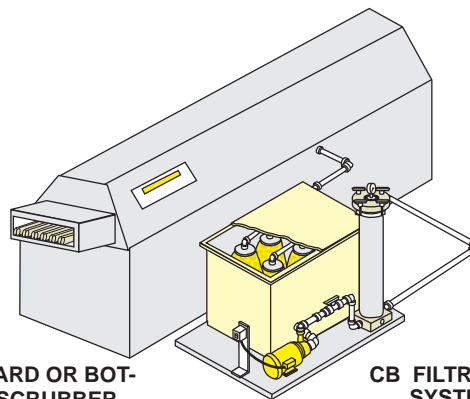
attached to a manifold with cam-lock quick-disconnect couplings for minimal down-time when servicing. The manifold includes an overflow vent which prevents back-up of system flow.

A circulating pump can be manually activated, or automatically activated with an optional level control, to transfer the filtered water from the primary filter tank to the second stage. This stage consists of a final trap filter chamber which uses a 2 micron pleated paper filter cartridge with 32 sq. ft. of surface area to polish the water so that clear water can be recycled to the process or discharged to a drain.



### **FEATURES:**

- Flow control valve
- High solids loading
- Vinyl coated steel base



PC BOARD OR BOT-  
TLE SCRUBBER

CB FILTRATION  
SYSTEM



2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

**SPECIFICATIONS**

**Entire system constructed of corrosion resistant materials for long service life.**

**PRIMARY FILTER TANK**

Eight 5, 10, 25, 50 or 100 micron polypropylene filter bags (order separately) with quick-disconnect couplings provide 17.6 sq. ft. (1.6 sq. m) total area primary filtration by gravity flow to a 36" x 24" x 32" (914 x 610 x 813 mm) deep polyethylene reservoir. Reservoir provided with cover.

**AVAILABLE WITH:**

**PVDF CENTRIFUGAL PUMP**

Provides 30 U. S. GPM at 18 PSI @ 60 Hz (95 LPM at 1.2 bar @ 50 Hz) with Viton® mechanical seal and "O"-ring. Flow control valve on 1" PVC pipe between pump and final filter.

or

**NORYL® SELF-PRIMING CENTRIFUGAL PUMP**

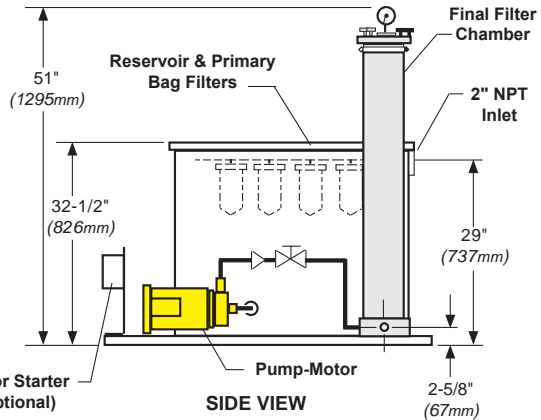
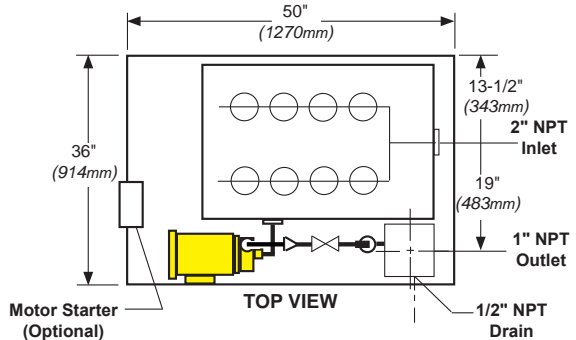
Provides 30 U. S. GPM at 21 PSI @ 60 Hz (95 LPM at 1.4 bar @ 50 Hz) with Viton® mechanical seal and "O"-ring. Flow control valve on 1" PVC pipe between pump and final filter.

**FINAL TRAP FILTER CHAMBER**

Constructed of PVC with quick opening swing bolts and tee handles. Supplied with pressure gauge. Includes one 4" x 36" pleated paper filter cartridge of 2 micron, 32 sq. ft. (3.0 sq. m.) expanded filter area.

**VINYL COATED STEEL BASE**

Approximate shipping weight - 200 lbs. (91 kg.)



**TO ORDER, use Price Code Number**

MODEL with PVDF end suction 'K' pump	MOTOR	PRICE CODE NO.
	TEFC, 1.5 HP 3450 RPM @ 60 Hz 2850 RPM @ 50 Hz	
CBF 65x58 1½x1½K3V(M2)-C1.5	115-230V/1/60 230V/460V/3/60	2750
CBF 65x58 1½x1½K3V(M2)-D1.5	380V/3/50	2751

MODEL with NORYL self-priming 'G' pump	MOTOR	PRICE CODE NO.
	TEFC, 1.0 HP 3450 RPM @ 60 Hz 2850 RPM @ 50 Hz	
CBF 65x58 GNOKCVN-C1.0	115-230V/1/60 230V/460V/3/60	2733
CBF 65x58 GNOKCVN-D1.0	380V/3/50	2734

Registered trademarks:  
Noryl - General Electric; Viton - DuPont Dow Elastomers  
Specifications subject to change without notice.

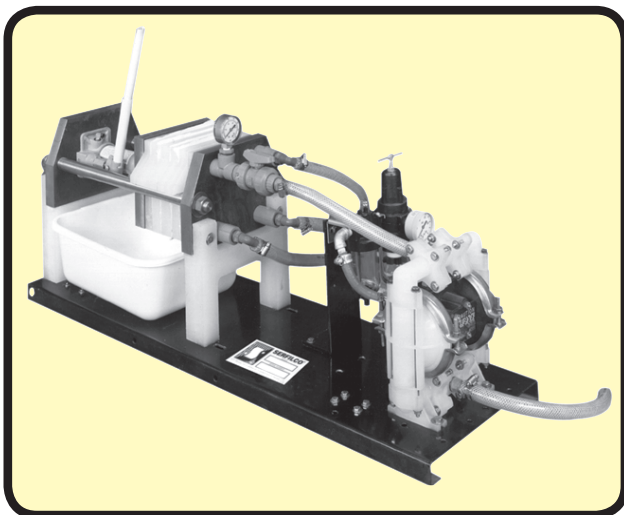
**OPTIONAL**

DESCRIPTION	PRICE CODE NO.
<b>LEVEL CONTROL</b> (motor starter required) Automatic on / off pump control	O-1490
<b>MOTOR STARTER</b> Watertight push button, 115-230V/1/50-60 230-460V/3/50-60	O-MS1P O-MS3P
Note: Add -S to motor starter PCN when ordering motor starter for use with O-1490 level control, i.e., O-MS3P-S	
<b>FILTER MEDIA</b> (Bags ordered separately, 1 cartridge included in original equipment.) Bags - Polypropylene, size 7" x 16" (8 req'd)	
5 micron	88-0848A
10 micron	88-0848B
25 micron	88-0848C
50 micron	88-0848D
100 micron	88-0848E
Replacement pleated cartridge 2 micron (1 required)	PL436-2-4



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## For Lab Analysis - Small Batch Production - Field Testing



- PLATE AND FRAME DESIGN**  
 Dual capacity- Can be used with one or two frames for adjusted volume -  
 .01 cu. ft. (283 cm<sup>3</sup>) or .02 cu. ft. (566 cm<sup>3</sup>)  
 Area per frame - 17in<sup>2</sup> (110 cm<sup>2</sup>)
- INCLUDES POLYPROPYLENE PLATES AND FILTER CLOTH**  
 Suitable for most waste solutions
- AIR DIAPHRAGM PUMP**  
 Polypropylene construction  
 Flows adjustable to 5 GPM (15.7 LPM)  
 Pressure adjustable to 60 PSI  
 (4.22 kg/cm<sup>2</sup>)

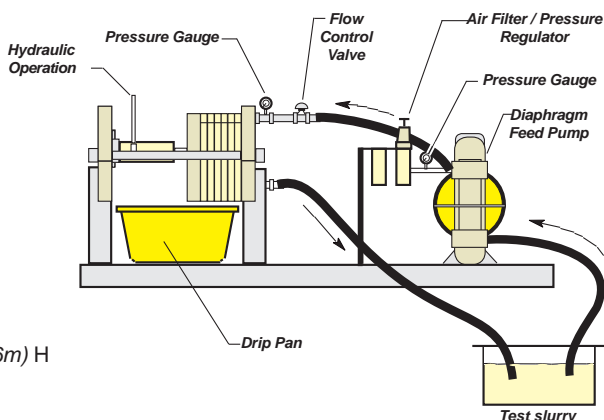
The **Lab Filter Press** is designed for lab analysis and small batch production. This press is also very useful for testing for upscaling to full production-size semi-automatic or manually operated presses. Includes polypropylene plates, filter cloth, air diaphragm pump, pneumatic controls, pressure gauges, inlet

flow control valve, hoses, manual hydraulic pump and drip pan. Entire assembly is mounted on a vinyl coated steel base. Flow pattern is corner inlet with three individual corner discharge lines.

### TO ORDER

<b>LAB FILTER PRESS</b>	<b>PRICE CODE NO.</b>
<b>MODEL .02 - 7PPMH</b>	43-0857
<b>REPLACEMENT CLOTHS</b> (4 Req'd.)	<b>PRICE CODE NO.</b>
<b>SF - 7 x 7</b>	43-0822

**Dimensions:** 42" (1.1m) L x 13" (.33m) W x 22" (.56m) H  
**Shipping Weight:** 95 Lbs (43 kg.)  
**Maximum operating temperature:** 150° F (66° C)





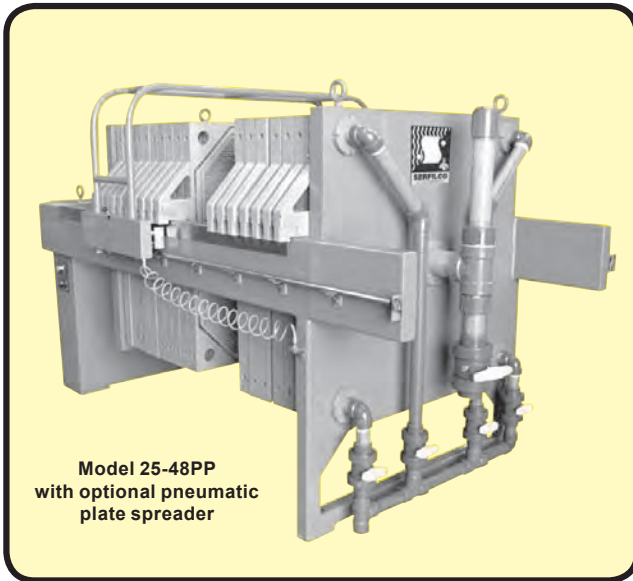
# RECESSED PLATE FILTER PRESS

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F-705\_T

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**Model 25-48PP**  
with optional pneumatic  
plate spreader

## LIQUID / SOLID SEPARATION FOR:

**WASTE & SEWAGE TREATMENT  
BREWING / CEMENT / CERAMIC  
MINING & PLATING INDUSTRIES  
FOOD & VARNISH PROCESSING  
CHEMICALS**

- **MANUAL HYDRAULIC**  
0.6 to 3 cu.ft.expandable
- **SEM -AUTOMATIC**  
1 to 50 cu.ft. expandable
- **AIR BLOWDOWN MANIFOLD**
- **CORROSION RESISTANT**
- **40-60% SOLIDS CONCENTRATION**
- **LOW ENERGY REQUIREMENT**
- **EASY DROPOUT CLEANING**

The **Recessed Plate Filter Press** will compact sludges to a dry cake with a density that is dependent upon the ultimate compaction pressure and the characteristics of the particular sludge.

Each pressload will require from 2-4 hours cycle time. To insure adequate time, the press should be sized for at least 8 hours working capacity. The table and formula below can be utilized to size your press. You can confirm your sizing and evaluate the process

for your application with a laboratory-sized model. Contact our Sales Dept. to arrange a pilot test.

Presses feature structural steel frame, coated with tough chemical resistant epoxy paint. The high-density molded polypropylene filter plates are light-weight, corrosion resistant and are fitted with special polypropylene quick cake release filter cloths. Presses also feature an air-actuated hydraulic system for opening and closing, automatic self-compensating hydraulic system and a conveniently located operator control console.

**TO SIZE YOUR PRESS**, the following information is required:

SLUDGE TYPE	% OF CAKE DRY WEIGHT SOLIDS	AVERAGE DRY WEIGHT/ CUBIC FOOT
Biological Sludge	15-25	15
Metal Hydroxide Sludge	25-40	25
Lime Treated Sludge	15-60	30

- A. Total gallons to be processed in selected press in specified period, e.g., U.S gals./8 hours. Twenty-four hours can be used to insure adequate capacity.
- B. Percent by weight of filterable suspended solids.
- C. Average dry weight per cubic foot for a particular sludge (obtained from table.)

**CALCULATIONS:**

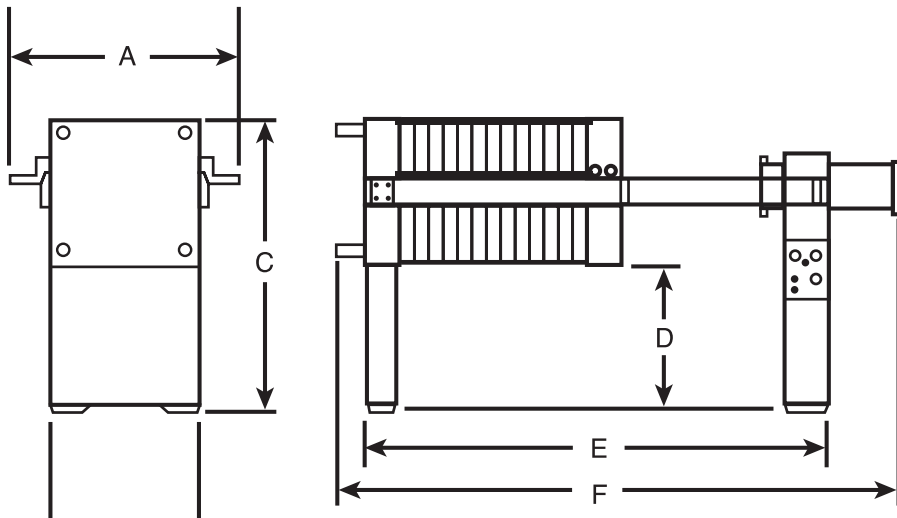
$$\frac{A \times B \times 8.33 \text{ LBS./GAL.}}{C} \text{ OR } \frac{(\text{U.S. GALS./ 8 HRS.}) \times (\% \text{ SUSPENDED SOLIDS}) \times 8.33 \text{ LBS./GAL.}}{(\text{AVERAGE LBS. DRY WT. / CUBIC FT.})} = \text{CU. FT. CAPACITY FOR A DURATION}$$



### SPECIFICATIONS

SIZE	MODEL	NOMINAL CAPACITY (CU. FT.)	IN-OUT NPT & SQUARE PLATE SIZE	NO. OF CHAMBERS	SLUDGE HOPPER (CU FT.)	DIMENSIONS (IN.)						APROX. WEIGHT (LBS.)
						A	B	C	D	E	F	
<b>MANUAL HYDRAULIC</b>												
AA	0.6-18PPMH	0.6		4	6					37	52	800
	1-18PPMH	1	1½" x 1"	7	6	32	24	61	48	41	56	850
	2-18PPMH	2	(470mm)	13	6					55	70	940
	3-18PPMH	3	18.5"	20	6					73	87	1060
<b>SEMI-AUTOMATIC</b>												
A	1-24PP	1		3	6					57	84	1700
	2-24PP	2	2½" x 1½"	7	14					67	93	1900
	3-24PP	3	(630mm)	10	14	39	31	56	30	74	100	2050
	4-24PP	4	24.8"	14	14					80	107	2150
	5-24PP	5		17	14					89	116	2300
B	6-31PP	6		12	14					82	109	4200
	8-31PP	8	3" x 2"	16	17					92	119	4450
	10-31PP	10	(800mm)	20	17	48	40	63	30	102	129	4900
	15-31PP	15	31.5"	30	2 X 14					127	154	5500
	20-31PP	20		40	2 X 14					152	179	6000
D	25-48PP	25		19	60					105	133	11,380
	30-48PP	30	4" x 2"	23	60					116	144	11,850
	40-48PP	40	(1200mm)	30	60	66	58	97	49	141	169	13,100
	50-48PP	50	47.2"	38	2 X 60					163	191	14,000

### DIMENSIONS





# RECESSED PLATE FILTER PRESS

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**TO ORDER, use Price Code Number**

MODEL	CUBIC FEET	PRICE CODE NUMBER	
		NON-GASKETED	GASKETED
0.6-18PPMH	0.6	43-0804	43-0804 G
1-18PPMH	1	43-0805	43-0805 G
2-18PPMH	2	43-0806	43-0806 G
3-18PPMH	3	43-0807	43-0807 G
1-24PP	1	43-0601	43-0601 G
2-24PP	2	43-0602	43-0602 G
3-24PP	3	43-0603	43-0603 G
4-24PP	4	43-0604 A	43-0604 AG
5-24PP	5	43-0605 A	43-0605 AG

MODEL	CUBIC FEET	PRICE CODE NUMBER	
		NON-GASKETED	GASKETED
6-31PP	6	43-0606	43-0606 G
8-31PP	8	43-0608	43-0608 G
10-31PP	10	43-0610	43-0610 G
15-31PP	15	43-0615 A	43-0615 AG
20-31PP	20	43-0620 A	43-0620 AG
25-48PP	25	43-0625 A	43-0625 AG
30-48PP	30	43-0630 A	43-0630 AG
40-48PP	40	43-0640	43-0640 G
50-48PP	50	43-0650	43-0650 G

**OPTIONAL EQUIPMENT**

Other options such as high-pressure units, pre-coat and body feed systems, catwalks, platforms and ladders are available and will be quoted upon request.

DESCRIPTION	PRICE CODE NO.
Air diaphragm pump, Polypropylene w/nitrile See Bulletin P-605	55-7287 55-7602 55-7615
Drum disposal system <sup>1</sup> - w/extended legs & chute Semi-automatic 24"	43-0648
Self-dumping sludge hopper 6 cu. ft. (36" L x 42" W x 27" H) 14 cu. ft. (48" L x 42" W x 27" H) 17 cu. ft. (60" L x 42" W x 27" H) 60 cu. ft. (60" L x 60" W x 48" H)	43-0641 43-0643 43-0681 43-0682
PRESS-FULL indicator	43-0668

DESCRIPTION	PRICE CODE NUMBER			
	18"	24"	31"	48"
<b>FOR PLATE SIZE</b>	18"	24"	31"	48"
Pneu. plate spreader	-	43-0680	43-0656	43-0658
Safety light curtains	-	-	43-0659	43-0661
Replacement cloth Non-gasketed Gasketed	SF-U18 <sup>‡</sup> SF-U18 <sup>‡</sup> G	SF-U24 <sup>‡</sup> SF-U24 <sup>‡</sup> G	SF-U31 <sup>‡</sup> SF-U31 <sup>‡</sup> G	SF-U48 <sup>‡</sup> SF-U48 <sup>‡</sup> G
Expander piece (For the future addition of up to 10 plates) <sup>2</sup>	43-0672	43-0673	43-0674	43-0675
Additional plates (each)	43-0676	43-0677	43-0678	43-0679
Automatic pump control <sup>3</sup> 3 stage 4 stage	43-0662 43-0670			
Hydraulic interlock for feed pump air supply	43-0671			

<sup>1</sup> AA Size - Manual Hydraulic units are designed to drop sludge directly into 55 gal. drums.

<sup>2</sup> Standard press allows for the addition of 4 plates.

<sup>3</sup> Allows progressively increasing air pressure on diaphragm pump to attain a denser, drier cake.

\* To designate cloth position, add to Price Code Number:  
H Head T Tail M Intermediate



**HAND-CARRY**  
for remote or field servicing



**TRANS-O-FILTER**  
w/optional coalescing chamber



**OIL RECONDITIONING STATION**  
for salvaging oils in large volume

## For renewal of:

**Hydraulic fluids / Lubricating oils**  
**Cutting fluids / Oil & water based coolants**  
**EDM — dielectric fluids / Synthetic oils**

- **Protect expensive machinery** from damaging dirt and abrasives
- **Quick payback** - Save disposal costs, re-use filtered liquid and lower biocide usage
- **No down-time** while restoring liquid to original level of cleanliness
- **Optional coalescers** to separate immiscible fluids

Oil contamination is the major cause of hydraulic equipment failure. Even fresh oil, right from the drum, may contain contaminants at levels exceeding new equipment manufacturers' standards. Petroleum products such as hydraulic fluids don't wear out. Filter them to like-new condition. Add new product only to make up for losses and to replenish additives.

**Trans-O-Filter Systems** effectively filter petroleum and synthetic fluids to remove abrasive grit and damaging sludges which contaminate and accumulate in hydraulic and lubricating oil circuits and reservoirs. They protect your machinery and system investments by eliminating pump damage, scored cylinders and the malfunction of valves and controls attributed to the destructive action of dirty or rancid oil. These systems offer you high flow rates and large dirt holding capacities in very compact packages. Each unit is designed to be completely self-contained; consisting of pump, motor, suction strainer and hoses. Carbon steel filter chamber will accommodate filter media down to 1 micron retention to meet your specific requirements. (Order filter media separately.)

**Oil reconditioning stations** salvage contaminated oils for further use by removing sludges, water and other suspended foreign material. Systems accelerate natural settling action with controlled elevated temperatures. Residual fine particulate are then removed by a polishing filter of inert depth type media. If removal of oxidation products is desirable, the polishing filter can be equipped with absorbent Fuller's Earth.

**Optional coalescing chambers** provide a means to separate immiscible fluids such as tramp oil or water. These coalescers will handle dissimilar liquids with specific gravity differences of 0.09 and greater. The resulting effluent contains less than 10 PPM of the discontinuous phase.

## STANDARD TRANS-O-FILTER<sup>1</sup> SYSTEMS INCLUDE:

1. Carbon steel filter chamber with 75 psi maximum rating. "O"-ring closure is EPDM on portable model, Buna-N on all others.
2. Positive displacement self-priming gear pump with built-in relief valve set at 35 psi, Buna-N mechanical seal and 40 mesh suction strainer. Motor: 115-230V/1/60, 1725 RPM, TEFC, with 8 ft. of 3-wire extension cord and 3-prong plug. Units wired 115V standard.
3. Also available with air operated diaphragm pump, polypropylene with Teflon<sup>®</sup> internals.
4. 10' suction and discharge hoses (vinyl on portable; Buna-N and neoprene on others).
5. Petcock vent and drain plug.
6. Pressure gauge mounted on gauge snubber to indicate dirty filter.
7. Completely assembled stationary models mounted on a vinyl coated steel base. Mobile models include 2-wheel upright hand cart with handle.
8. Painted machine tool gray with two-part epoxy paint.
9. Optional coalescing chambers include Pyrex<sup>®</sup> sight glass and coalescing element<sup>2</sup>.

<sup>1</sup> For liquid temperatures up to 200°F. <sup>2</sup> For liquid temperatures up to 160°F.





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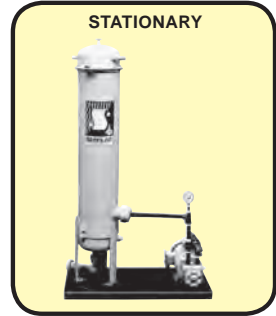
**HAND-CARRY**



**MACHINE or WALL MOUNT**



**PORTABLE**



**STATIONARY**

**HAND-CARRY**

- Remote location service
- Hydraulic door openers
- Escalator / elevator service
- Ideal for machine-tool servicemen
- Small hydraulic reservoirs
- Transfer from drum to machine reservoir and get added benefit of filtration

**PORTABLE (on wheels)**

- Easy to move to site of required oil filtration
- Includes motor starter (electric drive models)
- Ideal for field service personnel

**MACHINE MOUNT**

- Ideal for mounting to press or machine tool
- Support / extend original equipment filter system
- Mounts next to oil reservoir
- For permanent installation and continuous duty filtration

**STATIONARY**

- Provides same filtration as portable models, but mounted on a vinyl coated steel base
- Designed to be piped in place for high flow service on medium to large reservoirs
- Excellent for continuous recirculation of large central oil / coolant storage tanks

**TOORDER, use PRICE CODE NO.**

	PRICE CODE NO.	MODEL	FLOW	NO. OF CARTS.*	FILTER SURFACE AREA	SUCTION x DISCHARGE HOSE SIZE	MOTOR H. P.	DIMENSIONS	SHIP WT.
			GPH					L x W x H	Lbs.
<b>HAND-CARRY</b> Includes protective hood and sturdy carrying handle. Painted machine tool gray.	1402 A	S10 ½S TS3	180	1 - 10"	3.5 sq. ft.	3/8" x 3/8"	1/3	13 x 9 x 15	60
	1429	S20 ½S TS3						23 x 9 x 15	65

**MACHINE MOUNT**

With wall mount base plate. Painted machine tool gray.	1430	MMS20 ½S TS3	180	2 - 10"	7.0 sq. ft.	3/8" x 3/8"	1/3	14 x 14 x 7	60
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<b>PORTABLE</b>	PRICE CODE NO.	MODEL	FLOW	NO. OF CARTRIDGES *	FILTER SURFACE AREA	SUCTION x DISCHARGE HOSE SIZE	MOTOR H.P. / SCFM @ PSI	DIMENSIONS	SHIP WT.
			GPH					L x W x H	Lbs
<b>Electric drive models</b>	1405 B	S1(718)1/2BTS6-P-ST4-PS	360	1 - 4" or 7" x 18"	29.0 sq. ft.	3/4" x 1/2"	1/2	18 x 17 x 46	115
	1407 B	S50(1)1/2BTS3-P-ST4-PS	180	5 - 10"	17.5 sq. ft.	3/4" x 1/2"	1/3	18 x 17 x 46	115
	1410 B	S100(2)1/2BTS6-P-ST4-PS	360	10 - 10"	35.0 sq. ft.	3/4" x 1/2"	1/2	18 x 17 x 46	125
	1413 B	S150(3)1BTS9-P-ST4-PS	540	15 - 10"	52.5 sq. ft.	1" x 1"	1	18 x 17 x 52	130
<b>Air drive models</b>	1437	S1(718)1/2BPPTF1/2-P-PRV	480	1 - 4" or 7" x 18"	29.0 sq. ft.	3/4" x 1/2"	5 @ 50	18 x 17 x 46	110
	1438	S50(1)1/2B PPTF1/2-P-PRV	480	5 - 10"	17.5 sq. ft.	3/4" x 1/2"	5 @ 50	18 x 17 x 46	110
	1439	S100(2)1/2B PPTF1/2-P-PRV	480	10 - 10"	35.0 sq. ft.	3/4" x 1/2"	5 @ 50	18 x 17 x 46	120
	1440	S150(3)1B PPTF1-P-PRV	600	15 - 10"	52.5 sq. ft.	1" x 1"	10 @ 40	18 x 17 x 52	145

**STATIONARY**

<b>Electric drive models</b>	1416 A	S1(718)1/2STS6-PS	360	1 - 4" or 7" x 18"	29.0 sq. ft.	3/4" x 1/2"	1/2	30 x 13 x 30	105
	1418 B	S50(1)1/2STS3-PS	180	5 - 10"	17.5 sq. ft.	3/4" x 1/2"	1/3	30 x 13 x 25	115
	1422 B	S100(2)1/2STS6-PS	360	10 - 10"	35.0 sq. ft.	3/4" x 1/2"	1/2	30 x 13 x 37	125
	1426 B	S150(3)1STS9-PS	540	15 - 10"	52.5 sq. ft.	1" x 1"	1	30 x 13 x 47	130
<b>Air drive models</b>	1441	S1(718)1/2SPPTF1/2-PRV	480	1 - 4" or 7" x 18"	29.0 sq. ft.	3/4" x 1/2"	5 @ 50	30 x 13 x 30	100
	1442	S50(1)1/2S PPTF1/2-PRV	480	5 - 10"	17.5 sq. ft.	3/4" x 1/2"	5 @ 70	30 x 13 x 25	95
	1443	S100(2)1/2S PPTF1/2-PRV	480	10 - 10"	35.0 sq. ft.	3/4" x 1/2"	5 @ 70	30 x 13 x 37	120
	1444	S150(3)1/2S PPTF1-P-PRV	600	15 - 10"	52.5 sq. ft.	1" x 1"	10 @ 40	30 x 13 x 47	135



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**TRANS-O-FILTER OPTIONS**

DESCRIPTION	ADD	
	TO END OF MODEL NO.	PRICE CODE NO.
Coalescing chamber with K4x11N element(s) included. 1 element chamber (Portable or stationary models only.)	-1F8	O-1235
By-pass piping including 3 two-way valves for convenient transfer to by-pass filter. (Not for Hand-Carry)	-1/2" -1"	-BP O-1198A O-1199A
Portable base with two swivel and two fixed casters. (For stationary models only.)	-P	O-1428
Push button single phase motor starter with overload protection in water/oil tight enclosure. (Standard with portable models).	-ST4	O-1214
Viton® elastomers	-V	Add to PCN -V

**FILTER MEDIA**

DESCRIPTION	MICRON RETENTION	PRICE CODE NO.
2½" x 10" depth wound cotton filter cartridges on tinned steel core	5	5C10TC
	10	10C10T
	15	15C10T
	30	30C10T
	50	50C10T
	75	75C10T
4" x 18" depth wound cotton filter cartridges on 304 stn. steel core	100	99C10T
	1	1B18A4
	3	3B18A4
	5	5B18A4
	10	10B18A4
	20	20B18A4
3" x 10" pleated paper cartridges	30	30B18A4
	1	PL310-1
	5	PL310-5
	10	PL310-10

**NOTE:**

Order filter and coalescing media separately. Consult Sales Dept. for other cartridges.

Consult Sales Dept. for custom or special models, custom paint, Viton hose, three-phase motors or explosion-proof motors.

**COALESCING ELEMENTS**

DESCRIPTION*	MODEL NO.	PRICE CODE NO.
Nylon / 304 SS / Buna-N	K4x11N	88-3248
Polypropylene / 304 SS / Buna-N	K4x11P	88-3249
Glass / 304 SS / Buna-N	K4x11G	88-3250

\* Media / Core / Cap

**OIL RECONDITIONING STATIONS**

**INCREASE TOOL LIFE, REDUCE PRODUCTION COSTS BY RECYCLING CUTTING OILS FOR RE-USE**

**PURIFIES ALL TYPES OF LUBRICANTS**

The station at right is extremely well suited for screw machine oil coolants. Cutting oil, lapping oil, honing oil, hydraulic oils, synthetic oils, lubricating oils, vacuum pump oils, compression oil and many other special oils can be economically restored.

**EASY, LOW COST OPERATION**

This station is very compact as well as easy and economical to operate. It features a cone bottom settling tank equipped with a thermostatically controlled electric heating element that raises the temperature of the contaminated oils. This accelerates the natural settling of suspended foreign material into the cone for easy removal. The station also includes a positive displacement pump with a pressure relief valve, a TEFC motor, a pressure filter with gauge and a clean oil storage tank.

Models with a 50, 250, 500, 1000 or 2000 gallon settling capacity are available.



**Interconnected valve arrangement enables product to be conveniently transferred according to the need and clarification required.**

1. Pump dirty oil from a floor drum to a settling tank.
2. Transfer and filter settled oil from settling tank to storage tank.
3. Recirculate and filter oil in storage tank.
4. Transfer and filter settled oil from settling tank to floor drum.
5. Recirculate and filter oil in floor drum.
6. Draw clean oil from storage tank to container.
7. Pump clean oil from storage tank to container or machine.



# CARBON PURIFICATION CHAMBERS

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R-102\_T

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## FOR GRANULAR CARBON OR MAXI-CARB POWDERED CARBON CARTRIDGES

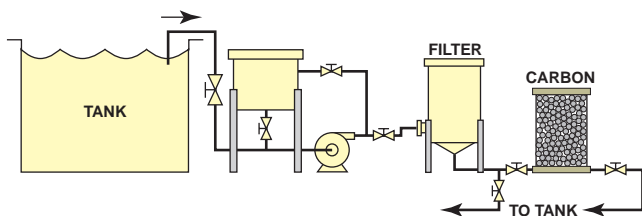
- **Bulk Carbon Chamber**  
for maximum amount of granular carbon
- **Carbon Canister Chamber**  
for convenient refill of granular carbon and interchangeability with C528PE or C548PE powdered carbon cartridges.

Carbon purification chambers offer a simple, low-cost, but effective method of removing organic impurities from plating baths and other chemical solutions.

- **Smoother, brighter deposits**
- **Fewer rejects**
- **Reduced tank downtime**

Connect to your existing filtration system for continuous carbon treatment. Recommended installation (shown below) provides side-stream flow through carbon for best control of results. One or two months of operation is not unusual before carbon change is necessary.

Complete matched systems — pump, filter, carbon chambers — are available to meet any size and type of production requirement.





# CARBON PURIFICATION CHAMBERS Specifications

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MODEL	SERIES	FLOW <sup>1</sup> GPM	TRAP <sup>2</sup> FILTER	CARBON CAPACITY		PRICE CODE NUMBER		
				Cu. ft.	Lbs.	PVC	CPVC	PP
<b>SERIES 'S' &amp; 'G' FOR BULK GRANULAR CARBON</b>								
CL630CS 1-G3	S	2 - 6	(1) Screen	.42	13	78-1424	78-1424 C	78-1424 PP
CL630CS 1B-G3	S	(Same as above w/bracket)	(1) Screen	.42	13	78-1425	78-1425 C	78-1425 PP
CL1230CSIO 1½-G3A	G	5 - 25	(3) Screens	1.6	50	78-1923 P	78-1923 C	78-1923 PP

Chamber made of CPVC, PVC or PP with polypropylene trap screens. Swing bolt cover closure and pressure gauge with diaphragm guard. **When ordering PVC chamber, change CL to PL in Model Number. To order PP chamber, change CL to PPL.**

<b>SERIES 'S' &amp; 'G' w/CANISTER FOR GRANULAR CARBON<sup>3</sup></b>				Cartridge	Lbs.	PVC	CPVC	PP
CL1(528P)CCS 1-G3	S	1 - 5	(1) 03U10U	1	7	78-1427	78-1427 C	78-1427 PP
CL3(528P)CCSIO 1½-G3A	G	3 - 15	(3) 03U10U	3	21	78-1913 P	78-1913 C	78-1913 PP
CL3(548P)CCSIO 1½-G3A	G	6 - 15	(3) 03U20U	3	36	78-1915 P	78-1915 C	78-1915 PP

Chamber made of CPVC, PVC or PP with canister with inlet screen and a built-in trap filter. CPVC and PVC chamber have PVC canister. PP chamber has PP canister. Swing bolt cover closure and pressure gauge with diaphragm guard. **When ordering PVC chamber, change CL to PL in Model Number. To order PP chamber, change CL to PPL.**

<b>SERIES 'S' &amp; 'G' w/MAXI-CARB CARTRIDGE</b>				Cartridge	Lbs.	PVC	CPVC	PP
CL1(528M)CS 1-G3	S	1 - 5	—	1	3	78-1626	78-1626 C	78-1626 PP
CL3(528M)CSIO 1½-G3A	G	3 - 15	—	3	9	78-1963 P	78-1963 C	78-1963 PP
CL3(548M)CSIO 1½-G3A	G	6 - 15	—	3	17	78-1965 P	78-1965 C	78-1965 PP

Chamber made of CPVC, PVC or polypropylene. Swing bolt cover closure and pressure gauge with diaphragm guard. **When ordering PVC chamber, change CL to PL in Model Number. To order PP chamber, change CL to PPL.**

<b>SERIES 'HF' w/CANISTER FOR GRANULAR CARBON<sup>3</sup></b>				Canister	Lbs.	PVC	CPVC
CL7(528P)CCS 2-G3A	HF	10 - 35	(7)03U10U	7	49	78-1669 P	78-1669 C
CL7(548P)CCS 2-G3A	HF	10 - 35	(7)03U20U	7	84	78-1670 P	78-1670 C

Chamber made of CPVC or PVC with PVC canister with inlet screen and a built-in trap filter. Swing bolt cover closure and pressure gauge with diaphragm guard.

**When ordering PVC chamber, change CL to PL in model number.**

<sup>1</sup> Design flow rates may vary, but the lower value offers the maximum adsorbency and the most efficient purification for each gallon processed.

<sup>2</sup> To order trap filter cartridges, see Bulletin M-109

<sup>3</sup> May also be used with C528PE and C548PE powdered carbon cartridges. See Bulletin M-305. (Ordered separately)

## INITIAL AND REPLACEMENT CARBON

<b>GRANULAR ACTIVATED CARBON</b>		
Activated with steam for high adsorption capacity		
COCONUT SHELL BASED		
12 x 30 MESH STANDARD	LBS.	PCN
	10	99-0997-10
	50	99-0997-50



# CARBON PURIFICATION SYSTEMS

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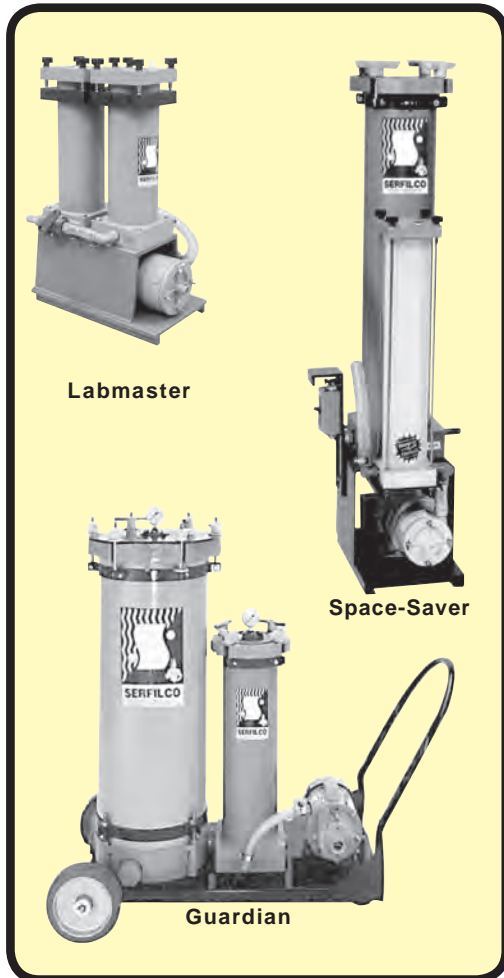
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***THE BEST AND LOWEST COST WAY TO PURIFY BRIGHT NICKEL, ACID COPPER AND SIMILAR SOLUTIONS.***

- **Modular design accommodates custom requirements**
- **Eliminates down-time**
- **Compact pre-engineered systems can be used on multiple baths thus saving in equipment cost**
- **Systems are adaptable to almost any type of use:**  
Continuous or intermittent, total or partial flow, with or without pre-filtering
- **Leakproof assembly, easy servicing**
- **Magnetic-coupled pump**
- **Available for use with:**  
Bulk carbon, carbon canister or carbon cartridges
- **Optional pre-filter**

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Granular Carbon Purification Systems provide a simple, economical and efficient method of removing organic impurities from electroplating or other chemical solutions.

Three product lines are offered: Labmaster, Space-Saver, and Guardian. The user can choose the particular model that is right for his/her application, flow rates, and the degree of solution purity required. Carbon canisters include trap filter.

Connect the Carbon Purification System to your plating tank to achieve efficient organic removal. Select a system with replaceable carbon cartridges or with a chamber which has removable and refillable bulk carbon canister. The latter also accept C528PE powdered carbon cartridges which are interchangeable with the canisters.

Seal-less, leak-proof pumps are rugged enough for continuous duty in systems that require total flow through the carbon chamber for effective organic removal, or they can be used at partial flow, as required. Units can be connected to a plating bath for continuous carbon treatment, then disconnected and used on another tank. Thus, one system can serve several tanks.

Pre-filters, offered optionally, protect the carbon from contamination by efficient removal of solid impurities that could render the carbon inefficient.

Larger and custom systems available to meet your particular application. Consult Sales Dept. for assistance.



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The following systems are designed for full flow through a filter and purification chamber. These systems are usually used in conjunction with filtration systems which are sized to remove the bulk of solids

from the solution being treated. Therefore, the filters offered on these systems are sized to hold only the solids which have not been picked up with the main filter.

MODEL NUMBER	FLOW RATE <sup>1</sup> GPM	MAX. PSI	CARBON CHAMBER MEDIA <sup>3, 4</sup>	PRE-FILTER CHAMBER CARTRIDGES <sup>4</sup>	DIM. LxWxH Inches	MOTOR <sup>2</sup> TEFC HP	PRICE CODE NUMBER
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**LABMASTER® FOR CARBON CARTRIDGES WITH PRE-FILTRATION**

PCL10 x PCL10CC ½V APSV	1 - 2		1 of CU10P	1 of 15U10U	10 x 7 x 23		S-0385 B
PCL20 x PCL20CC ½V APSV	1 - 4	9	1 of CU20P	1 of 15U20U	10 x 7 x 33	1/12	S-0386 B
PCL30 x PCL30CC ½V APSV	1½ - 5		1 of CU30P	1 of 15U30U	10 x 7 x 43		S-0387 B

Systems consist of two clear PVC chambers; the first for depth cartridges, the second for carbon cartridges. The pump is magnetic-coupled, made of glass-filled polypropylene. Reinforced vinyl

hoses, 6 ft. suction and 6 ft. discharge with CPVC fittings included. System is mounted on a corrosion resistant base.

**SPACE-SAVER® WITH CANISTER FOR CARBON WITHOUT OR WITH PRE-FILTRATION**

							w/CPVC Chamber	w/PVC Chamber*	
CL1(528)S ¾V BPSV-G3	1½ - 5	13	7 lbs. carbon for 1 canister	-	3 of 15U10U	13 x 9 x 47	1/6	S-0413 A	S-0413 AA
CL1(528)S x PCL30 ¾V BPSV-G3								S-0414 A	S-0414 AA

Systems are assembled without or with clear PVC pre-filter chamber for depth cartridges as indicated and a CPVC carbon chamber with one PVC refillable canister with trap filter for granular carbon. The pump is magnetic-coupled, made of glass-filled polypropylene. Reinforced vinyl hoses, 10 ft. suction and 10 ft. discharge, CPVC and

polypropylene fittings. System, mounted on a corrosion resistant base, includes -G3 pressure gauge on polypropylene gauge guard with EPDM diaphragm.

\* For PVC – change **CL** to **PL** in model number.

**GUARDIAN® WITH CANISTERS FOR CARBON WITHOUT OR WITH PRE-FILTRATION**

								w/CPVC Chamber	w/PVC Chamber*
CL3(528P)CCS ¾C MPLCR 1A-C.5-G3A	4½ - 15	22	21 lbs. carbon for 3 canisters	-	6 of 15U10U	33 x 18 x 53	1/2	S-0357 F	S-0357 FA
CL3(528P)CCS x CL60(2)S ¾C MPLCR1A-C.5-G3A								S-0358 F	S-0358 FA

Systems are assembled without or with CPVC or PVC pre-filter chamber for depth cartridges as indicated and a CPVC carbon chamber with three PVC refillable canisters with trap filter for granular carbon. The pump is magnetic-coupled, made of polypropylene. System, mounted

on a PVC base, includes -G3A pressure gauge on polypropylene gauge guard with EPDM diaphragm and CPVC air release valve. \* For PVC – change **CL** to **PL** in Model Number.

OPTIONAL	ADD TO MODEL	PRICE CODE NO.
Portable - addition of two wheels For Labmaster 20" & 30" models and Space-Saver -two fixed wheels, two swivel casters For Guardian	- P - P	O-0191 O-0454
Flow control valve on pump discharge ½" for Labmaster ¾" for Space-Saver, Guardian	-V1 -V1	O-CV12 O-0984
Motor starter with overload protection, push button, waterlight, Optional 3-phase (for all systems except Labmaster)	1 phase -ST4	O-MS1P O-MS3P
Operating voltage - under 1 HP, 3-phase motor (except Labmaster)	-	O-3PH
50 Hz operation - Consult Sales Dept.	-	-

<sup>1</sup> Design flow rates may vary, but the lower value offers the maximum adsorbency and the most efficient purification for each gallon processed.

<sup>2</sup> All motors are 115/230V/1/60, 3450 RPM and include 8 ft. of 3-wire cord and plug. Motors are wired for 115V operation, unless otherwise requested.

<sup>3</sup> (528P) canister includes 03U10U trap filter cartridge.

<sup>4</sup> Filter cartridges, carbon cartridges and bulk carbon must be ordered separately. To order: Filter cartridges, see Bulletin M-109 Carbon cartridges, see Bulletin M-109 Bulk carbon, see Bulletin R-102

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# ION EXCHANGE RESIN CHAMBERS and SYSTEMS

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R-201\_M

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- **For PRECIOUS METAL RECOVERY**

These resin systems can recover gold and other metals from plating operations easily and economically. Select the proper resin for gold recovery from acid or cyanide rinse water. Depth of resin column assures good solution contact for maximum metal recovery. Gold is recovered by incinerating the resin. Units have early payback; one cubic foot of resin can retain 70 to 100 troy ounces of gold.

- **For HEAVY METAL REMOVAL/RECOVERY**

Recover heavy metals from metal finishing rinse water and printed circuit board manufacturing. Effluent is suitable for discharge or bath replenishment. Concentrated regenerate can be chemically treated for disposal or possible recovery.

- **For WATER PURIFICATION**

Units provide high quality deionized water when filled with a strong base mixed-bed resin. Product water is low in dissolved solids, CO<sub>2</sub> and silica, with a resistivity of 10 megohms or higher. Resin has built-in resistance color indicator, changing from purple to golden brown to indicate resin exhaustion.

- **NON-METALLIC SOLUTION CONTACT**

- **MAGNETIC COUPLED PUMP (Systems)**

- **EASY SERVICING WITHOUT TOOLS**

### CONSTRUCTION

Chambers are available in translucent PVC, PVC, or fiberglass reinforced polyethylene shell, in sizes from 0.15 to 15 cubic feet of resin. Built-in strainers help prevent resin migration. Seal-less magnetic coupled pumps provide leak-proof operation with minimal maintenance. All systems are mounted on a base, ready to connect and operate.

### PLUS OPTIONAL . . .

**FLOW CONTROL VALVE** – For most effective exchange. Recommended to control flow through resin.

**RESIN CANISTER CHAMBER** – For convenient refill of resin. Trap filters are 30 micron depth wound cartridges.

### CHOICE of SYSTEMS – with or without PRE-FILTERS

Pre-filters are highly recommended to remove suspended solids that decrease resin capacity. Installed in-line upstream of the resin, filter can be ordered with the unit or installed separately. Must be sized according to dirt load and volume to be treated.



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**SYSTEMS**

**For precious metal recovery, heavy metal removal/recovery or purification of rinse water using standard resins.**

Systems are assembled with or without a pre-filter chamber (CPVC base & cover with translucent PVC shell) for depth wound cartridges as indicated, followed by a refillable resin chamber with CPVC cover and base and PVC (PL) shell or translucent PVC shell (PCL), with 250 micron polypropylene strainers to prevent resin migration.

To maintain an effective resin surface, these systems should be used in conjunction with suitable filtration systems to remove the bulk of solids from the solution being treated. The pre-filters offered on these systems are sized to hold only the solids which have not been removed by the main filter.

Filter cartridges<sup>2</sup> and resin<sup>3</sup> ordered separately

The pump is magnetic coupled, made of glass filled polypropylene. Systems include reinforced vinyl (PVC) hose, CPVC fittings and corrosion resistant base.

MODEL	FLOW RATE <sup>1</sup>	MAXIMUM FLOW RATE	MAX PSI	RESIN CHAMBER (cu. ft of resin) <sup>3</sup>	FILTER CHAMBER (recommended depth cartridge) <sup>2</sup>	HT. (in.)	TEFC MOTOR	SHIP. WT. (lbs.)	PRICE CODE NO.
	GPH								

**LABMASTER SYSTEMS FOR BULK RESIN - (A) without pre-filter and (B) with pre-filter**

(A) PCL430R 5/8V AAPSV	30	100	8	.15	--	41	1/12 HP 115V/1/50-60	37	0365 A
(B) PCL430R x PCL10 5/8V AAPSV					1 of 15U10U			45	0326 A

System is mounted on a PVC hooded base.

To order system with canister for resin, change **R** to **RC** in Model No. and add **C** to Price Code No.

**SPACE-SAVER SYSTEMS FOR BULK RESIN - (A) without pre-filter and (B) with pre-filter**

(A) PL630RS 3/4V BAPSV	72	480	13	.5	--	47	1/6 HP 115/230V/ 1/60	95	0383 C
(B) PL630RS x PCL20 3/4V BAPSV					2 of 15U10U			105	0380 D
(A) PCL630RS 3/4V BAPSV	72	480	13	.5	--	47	1/6 HP 115/230V/ 1/60	95	0384 A
(B) PCL630RS x PCL20 3/4V BAPSV					2 of 15U10U			105	0380 C

System is mounted on a PVC hooded base.

To order system with canister for resin, change **RS** to **RCS** in Model No. and add **C** to Price Code No.<sup>4</sup>

To order system with bag resin (one .5 cu. ft. bag), change **RS** to **RBS** in Model No. and add **B** to Price Code No.

**GUARDIAN SYSTEMS FOR BULK RESIN - (A) without pre-filter and (B) with pre-filter**

(A) PL1230RS 3/4V MPLCR 1A-C.5	400	1200	19	1.8	--	53	1/2 HP 115/230V/1/60	115	2705 B
(B) PL1230RS x PCL20 3/4V MPLCR 1A-C.5					2 of 15U10U			125	2706 B

System is mounted on a vinyl coated steel base.

To order system with canister for resin, change **RS** to **RCS** in Model No. and add **C** to Price Code No.<sup>4</sup>

To order system with bag resin (two .9 cu. ft. bags), change **RS** to **RBS** in Model No. and add **B** to Price Code No.

<sup>1</sup> Recommended flow rate for maximum metal recovery.

<sup>2</sup> See product bulletin to order filter cartridges.

<sup>3</sup> Refer to resin table on next page.

<sup>4</sup> With canister, total resin capacity will be half and flow rates will be lower.





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**OPTIONAL EQUIPMENT**

DESCRIPTION		FOR SYSTEM	Add to MODEL NO.	PRICE CODE NO.
Flow control valve	1/2" NPT 3/4" NPT	Labmaster, Space-Saver, Guardian	-V1	0981 0984
Motor starter w/overload protection, pushbutton, NEMA 4 watertight, 115V/1/50-60		Labmaster, Space-Saver, Guardian	-ST4	MS1P
Portable - two wheels		Space-Saver	-P	0378
Portable - two fixed wheels, two swivel casters		Guardian		0454
Priming chamber for 6 MRGR		Guardian	-PC4	PC4

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RESIN (initial and replacement)		1.0 cu. ft.*
		Price Code Number
For precious metal recovery	Alkaline Acid	1316 1322
For deionizing water, mixed bed resin	(DWI)	1328
See Bulletin R-208 for other resin selections		

\* To order .25 cu. fit. add .25 to Price Code Number  
To order .5 cu. ft. add .5 to Price Code Number

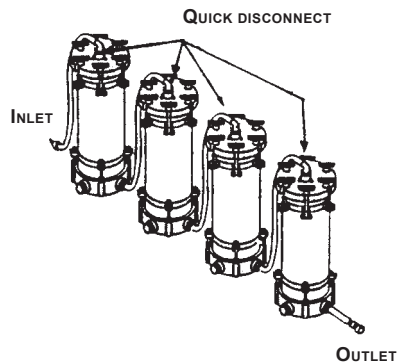
**CUSTOM ION EXCHANGE SYSTEMS**

This wide selection of resin chambers allows us to offer a variety of custom systems to meet most specific requirements and add to total resin volume for extended recovery.

All systems are connected with vinyl hose and quick disconnect couplings allowing individual chambers to be removed for regeneration without shutting down the system. All systems offer easy operation and service for exhausted resin.

Pre-selected models listed below are 4-chamber models. Systems can be ordered with 2, 3, 4 or more resin chambers in series or parallel to meet a wide range of required resin capacities and flow rates. Systems can be ordered with or without pump and on a square or rectangular base, all ordered separately - consult Sales Department.

Bag chambers available for either one .5 cu. ft. bag or two .9 cu. ft. bags. With the choice of additional chambers, the amount of cation versus anion resin can be adjusted as required.



**MODEL PL1230RS x 4 1V**

**Pre-selected 4-chamber models**

MODEL NUMBER	CU. FT. OF RESIN	PRICE CODE NO.
PL630RSx4 3/4V <sup>1</sup>	2	2860
PL640RSx4 3/4V <sup>1</sup>	2.4	2861
PL1230RSx4 1V <sup>1</sup>	7.2	2863
PL1250RSx4 1V	12.0	2864

<sup>1</sup> For bag resin chamber, change **RS** to **RBS** in Model No. and add **B** to Price Code No.  
For canister resin chamber, change **RS** to **RCS** in Model No. and add **C** to Price Code No.



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**ION EXCHANGE CHAMBERS**

**For in-line use with existing pressure piping (such as city water) or separate pump or recirculation, with pre-filter if required.**

**SERIES 'L' CHAMBER for bulk resin**

Chamber has CPVC base & cover with translucent PVC shell with ¾" NPT inlet and outlet ports, one 250 micron trap filter screen for use with bulk resin.

MODEL	INITIAL FLOW RATE <sup>1</sup> (GPH)	RESIN CAPAC. (cu. ft.)	SHIP WT. (lbs.)	PRICE CODE NUMBER
PCL30R-¾	30 - 100	.15	9	78-1633P

To order chamber with canister for resin, change **R** to **RC** in Model Number and add **C** to Price Code No.

For mounting bracket, add Price Code No. 44-3200 1.

**SERIES 'S' & 'G' CHAMBERS for bulk resin**

PVC chambers with three 250 micron screens for use with bulk resin. Series 'S' - ¾" hose inlet and 1" NPT outlet ports, Series 'G' - ¾" hose inlet and 1½" NPT outlet ports.

PCL630RS-1 <sup>2</sup>	100 - 480	.5	30	78-1637
PCL640RS-1 <sup>2</sup>		.7	50	78-1638
PL1230RSIO-1½-G3A	200 - 480	1.8	90	78-1943P
PL1250RSIO-1½-G3A		3.0	100	78-1945P

<sup>1</sup> Flow rates may vary as indicated. The lower value is maximum capacity for the most efficient recovery from each gallon processed.

<sup>2</sup> For bag resin chamber, change **RS** to **RBS** in Model No. and add **B** to Price Code No.

For canister resin chamber, change **RS** to **RCS** in Model Number and add **C** to Price Code No.

**NOTE:** With canister, total resin capacity will be half and flow rates will be lower.

**SERIES 'GR' CHAMBERS for bulk resin**

These economical and durable chambers are manufactured from high density polyethylene and fiberglass reinforced for superior strength. One-piece construction is one third the weight of steel and will not corrode or leak. Smaller chambers have molded polypropylene bases. Models GR2472 and GR3072 have heavy duty bases. Chambers are NSF approved. Maximum operating pressure: 150 PSI @ 120°F.

MODEL / CONNS.	TANK CAPACITY (cu. ft.)	NOM. DIMENSIONS DIA. x HEIGHT (inches)	SHIPPING WEIGHT (lbs.)	RESIN CAPACITY <sup>3</sup> (cu. ft.)		FLOW RATE <sup>4</sup> (GPM)	PRICE CODE NUMBER
				50% EXP.	20% EXP.		
GR1252-¾	2.9	12.0 x 52.2	27	1.5	2.3	1.5 - 11.5	78-1336
GR1354-¾	3.7	13.0 x 54.3	30	1.8	3.0	1.8 - 15.0	78-1337
GR1465-1	5.5	14.3 x 65.4	42	2.25	4.4	2 - 22	78-1338
GR1665-1	6.5	16.0 x 65.4	45	3.25	5.2	3 - 25	78-1339
GR2472-2	10	24 x 81.8	195	5	8	5 - 40	78-1340
GR3072-2	15	30 x 83.5	272	7.5	12	7.5 - 60	78-1341

Trap screen: ABS .013" wide slot on all models.

<sup>3</sup> 50% expansion of bed for backwash / regeneration. See specification sheet for resin to be used.

20% expansion for swelling for non-regeneration system. See individual resin specification sheet.

<sup>4</sup> Based on 1 - 5 GPM/cu. ft. of resin. See individual resin specification sheet.

**BULK RESIN MUST BE ORDERED SEPARATELY. SEE PREVIOUS PAGE AND BULLETIN R-208.  
ALL ION EXCHANGE CHAMBERS / SYSTEMS CAN BE USED WITH GRANULAR CARBON.  
SEE BULLETIN R-103 FOR ADDITIONAL CARBON PURIFICATION CHAMBERS.**



# ION EXCHANGE RESINS

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**For: High purity water / Precious metal recovery**  
**Recirculated rinses / Waste treatment**  
**Heavy metal removal**

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## MIXED BED RESIN

FOR MAKE-UP WATER AND RECIRCULATED RINSES **Mixedbed resin** is designed for use in a single column or multiple columns in series to provide water to a 20,000 ohm endpoint (25 ppm). Average quality less than 0.1 ppm prior to breakthrough. Use to demineralize make-up water such as for plating and EDM.

When used in recirculating rinses, the estimated capacity per cu. ft. is 470,000 divided by the MMHOS or 235,000 divided by ppm TDS.

When regenerated and reused, the capacity will only be 50 to 70% of the virgin resin.

**Specialty blended resin** for pure recirculation of EDM systems.

DESCRIPTION	TYPE	PART NO. *
Mixed bed resin	MB400	1328
Mixed bed resin w/indicator dye	MB400IND	1328D

Provides maximum capacity for metallic ions. Not recommended for raw make-up water. Requires monitoring with a conductivity meter.

For gold and silver recovery from rinse water.

<b>Specialty blended resin for EDM recirc. systems</b>	MB378	1306
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## ANION RESINS

Can hold as much as 120 ounces per cu. ft., but is typically used up to only 50 to 75% of capacity.

Silver photographic solutions can be regenerated in a two-step operation using dilute sulfuric acid and a tap water rinse which causes the silver to precipitate in the resin. After up to 10 cycles the silver is recovered by incineration.

An anion resin in the OH<sup>-</sup> form, maintains a high pH and helps prevent formation of hydrogen cyanide gas. Capacity for gold is

<b>Resin for acid gold recovery and silver recovery from photographic solution</b>	A600	1322
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100 ounces per cu. ft. maximum. This anion resin is also used in two-step demineralization systems with the cation resin in the hydrogen form.

Supplied in the sodium form, will remove heavy metals from rinse waters for discharge. It will also remove calcium and

<b>Resin for alkaline gold or silver recovery</b>	A600OH	1316
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## CATION RESINS

magnesium which will reduce its capacity for copper, nickel, trivalent chromium. We suggest the use of softened rinse water. Same function as the sodium form, but the discharge will be acidic. The cation resin in the hydrogen form is used

DESCRIPTION	TYPE	PART NO. *
Sodium form	C100E	1375

with the anion resin in the OH<sup>-</sup> form (A600-OH) in two-step demineralization processes.

**Specific ion resins** have the capacity to remove specific types of metals from waste streams in the presence of other

Hydrogen form	C100H	1376
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## SPECIFIC ION RESINS

ions that would normally exhaust the resin. This ability allows the treatment of much larger volumes than with ordinary non-specific resins. Consult the Sales Department for specific details.

\* Price per cubic foot.

Consult Sales Department for quantity pricing

<b>Heavy metals removal copper, nickel, chrome, zinc, lead as cations at pH's 5 and below.</b>	S930	1307
<b>Precious metal removal from acid streams including aqua regia at pH 0-6, non-regenerable. Also for mercury removal as cation or anion</b>	S920	1309
<b>Heavy metal removal from waste streams.</b>	S950	1310

and special packaging.

To order .5 cu. ft. bag - add **.5B** to Part No.  
 To order .9 cu. ft. bag - add **.9B** to Part No.





# COALESCING SYSTEMS

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## LIQUID / LIQUID SEPARATION

### COMPACT, ECONOMICAL LIQUID SEPARATION SYSTEMS FOR USE WITH NON-EMULSIFIED SOLUTIONS UP TO 150°F.

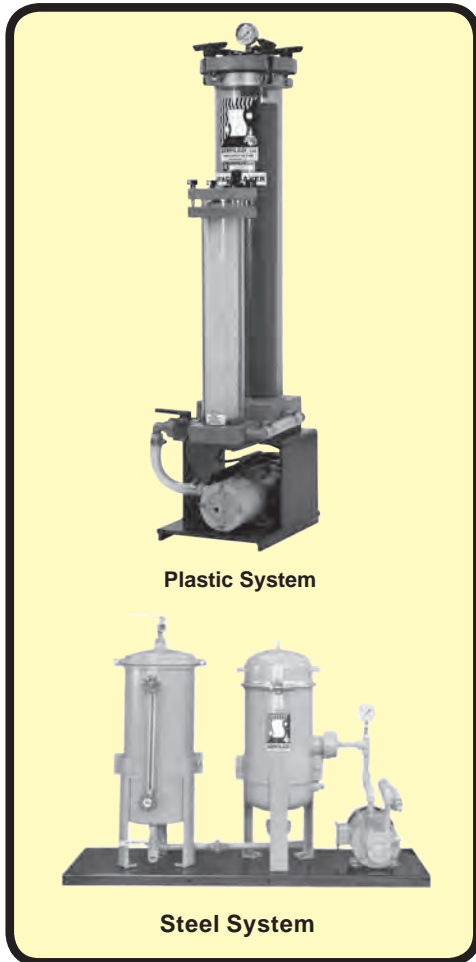
**SERFILCO Coalescing Systems** are compact, economical, and simple to operate. Remove oils from rinse waters, cleaning solutions, plating solutions or waste effluents. Separate water or tramp oil from hydraulic fluids and machining coolants.

Highly effective systems pump, prefilter and separate non-emulsified fluids having a .09 or greater difference in specific gravity. Solution is pumped through prefilter, then coalescing element where small droplets are held until large enough to float to top of coalescing chamber. Light phase is discharged from top of coalescing chamber, heavy phase is discharged from bottom of coalescing chamber. Unwanted phase is periodically bled off via manual flow control valve. Purified solution is directed back to tank or reservoir for re-use. Recovered effluent contains less than 10 ppm of the discontinuous phase. Carbon purification may be used to polish.

Standard coalescing systems include pump, \* prefilter and coalescing chamber with manual light and heavy phase discharge valves. Prefilter media of 5 to 10 micron is required to protect coalescing element. Selecting a system with greater prefilter capacity will reduce prefilter cartridge and coalescing element consumption. If properly protected, coalescing element has indefinite life. Coalescing of fluids with excessive particulate loading is best accomplished when solution is first clarified with separate filtration system.

*\* Standard pumps are low shear positive displacement: flexible impeller, rotary gear or diaphragm. These pumps minimize emulsification in pump head and have self-priming capabilities. For removal of floating or light phase, pump suction must be connected to overflow weir or optional skimmer assembly. For removal of heavy phase solution, suction connection near tank bottom is recommended.*

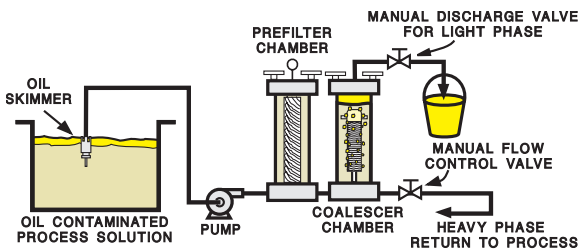
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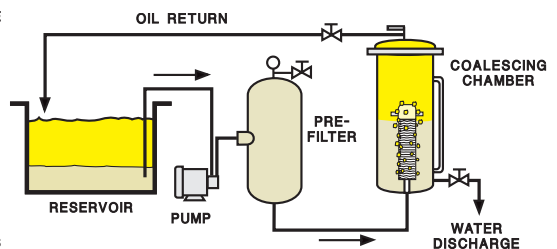
Plastic System

Steel System

### OIL SEPARATION FROM AQUEOUS RESERVOIR



### WATER SEPARATION FROM OIL RESERVOIR





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Plastic coalescing system are best suited for separation of oil from aqueous based solutions. Non-metallic solution contact allows a wide range of chemical compatibility.

**Plastic Coalescing systems include:**

- Plastic prefilter chamber and coalescer with EPDM gaskets
- Light and heavy phase discharge valves on coalescer
- Corrosion resistant mounting base
- 10 ft. suction and discharge hoses

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**AIR OPERATED PLASTIC COALESCING SYSTEMS**

- Polypropylene air operated diaphragm pump with Teflon® internals
- Air pressure regulator
- Pump will run dry and self primes to 10 ft.

FLOW		SYSTEM	SCFM @ PSI	PUMP	PREFILTER <sup>1</sup>		COALESCER <sup>1</sup>		DIMENSIONS L x W x H Inches	SHIPPING WEIGHT Lbs.
GPH @ 60 Hz	LPH @ 50 Hz				MEDIA/ CHAMBER SERIES	MATERIALS OF CONST. BASE / SHELL	MEDIA / CHAMBER	MATERIALS OF CONST. BASE / SHELL		
300	1363	S-1386A	2 @ 40	PPTF½"	1-20" / L	PVC/clear PVC	1-2.5"x10" / L	PVC/clear PVC	19" x 10" x 33"	70
300	1363	S-1387	2 @ 40	PPTF½"	1-20" / L	polypropylene	1-2.5"x10" / L	polypropylene	19" x 10" x 33"	70
600	2271	S-1388	10 @ 40	PPTF1"	3-10" / S	polypropylene	1-2.5"x10" / S	PP/clear PVC	29" x 10" x 33"	80
600	2271	S-1389	10 @ 40	PPTF1"	3-10" / S	polypropylene	1-2.5"x10" / S	polypropylene	29" x 10" x 33"	80
600	2271	S-1390	10 @ 40	PPTF1"	3-20" / S	polypropylene	1-2.5"x10" / S	polypropylene	29" x 10" x 33"	90
1500	5678	S-391	30 @ 80	PPTF1"	3-20" / S	polypropylene	1-6"x11" / G	polypropylene	33" x 18" x 33"	100
1500	4578	S-1392	30 @ 80	PPTF1"	3-30" / S	polypropylene	1-6"x11" / G	polypropylene	33" x 18" x 43"	100

**ELECTRIC OPERATED PLASTIC COALESCING SYSTEMS**

- Epoxy pump with Buna-N Flexiable impeller - limited dry run capability
- Pump will self prime to 5 feet when wetted
- 115V/1/60, TEFC, 1725 RPM motor with- 8 ft. of 3-wire cord and plug

FLOW		SYSTEM NUMBER	PUMP HP, MODEL	PREFILTER <sup>1</sup>		COALESCER <sup>1</sup>		DIMENSIONS L x W x H Inches	SHIPPING WEIGHT Lbs.
GPH @ 60 Hz	LPH @ 50 Hz			MEDIA/ CHAMBER SERIES	MATERIALS OF CONST. BASE / SHELL	MEDIA / CHAMBER	MATERIALS OF CONST. BASE / SHELL		
300	945	S-1394	1/3, 1/2 JPH	1-20" / L	polypropylene	1-2.5"x10" / L	polypropylene	14" x 10" x 33"	85
600	1890	S-1395	1/2, 3/4 JENH	3-10" / S	polypropylene	1-2.5"x10" / S	PP/clear PVC	24" x 10" x 33"	95
600	1890	S-1396	1/2, 3/4 JENH	3-10" / S	polypropylene	1-2.5"x10" / S	polypropylene	24" x 10" x 33"	95
600	1890	S-1397	1/2, 3/4 JENH	3-20" / S	polypropylene	1-2.5"x10" / S	polypropylene	24" x 10" x 33"	105
1500	4725	S-1398	1, 1 JEESNH	3-20" / S	polypropylene	1-6"x11" / G	polypropylene	50" x 18" x 33"	115
1500	4725	S-1399	1, 1 JEESNH	3-30" / S	polypropylene	1-6"x11" / G	polypropylene	50" x 18" x 43"	115

<sup>1</sup> Filter media and coalescing media ordered separately. See page 4.



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Metal coalescing systems are best suited for removing oil from synthetic machining fluids, oils from alkaline solutions or trace water from petroleum base fluids.

**Metal Coalescing systems include:**

- Metallic prefilter chamber and coalescer with Buna-N gaskets
- Light and heavy phase discharge valves on coalescer
- Sight glass on coalescer
- Corrosion resistant mounting base
- 10 ft. suction and discharge hoses

**AIR OPERATED METAL COALESCING SYSTEMS**

- Polypropylene air operated diaphragm pump with Teflon® interals
- Pump will run dry and self prime to 10 ft.
- Air pressure regulator

**STEEL**

FLOW		SYSTEM NUMBER	SCFM @ PSI	PUMP	PREFILTER <sup>1</sup>		COALESCER <sup>1</sup>		DIMENSIONS L x W x H Inches	SHIPPING WEIGHT Lbs.
GPH @ 60 Hz	LPH @ 50 Hz				MEDIA	MATERIALS OF CONST.	MEDIA	MATERIALS OF CONST.		
480	1363	S-1283	5 @ 50	PPTF½"	5-10"	carbon steel	1-4" x 11"	carbon steel	42" x 13" x 37"	150
480	2271	S-1284	5 @ 50	PPTF½"	5-20"	carbon steel	1-4" x 11"	carbon steel	42" x 13" x 37"	160
600	5678	S-1285	10 @ 40	PPTF1"	5-30"	carbon steel	1-4" x 11"	carbon steel	42" x 13" x 37"	170

**STAINLESS STEEL**

FLOW		SYSTEM NUMBER	SCFM @ PSI	PUMP	PREFILTER <sup>1</sup>		COALESCER <sup>1</sup>		DIMENSIONS L x W x H Inches	WEIGHT Lbs.
GPH @ 60 Hz	LPH @ 50 Hz				MEDIA	MATERIALS OF CONST.	MEDIA	MATERIALS OF CONST.		
480	1363	S-1286A	5 @ 50	PPTF1/2"	5 - 10"	304 stainless steel	5-2.5"x10"	304 stainless steel	42" x 13" x 37"	155
480	2271	S-1287A	5 @ 50	PPTF1/2"	5 - 20"	304 stainless steel	5-2.5"x10"	304 stainless steel	42" x 13" x 37"	165
600	5678	S-1288A	10 @ 40	PPTF1"	5 - 30"	304 stainless steel	5-2.5"x10"	304 stainless steel	42" x 13" x 37"	175

**ELECTRIC OPERATED METAL COALESCING SYSTEMS**

- Cast iron or 316 stainless steel gear pump - best suited for fluid having lubricity and low particle load
- Pump will self prime to 10 ft.
- 115V/1/60, TEFC, 1725 RPM motor with 8 ft of 3-wire cord and plug

**STEEL**

FLOW		SYSTEM NUMBER	PUMP HP, MODEL	PREFILTER <sup>1</sup>		COALESCER <sup>1</sup>		DIMENSIONS L x W x H Inches	WEIGHT Lbs.
GPH @ 60 Hz	LPH @ 50 Hz			MEDIA	MATERIALS OF CONST.	MEDIA	MATERIALS OF CONST.		
180	567	S-1277	1/3, TS3	5 - 10"	carbon steel	1-4"x11"	carbon steel	42" x 13" x 37"	175
360	1134	S-1278	1/2, TS6	5 - 20"	carbon steel	1-4"x11"	carbon steel	42" x 13" x 37"	195
540	1701	S-1279	1, TS9	5 - 30"	carbon steel	1-4"x11"	carbon steel	42" x 13" x 37"	215

**STAINLESS STEEL**

FLOW		SYSTEM NUMBER	PUMP HP, MODEL	PREFILTER <sup>1</sup>		COALESCER <sup>1</sup>		DIMENSIONS L x W x H Inches	SHIPPING WEIGHT Lbs.
GPH @ 60 Hz	LPH @ 50 Hz			MEDIA	MATERIALS OF CONST.	MEDIA	MATERIALS OF CONST.		
180	567	S-1433A	1/2, TSS3	5-10"	304 stainless steel	5-2.5"x10"	304 stainless steel	42" x 13" x 37"	200
300	945	S-1434A	3/4, TSS5	5-20"	304 stainless steel	5-2.5"x10"	304 stainless steel	42" x 13" x 37"	225

<sup>1</sup> Filter media and coalescing media ordered separately. See page 4.



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**PREFILTER MEDIA**

MICRON	MEDIA	LENGTH (Inches)	CORE	PRICE CODE NO.
5	polypropylene	10	polypropylene	05U10U
5	polypropylene	20	polypropylene	05U20U
5	polypropylene	30	polypropylene	05U30U
10	polypropylene	10	polypropylene	10U10U
10	polypropylene	20	polypropylene	10U20U
10	polypropylene	30	polypropylene	10U30U
5	bleached cotton	10	tinned steel	05C10T
5	bleached cotton	20	tinned steel	05C20T
5	bleached cotton	30	tinned steel	05C30T
10	bleached cotton	10	tinned steel	10C10T
10	bleached cotton	20	tinned steel	10C20T
10	bleached cotton	30	tinned steel	10C30T

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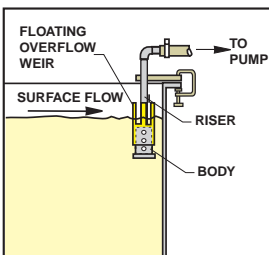
**COALESCING MEDIA**

MODEL	MATERIAL DESCRIPTION Media, Core, End Caps*	DIMENSIONS I.D. x O.D. x Length	PRICE CODE NUMBER
K2.5 x 10N K2.5 x 10P K2.5 x 10G	Nylon, polypropylene, EPDM Polypropylene, polypropylene, EPDM Glass, polypropylene, EPDM	1" x 2.5" x 10"	88-3245 88-3246 88-3247
K4 x 11N K4 x 11P K4 x 11G	Nylon, 304 stainless steel, Buna-N Polypropylene, 304 stainless steel, Buna-N Glass, 304 stainless steel, Buna-N	1.8" x 4" x 11"	88-3248 88-3249 88-3250
K6 x 11NPP	Nylon, Polypropylene, Buna-N	3" x 6" x 11"	88-0816

\* Viton® end caps (4 x 11 size only). Minimum order carton quantity. Add -V to Model and Price Code Number.  
Note: Carton quantity: 25 of 10", 10 of 11".

**SKIMMER ASSEMBLY**

Connect to pump suction to skim floating oils or debris. Constructed of polypropylene and CPVC.



MODEL NUMBER	LIQUID LEVEL DIFFERENTIAL	SKIM RATE GPH	INLET / OUTLET **		INLET LENGTH	RISER LENGTH	BRACKET 1/2" THICK	PRICE CODE NO.
			PIPE	PORT				
SK 1/2	2"	to 300	1/2"	3/8"	15"	13"	4" x 2"	99-0479
SK 3/4	3"	to 600	3/4"	1/2"	18"	18"	4" x 2"	99-0498
SK 1	4"	to 900	1"	3/4"	18"	18"	6" x 2"	99-0480

To select skimmer: 1. Determine tank liquid level differential. This will minimize dry pump operation.  
2. Use skim rate as guideline for sizing.

\*\* SK 1/2 to SK 1 have NPT inlet and hose adapter outlet, "C" clamp, hose clamp, lock screw and elbow hose adapter.  
- Consult Sales Dept. for other skimmer sizes.

**OPTIONAL**

DESCRIPTION	PRICE CODE NO.
Motor starter Model -ST4	0-MS1P
Portable - 2 wheels and 2 legs on standard mounting base (metal & plastic systems)	0-0191
Sight glass for 1500 GPH coalescing chamber	0-1435
Viton® chamber elastomers / Viton impeller (J-pumps)	Add -V to System No.



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## SKIM-DISC



### CONTINUOUSLY REMOVES OILS, GREASE AND FLOATING CONTAMINANTS FROM WATER, COOLANTS, CLEANERS AND OTHER AQUEOUS SOLUTIONS

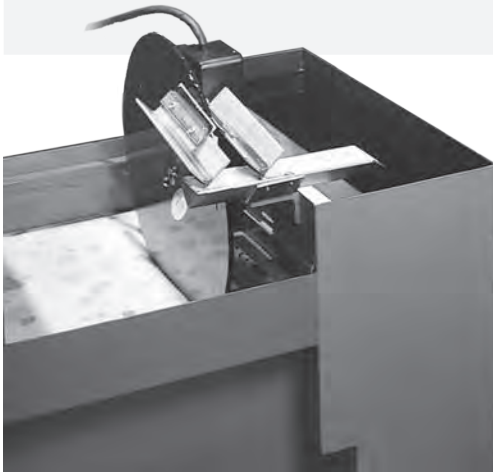
- Skim rate - 1.5 GPH
- Phenolic or stainless steel disc  
For temperatures to 180°F
- Lightweight, easy to install, trouble free

#### ***BENEFITS***

- Maintains solution surface free of oil
- Extends life of primary solution
- Less cleaning of piece parts
- Simplifies reclamation and disposal  
Collected oil can be sold, burned or filtered and reused

The **SERFILCO Skim-Disc** is an inexpensive investment when compared with fluid costs, maintenance costs and process effectiveness. The equipment pays for itself in a very short time. For ease of operation and cost effectiveness SERFILCO oil skimmers outperform other methods.

Oil adheres to the slowly rotating disc and is automatically channeled by stationary wiper blades in a collector trough. The Skim-Disc with phenolic disc is ideal for machine tool coolants or other nonaggressive fluids at temperatures below 150° F. The Skim-Disc with stainless steel disc is good to 180°F. With few moving parts, SERFILCO Skim-Disc is easy to install maintain, and simple to operate.



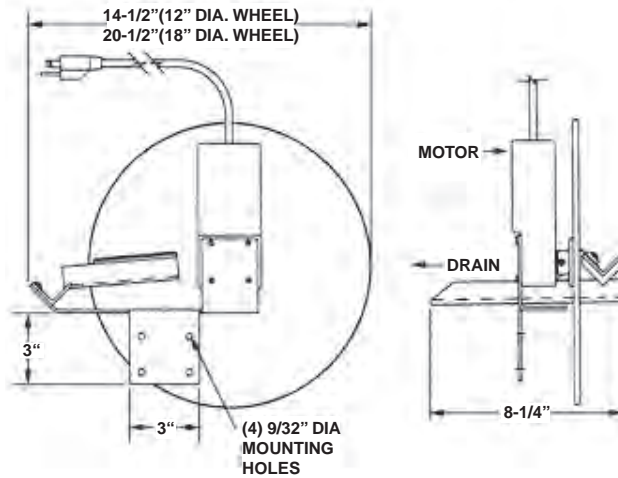
#### ***INSTALLATION***

- Mount the unit with 2-3 inches of the wheel in the fluid.
- Mount in a safe area and protect from spraying fluids.
- A ground fault circuit interrupt device and proper grounding are required for electrical installation.
- Run when oil is floating on the surface. The best time maybe during downtime when the fluid is motionless.





**SKIM-DISC**



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**TO ORDER, use Price Code Number**

**SKIM-DISC**

MODEL	DISC MATERIAL	DISC DIAMETER	SHIPPING WEIGHT	PRICE CODE NO.
SD12 - PH	phenolic	12"	12 lbs	99-0470
SD18 - PH		18"	15 lbs	99-0471
SD12 - SS	stainless steel	12"	13 lbs	99-0468
SD18 - SS		18"	16 lbs	99-0469

Note: Standard voltage is 115V/1/60.  
For 220V/1/50, add -5 to Model and Price Code No.



## **DEPTH WOUND FILTER CARTRIDGES**

MAXI-DEPTH, MAXI-WIND, HI-PERF, PUREFYBE and VALUWOUND filter cartridges offer true depth filtration. Wound cartridges are manufactured to provide selective particle retention throughout the media's depth which translates to high solids retention and longer service life with relatively low pressure drop.

## **MELT BONDED FILTER CARTRIDGES**

POLYSPUN melt bonded filter cartridges are manufactured from continuous fibers thermally bonded and spun over a heated mandrel. Controlled graded density construction provides true depth filtration. These cartridges are free of resins, lubricants and antistatic agents; they are non-migrating and suitable for high purity applications.

## **PLEATED FILTER CARTRIDGES**

POLYSERF pleated filter cartridges are manufactured of continuous polypropylene microfibers self-bonded by a unique process that controls media uniformity and density. They provide large surface area for efficient particle removal with very low pressure drops. These cartridges are also free of resins, binders or surfactants for high purity applications.

## **SLEEVE-TYPE FILTER CARTRIDGES**

SERFILCO sleeve-type filter cartridges may be used uncoated or precoated with filter aid. Sleeve cartridges are interchangeable with any regular cartridge of corresponding length. They are re-usable for economical operation and, therefore, minimize disposal costs.

## **BAG FILTERS**

A Bag Filter is shaped like a bag or sack with only the top side open. The bag filter is made of a variety of materials including needled felt and polypropylene, just to name a few. Flow is from inside through the porous material to the outside. Bag filters are available in a variety of micron ratings from 5 to 100. Bag filters are best used to capture large contaminates, or applications with high contaminate loading. One of the best applications for bag filters is ahead of cartridge filters reducing the loading and increasing life.

## **ROLL FILTER MEDIA**

Roll filter media is used by a wide variety of high solid loading, gravity flow, filtration machinery. Generally these are automatic indexing continuous operation filtration machines that use rolls of filtering media. The roll filter media is available in a wide range of widths, lengths and materials such as polypropylene and polyester in nominal micron ratings from 1 to 125.



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SERFILCO offers a wide selection of filter cartridge styles, material selections and porosities to satisfy almost any filtration application in the metal finishing and electronics industries. They can be used with SERFILCO filter chambers and systems or as replacements for other single or multiple cartridge housings.

SERFILCO offers stock cartridges in minimum quantities. They are available for immediate delivery. To meet your annual needs, enter a blanket order with scheduled releases to earn the lowest quantity price, plus gain "just in time" delivery.

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## 7 REASONS FOR USING DEPTH FILTER CARTRIDGES

- 1 **TRUE DEPTH FILTRATION** - wound filter cartridges provide selective particle retention. They are manufactured to provide true depth filtration deficient filtering throughout the path of the fluid. Winding creates diamond-shaped openings that become progressively smaller toward the center tube, to trap progressively smaller particles. Large particles never reach small openings.
- 2 **LONGER SERVICE LIFE** – because the wound cartridge so successfully resists clogging, it's not uncommon for a set of cartridges to filter many millions of gallons of fluid before replacement. Fewer filter changes obviously save both labor and materials. More important is that production equipment is shut down less often for filter cartridge service. Such facts are important considerations in selecting the kind of filtration system you install.
- 3 **CHEMICAL AND TEMPERATURE COMPATIBILITY** – cartridge windings are made in a variety of materials – polypropylene, nylon, cotton, rayon, orlon and glass to name a few, and other materials on special order. Cores are of polypropylene, stainless steel or tinned steel as standard materials. Various materials also have different temperature tolerances. By selecting the right materials for your needs, you're assured of complete chemical and temperature compatibility.



- 4 **EASE OF SERVICE** – depth cartridges do not require highly trained personnel for service. Replacement can be done by almost anyone. On most filter chambers, a top cover is removed, old cartridges are lifted out and new ones are set in place. No solution is lost from the tank. Changing can be done much quicker than filters that use loose media.
- 5 **POLLUTION ABATEMENT** – cartridges present no liquid or wastewater pollution problem: spent cartridges are disposed of as solid waste. Where it is necessary to treat them for toxicity or to neutralize them, it can be done in place, with cartridges still in the chamber.
- 6 **WIDE CHOICE OF POROSITIES** – wound cartridges reject particles from as low as 0.5 micron to 100 micron. This wide range of porosities expands the customer's ability to tailor his filtration system to his specific need, to select exactly the right cartridge, whether for single pass filtration or recirculation filtration.
- 7 **MODULAR DESIGN** – most filter chambers designed for wound cartridges can accommodate several modular sizes of cartridges in diameters of 2.5 inches and standard lengths of 6, 10, 20, 30, and 40 inches. Thus, a chamber might be fitted with 36 10-inch cartridges, or 12 30-inch units, or a combination of more than one size. The choice is the customer's, based on economics and ease of changeover; but filtration efficiency is not impaired, regardless of cartridge size.



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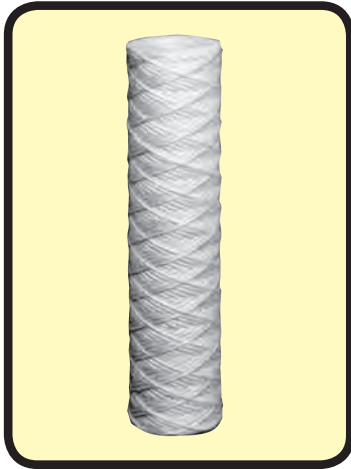
**POLYPROPYLENE W/ POLYPROPYLENE CORE**

**FEATURES**

- Full 2½" O.D. provides 3.5 square feet of filter area per 10" length
- Precision wound
- Micron accuracy tested
- Wide selection of media material, cartridge lengths and micron ratings
- Excellent chemical resistance (see TM-110)
- Fits any D.O.E. style vessel

**BENEFITS**

- Improve finished goods quality, and minimize maintenance and rework with longer continuous high-flow operation
- Save money with lower cost, high surface area
- Reduce inventory, get quantity discounts, and “just-in-time” scheduled releases, by placing blanket order



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MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
01U10U	1	10"	30
01U20U		20"	15
01U30U		30"	15
003U4U	3	4"	60
003U6U		6"	30
03U10U		10"	30
03U20U		20"	15
03U30U		30"	15
03U40U	40"	10	
005U4U	5	4"	60
05U10U		10"	30
05U20U		20"	15
05U30U		30"	15
05U40U		40"	10
010U4U	10	4"	60
010U6U		6"	30
10U10U		10"	30
10U20U		20"	15
10U30U		30"	15
015U4U	15	4"	60
015U6U		6"	30
15U10U		10"	30
15U20U		20"	15
15U30U		30"	15
15U40U		40"	10

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
20U10U	20	10"	30
20U20U		20"	15
20U30U		30"	15
030U4U	30	4"	60
030U6U		6"	30
30U10U		10"	30
30U20U		20"	15
30U30U		30"	15
50U10U	50	10"	30
50U20U		20"	15
50U30U		30"	15
50U40U		40"	10
75U10U	75	10"	30
75U20U		20"	15
75U30U		30"	15
99U10U	100	10"	30
99U20U		20"	15
99U30U		30"	15
99U40U		40"	10



**MAXI-DEPTH WOUND FILTER CARTRIDGES cont'd**

M-109\_N

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**BLEACHED COTTON w/ POLYPROPYLENE CORE**

Free of "sizing" and yarn "finish" substances.  
Meets FDA regulations for potable water.

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
001C4U	1	4"	60
001C6U		6"	30
01C10U		10"	30
01C20U		20"	15
01C30U		30"	15
003C6U	3	6"	30
03C10U		10"	30
03C20U		20"	15
03C30U		30"	15
03C40U		40"	10
05C10U	5	10"	30
05C20U		20"	15
05C30U		30"	15
010C6U	10	6"	30
10C10U		10"	30
10C20U		20"	15
10C30U		30"	15
015C4U	15	4"	60
015C6U		6"	30
15C10U		10"	30
15C20U		20"	15
15C30U		30"	15
15C40U		40"	10
20C10U	20	10"	30
20C20U		20"	15
20C30U		30"	15
030C6U	30	6"	30
30C10U		10"	30
30C20U		20"	15
30C30U		30"	15
50C10U	50	10"	30
50C20U		20"	15
50C30U		30"	15
50C40U		40"	10
75C10U	75	10"	30
75C20U		20"	15
75C30U		30"	15
99C10U	100	10"	30
99C20U		20"	15
99C30U		30"	15

**BLEACHED COTTON w/TINNED STEEL CORE**

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
05C10T	5	10"	30
10C10T	10		
15C10T	15		
30C10T	30		
50C10T	50		
75C10T	75		
99C10T	100		

**UNBLEACHED COTTON w/TINNED STEEL CORE**

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
05B10T	5	10"	30
05B20T		20"	15
05B30T		30"	15
15B10T	15	10"	30
15B20T		20"	15
15B30T		30"	15
30B10T	30	10"	30
30B20T		20"	15
30B30T		30"	15
50B10T	50	10"	30
50B20T		20"	15
50B30T		30"	15
99B10T	100	10"	30
99B20T		20"	15
99B30T		30"	15

Order in carton quantity

**MODEL NUMBER IDENTIFICATION**

Example of Model Number: **10 U 10 U C -ECS**

NOMINAL MICRON RATING	MEDIA MATERIAL	NOMINAL LENGTH	CORE MATERIAL	CORE COVER	EXTENDED CORE
1	B - Unbleached cotton	4 (3-7/8")	U - Polypropylene	None - No symbol	None - No symbol
3	C - Bleached cotton	6 (5-7/8")	S - 316SS	C - Cover compatible with media	ECU - Polypropylene
5	CU - Carbon & Polypropylene	8 (7-7/8")			
10	G - Glass fiber (Unbaked)	9.8 (9-3/4")	A - 304SS		
15	H - Hi-Perf Polyspun®	10 (10")			
20	K - Polyester	19.8 (19-3/4")	T - Tinned Steel	ECS - 316 SS	
30	N - Nylon	20 (20")			
50	O - Orlon®	29.8 (29-3/4")			
75		30 (30")			
99 (100)		40 (40")			EPS - One piece polypropylene spring & top seal

Orlon is a registered trademark of DuPont.





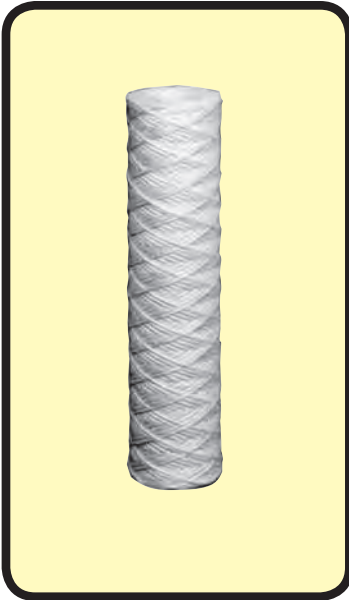
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**WATER / ACIDS / BASES**

New Valuwound cartridges offer high quality and value in a polypropylene depth filter. Designed for excellent chemical resistance and efficient long life particle removal, these cartridges are the perfect choice for a wide range of applications.

**FEATURES**

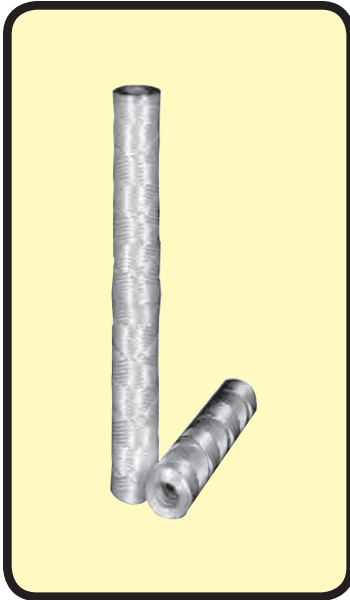
- High quality polypropylene — polypropylene core
- Precision wound
- Micron accuracy tested
- Available 1 - 100 micron rating
- Nominal 2<sup>3</sup>/<sub>8</sub>" O.D.
- Continuous molded cores in 10", 20", 30" or 40" lengths.
- Excellent temperature and chemical compatibility
- Economically priced



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MODEL	MICRON	NOMINAL LENGTH	CARTON QTY
1PP10	1	10	30
1PP20		20	15
1PP30		30	15
1PP40		40	10
3PP10	3	10	30
3PP20		20	15
3PP30		30	15
3PP40		40	10
5PP10	5	10	30
5PP20		20	15
5PP30		30	15
5PP40		40	10
10PP10	10	10	30
10PP20		20	15
10PP30		30	15
10PP40		40	10
15PP10	15	10	30
15PP20		20	15
15PP30		30	15
15PP40		40	10

MODEL	MICRON	NOMINAL LENGTH	CARTON QTY
20PP10	20	10	30
20PP20		20	15
20PP30		30	15
20PP40		40	10
30PP10	30	10	30
30PP20		20	15
30PP30		30	15
30PP40		40	10
50PP10	50	10	30
50PP20		20	15
50PP30		30	15
50PP40		40	10
75PP10	75	10	30
75PP20		20	15
75PP30		30	15
75PP40		40	10
100PP10	100	10	30
100PP20		20	15
100PP30		30	15
100PP40		40	10

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431**FREE OF EXTRACTABLES, LUBRICANTS,  
BINDERS, ANTI-STATIC AND SIZING AGENTS.****APPLICATIONS**

Plating Solutions	Photographics	D.I. & Tap Water
Electronics	PC Board Mfg.	Pharmaceuticals
Coatings	Chemicals	

- **100% Pure polypropylene**  
with polypropylene center core
- **Fibrillated fiber, organic-free, non-migrating**  
A smooth, firm filter media that can be reused
- **High temperature performance**  
Plating solutions and most chemicals to 200°F (93°C)  
(see chem. guide TM-110)
- **Length to fit any chamber**  
10", 20", and 30" x 2½" nominal O.D.
- **Selective depth filtration**

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Purefybe is an all polypropylene cartridge wound of fibers free of extractables. It is designed for filtration of electroforming, precious metals and all other plating solutions or applications requiring organic-free filter media. It is also recommended for gelatinous precipitates such

as iron and aluminum hydroxides which can be dissolved with acids. Enter a blanket order with scheduled releases to earn the lowest quantity price, plus gain **"Just in time"** delivery.

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
01P10U	1	10"	30
01P20U		20"	15
01P30U		30"	15
03P10U	3	10"	30
03P20U		20"	15
03P30U		30"	15
05P10U	5	10"	30
05P20U		20"	15
05P30U		30"	15
10P10U	10	10"	30
10P20U		20"	15
10P30U		30"	15

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
15P10U	15	10"	30
15P20U		20"	15
15P30U		30"	15
20P10U	20	10"	30
20P20U		20"	15
20P30U		30"	15
25P10U	25	10"	30
25P20U		20"	15
25P30U		30"	15
50P10U	50	10"	30
50P20U		20"	15
50P30U		30"	15
99P10U	100	10"	30
99P20U		20"	15
99P30U		30"	15

Order in carton quantity



## DEPTH WOUND FILTER CARTRIDGES cont'd

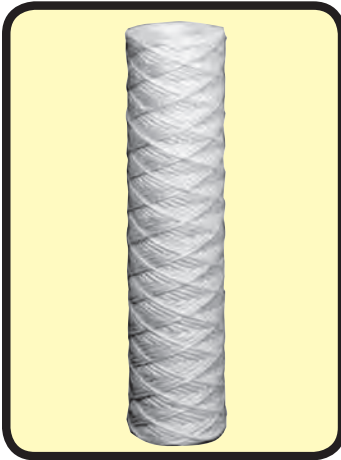
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## HI-PERF

## FOR CHROMIC / SULFURIC / NITRIC ACIDS

HI-PERF filter cartridges are constructed of proprietary materials which are specifically designed for chrome plating applications, nitric and sulfuric acid solutions. They are equally well suited for aggressive solvents and bases.



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MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY
05H10U	5	10	30
05H20U		20	15
05H30U		30	15
05H40U		40	10
15H10U	15	10	30
15H20U		20	15
15H30U		30	15
15H40U		40	10
30H10U	30	10	30
30H20U		20	15
30H30U		30	15
30H40U		40	10
50H10U	50	10	30
50H20U		20	15
50H30U		30	15
50H40U		40	10
99H10U	100	10	30
99H20U		20	15
99H30U		30	15
99H40U		40	10

## GLASS FIBER

These cartridges resist all strong oxidizing acids (except hydrofluoric). Especially suitable for hot chromic acid and chrome etch solutions. Glass fiber cartridges can be used at higher temperatures than any of the other fiber type filter media. Glass fiber offers the additional advantage of being impervious to highly corrosive agents. Cartridges are unbaked on a polypropylene core and include a woven glass fiber core cover. Max. 200°C).



2-1/2" nominal diameter

MODEL	MICRON RETENTION RATING	LENGTH	CARTON QTY
05G10UC	5	10	30
05G20UC		20	15
05G30UC		30	15
20G10UC	20	10	30
20G20UC		20	15
20G30UC		30	15

## HI-DENSITY COTTON and POLYPROPYLENE

## COTTON (.5 micron organic free)

Wound on a polypropylene core with a hemp core cover. Offers a 0.5 micron (nominal) retention. Free of sizing agents, it is ideal for ultra clean water for the electronics industry and many plating solutions. 1 GPM aqueous flow per 10" length @ 5 PSI pressure drop. (3.78 LPM @ .35 kg/cm<sup>2</sup>)



2-1/2" nominal diameter x 10"

MODEL	CARTON QTY
C0 5A10UH	30

## POLYPROPYLENE (.5 micron)

Wound on a corrosion resistant polypropylene core with a polypropylene core cover. Offers a 0.5 micron (nominal) retention. For efficient filtration of plating solutions for electronics. 1 GPM aqueous flow per 10" length @ 2 PSI pressure drop. (3.78 LPM @ .14 kg/cm<sup>2</sup>). 2-1/2" nominal O.D.

MODEL	LENGTH	CARTON QTY
U0.5A10UC	10	30
U0.5A20UC	20	15
U0.5A30UC	30	15

Order in carton quantity





# MAXI-WIND 4" DIAMETER FILTER CARTRIDGES

M-109\_N

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## 4" DIAMETER X 9¾" LONG

Maxi-Wind cartridges provide extended solids loading at greater efficiency. Their dirt holding capacity is equivalent to 10 square ft. (.93m<sup>2</sup>) of surface filtration. They are designed for maximum solids loading at a recommended flow rate of 10 U.S. GPM (38 LPM). For Model GPO10-1 filter chambers and replacement for original equipment cartridges.

### POLYPROPYLENE w/POLYPROPYLENE CORE For good chemical resistance

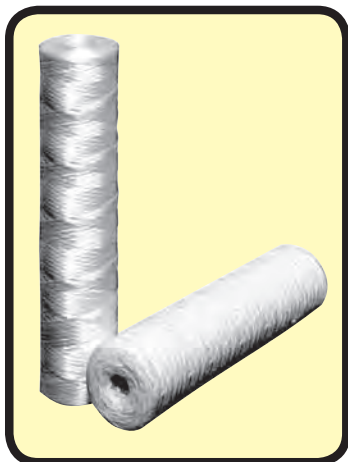
MODEL	MICRON RETENTION RATING	CARTON QTY *
0.5U9.8U4	.5	10
1U9.8U4	1	
5U9.8U4	5	
10U9.8U4	10	

\* Minimum order carton of 10.

### PUREFYBE® (Fibrillated polypropylene) w/POLYPROPYLENE CORE Wound of fibers free of "sizing" and yarn "finish" substances

MODEL	MICRON RETENTION RATING	CARTON QTY *
5P9.8U4	5	10
10P9.8U4	10	
25P9.8U4	25	
50P9.8U4	50	
99P9.8U4	100	

\* Minimum order carton of 10.



## 4" DIAMETER X 18" LONG

These cartridges provide a dirt holding capacity equivalent to 18 sq. ft. of surface filtration. They are designed for maximum solids loading at a recommended flow rate of 18 GPM (68 LPM). For Models (718), CB Filtration Chambers, and as replacement for original equipment cartridges.

### UNBLEACHED COTTON FOR OILS, SOLVENTS & SEMI-AQUEOUS CLEANERS

MODEL	MICRON RETENTION RATING	CARTON QTY *
1B18A4	1	5
3B18A4	3	
5B18A4	5	
10B18A4	10	
20B18A4	20	
30B18A4	30	

### POLYPROPYLENE FOR GOOD CHEMICAL RESISTANCE

MODEL	MICRON RETENTION RATING	CARTON QTY *
1U18A4	1	5
3U18A4	3	
5U18A4	5	
10U18A4	10	
20U18A4	20	
30U18A4	30	

\* Minimum order carton of 5.

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# CARTRIDGE ORDERING INFORMATION

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- Use Model Number to order.
- All cartridges sold in carton quantity only.
- For larger quantities, consult SERFILCO Sales Dept. for quantity pricing.
- Enter a blanket order with scheduled releases to earn the lowest quantity price, plus gain "Just in Time" delivery.
- Minimum order \$50.00
- F.O.B. shipping point
- Specifications subject to change without notice.

**TABLE A**

DEPTH CARTRIDGE PACKAGING				
LENGTH (in.)	4	6, 10	20, 30	40
CARTON QTY	60	30	15	10

## SUBSTITUTIONS AND ACCESSORIES, CORE COVER AND EXTENDED CORE

**TABLE B**

SUBSTITUTE CORE MATERIAL	
<b>TINNED STEEL - T TO:</b>	
S - 316SS	Replace the last letter "T" in the Model Number with "S", "A" or "U".
A - 304SS	
T - Polypro.	
<b>POLYPROPYLENE - U TO:</b>	
S - 316SS	Replace the last letter "U" in the Model Number with "S", "A" or "T".
A - 304SS	
T - Tinned Steel	

Consult Sales Dept. for other filter media, core materials, diameters, lengths, and micron ratings. See Table E below.

**TABLE C**

CORE COVER
Add "C" after core material letter in Model Number

**TABLE D**

EXTENDED CENTER CORE	
MATERIAL	ADD TO MODEL NO.
316SS	-ECS
Polypropylene	-ECU
One piece polypropylene spring & top seal	-EPS

Consult Sales Dept. for other filter media, core materials, diameters, lengths and micron ratings. See Table E below.

**TABLE E – MODEL NUMBER IDENTIFICATION**

Example of Model Number: 10 U 10 U C -ECS

NOMINAL MICRON RATING	MEDIA MATERIAL		NOMINAL LENGTH	CORE MATERIAL	CORE COVER	EXTENDED CORE
1	B - Unbleached cotton	P - Fibrillated polypropylene	4 (3-7/8")	U - Polypropylene	None - No symbol	None - No symbol
3	C - Bleached cotton	(Purefybe <sup>®</sup> )	6 (5-7/8")			
5	CU - Carbon & Polypropylene	R - Rayon	8 (7-7/8")	S - 316SS	C - Cover compatible with media	ECU - Polypropylene
10	G - Glass fiber (Unbaked)	U - Polypropylene (Wound & Polyspun <sup>®</sup> )	9.8 (9-3/4")			
15	H - Hi-Perf		10 (10")	A - 304SS		ECS - 316 SS
20	K - Polyester	W - Potable water polypropylene	19.8 (19-3/4")			
30	N - Nylon		20 (20")	T - Tinned Steel		EPS - One piece polypropylene spring & top seal
50	O - Orlon <sup>®</sup>		29.8 (29-3/4")			
75			30 (30")			
99 (100)		Orlon is a registered trademark of DuPont.	40 (40")			

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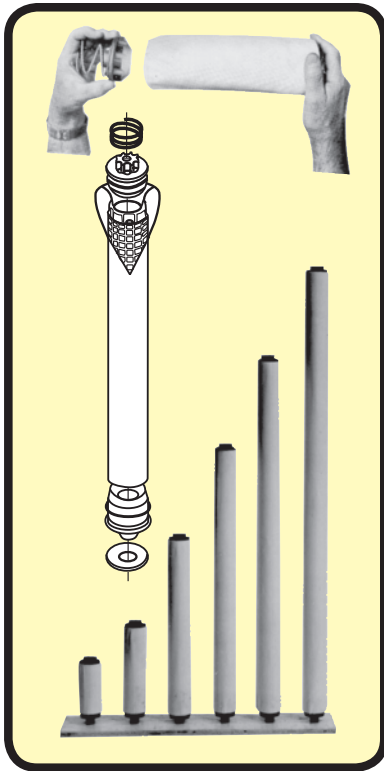
**ECONOMICAL ALTERNATIVE TO DISC-TYPE FILTER**

**FEATURES**

- **Interchangeable**  
Sleeve cartridges are interchangeable with any regular cartridge of corresponding length and diameter.
- **CPVC and polypropylene construction**
- **15 micron seamless sleeve**  
Designed for precoating with all types and grades of filter aid to provide a high quality filtrate; however, may also be used without precoat.
- **Easy to clean**
- **Reusable**

**BENEFITS**

- **Reduced operating costs**
- **Reduced disposal costs**



The SERFILCO Sleeve-Type Filter Cartridge may be used uncoated or with filter aid or filter aid with carbon. As the filters become dirt-laden, they may easily be backwashed, or the sleeves may be removed, rinsed or laundered and put back into service.

This unique design of filter cartridges will not only help reduce operating costs, but will simplify and speed up any pre-coat type filtration process.

Each filter cartridge consists of a polypropylene top and bottom seat, a polypropylene woven fabric sleeve, a polypropylene support mesh, a CPVC support column, EPDM "O"-rings and a vinyl coated spring to assure good sealing.

These filter cartridges can be quickly and easily assembled and re-assembled — no tools are required.

**CLEANABLE SLEEVE CARTRIDGES**

SLEEVE LENGTH X 2-1/2" DIA.	SURFACE AREA SQ. FT.	FOR CHAMBER STYLE		REPLACEMENT SLEEVE ONLY
		SINGLE COLUMN	MULTIPLE COLUMN	
		PRICE CODE NUMBER		
10"	0.6	99-0701	99-0704	88-0161 A
20"	1.2	99-0702	99-0705	88-0162 A
30"	1.8	99-0703	99-0706	88-0163 A
40"	2.4	99-0715	99-0707	88-0164 A
50"	3.0	—	99-0708	88-0165 A

OPTIONAL	DESCRIPTION	PRICE CODE NO.
	Viton® elastomers for sleeve assembly	O-VSL

TO ORDER: Use Price Code No.

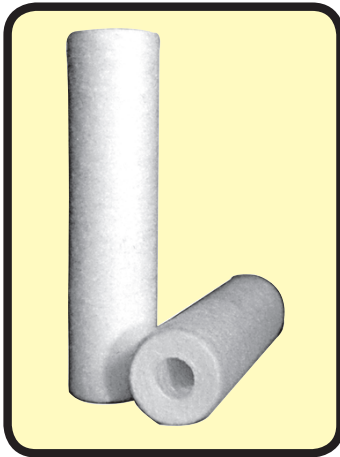
Viton is a registered trademark of DuPont Dow Elastomers.





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**15**



**FREE OF RESINS, LUBRICANTS, BINDERS & ANTI-STATIC AGENTS**

**APPLICATIONS**

Plating solutions / Potable water  
 Tap & D.I. water / Coatings  
 Electronics / Photographics  
 FDA Approved for food contact applications

- **100% Pure polypropylene**  
 Extruded for structural strength without center core
- **High temperature performance**  
 Plating solutions and most chemicals to 140°F (60°C)  
 Water to 212°F (100°C)
- **Unique fiber bonding**  
 Four to five hundred layers of melt-bonded polypropylene fiber
- **Length to fit any chamber** - 9.75", 10", 20", or 30"
- **Selective depth filtration** - 1, 5, 10, 20, 50 or 75 micron

SERFILCO POLYSPUN depth filter cartridges are individually packaged to provide 1 to 75 micron high purity filtration and an organic free, pure polypropylene media. Their outstanding

chemical resistance, fiber free melt-bonded media and excellent flow characteristics present a filter cartridge that meets the tough requirements of today's technology.

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY*
01U9.8	1	9.75	30
01U10		10	30
01U20		20	15
01U30		30	15
05U9.8	5	9.75	30
05U10		10	30
05U20		20	15
05U30		30	15
10U9.8	10	9.75	30
10U10		10	30
10U20		20	15
10U30		30	15

MODEL	MICRON RETENTION RATING	NOMINAL LENGTH	CARTON QTY*
20U10	20	10	30
20U20		20	15
20U30		30	15
30U10	30	10	30
30U20		20	15
30U30		30	15
50U10	50	10	30
50U20		20	15
50U30		30	15
75U10	75	10	30
75U20		20	15
75U30		30	15

MICRON	1	5	10	20	30-75
PRESSURE DROP (PSI) **	5	2	1	.7	.5

\*\* Aqueous flow at 5 U.S. GPM (19 LPM) per 10" length.

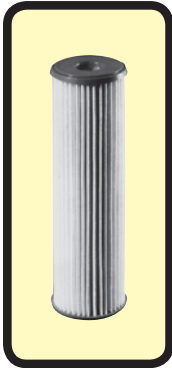
\* Order in carton quantity



# PLEATED FILTER CARTRIDGES

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## POLYESTER



### Cleanable, reusable in most applications:

This pleated polyester cartridge can be rinsed off and reused a number of times. Center core and end caps are PVC. The center core, end caps and media are all thermally bonded for long life in reusable applications up to 80 PSID. Good for pH 3 to 11. Flow rate is 10 U.S. GPM per 10" length @ 2.5 PSI (38 LPM @ .18 kg./cm<sup>2</sup>) pressure drop. Use at 35° to 160°F (0° to 71°C). 2¾" diameter x 9¾", 19½" or 29¼" long.

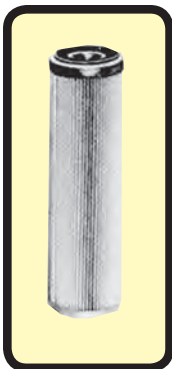
**Potable water / Process water  
Chemicals / Photographic  
Inks / Oils / Waste treatment**

- **High flow rates**  
to 10 U.S. GPM (38 LPM) per 10" length
- **Thermally bonded for long life**

MODEL	LENGTH	AREA	
		FT <sup>2</sup>	m <sup>2</sup>
PL-P_* x 9¾"	9¾"	4	.37
PL-P_* x 19½"	19½"	8	.74
PL-P_* x 29¼"	29¼"	12	1.1

\* Insert micron size desired — 1, 5, 20 or 50.  
End cap color code: Tan 1µ, white 5µ, blue 20µ, yellow 50µ. 24 cartridges/case.  
Minimum order 6 cartridges.

## MICROFIBERGLASS AND POLYESTER



### Large surface area for filtering:

This cartridge assures fine filtration and high flow rates. The media is constructed of microfiber glass and polyester (pleated for maximum area). The center core is available in glass fiber reinforced polypropylene or 304 stainless steel. End cap gaskets are Buna-N. Unique 3-layer construction gives pre-filtration plus inner mechanical strength. Use polypropylene core cartridges at temperatures up to 68°F (20°C), stainless steel core cartridges to 250°F (121°C). 2½" diameter.

**Chemicals / Cosmetics / Oils  
Magnetic coatings / Electronics  
Photographic / Pharmaceuticals**

MICRON RATING		WATER FLOW RATE PER 10" LENGTH			
NOM.	ABS.	@ .5 PSID (.035 kg/cm <sup>2</sup> D)		@ 1 PSID (.07 kg/cm <sup>2</sup> D)	
		U.S GPM	LPM	U.S GPM	LPM
.45	2	3	11	6	23

### Polypropylene Core

MODEL	MICRON	AREA		LENGTH
	NOM.	FT. <sup>2</sup>	m <sup>2</sup>	
PL-PG.45x10U	.45	8	.74	10"
PL-PG.45x20U		16	1.4	20"
PL-PG.45x30U		24	2.2	30"

### 304 Stainless Steel Core

MODEL	MICRON	AREA		LENGTH
	NOM.	FT. <sup>2</sup>	m <sup>2</sup>	
PL-PG.45x10S	.45	8	.74	10"
PL-PG.45x20S		16	1.4	20"
PL-PG.45x30S		24	2.2	30"

Minimum order 6 cartridges.



# TRI-PLEATED FILTER CARTRIDGE

300

M-207\_W

2900 MacArthur Blvd Northbrook, IL USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

Extended surface area for longer service life

## APPLICATIONS

**D. I. water**  
**Electronics**  
**Photographic**

**Food • Beverage**  
**Solvents**  
**Pharmaceuticals**

**Cosmetics**  
**R. O. pre-filter**  
**Plating solutions**

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## FEATURES

- **All polypropylene**  
with EPDM or Viton® elastomers
- **Chemical compatibility**  
including solvents, acids and bases
- **Nominal pore size**  
0.1, 0.45 and 1.0 micron
- **Absolute rated**  
1.0, 2.0 and 5.0 micron
- **Organic-free**  
no sizing or anti-static agents
- **Length: 10", 20", 30" or 40"**  
with double open end gaskets or  
single open end "O"-rings

All polypropylene filter cartridge constructed of ultra-fine diameter continuous filaments of polypropylene, formed into thermally bonded and pleated layers of filter media to provide particulate removal in the submicron range. Includes pleated pre-filter, end caps, center core and protective outer cage all of polypropylene. Cartridge is totally free of all sizing, anti-static agents and all organics. Standard end gaskets DOE (double open end) and 222 "O"-rings SOE (single open end) are ethylene propylene.\*\*

Maximum recommended operating temperature:

140°F @ 60 PSID (60°C @ 4.2 kg/cm<sup>2</sup>D)  
180°F @ 10 PSID (82°C @ .7 kg/cm<sup>2</sup>D)

Maximum recommended operating differential pressure:

60 PSID (4.2 kg/cm<sup>2</sup>D)

Cartridge is 2.7" diameter.

**TO ORDER** - Select rating, length and end seal.

MODEL		MICRON RATING		FILTER AREA		FLOW @ 1.0 PSID	
FLAT GASKETS DOE	222 "O"-RINGS SOE	NOM.	ABS.	PER 10" CARTRIDGE			
				FT. <sup>2</sup>	m <sup>2</sup>	GPM	LPM
PL-U.1x*_UL	PL-U.1x*_UL-2	0.1	1.0	4.3	.40	2.5	9.5
PL-U.45x*_UL	PL-U.45x*_UL-2	0.45	2.0	4.6	.43	9	34
PL-U1.0x*_UL	PL-U1.0x*_UL-2	1.0	5.0	4.9	.45	12	45

\* Length. Specify 10", 20", 30" or 40".

\*\* For Viton elastomers, substitute UV for UL in Model No.



# TRI-PLEATED FILTER CARTRIDGE

M-207\_W

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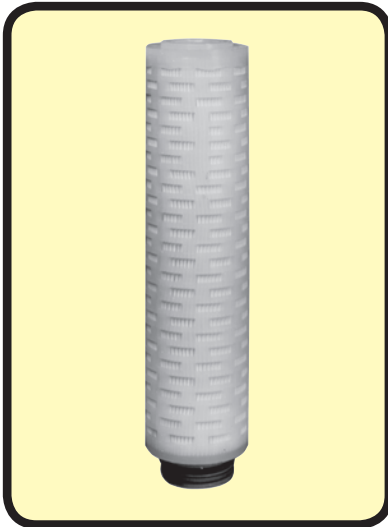
Polypropylene with polysulfone membrane

## APPLICATIONS

18 megohm D. I. water  
Electronics  
Pharmaceuticals

Food • Beverage  
Photographic  
Reagent grade chemicals

Distilled liquors  
Cosmetics  
R. O pr -filter



- **Chemical compatibility**  
including solvents, acids and bases
- **With EPDM or Viton® elastomers**
- **Absolute pore size**  
0.1, 0.2 and 0.45 micron
- **Preflushed with 18 megohm pyrogen-free water prior to shipment**
- **Length: 10", 20", 30" or 40"**  
with double open end gaskets or  
single open end "O"-rings

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A pleated polysulfone membrane whose pore size decreases gradually from 10 to 20 micron on the upstream side to the absolute rated 0.1, 0.2 or 0.45 micron on the downstream side. The membrane provides its own cast-in pre-filter to prevent premature loading and extend service life. Includes pleated polypropylene support and drainage layers, end caps, center core and protective outer cage. Cartridge is free of all organics and electrochemical bonding. Standard end gaskets (DOE) and 222 "O"-rings (SOE) are ethylene propylene.\*\*

Each 10" length has 5½ sq. ft. (.51 sq. m) of filter area and will hold more than 150 grams of Arizona fine test dust. Cartridge will withstand water at 200°F (93°C) for extended periods without degradation. Maximum recommended differential pressure, 50 PSID (3.5 kg/cm²D). Cartridge is 2.6" diameter.

**TO ORDER** - Select rating, length and end seal.

MODEL		ABSOLUTE MICRON RATING	FLOW PER 10" @ 1.0 PSID	
FLAT GASKETS DOE	222 "O"-RINGS SOE		GPM	LPM
PL-UPS.1x*UL	PL-UPS.1x*UL-2	0.1	2	7.6
PL-UPS.2x*UL	PL-UPS.2x*UL-2	0.2	4	15
PL-UPS.45x*UL	PL-UPS.45x*UL-2	0.45	6	23

\* Length. Specify 10", 20", 30" or 40".

\*\* For Viton elastomers, substitute **UV** for **UL** in Model No.

Viton is a registered trademark of  
**DuPont Dow Elastomers.**



# CARBON CARTRIDGES

M-305\_AB

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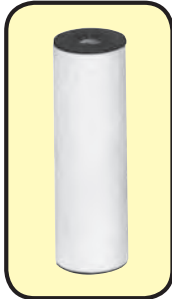
## FOR CHEMICALS / PLATING

### CARBONEX P

#### 3 IN 1 GRANULAR CARBON FILTER:

Porous polyethylene outer shell which serves as a 50 micron prefilter houses granular activated 99.5+% sulfur-free carbon and encases a 3 micron polypropylene wound polishing filter

on a polypropylene core. Maximum operating temperature 150°F (66°C). EPDM gaskets. Flow rate 2 U.S. GPM (8 LPM) per each 10" length.



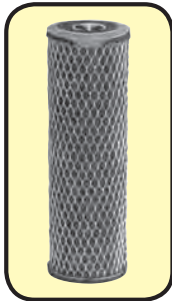
MODEL	WT. OF CARB	LENGTH	DIA.	CTN. QTY.
CU10P	7 oz.	10"	2-3/4"	25
CU20P	14 oz.	20"	2-3/4"	12
CU30P	21 oz.	30"	2-3/4"	12

### CARBO-FYNE P

#### POWDERED CARBON FILTER:

Cartridge contains high purity, pre-washed sulfur-free, pulverized activated carbon with 7 micron depth filtration for long life. All non-metallic with polyethylene end caps, polyolefin green net

and polypropylene core. Maximum operating temperature 150°F (66°C). For 3 U.S. GPM (11 LPM) continuous or 1.5 U.S. GPM (5.7 LPM) batch transfer treatment per each 10" length.



MODEL	WT. OF CARB	LENGTH	DIA.	CTN. QTY.
C4P	1.6 oz.	4"	2-3/4"	60
C6P	2.4 oz.	6"	2-3/4"	30
C9.8P	4 oz.	9.75"	2-5/8"	30
C10P	4 oz.	10"	2-3/4"	30
C20P	8 oz.	20"	2-3/4"	30
C30P	12 oz.	30"	2-3/4"	30

### CARBO-WIND P

#### 3 IN 1 GRANULAR CARBON FILTER:

Polypropylene outer winding serves as a 50 micron prefilter which houses granular activated 99.5+% sulfur-free carbon followed by a 3 micron polypropylene wound polishing filter

on a polypropylene core. Maximum operating temperature 200°F (93°C). Flow rate 2½ U.S. GPM (9.5 LPM) per each 10" length.



MODEL	WT. OF CARB	LENGTH	DIA.	CTN. QTY.
CU10UP	5 oz.	10"	2-3/4"	20
CU20UP	10 oz.	20"	2-3/4"	12
CU30UP	15 oz	30"	2-3/4"	12

MODEL	WT. OF CARB	LENGTH	DIA.	CTN. QTY.
CUR10UP	3 oz.	10"	2-1/2"	20
CUR20UP	6 oz.	20"	2-1/2"	12
CUR30UP	9 oz	30"	2-1/2"	12

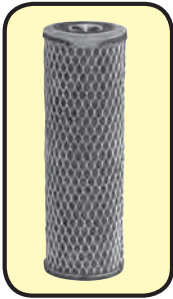




# CARBON CARTRIDGES PLATING

M-305\_AB

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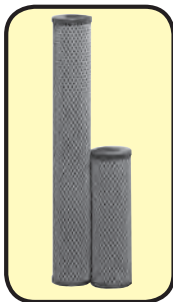
### CARBO-FYNE PE

### POWDERED CARBON FILTER ELECTRONICS:

Designed for purifying plating solutions used for electronics, memory discs, semi-conductors, etc. where solutions are to be free of organics and particles larger than two micron. All non-metallic with polyethylene end caps, polyolefin blue net

and polypropylene core. Cartridge contains high purity, pre-washed sulfur-free, pulverized activated carbon with 2 micron depth filtration for long life. Maximum operating temperature 150°F (66°C). Flow rate 1.5 U.S. GPM (5.7 LPM).

MODEL	WT. OF CARB	LENGTH	DIA.	CTN. QTY.
C10PE	6 oz.	10"	2-3/4"	30
C20PE	12 oz.	20"	2-3/4"	30



### MAXI-CARB PE

### POWDERED CARBON FILTER ELECTRONICS:

Constructed like Carbo-Fyne PE except oversized for maximum carbon capacity. May be installed in single or triple canister chambers

and are interchangeable in all SERFILCO carbon chambers which use the 528 & 548 refillable bulk granular carbon canisters.

MODEL	WT. OF CARB	LENGTH	DIA.	FLOW (GPM)	CTN. QTY.
C528PE	48 oz.	28"	5"	3 - 5	6
C548PE	90 oz.	48"	5"	5 - 7	6



### MINI-CANISTER P

### ABS/PVC/SARAN® CANISTER – FOR GRANULAR CARBON:

Features a twist-off end cap which permits easy filling with carbon or resin (not included). End cap screens retain contents. Maximum operating temperature is 160°F (71°C). Non-standard lengths available. Flow rates to 2 U.S. GPM (7.6 LPM) per each 10" length. For SERFILCO Series 'L' chambers (see C-105). To order Mini-Canister with CPVC 5/8" hose adapter add H.5 to Model Number, for 3/4" add H.75

MODEL	3" DIA. x LGTH	WT. OF CARB.
4ABS	4"	3 oz.
6ABS	6"	7 oz.
10ABS	10"	14 oz.
20ABS	20"	33 oz.
30ABS	30"	52 oz.
40ABS	40"	71 oz.

### GRANULAR ACTIVATED CARBON

#### COCONUT SHELL BASED

Steam activated for high absorption capacity

12 x 30 MESH STANDARD	LBS	PCN
	10	99-0997-10
	50	99-0997-50



# CARBON CARTRIDGES WATER

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## TASTE, ODOR, COLOR AND PARTICLE REMOVAL MATERIALS MEET FDA REGULATIONS FOR POTABLE WATER

### CARBONEX W

#### 3 IN 1 GRANULAR CARBON FILTER :

Contains extra high quality granular activated carbon designed to remove or substantially reduce chlorine and other chemicals, unpleasant tastes, odors and sediment from water. Three stage filtration: (1) 50 micron white polyethylene shell

prefilter; (2) activated carbon adsorption bed; (3) polypropylene 3 micron depth wound polishing filter on a polypropylene core. EPDM end gasket / caps. Flow rate 2 U.S. GPM (7.6 LPM) per each 10" length.

MODEL	WT. OF CARB.	LENGTH	DIA.	CTN. QTY.
CU9.8W	7 oz.	9 3/4"	2-3/4"	25
CU19.8W	14 oz.	19 3/4"	2-3/4"	12



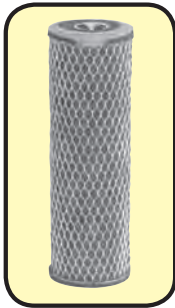
### CARBO-FYNE W

#### POWDERED CARBON FILTER:

Pre-washed, pulverized activated carbon, removes or substantially reduces chlorine taste and organic related odors and colors. The 10 micron retention assures turbidity-free water.

Polypropylene core with polyethylene end caps and polyolefin white net. Flow rate to 3 U.S. GPM (11 LPM) per each 10" length.

MODEL	WT. OF CARB.	LENGTH	DIA.	CTN. QTY.
C4W	1.6 oz.	4"	2-3/4"	60
C10W	4 oz.	10"	2-3/4"	30
C20W	8 oz.	20"	2-3/4"	30



### CARBO-WIND W

#### 3 IN 1 GRANULAR CARBON FILTER:

Provides one-step removal of sediment, chlorine, chemicals, unpleasant tastes and odor. The depth wound polypropylene prefilter is designed to give maximum sediment removal. It encases a bed of extra high quality granular activated carbon fol-

lowed by a 3 micron depth wound polishing filter on a polypropylene core. Maximum operating temperature 200oF (93oC). Flow rate 2½ U.S. GPM (9.5 LPM) per each 10" length.

MODEL	WT. OF CARB.	LENGTH	DIA.	CTN. QTY.
CU9.8UW	5 oz.	9 3/4"	2-3/4"	20
CU19.8UW	10 oz.	19 3/4"	2-3/4"	12



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# CARBON CARTRIDGES WATER

M-310\_L

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



### MAXI-CARB W

#### POWDERED CARBON FILTER:

For absorption of undesirable contaminants including chlorine and many organics. Serves as an effective sediment removal filter down to the 1 - 2 micron range. Non-metallic, polyethylene end caps w/rubber gaskets, polyolefin blue net and polypropylene core. Cartridge contains high purity pre-washed sulfur-free, pulverized activated carbon. Maximum operating temperature 180°F (82°C). Flow rate 3 U.S. GPM (11 LPM).

MODEL	WT. OF CARB.	CTN. QTY.
C510W	17 oz.	12

4 5/8" nominal dia. x 9-3/4" long.

Designed to fit SERFILCO GPO10-1 chamber. Bulletin C-101



### MINI-CANISTER W

#### ABS/PVC/SARAN® CANISTER – FOR GRANULAR CARBON:

Features a twist-off end cap which permits easy filling with carbon or resin (not included). End cap screens retain contents. Carbon is used to remove organic substances which cause taste, odor and color in water. Maximum operating temperature is 160°F (71°C). Non-standard lengths available. Flow rates to 2 U.S. GPM (7.6 LPM) per each 10" length. ABS / PVC canister. Saran end screens.

MODEL	3" DIA. x LGTH	WT. OF CARB.
10ABS	10"	14 oz.
20ABS	20"	33 oz.

Designed to fit SERFILCO GPO and GSO chambers. Bulletin C-101

### GRANULAR ACTIVATED CARBON

COCONUT SHELL BASED Steam activated for high absorption capacity		
	LBS	PCN
12 x 30 MESH STANDARD	10	99-0997-10
	50	99-0997-50

To order resin, refer to Bulletin R-208.



# STAINLESS STEEL FILTER CARTRIDGES

M-309\_E-2

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



**SINTERED POROUS CYLINDER**

Porous media is constructed of grade 316 stainless steel powder, precompressed, formed and heated to sintering temperature in a controlled atmosphere. End supports are also 316 stainless steel. This manufacturing technique offers:

- a. Precise thickness control to  $\pm .005"$ .
- b. A more uniform porous structure and permeability.
- c. Each particle bonded to several others, thereby leaving no loose particles to migrate into effluent stream.

Result is a reusable, quality filter cartridge with consistent pore size at the eight retention ratings offered.

**SPECIFICATIONS —**

**Dimensions:** 2.5" Dia. x 10", 20" or 30" long  
**End style:** DOE  
**Filter area:** .5 ft.<sup>2</sup> per 10" length  
**Maximum pressure:** 50  $\Delta$ P  
**Maximum temperature:** Limited by gasket  
**Standard gaskets:** EPDM (to 250° F)

**TO ORDER**

MODEL	GPM **	MICRON
PS.2X _*_L	.1	.2
PS.5X _*_L	.3	.5
PS2X _*_L	2	2
PS5X _*_L	3	5
PS10X _*_L	18	10
PS20X _*_L	30	20
PS40X _*_L	30	40
PS100X _*_L	30	100

\* Length: Specify 10", 20" or 30"

\*\* Flow per 10" length at 2  $\Delta$ P water.  
 Maximum recommended is 30 GPM per cartridge.

**OPTIONAL**

GASKETS	MAX. TEMP.	CHANGE 'L' in MODEL to
Viton®	400° F	V

Registered trademark: Viton - DuPont Dow Elastomers

- Choose from sintered porous cylinder or pleated wire mesh
- Excellent chemical resistance
- Cleanable and reusable 10", 20", 30" lengths
- High flow rates 25 or 30 GPM per 10" length
- High service temperature to 400° F
- High operating pressure to 50  $\Delta$  P

**PLEATED WIRE MESH**

Media is woven 304 stainless steel wire, pleated for additional filter area and strength, then welded to 304 stainless steel center rings and end supports. This manufacturing technique offers:

- a. Extended filter area for each 10" length.
- b. Rigid construction and uniform porosity.
- c. Positive-crimp end pleat seal prevents particle bypass into effluent stream.

Result is a reusable, quality filter cartridge with consistent pore size at the five retention ratings offered.

**SPECIFICATIONS —**

**Dimensions:** 2.5" Dia. x 10", 20" or 30" long  
**End style:** DOE  
**Filter Area:** 10" cart. = 1.7 ft.<sup>2</sup>, 20" cart. = 3.6 ft.<sup>2</sup>, 30" cart. = 5.5 ft.<sup>2</sup>  
**Maximum pressure:** 50  $\Delta$ P  
**Maximum temperature:** Limited by gasket  
**Standard gaskets:** Buna-N (to 250° F)

Consult Sales Department for 316 SS construction.

**TO ORDER**

MODEL	GPM **	MICRON
PWC40X _*_B	12	40
PWC75X _*_B	15	75
PWC100X _*_B	16	100
PWC150X _*_B	17	150
PWC230X _*_B	25	230

\* Length: Specify 10", 20" or 30"

\*\* Flow per 10" length at 2  $\Delta$ P water.  
 Maximum recommended is 25 GPM per cartridge.

**OPTIONAL**

GASKETS	MAX. TEMP.	CHANGE 'B' in MODEL to
Viton®	400° F	V

Consult Sales Department for flow at other viscosities.

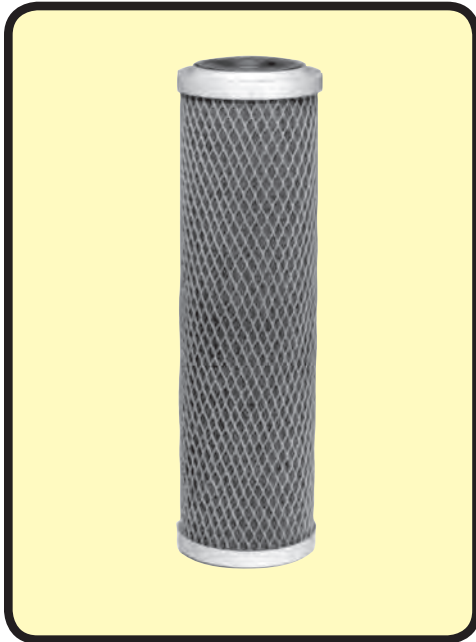


# LEAD REMOVAL CARTRIDGES

307

M-308\_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



## FOR POTABLE WATER *POWDERED ACTIVATED CARBON WITH ATS® LEAD REMOVAL SORBENT*

- Contains Engelhard Corporation's ATS sorbent, a state-of-the-art ceramic lead removal matrix, along with a blend of premium performing, highly pulverized, activated carbon.
- Offers true-depth type filtration for fine sediment, 1 to 2 micron particle removal.
- Effectively removes both soluble and insoluble lead, foul tastes, odors and free chlorine.
- Is unaffected by pH or the presence of other ions including calcium, magnesium, iron and manganese.
- Bonds internally and irreversibly avoiding the potential hazard of a concentrated solution of lead "avalanching" into the treated water.
- Available in two lengths: 9¾" or 20".
- Constructed of molded polystyrene end caps with thermoplastic rubber gaskets, blue polyolefin outer net and a polypropylene center core "sandwiching" a blend of highly purified activated powdered carbon and ATS lead removal sorbent. Inner layer of heat fused polyolefin fiber media prevents carbon bleed-off.

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The inert molecular sieve construction of the ATS material internally and irreversibly locks onto any lead in solution reducing the concentration to below U.S. EPA guidelines with a very short contact time. The ATS material works well in hard water as well as in the presence of iron, manganese, magnesium and calcium ions. It functions on the principle of chemically "absorbing" the lead ions rather than insolubilizing the lead and will not put aluminum, copper or zinc ions into the treated water.

The CLR Series has been evaluated against the test protocol as outlined in NSF standard #53 by a certified third-party laboratory. The results show that a standard 9¾" cartridge at 0.75 GPM will effectively reduce a 150 PPB spiked feed of lead to less than 10 PPB for 4000 gallons in a low pH, low alkalinity solution and for 3000 gallons in a high pH, high alkalinity solution.

### TO ORDER

MODEL	GPM	LENGTH	DIA	CTN QTY
CLR10W	.5 - 1	9-3/4"	2-3/4"	12
CLR20W	1 - 2	20"	2-3/4"	12



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## FOR ALL TYPES OF OIL FILTERING — FUEL, LUBE, HYDRAULIC, CUTTING OILS, QUENCH, TRANSFORMER, DIELECTRIC & COALESCING

### TYPE 'PL' PLEATED PAPER



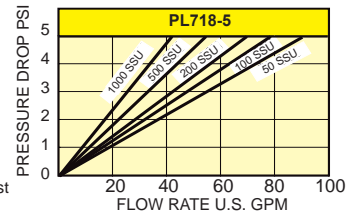
PL718

PL310

Has extremely high flow rate. Performs well on filtration of water and oil. Typical applications: For detergent, straight mineral and residual fuel oils. Water, glycol-water synthetics or oil-water emulsions. PL718 has a metal jacket and center core with vellumoid seals. PL310 has exposed pleats and Buna-N seals. Maximum temperature: 250°F.

MODEL 2-1/8" I.D x 6" x 18" lg	MICRON
PL718-1	1
PL718-5	5
PL718-10	10
PL718-20	20
PL718-30	30

6 & up shipped full carton quantity (6/ctn.)  
Quantity 1-12 F.O.B. Northbrook, Illinois 18 & up F.O.B. East Coast

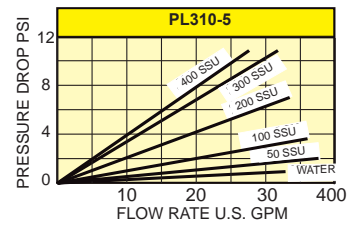


**SERFILCO  
PLEATED PAPER  
CARTRIDGES**

For cartridges of other dimensions or cross reference to other brands, request Bulletin M-205 and Price Sheet M-204.

1-1/8" I.D x 2-5/8" x 10" lg.	MICRON
PL310-1-11B	1
PL310-5-11B	5
PL310-10-11B	10

30 & up shipped full carton quantity (30/ctn.)  
Quantity 6-29 F.O.B. Northbrook, Illinois 30 & up F.O.B. East Coast



1-5/8" I.D. x 4" x 36 1/2" lg.	MICRON
PL436-2-4	2

PL436 has exposed pleats, PP core, plastisol end caps.  
F.O.B. Northbrook, Illinois

### TYPE 'C' PURE COTTON



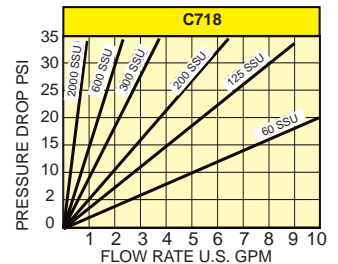
C718

**SERFILCO  
"SPUN-WOUND"  
COTTON THREAD  
CARTRIDGES**

Has a relatively high flow rate and dirt holding capacity. Retains resiliency and will absorb water. Typical applications: Hydraulic, fuel, quench and diesel engine lube oils; machine tool coolants, solvents, etc. Spun wound all new cotton thread.

MODEL (MATERIAL)	MICRON
C718 (Cotton/stl. core)	10

2-1/8" I.D. x 6-3/4" O.D. x 18" lg.  
4 & up shipped full carton quantity (4/ctn.)  
Quantity 1-3 F.O.B. Northbrook, Illinois  
12 & up F.O.B. East Coast





2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431

**TYPE 'F' FULLER'S EARTH - Highest quality.**

Neutralizes oils which become acidic from long use. Metal encased and bag type.



**FOR: FUEL, HYDRAULIC, INSULATING AND LUBRICATING OILS. JET FUELS, QUENCH, ROLLING AND SYNTHETIC HYDRAULIC OILS.**

- **Outer retaining bag**  
Made from medium permeable duck - strong, yet providing good penetration without sliming over.
- **Inner core fabric**  
Stout, heat bonded polyester non-woven material. Good permeability with orifice size designed to minimize migration.
- **Attapulgite LVM clay**  
Especially extruded and calcined to improve porosity and adsorptive characteristics.
- **Packaging**  
Each cartridge is poly bagged to prevent moisture contamination.  
**Metal canister F718C** - Individually boxed and palletized.  
**Cotton bags F718 & F718-4** - Packed 4 per heavy double wall carton for maximum shipping protection.

**15**

**COTTON BAG**

**F718** (2-1/8" I.D. x 7" x 19-1/4" lg.)

Bag type to replace:

CFD 6825, Fram C727, Keene LEB 718, Velcon CO-719B

**F718-4** (2-1/4" I.D. x 6-3/4" x 18-1/4" lg.)

Bag type with permanent center tube to replace:

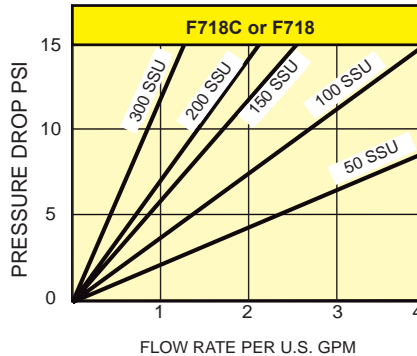
Velcon CO-718B

**METAL CANISTER**

**F718-C** (2-1/8" I.D. x 6-3/4" x 18" lg.)

Canister type to replace:

Banner FCC 18701, CFD 4603, Fram C766-1, Hilco FFC-00, H-A 718-FEP, Keene D196, LE 718, Velcon CO-718-CC



**TO ORDER, specify Model**

MODEL	DESCRIPTION
F718-C	METAL CANISTER
F718	COTTON BAG
F718-4	COTTON BAG

**4 & up shipped full carton quantity.**  
Quantity 1-3 F.O.B. Northbrook, Illinois  
4 & up F.O.B. East Coast.



# EDM FILTER CARTRIDGES

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## *Protect your investment - reduce costs with high quality replacement filter cartridges*

- Designed for both wire EDM (D.I. water) and Ram/sinker EDM (oil) machines. Meets or exceeds OEM specifications.
- High efficiency filtration for removal of harmful spark erosion residue resulting in improved fluid flushing, cooling & insulating properties.
- Reduce downtime & extend the life of your deionized water or dielectric oil.
- Eliminate hot spots & arcing caused by contaminated dielectric fluids.
- Water resistant paper is phenolic resin impregnated and oven cured.

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**PL614-5**



**PL614-5-5**

SPECIFICATIONS								
PART NUMBER	OUTSIDE DIA.	INSIDE DIA.	OVERALL LENGTH	SEAL	CORE	OUTSIDE BODY	BONDING	COMMENT
PL407-5-2	4"	1-1/16"	7-1/2"	Vellumoid	Steel	Plated	PVC	Agietron
PL614-5	6"	3-1/2"	14-1/2"	Buna N	Steel	Plated	PVC	Japax Facet CH 57 EDM
PL614-5-1	6"	1"	14-5/8"	Grommet	Steel	Plated	PVC	Facet C44 (w/handle)
PL614-5-1A	6"	1"	14-5/8"	Grommet	Plated	Plated	PVC	Facet C44P (w/handle)
PL614-5-2	6"	1-1/4"	14-5/8"	Grommet	Steel	Plated	PVC	Charmilles Agietron Facet C54 (w/handle)
PL614-5-2A	6"	1-1/4"	14-5/8"	Grommet	Steel	None	PVC	Facet C54 & CH54PL (w/handle)
PL614-5-2P	6"	1-1/4"	14-5/8"	Grommet	Plated	Plated	PVC	Sodick Charmilles Facet CH56PL (w/handle)
PL614-5-3	6"	1-1/4"	14"	Cork	Steel	Plated	PVC	Japax
PL614-5-5	6"	3-1/2"	14-1/2"	Buna N	Steel	None	PVC	Japax Facet C744
PL614-5-6	6"	3-1/2"	14-1/2"	Buna N	Plated	None	PVC	Japax
PL614-5-16	6"	1-1/4"	14-5/16"	Cork	Steel	Plated	PVC	Japax
PL614-5-16A	6"	1-1/4"	14-5/16"	Cork	Plated	Plated	PVC	Japax
PL614-5-16C	6"	1-1/4"	14-5/16"	Cork	Steel	None	PVC	Japax
PL614-3-20	6"	1-1/4"	14"	Cork	Plated	None	PVC	Japax (w/handle) 3 micron
PL614-5-20	6"	1-1/4"	14"	Cork	Plated	None	PVC	Edmas WF-8 (w/handle)
PL614-5-20A	6"	1-1/4"	14"	Cork	Plated	None	PVC	Japax (w/handle) Water Resistant Paper
PL614-5-20C	6"	1-1/4"	14"	Cork	Steel	None	PVC	Japax (w/handle)
PL614-5-26	6"	3-1/2"	14-1/2"	Buna N	Plated	None	Epoxy	Deionized Water Only
PL614-5-44A	6"	1-1/4"	14"	Vellumoid	Plastic	None	Epoxy	Epoxy Ends
C718	6-1/2"	2-1/8"	18"	Vellumoid	Steel	Sock	N/A	Depth-Cotton Fiber
F718-C	6-1/2"	2-1/8"	18"	Cork	Fiber	Plated	PVC	Clay (Fuller's Earth)_ Oil Acid REmoval
PL718-5FP	6"	2-5/8"	18"	Vellumoid	Steel	Plated	PVC	Charmilles Sodick Elox Excello Spartcatron
PL718-5-5A	6"	2-1/8"	18"	Vellumoid	Steel	Plated	PVC	Sodic Elitee Pulsitron Spartcatron (w/handle)
PL718-5-14BP	6"	2-5/8"	17-7/8"	Buna N	Plated	Plated	PVC	Deionized Water Only
C815-2	7-1/2"	1-1/2"	15-1/8"	Vellumoid	Steel	Sock	N/A	Depth-Cotton Fiber





**Protect your investment - reduce costs with high quality replacement filter cartridges**

- **Designed for both wire EDM (D.I. water) and Ram/sinker EDM (oil) machines. Meets or exceeds OEM specifications.**
- **High efficiency filtration for removal of harmful spark erosion residue resulting in improved fluid flushing, cooling & insulating properties.**
- **Reduce downtime & extend the life of your deionized water or dielectric oil.**
- **Eliminate hot spots & arcing caused by contaminated dielectric fluids.**
- **Water resistant paper is phenolic resin impregnated and oven cured.**

15

**DESIGN SPECIFICATIONS**

PART NUMBER	OUTSIDE DIA.	INSIDE DIA.	OVERALL LENGTH	SEAL	CORE	OUTSIDE BODY	BONDING	COMMENT
PL1011-5	10"	1-3/4"	11"	Vellumoid	Plated	None	PVC	Le Blond Makino (w/handle)
PL1011-5-1	10-1/4"	1-3/4"	11"	Vellumoid	Plated	Plated	PVC	Le Blond Makino (w/handle)
PL1012-5	10-1/4"	1-3/4"	11-5/8"	Buna N	Plated	None	PVC	Le Blond Makino (w/handle)
PL1014	10-1/4"	1-1/4"	13-1/2"	Cork	Plated	None	PVC	Elox CNC Mitsubishi Hitachi
PL1014-3	10-1/4"	1-1/4"	13-1/2"	Cork	Plated	None	PVC	Mitsubishi 3 micron
PL1014-5	10-1/4"	1-1/4"	13-1/2"	Cork	Plated	None	PVC	Mitsubishi (w/handle)
PL1014-5-1	10-1/4"	1-1/4"	13-1/2"	Cork	Plated	Plated	PVC	Mitsubishi Diafilpa (w/handle)
PL1016-5	10-1/4"	1-13/16"	16"	Vellumoid	Plated	Plated	Epoxy	Brother-Racon
PL1214	11-13/16"	1-3/4"	13-1/2"	Vellumoid	Plated	Plated	Epoxy	Hitachi
PL1220-3	11-13/16"	1-5/32"	19-5/8"	None	Plated	Plated	Epoxy	Mitsubishi 3 micron
PL1220-5	11-13/16"	1-5/32"	19-5/8"	None	Plated	Plated	Epoxy	Mitsubishi
PL1220-20	11-13/16"	1-1/8"	19-5/8"	None	Plated	Plated	Epoxy	Mitsubishi
PL1220-5-1	11-13/16"	1-1/8"	19-5/8"	None	Steel	Plated	Epoxy	Mitsubishi
PL1220-5-2	11-13/16"	2-1/4"	20"	None	Plated	Plated	Epoxy	Mitsubishi Bi-directional Flow
PL1312	13-1/2"	1-7/8"	12"	Vellumoid	Plated	Plated	Epoxy	Elox-Fanuc
PL1318-3	13-1/2"	1-7/8"	18"	Vellumoid	Plated	Plated	Epoxy	Elox-Fanuc 3 micron
PL1318-5	13-1/2"	1-7/8"	18"	Vellumoid	Plated	Plated	Epoxy	Elox-Fanuc flat cover/bottom
PL1318-10	13-1/2"	1-7/8"	18"	Vellumoid	Plated	Plated	Epoxy	Elox-Fanuc, 10 micron flat cover/bottom
PL1318-5-1F	13-1/2"	1-7/8"	18"	Buna N	Plated	Plated	Epoxy	Fanuc cone cover/flat bottom
PL1318-5-1S	13-1/2"	1-7/8"	18"	Buna N	Plated	Plated	Epoxy	Sodick flat cover/cone bottom



**PL1011-5**



**PL1220-5**



# CHEMICAL RESISTANCE GUIDE FILTER MEDIA

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## MATERIAL CODES

FILTER MEDIA	CORE MATERIAL
<b>B</b> - Natural Cotton	<b>A</b> - 304 stainless steel  <b>S</b> - 316 stainless steel  <b>T</b> - Tinned steel  <b>U</b> - Polypropylene
<b>C</b> - Bleached Cotton <sup>1,2</sup>	
<b>G</b> - Glass Fiber	
<b>H</b> - Hi Perf	
<b>K</b> - Polyester (Dacron®)	
<b>N</b> - Nylon	
<b>O</b> - Acrylic (Orlon®)	
<b>P</b> - Polypropylene, Fibrillated <sup>1,2</sup>	
<b>R</b> - Rayon	
<b>U</b> - Polypropylene	
<b>W</b> - Polypropylene <sup>1</sup> , Potable Water	

NUMERICAL EXPONENTS INDICATE FOLLOWING CONCENTRATIONS		
1. 1%	5. 30%	9. 80%
2. 5%	6. 40%	10. Dilute
3. 10%	7. 50%	11. 96%
4. 20%	8. 5 to 80%	12. Fuming

**OK** - Acceptable to use media to its maximum recommended operating temperature.

**Number** - Maximum recommended operating temperature (°F).

**NR** - Not recommended.

<sup>1</sup> Meets FDA regulations for potable water

<sup>2</sup> Free of "sizing" and yarn "finish" substances

<sup>®</sup>Dacron and Orlon are registered trademarks of DuPont.

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	B & C		G		H		K		N		O		P, U & W		R	
	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core
Acetaldehyde	200	S,A	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acetic acid, 20%	85	135U,S,A	OK	S	100 <sup>8</sup>	100U,S,A	200 <sup>2</sup>	140U,S,A	—	—	OK <sup>8</sup>	130U,S,A	OK	135U,S,A	OK <sup>2</sup>	135U,S
Acetic acid, glacial	70	135U,S,A	OK	S	70	70U,S,A	200	140U,S,A	—	—	OK	130U,S,A	150	135U,S,A	70	70U,S,T
Acetic anhydride	NR	NR	—	—	NR	NR	NR	NR	—	—	NR	NR	70	135U,S,A,T	—	—
Acetone	OK	80U,S,A,T	OK	S	NR	NR	OK	80U,S,A	5U,S,A,T	—	OK	S,A,T	70	70U,S,A,T	OK	S,A,T
Aluminum chloride	130 <sup>2</sup>	130U,S,A	—	—	70 <sup>2</sup>	70U,S,A	70 <sup>2</sup>	70U,S,A	565 <sup>2</sup>	—	70 <sup>2</sup>	70U,S,A	195 <sup>2</sup>	135U,S,A	130 <sup>2</sup>	130U,S,A
Aluminum fluoride	NR <sup>2</sup>	NR	—	—	—	—	NR <sup>2</sup>	NR	65U,S,A	—	—	—	135 <sup>2</sup>	135U	—	—
Aluminum sulfate	70	70U,S,A	—	—	NR	NR	65	65U,S,A	45U,S,A	—	70	70U,S,A	175	135U,S,A	NR <sup>5</sup>	NR
Ammonia, aqueous	NR	NR	NR	NR	NR	NR	—	—	65U,S,A	—	100	S,A,T	—	—	—	—
Ammonium carbonate	OK <sup>3</sup>	140U,S,A	—	—	—	—	—	—	—	—	—	—	OK <sup>3</sup>	135U,S,A	—	—
Ammonium chloride	—	—	—	—	—	—	70 <sup>2</sup>	70U,S,A	120U,S,A	—	—	—	135 <sup>2</sup>	135U	—	—
Ammonium hydroxide	100 <sup>5</sup>	100U,S,A	NR	NR	—	—	65 <sup>5</sup>	65U,S,A	NR00 <sup>5</sup>	—	—	—	195 <sup>5</sup>	135U,S,A	70	70U,S,A
Ammonium nitrate	100 <sup>2</sup>	100U,S,A	—	—	OK <sup>2</sup>	140U,S,A	65 <sup>2</sup>	65U,S,A	100U,S,A	—	OK <sup>2</sup>	140U,S,A,T	OK <sup>2</sup>	135U,S,A,T	100 <sup>2</sup>	S,A,T
Ammonium phosphate	—	—	—	—	—	—	65	65U,S,A	200U,S,A,T	—	—	—	135	135U,S,A	—	—
Ammonium sulfate	—	—	—	—	—	—	65 <sup>2</sup>	65U,S,A,T	NR95 <sup>2</sup>	—	—	—	OK <sup>2</sup>	195U,S,A,T	—	—
Amyl acetate	200	S,A,T	—	—	70	S,A,T	NR	NR	S,A,85	—	70	S,A,T	NR	NR	OK	S,A
Amyl alcohol	200	S,A,T	—	—	—	—	65	S,A,T	S,A,T,95	—	—	—	65	S,A,T	OK	S,A,T
Aniline	—	—	—	—	—	—	NR	NR	S,A,85	—	—	—	175	S,A,T	—	—
Aqua regia	NR	NR	—	—	—	—	NR	NR	S,A,NR	—	—	—	70	70U	—	—
Arsenic acid	NR	NR	OK	S	100	100U,S,A	NR	NR	NR	—	70	70U,S,A	OK	95U,S,A	—	—
Barium hydroxide	—	—	—	—	—	—	—	—	NR	—	—	—	—	—	—	—
Barium chloride	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Barium sulfate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Benzaldehyde	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Benzene (benzol)	OK	S,A,T	OK	S,A	NR	NR	65	S,A,T	S,A,OK	—	65	S,A,T	NR	NR	OK	S,A,T
Benzene sulfonic acid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Benzoic acid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Borax (sodium borate)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Boric acid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bromine water	NR	NR	—	—	—	—	NR	NR	NR	—	—	—	NR	NR	—	—



# CHEMICAL RESISTANCE GUIDE FILTER MEDIA

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NUMERICAL EXPONENTS INDICATE FOLLOWING CONCENTRATIONS					
1. 1%	5. 30%	9. 80%			
2. 5%	6. 40%	10. Dilute			
3. 10%	7. 50%	11. 96%			
4. 20%	8. 5 to 80%	12. Fuming			

**OK** - Acceptable to use media to its maximum recommended operating temperature.  
**Number** - Maximum recommended operating temperature (°F).  
**NR** - Not recommended.

15

	B & C		G		H		K		N		O		P, U & W		R	
	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core
Butyl acetate	OK	U,A,T	OK	S	OK	S,A	65		OK,S,A		OK,S,A		195S,A	S,A	—	—
Butyl alcohol	OK	140U,S,A,T	OK	S	OK	S,A,T	65		OK,U,S,A,T		OK,U,S,A,T		65S,A	65U,S,A,T	—	—
Butyl amine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Butyl phthalate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Butyric acid	70	70U,S,A	—	—	—	—	195		NR,U,S,A		NR		65	65U,S,A	—	—
Cadmium cyanide	200	140U,A,T	NR	NR	OK	140U,A,T	—	—	—		NR		OK,NR	135U,A,T	140	140U,A,T
Calcium bisulfite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Calcium chloride	NR	NR	—	—	OK	S	195		NR,S		OK,NR		OK,S	S	NR	NR
Calcium hypochlorite	NR	NR	NR	NR	140	140U	—	—	NR		NR,NR		135NR	135U	—	—
Calcium nitrate	NR	NR	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Calcium phosphate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Calcium sulfate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Carbon disulfide	70	S,A,T	—	—	65	S,A,T	NR		65 NR		65S,A,T		NR,S,A,T	NR	—	—
Carbon tetrachloride	OK	100U,S	100	S	OK	S	65		OK,U,S		OK,U,S		95	95U,S	OK	95U,S
Carbonic acid	100	100U,S	—	—	100	S,A	NR		95 NR		100U,S,A		OK,S	135U,S,A	100	100U,S,A
Cellosolve	NR	NR	—	—	—	—	NR		NR		—		NR	NR	—	—
Chloroacetic acid	NR	NR	—	—	—	—	NR		NR,NR		NR		70	70U	—	—
Chlorine water	NR	NR	—	—	NR	NR	—	—	NR		NR		NR	NR	NR	—
Chlorobenzene	195	S,A	OK	S	195	S,A	195		195S,A		195S,A		NR,S,A	NR	195	S,T
Chloroform	OK	65U,S,A	—	—	OK	70U,S,A	65		NR,U,S,A		OK,NR		70U,S	70U,S,A	OK	S,A
Chlorosulfonic acid	NR	NR	—	—	—	—	—	—	NR		NR		NR	NR	—	—
Chromic acid up to 30%	NR	NR	—	—	—	—	—	—	NR		NR		NR	NR	NR	—
Chromic acid, 50%	—	—	—	—	95	S	NR		NR,NR		NR		NR	NR	—	—
Citric acid	135	135U,S,A	OK	S,A	NR	NR	65		NR,U,S,A		OK,NR		OK,S	135U,S,A	150	140U,S,A
Copper chloride	—	—	—	—	—	—	—	—	—		—		—	—	—	—
Copper cyanide	NR	NR	NR	NR	—	—	—	—	—		—		OK	135U,S,A	135	135U,S,A
Copper nitrate	NR	NR	—	—	—	—	—	—	—		—		—	—	—	—
Copper sulfate	135	135U,S	OK	S,A	OK	130U,S,A	65		NR,U,S,A		OK,NR		OK,U,S	135U,S,A	135	135U,S,A
Cresol	OK	S	80	U	70	S	65		— S		—		NR	—	185	S
Cyclohexane	65	S,A,T	—	—	NR	NR	65		195S,A,T		NR,S,A,T		NR	NR	65	S,A,T
Decalin	—	—	—	—	—	—	—	—	—		—		NR	NR	—	—
Detergents	—	—	—	—	—	—	—	—	—		—		—	—	—	—
Diesel fuel	OK	115U,S,A,T	OK	S,A	OK	S,A,T	65		OK,U,S,A,T		NR,U,S,A,T		120NR	120U,S,A,T	OK	S,A,T
Dowtherm	65	65U,S,A,T	OK	S,A	—	—	—	—	—		—		70	70U,S,A,T	—	—
Ethanolamine	65	65U,S,A,T	—	—	—	—	—	—	—		—		70	70U,S,A,T	—	—
Ether	OK	S,A,T	OK	S,A	OK	S,A,T	65		—S,A,T		NR		NR	NR	NR	—
Ethyl acetate	OK	115U,S,A,T	OK	S,A	65	S,A,T	65		65U,S,A,T		NR		120NR	120U,S,A,T	65	S,A,T
Ethyl alcohol (ethanol)	OK	120U,S,A,T	OK	S	—	—	OK		135U,S,A,T		—		OK	135U,S,A,T	OK	S,A,T
Ethylene dichloride	—	—	—	—	—	—	—	—	—		—		—	—	—	—
Ethylene glycol	OK	120U,S,A,T	OK	S,A	OK	70U,S,A,T	OK		65U,S,A,T		80U,S,A,T		OK,U,S	140U,S,A,T	OK	S,A,T
Ferric chloride	NR	NR	140	U	95	95U,S,A,T	140		65140U		19565U		OK,U,S	135U,S	NR	NR
Ferric hydroxide	NR	NR	—	—	—	—	—	—	—		—		NR	NR	—	—
Ferric nitrate	NR	NR	—	—	NR	NR	65		—65U,S		70		OK,U,S	135U,S	NR	NR
Ferric sulfate	65	65U,S,A	OK	S,A	NR <sup>2</sup>	NR	65		65U,S,A		70U,S,A		OK,U,S	135U,S,A	—	—
Ferrous chloride	NR	NR	—	—	NR	NR	65		6565U		6565U		OK65U	135U	65	65U
Ferrous sulfate	NR	NR	—	—	—	—	—	—	—		—		NR	NR	—	—
Fluoboric acid	NR	NR	—	—	—	—	—	—	—		—		NR	NR	—	—
Fluosilicic acid	NR	NR	—	—	—	—	NR		— NR		—		70	70U	—	—
Formaldehyde	70	70U,S,70A8T	OK	S,A	OK	130U,S	65		65U,S,A		65U,S,A		OK,U,S	135U,S	65	65U,A,T
Formic acid	NR <sup>3</sup>	NR	OK	S,A	OK <sup>3</sup>	140U&A	OK <sup>10</sup>		NR,U,150A		100NR		OK,U,S	135U,70A	NR	NR
Freons (fluorocarbons)	200	S,A,T	OK	S,A	OK	S,A,T	—		95		OK,S,A,T		70S,A	70U,S,A,T	195	S,A,T
Fuel oils	OK	S,A,T	—	—	OK	S,A,T	OK		OK,S,A		OK,S,A,T		70S,A	70U,S,A,T	OK	S,A,T
Furfural	65	S,A,T	—	—	—	—	65		— S,A		—		NR	NR	—	—
Gasoline	OK	S,A,T	—	—	OK	S,A,T	—		OK		OK,S,A,T		NR,S,A,T	NR	NR	NR
Glycerine (Glycerol)	70	70U,S,A,T	—	—	NR	NR	—		—		—		70S,A	70U,S,A,T	—	—
Heptane	—	—	—	—	—	—	—	—	—		—		NR	NR	—	—
Hexane	OK	120U,S,A,T	OK	S,A	—	—	65		65U,S,A,T		65U,S,A,T		140	140U,S,A,T	OK	S,A,T
Hydrobromic acid, 20%	—	—	140	U	70	70U	65		NR65U		70 NR		140	70U	140U	NR
Hydrochloric acid, 0-25%	—	—	140	U	OK <sup>2</sup>	130U	NR		NR,NR		OK <sup>2</sup> NR		OK	130U	135U	NR
Hydrochloric acid, 25-37%	—	—	140	U	OK <sup>3</sup>	130U	—		—		130		OK	130U	—	—



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2. 5%	6. 40%	10. Dilute
3. 10%	7. 50%	11. 96%
4. 20%	8. 5 to 80%	12. Fuming

**OK** - Acceptable to use media to its maximum recommended operating temperature.  
**Number** - Maximum recommended operating temperature (°F).  
**NR** - Not recommended.

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	B & C		G		H		K		N		O		P, U & W		R		
	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	
Hydrofluoric acid, 10%	70	70U	NR	NR	140	140U	65	65U	NR	NR	140	140U	135U	OK	65	65U	
Hydrofluoric acid, 30%	NR	NR	NR	NR	—	—	—	—	—	—	—	—	—	—	—	—	
Hydrofluoric acid, 50%	NR	NR	NR	NR	70	70U	65	65U	—	—	70	70U	70U	70	NR	NR	
Hydrogen peroxide, 30%	NR	NR	OK	S,A	100	65U,S,A	65	65U,S,A	NR	NR	100	65U,S,A	100	100	100 <sup>2</sup>	95U,S,A	
Hydrogen peroxide, 50%	NR	NR	OK	S,A	—	—	65 <sup>2</sup>	65U	NR	NR	—	—	70U	70U	NR <sup>3</sup>	NR	
Kerosene	OK	65U	OK	S,A	NR	NR	OK	65U,S,A	NR	NR	OK	S,A,65U	S,A	OK	S,A,T	OK	S,A,T
Ketones	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lactic acid	NR	NR	140	U	OK	140U	65	65U	65U	65	OK	140U	135U	OK	65	65U	
Lead acetate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lubricants	OK	65U,S,A,T	—	—	OK	S,A,T	—	—	65U	S,A	OK	S,A,70U	S,A	OK	S,A,T	OK	S,A,T
Magnesium chloride	65	65U,S	—	—	NR	NR	65	65U,S	65	65U	70	70U	70U	70	65	S	
Magnesium hydroxide	65	65U,S	—	—	—	—	—	—	—	—	—	—	—	135U	OK	—	
Magnesium nitrate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Magnesium sulfate	65	65U,S,A	—	—	—	—	—	—	—	—	—	—	—	135U	65	65U,S,A	
Methyl alcohol (methanol)	OK	120U,S,A,T	OK	S,A	OK	U,S,A,T	OK	U,S,A,U,S,A	OK	OK	OK	U,S,A,U,S,A	OK	OK	OK	U,S,A,T	
Methyl chloride	—	—	—	—	—	—	—	—	—	—	—	—	—	NR	NR	—	
Methyl ethyl ketone	OK	130U,S,A,T	OK	S	NR	NR	65	65U,S,A	NR	NR	OK	S,A,70U	S,A	OK	140U,S,A,T	—	
Methylene chloride	OK	200S&A,95T	212	S,A	NR	NR	95	95S,A,212	65	65U	OK	212S&A	NR	NR	—	—	
Naphtha	OK	65U,S,A,T	OK	S,A	OK	S,A,T	65	65U,S,A	NR	NR	OK	S,A,65U	S,A	OK	70U,S,A,T	—	
Nickel chloride	70	70U	140	U	OK	70U	65	65U	NR	NR	70	70U	140U	95	95U	—	
Nickel sulfate	70	70U,S,A	OK	S,A	OK	70U,S,A	65	65U,S,A	NR	NR	70	70U,S,A	70U	95	140U,S,A	—	
Nitric acid, 10%	70	70U,S,A	OK	S,A	OK	130U,S,A	205	130U,S,A	NR	NR	200	130U,S,A	135U	65	140U,S,A	—	
Nitric acid, 20%	NR	NR	250	S,A	OK	130U	65	65U	—	—	145	130U	135U	NR	NR	—	
Nitric acid, 50%	NR	NR	250	S,A	70	70U	65	65U	—	—	70	70U	70U	NR	NR	—	
Nitric acid (concentrate)	NR <sup>12</sup>	NR	125	S,A	NR <sup>12</sup>	NR	NR <sup>12</sup>	NR	—	—	NR <sup>12</sup>	NR	NR <sup>12</sup>	NR	NR	—	
Nitrobenzene	NR	NR	—	—	NR	NR	195	70U,S	U,S,195	195	70U,S	U,S,195	195	195	S	—	
Oil, vegetable	OK	90U,S,A,T	—	—	NR	NR	65	65U,S,A	NR	NR	NR	NR	70U	OK	100U,S,A	—	
Oil, sour crude	140	65U,S,A,T	—	—	OK	S,A,T	OK	65U,S,A	NR	NR	OK	S,A,70U	S,A	OK	70U,S,A,T	—	
Oleic acid	70	70U,S	—	—	OK <sup>2</sup>	70U,S	65 <sup>2</sup>	65U,S	NR	NR <sup>2</sup>	70 <sup>2</sup>	70U,S	135U	95 <sup>2</sup>	140U,S	—	
Oxalic acid	NR	NR	—	—	OK	65U,S,A	NR <sup>2</sup>	NR	NR	NR <sup>2</sup>	65	65U,S,A	135U	95 <sup>2</sup>	140U,S,A	—	
Perchloroethylene	OK	65U,S,A,T	—	—	OK	S,A,T	OK	65U,S,A	S,A,OK	OK	OK	S,A,65U	S,A	OK	S,A,T	—	
Phenol	OK	65U,S	—	—	NR	NR	—	—	—	—	NR	NR	65U	205	S	—	
Phosphoric acid, 0-50%	70 <sup>3</sup>	70U,S,200A	212	A	OK <sup>3</sup>	210A,S	205 <sup>3</sup>	205A,S	65U,S	65U	210 <sup>3</sup>	210A,S	210A	135 <sup>3</sup>	135S&A	—	
Phosphoric acid, 50-100%	NR	NR	140	U	OK <sup>3</sup>	140U	—	—	NR	NR <sup>7</sup>	150 <sup>3</sup>	140U	135U	65 <sup>3</sup>	65U&A	—	
Potassium bromide	—	—	—	—	—	—	—	—	—	—	—	—	—	NR	NR	—	
Potassium carbonate	—	—	—	—	—	—	—	—	—	—	—	—	—	NR	NR	—	
Potassium chlorate	NR	NR	—	—	—	—	—	—	—	—	—	—	—	NR	NR	—	
Potassium chloride	70 <sup>2</sup>	135U,S,A	—	—	NR <sup>2</sup>	NR	65 <sup>2</sup>	65U,S,A	—	—	65 <sup>2</sup>	65U,S,A	135U	65 <sup>2</sup>	140U	—	
Potassium cyanide	OK <sup>2</sup>	120U,S,A	—	—	OK	135U,S,A	—	—	—	—	NR <sup>2</sup>	NR	135U	OK <sup>2</sup>	S,A	—	
Potassium dichromate	NR	NR	—	—	—	—	—	—	—	—	—	—	—	NR	NR	—	
Potassium hydroxide	OK <sup>2</sup>	120U,S,A	NR	NR	OK <sup>2</sup>	130U,S,A	120 <sup>2</sup>	120U,S,A	U,S,120 <sup>2</sup>	195 <sup>2</sup>	130U,S,A	135U	OK <sup>2</sup>	OK <sup>2</sup>	140U,S,A	—	
Potassium nitrate	NR	NR	—	—	—	—	—	—	—	—	—	—	—	NR	NR	—	
Potassium permanganate	NR <sup>2</sup>	NR	—	—	—	—	NR <sup>2</sup>	NR	—	—	—	—	135U	NR <sup>2</sup>	NR	—	
Potassium sulfate	70 <sup>2</sup>	70U,S,A	—	—	NR <sup>2</sup>	NR	65 <sup>2</sup>	65U,S,A	—	—	NR <sup>2</sup>	NR	135U	65 <sup>2</sup>	65U,S,A	—	
Propyl alcohol	OK	120U	—	—	—	—	—	—	—	—	—	—	—	65U	S,A	—	
Silver nitrate	NR	NR	OK	S,A	OK	130U,S,A	NR	NR	NR	NR	OK	130U,S,A	135U	NR	NR	—	
Soaps	—	—	—	—	—	—	—	—	—	—	—	—	—	135U	65	—	
Sodium acetate	65	65U,S,A	—	—	—	—	65	65U,S,A	—	—	—	—	135U	65	65U,S,A	—	
Sodium bicarbonate	65	65U,S,A,T	—	—	NR	NR	65	65U,S,A,T	—	—	135	135U,S,A,T	135U	65	65U,S,A	—	
Sodium bisulfate	NR	NR	—	—	NR	NR	65	65U	—	—	70	70U	135U	NR	NR	—	
Sodium carbonate	65	65U,S,A	—	—	65	65U,S,A	65	65U,S,A	U,S,65	65	65	65U,S,A	70U	—	—	—	
Sodium chlorate	NR	NR	—	—	—	—	65	65U,S,A	—	—	—	—	135U	—	—	—	
Sodium chloride	OK	120U	—	—	OK <sup>3</sup>	140U	OK <sup>3</sup>	140U	140U	OK <sup>3</sup>	OK	140U	135U	OK <sup>3</sup>	OK <sup>3</sup>	140U	
Sodium cyanide	OK	120U,S,A	—	—	OK	130U,S,A	NR	NR	140U	U,S,OK	NR	NR	135U	NR	NR	—	
Sodium hydroxide, 20%	65	65U,S,A	NR	NR	—	—	65 <sup>2</sup>	65U,S,A	U,S,65	65	—	—	135U	NR	NR	—	
Sodium hydroxide, 50%	NR <sup>6</sup>	NR	NR	NR	OK <sup>6</sup>	130U,S,A	—	—	—	—	NR <sup>6</sup>	NR	135U	—	—	—	
Sodium hypochlorite	NR	NR	NR	NR	NR <sup>2</sup>	NR	65 <sup>2</sup>	65U,S	U,S,65	95	NR	NR	110U	NR <sup>2</sup>	NR	—	
Sodium nitrate	65	65U,S,A	OK	S,A	NR	NR	65	65U,S	U,S,65	65	135	135U,S	135U	65	65U,S,A	—	
Sodium silicate	65	65U,S,A,T	—	—	—	—	65	65U,S,A,T	—	—	—	—	135U	65	S,A,T	—	
Sodium sulfate	70	70U,S,A	OK	S,A	NR	NR	65	65U,S	U,S,65	65	135	135U,S	135U	65	65U,S,A	—	



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3. 10%	7. 50%	11. 96%
4. 20%	8. 5 to 80%	12. Fuming

**OK** - Acceptable to use media to its maximum recommended operating temperature.  
**Number** - Maximum recommended operating temperature (°F).  
**NR** - Not recommended.

	B & C		G		H		K		N		O		P, U & W		R	
	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core	Media	Core
Sodium sulfide	65	65U,S	—	—	NR	NR	65	65U,S	—	—	135	135U,S	170	135U,S	65	65U,S
Stannic chloride	65	65U	—	—	—	—	65 <sup>2</sup>	65U	65 <sup>2</sup>	65U	—	—	70 <sup>2</sup>	70U	65 <sup>2</sup>	65U
Sulfuric acid, 0-10%	100 <sup>2</sup>	100U,S	OK	S	145 <sup>2</sup>	145U,S	140 <sup>2</sup>	140U,S	—	—	145 <sup>2</sup>	145U,S	OK <sup>3</sup>	135U,S	100 <sup>2</sup>	100U,S
Sulfuric acid, 10-75%	NR <sup>7</sup>	NR	OK	S	65 <sup>7</sup>	65U	NR <sup>11</sup>	NR	NR	NR	65 <sup>7</sup>	65U	135 <sup>7</sup>	135U	NR <sup>11</sup>	NR
Sulfuric acid (conc.)	NR <sup>12</sup>	NR	100	S	NR <sup>12</sup>	NR	NR <sup>12</sup>	NR	NR	NR	NR <sup>12</sup>	NR	65 <sup>11</sup>	65U,S,A	NR <sup>12</sup>	NR
Sulfurous acid	NR	NR	140	U	OK	135U	NR	NR	NR	NR	OK	135U	135	135U	—	—
Tannic acid	65	65U,S,A	OK	S,A	OK	135U,S,A	65 <sup>5</sup>	65U,S,A	65 <sup>5</sup>	65U,S,A	OK	135U,S,A	OK	135U,S,A	135	135U,S,A
Tartaric acid	65	65U,S	—	—	NR	NR	65	65U,S	—	—	135	135U,S	145	135U,S	—	—
Tetrahydrofuran	65	65U,S,A	OK	S,A	NR	NR	65	S,A	95	70U,S,A	NR	NR	70	65U,S,A	OK <sup>3</sup>	70U,S,A
Toluene (toluol)	OK	110U,S,A	OK	S,A	NR	NR	65	65U,S,A,T	OK	120U,S,A,T	OK	S,A,T	120	110U,S,A,T	OK	S,A,T
Trichloroethylene	OK	S,A	—	—	NR	NR	65	S,A	65	65U,S,A	OK	S,A	NR	NR	OK	S,A
Triethanolamine	65	65U,S,A,T	—	—	—	—	65	65U,S,A,T	—	—	—	—	70	65U,S,A,T	—	—
Turpentine	OK	65U,S,A,T	OK	S,A	95	S,A,T	65	65U,S,A,T	OK	S,A,T	OK	S,A,T	70	65U,S,A,T	OK	S,A,T
Urea	70	T	—	—	—	—	—	—	—	—	—	—	—	—	65	T
Vinegar	95	95U,S,A	—	—	NR	NR	—	—	NR	NR	NR	NR	135	135U,S,A	100	100U,S,A
Water, deionized	—	—	—	—	—	—	—	—	—	—	—	—	OK	U,S	—	—
Water, sea (salt)	OK	120U	140	U	OK	135U	140	140U	135	135U	240	135U	OK	135U	140	140U
Xylene (xylo)	OK	S,A,T	—	—	NR	NR	OK	S,A,T	OK	S,A,T	OK	S,A,T	NR	NR	OK	S,A,T
Zinc chloride	—	—	—	—	—	—	—	—	—	—	—	—	120	120U	—	—
Zinc sulfate	—	—	OK	S,A	NR	NR	—	—	NR	NR	OK	U,S,A	OK	U,S,A	—	—



# 7 REASONS

# FOR USING DEPTH FILTER CARTRIDGES

- TRUE DEPTH FILTRATION** - wound filter cartridges provide selective particle retention. They are manufactured to provide true depth filtration deficient filtering throughout the path of the fluid. Winding creates diamond-shaped openings that become progressively smaller toward the center tube, to trap progressively smaller particles. Large particles never reach small openings.
- LONGER SERVICE LIFE** – because the wound cartridge so successfully resists clogging, it's not uncommon for a set of cartridges to filter many millions of gallons of fluid before replacement. Fewer filter changes obviously save both labor and materials. More important is that production equipment is shut down less often for filter cartridge service. Such facts are important considerations in selecting the kind of filtration system you install.
- CHEMICAL AND TEMPERATURE COMPATIBILITY** – cartridge windings are made in a variety of materials – polypropylene, nylon, cotton, rayon, orlon and glass to name a few, and other materials on special order. Cores are of polypropylene, stainless steel or tinned steel as standard materials. Various materials also have different temperature tolerances. By selecting the right materials for your needs, you're assured of complete chemical and temperature compatibility.
- Ease of service – depth cartridges do not require highly trained personnel for service. Replacement can be done by almost anyone. On most



filter chambers, a top cover is removed, old cartridges are lifted out and new ones are set in place. No solution is lost from the tank. Changing can be done much quicker than filters that use loose media.

- POLLUTION ABATEMENT** – cartridges present no liquid or wastewater pollution problem: spent cartridges are disposed of as solid waste. Where it is necessary to treat them for toxicity or to neutralize them, it can be done in place, with cartridges still in the chamber.
- WIDE CHOICE OF POROSITIES** – wound cartridges reject particles from as low as 0.5 micron to 100 micron. This wide range of porosities expands the customer's ability to tailor his filtration system to his specific need, to select exactly the right cartridge, whether for single pass filtration or recirculation filtration.
- MODULAR DESIGN** – most filter chambers designed for wound cartridges can accommodate several modular sizes of cartridges in diameters of 2.5 inches and standard lengths of 6, 10, 20, 30, and 40 inches. Thus, a chamber might be fitted with 36 10-inch cartridges, or 12 30-inch units, or a combination of more than one size. The choice is the customer's, based on economics and ease of changeover; but filtration efficiency is not impaired, regardless of cartridge size.



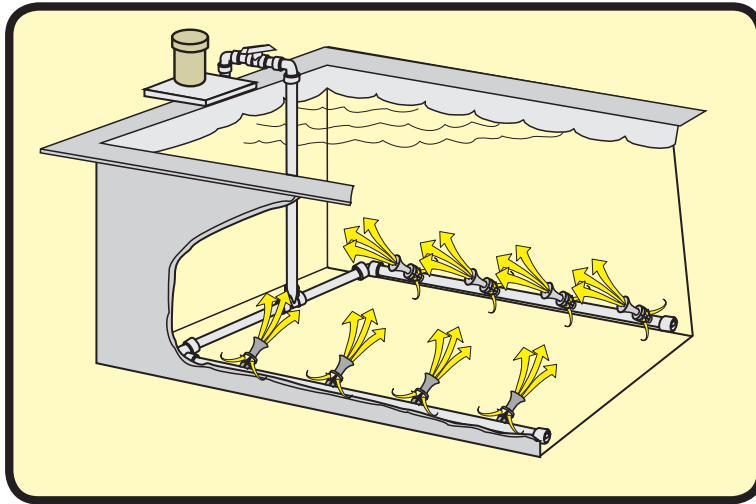
# SER-DUCTOR® PUMPED AGITATION

316

A-407\_L

2900 MacArthur Blvd. Northbrook, IL USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

**Efficient agitation and mixing of:  
CLEANING / RINSING / PLATING / WASTE TREATMENT  
and OTHER PROCESS SOLUTIONS**



16

A SER-DUCTOR system provides solution agitation with a centrifugal pump by drawing liquid from a tank and returning it to the tank through a sparger system, similar to that used for air agitation, with eductors strategically placed along the sparger pipe.

SER-DUCTOR agitation delivers 5 times the pump output at each nozzle. It effectively distributes the desired level of agitation to critical areas in your process tank. The system is driven by your choice of vertical, magnetic drive, self-priming or mechanical seal pump.

With SER-DUCTOR systems, solutions are agitated without the introduction of foreign matter such as airborne dirt or compressor oil, as is often the case with air agitation. Whether the solution is a cleaner, a rinse, a plating

bath or other process solution, it is only this fluid that is recirculated by the SER-DUCTOR system.

SER-DUCTOR agitation in a process tank keeps particulate from settling to the tank bottom where it can form a layer of sludge that shortens the life of the solution, requires expensive dumps, new make-ups and costly downtime in between for manual cleanout of the tank bottom. By effectively keeping the "dirt" in suspension, the SER-DUCTOR system makes it easier for a filtration system on the tank to remove particles. This extends the life of the bath and greatly reduces the possibility of contamination being carried to other tanks in the process cycle where it can lead to costly rejects and even product failure.

## PROVEN BENEFITS OF SERDUCTOR SYSTEMS IN PLATING APPLICATIONS

- Reduces airborne fume emissions by 90%
- Saves heating costs up to 25%
- Reduces brightener consumption 20%
- Saves metal as a result of more uniform brightness and thickness distribution
- Improves throw and deposit thickness in blind and through holes and recesses
- Permits increased current density, especially compared to air or cathode rod agitation, for faster plating rate
- Reduces carbonates in alkaline processes
- Reduces or eliminates gas-pitting
- Provides constant agitation because SER-DUCTOR systems don't clog

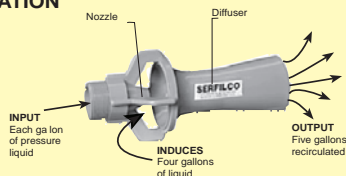
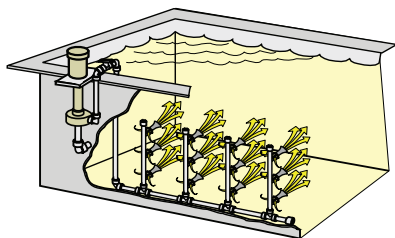




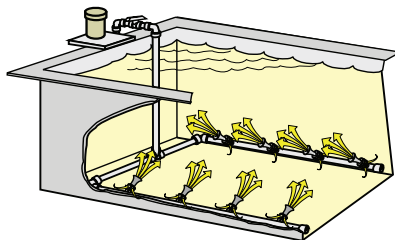
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**PRINCIPLE OF OPERATION**

Liquid pumped into the eductor nozzle exits at high velocity, drawing an additional flow of the surrounding solution through the eductor. This additional flow (induced liquid) mixes with the pumped solution and multiplies its volume five-fold. The source of the pumped liquid (input) can be a pump or filter chamber discharge.

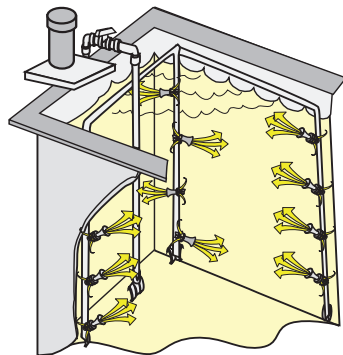
**TYPICAL APPLICATIONS****FOR PRINTED CIRCUIT BOARDS AND RACK PLATING**

SER-DUCTOR agitation in printed circuit board manufacturing and rack plating applications enhances plating solution flow across the board surface. Carefully engineered clusters of eductor nozzles sweep away cathode films swiftly allowing faster plating at lower voltages with much higher current densities. More even plating and significantly lower metal usage result. (The horizontal direction of eductors stationed along vertical distributor pipes is a typical SER-DUCTOR configuration for these applications.)

**FOR PARTS CLEANING IN BASKETS OR ON RACKS**

SER-DUCTOR agitation for bulk parts cleaning in baskets or for racked work improves solution flow through the work and assures greater impingement of fresh solution on the parts.

Additionally, in cleaner tank applications SER-DUCTOR agitation prevents temperature stratification. It also keeps solids in suspension so they can be more easily removed by filtration. This extends bath life and reduces chemical make-up costs. (The moderately upward angle of these eductors along "wishbone" distributor piping provides the proper direction of solution flow.)

**FOR MIXING**

Vigorous SER-DUCTOR agitation within the tank creates sufficient solution movement to eliminate solution stratification. This movement lends itself to mixing two or more liquids or to mixing a liquid and a powder. (A more extreme angle of eductor positioning is helpful in mixing bath components and assuring continuing uniformity of the solution.)



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**TO ORDER, use Price Code Number**

**SER-DUCTOR NOZZLES**

CONN	POLYPROPYLENE		CPVC		PVDF		ECTFE		316 STAINLESS STEEL		IRON	
MN PT	MODEL	PCN	MODEL	PCN	MODEL	PCN	MODEL	PCN	MODEL	PCN	MODEL	PCN
1/4"	ME 1/4	33-1930	MEC 1/4	33-1930 C	MEK 1/4	33-1930 K	MEH 1/4	33-1930 H	—	—	—	—
3/8"	ME 3/8"	33-1732	MEC 3/8"	33-1732 C	MEK 3/8"	33-1732 K	MEH 3/8"	33-1732 H	MESS 3/8"	33-1732 S	MES 3/8"	33-1732 F
3/4"	ME 3/4"	33-1733	MEC 3/4"	33-1733 C	MEK 3/4"	33-1733 K	MEH 3/4"	33-1733 H	MESS 3/4"	33-1733 S	MES 3/4"	33-1733 F
1-1/2"	ME 1-1/2"	33-1734	—	—	MEK 1-1/2"	33-1734 K	—	—	MESS 1-1/2"	33-1734 S	MES 1-1/2"	33-1734 F

**NOZZLE DIMENSIONS**

**SER DUCTOR COUPLING/NOZZLE ASSEMBLY**

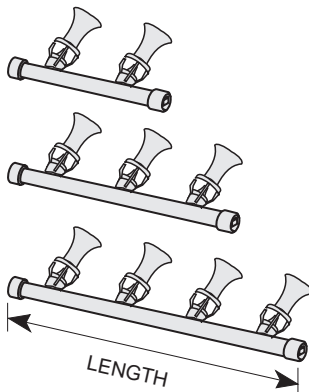
CONNS	DIMENSIONS	
	Length	Diameter
1/4	2-3/4"	1-1/4"
3/8"	4-1/4"	2-1/8"
3/4	6-3/8"	3"
1-1/2"	9-7/8"	4-5/8"



COUPLING	1/4" PP	3/8" PP	3/4" PP
	FNPT	PCN	PCN
3/4"	—	33-7003	33-6098
1"	—	33-7004	33-6022
1-1/4"	—	33-7005	33-6099
1-1/2"	—	—	33-7000
2"	—	—	33-6025
—	—	33-7001	33-6026

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**PRE-ENGINEERED SYSTEM**



PIPE SIZE	EDUCTORS		LENGTH		PP/CPVC		PVDF/PVDF		
	MNPT	No.	Size	Inches	Meters	Model	PCN	Model	PCN
1"	2	3	3/8"	24	.6	S-E1	33-6006	S-E1K	33-6006 K
				36	.9	S-E2	33-6007	S-E2K	33-6007 K
				48	1.2	S-E3	33-6008	S-E3K	33-6008 K
1-1/4"	2	3	3/8"	24	.6	S-E4	33-6009	—	—
				36	.9	S-E5	33-6010	—	—
				48	1.2	S-E6	33-6011	—	—
1-1/4"	2	3	3/4"	24	.6	S-E7	33-6012	—	—
				36	.9	S-E8	33-6013	—	—
				48	1.2	S-E9	33-6014	—	—
1-1/2"	2	3	3/8"	24	.6	S-E16	33-6081	S-E16K	33-6081 K
				36	.9	S-E17	33-6082	S-E17K	33-6082 K
				48	1.2	S-E18	33-6083	S-E18K	33-6083 K
1-1/2"	2	3	3/4"	24	.6	S-E10	33-6015	S-E10K	33-6015 K
				36	.9	S-E11	33-6016	S-E11K	33-6016 K
				48	1.2	S-E12	33-6017	S-E12K	33-6017 K
2"	2	3	3/8"	24	.6	S-E19	33-6084	S-E19K	33-6084 K
				36	.9	S-E20	33-6085	S-E20K	33-6085 K
				48	1.2	S-E21	33-6086	S-E21K	33-6086 K
2"	2	3	3/4"	24	.6	S-E13	33-6018	S-E13K	33-6018 K
				36	.9	S-E14	33-6019	S-E14K	33-6019 K
				48	1.2	S-E15	33-6020	S-E15K	33-6020 K

All SER-DUCTOR systems can be connected to achieve extended length assemblies.



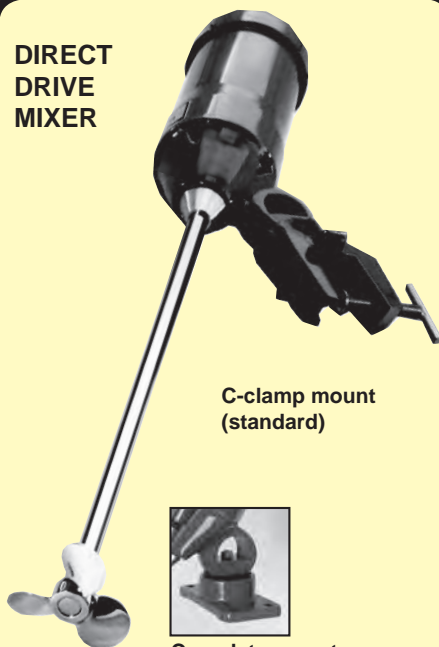


# PROCESS MIXERS

A-403\_J

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## DIRECT DRIVE MIXER



C-clamp mount  
(standard)



Cup plate mount  
(optional)

## GEAR DRIVE and DIRECT DRIVE

For waste treatment neutralization, blending two or more liquids, or mixing liquids with solids

### TYPICAL APPLICATIONS:

WASTE TREATMENT  
FOOD PROCESSING  
COSMETICS  
CHEMICAL MANUFACTURING  
PHARMACEUTICALS  
PAINTS AND INKS

- For tank sizes to 4500 gallons  
Pumping rate to 4500 GPM
- Single or dual propeller configurations
- Variable speed drive available for shear sensitive liquids
- Mixers for special applications available.  
Consult Sales Department

## SPECIFICATIONS

**Motor:** 1750 RPM, TEFC electric or air operated

**Gear housing:** Heavy wall A-356-T6 heat-treated cast aluminum - polished before painting.

**Mounting:** Universal C-clamp (standard) or rigid cup plate mount.

**Shaft:** 5/8" - 1 1/2" diameter 316L stainless steel, center-less ground and polished for vibration-free operation.

**Dual chuck set screws** allow for shaft removal without disassembling mixer.

**Propellers:** Square pitch, 3 blade marine propellers or high efficiency impeller — 316L stainless steel.



**Do not use on flammables or in a combustible atmosphere.**  
Consult Sales Dept. for mixers designed for this purpose.



# DIRECT DRIVE MIXERS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**SERFILCO DIRECT DRIVE MIXERS** utilize a precision-bored shaft chuck connected directly to a 56C frame motor. Permanently lubricated chuck support bearing and elastomeric lip seal with garter spring means no contamination from lubricants and no maintenance. Operating RPM is 1750.

## SPECIFICATIONS

MODELS	PUMPING RATE <sup>1</sup> (GPM)	APPROX. TANK SIZE (GAL)	PROPELLER			SHAFT			MOTOR HP
			TYPE	DIAMETER (IN.)		DIA (IN.)	STD LGTH (IN.)	OPT. LGTH (IN.)	
				SINGLE	DUAL				
SMD1025	230	up to 250	JP3	4.0	3.5	5/8"	42"	-	0.25
SMD1050	325	200-400	JP3	4.5	4.0	5/8"	42"	54"	0.5
SMD1010	445	250-500	JP3	5.0	4.5	5/8"	30"	-	1.0
SMD3010	445	300-600	JP3	5.0	4.5	1"	38"	50"	1.0
SMD3015	590	500-800	JP3	5.5	5.0	1"	38"	50"	1.5
SMD3020	770	600-1000	JP3	6.0	5.0	1"	38"	50"	2.0

<sup>1</sup> Data based on 100 CPS viscosity and specific gravity approximately equal to 1.0.

**TO ORDER, use Price Code Number**

**FOR DIRECT DRIVE MODEL, SELECT MIXER, SINGLE OR DUAL PROPELLER AND MOTOR FROM TABLES BELOW.**

**EXAMPLE:** Mixer + Propeller + Motor = Model = Price Code No.  
 SMD3010 + 1 + 1 PHASE = SMD3010-1-G1.0 = 50-1241G

BASIC MODEL		PROPELLER				MOTOR					
MODELS	PRICE CODE NO	SINGLE PROP		DUAL PROP		115-230/1/60		230-460/3/60		AIR	
		MODEL	PCN	MODEL	PCN	MODEL	PCN	MODEL	PCN	MODEL	PCN
SMD1025	50-121	-1	1	-2	2	-G.25	G	-H.25	H	-AIR	R
SMD1050	50-122					-G.50		-H.50			
SMD1010	50-123					-G1.0		-H1.0			
SMD3010	50-124					-G1.0		-H1.0			
SMD3015	50-125					-G1.5		-H1.5			
SMD3020	50-126					-		-H2.0			

Direct Drive motor height -17½"

Air Drive height - 12"

OPTIONAL	ADD TO MODEL	PCN
Cup Plate Mount	-C	O-CM
Optional Length - Direct Drive	-OL	O-LD

**NOTE:** When the tank height is greater than 1¼ times the tank diameter, dual propellers should be used to assure complete mixing. The second propeller is generally located midway between the bottom propeller and the liquid surface. See Technical Bulletin TA-105 for selection guidelines.



# GEAR DRIVE MIXERS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**SERFILCO DOUBLE REDUCTION HELICAL GEAR DRIVE MIXERS**, AGMA quality 8, provide smooth, quiet performance. Mixer operating speed is 350 RPM. Heavy duty design offers more mixing capability than any other portable mixer. SMG40 models have integral motor / gear reducer. SMG50 models have separate motor and gear reducer.

## SPECIFICATIONS

MODELS	PUMPING RATE <sup>1</sup> (GPM)	APPROX. TANK SIZE (GAL)	PROPELLER			SHAFT			MOTOR
			TYPE	DIAMETER (IN)		DIA (IN.)	STD LGTH (IN.)	OPT. LGTH (IN.)	HP
				SINGLE	DUAL				
SMG4012	1230	750-1200	JP3	12.0	—	1"	38"	62"	1.0
SMG4013	1564	1200-1750	JP3	13.0	—	1"	38"	62"	1.0
SMG4014	1954	1500-2500	JP3	14.0	12.0	1"	38"/62" <sup>2</sup>	62"/74" <sup>2</sup>	1.0
SMG5015	2713	2000-3000	SC3	14.3	—	1.5"	68"	80"	1.5
SMG5020	3632	3000-4000	SC3	16.5	—	1.5"	68"	80"	2.0
SMG5030	4445	3500-4500	SC3	17.1	14.3	1.5"	68"	80"	3.0

<sup>1</sup> Data based on 100 CPS viscosity and specific gravity approximately equal to 1.0.

<sup>2</sup> Shorter length for single prop; longer length for dual prop

**TO ORDER, use Price Code Number**

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**FOR GEAR DRIVE MODEL, SELECT MIXER, SINGLE OR DUAL PROPELLER AND MOTOR FROM TABLES BELOW.**

**EXAMPLE:** Mixer + Propeller + Motor = Model = Price Code No.  
 SMG4014 + 1 + 1 PHASE = SMG4014-1-G1.0 = 50-1331G

BASIC MODEL		PROPELLER				MOTOR			
MODELS	PRICE CODE NO	SINGLE PROP		DUAL PROP		115-230/1/60		230-460/3/60	
		MODEL	PCN	MODEL	PCN	MODEL	PCN	MODEL	PCN
SMG4013	50-132			—	—	-G1.0		-H1.0	
SMG4014	50-133			-2	2	-G1.0		-H1.0	
SMG5015	50-134	-1	1	—	—	-G1.5	G	-H1.5	H
SMG5020	50-135			—	—	—		-H2.0	
SMG5030	50-136			-2	2	—		-H3.0	

Motor and gear box length - 22"

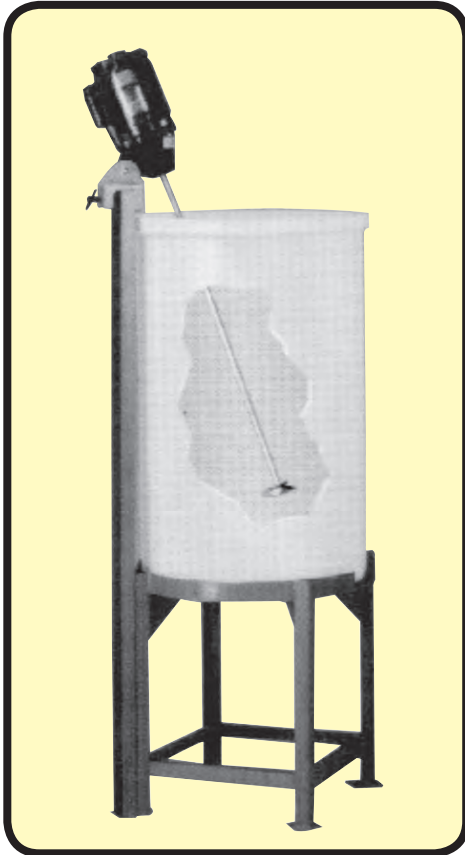
OPTIONAL	ADD TO MODEL	PCN
Cup Plate Mount	-C	O-CM
Optional Length - Gear Drive	-OL	O-LG



# MIXING STATIONS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

16



- **Excellent for mixing, adding flocculating agents, waste treat, plating, chemical processing**
- **Pre-engineered packages**
- **7 sizes to choose from**  
Up to 250 Gallons
- **Chemical resistant**
- **Seamless — corrosion-resistant tanks - Molded HDPE**
- **Cone bottom for easy and complete emptying with optional drain**
- **For liquids to 160°F and 1.3 S.G., 500 CPS**

These mixing stations feature a heavy duty HDPE tank, epoxy painted steel tank stand with mixer mount. The mixers are direct drive to 1725 RPM for optimum tank mixing and blending. Motors are 115/230/1/60. Tank connections and valves ordered separately.

*For custom inlet & outlet configurations, consult Application Engineering Dept.*

MODEL NUMBER	TANK SIZE		MIXER H.P.	PRICE CODE NO.
	GALLONS	DIA. x HT. (in.)	TEFC	
MS30	30	18 x 29	1/4	48-0974
MS55	55	22 x 36	1/4	48-0975
MS75	75	30 x 24	1/3	48-0976
MS100	100	30 x 36	1/3	48-0977
MS125	125	42 x 24	1/3	48-0978
MS200	200	31 x 65	1/2	48-0979
MS250	250	42 x 46	1/2	48-0980



# PORTABLE DOLLY & MIXING TANK

323

P-200\_C

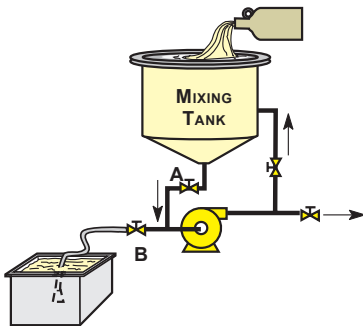
2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**For use with any end suction horizontal centrifugal pump to provide pumping, transferring, recirculating, cleaning or filtering.**

- CHEMICAL & FOOD PROCESSING TANKS
- PHOTOGRAPHIC SOLUTIONS
- ETCHING SOLUTIONS
- CLEANING SOLUTIONS
- WASTES • ACIDS
- CHEMICALS • PLATING
- FUME SCRUBBING
- COOLING TOWER



16

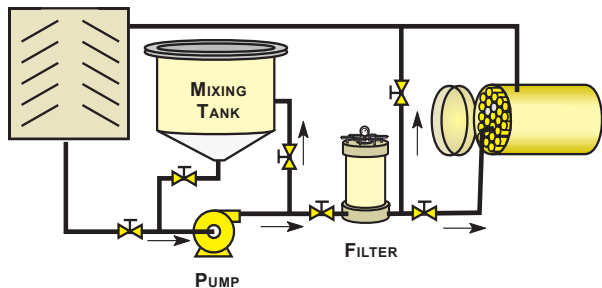


### PUMP PRIMING

Pumps can be primed by first recirculating solution between the mixing tank and the pump. Partially open valve B to remove air from the suction hose.

### ADDING CHEMICALS TO SOLUTIONS

Chemical additions to solutions being pumped can be made directly by placing the chemicals in the mixing tank and opening valve A.



### PRECOATING A FILTER

Provides a convenient way to add filter aid (precoating) to a filter support membrane and to provide additional filter aid and carbon as required.

### CLEANING A TANK, BOILER or COOLING TOWER

Provides easy descaling, rinsing and flushing with or without a filter.

ADD TO PUMP MODEL NO.	DESCRIPTION	PRICE CODE NO.
-SV	MIXING TANK with piping, valves and base assembly. Consists of a 7.5 gallon (28 liter) polyethylene tank with cone bottom, polypropylene outlet strainer, PVC tank frame. CPVC union ball valves on suction and discharge, two 1" NPT CPVC union ball valves (tank inlet and outlet), CPVC piping, all mounted on an 18" x 33" (457mm x 838mm) vinyl coated steel stationary base. Includes pump installation and quick coupling hose adapter on suction and discharge. (Order pump separately.) Shipping weight – approximately 100 lbs. (45 kg) Order -SV system to match pump suction connection: with 1" NPT suction and discharge valves with 1½" NPT suction and discharge valves with 2" NPT suction and 1½" NPT discharge valves	48-0972 48-0962A 48-0973
-P	PORTABLE with two fixed wheels, two swivel casters and pull handle. <i>Note:</i> If double seal is required, be sure to use self-contained water recirculating pump kit for flushing. (See separate bulletin.)	O-2042
HOSE	HOSE Select necessary length of hose and clamps for suction and discharge.	See separate bulletin

For SERFILCO pump selection, see Bulletins P-203 (HC/HK), P-201 (HE), P-504 (D), P-509 (M), P-621 (F)



# SERIES 'WPH' pH/ORP CONTROLLERS

324

A-312\_C

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**Used for the addition of acids and bases to plating solutions; neutralization of waste streams; cooling tower and boiler feed preparation; process control monitoring and recording.**



### Versatility for a Broad Range of Applications

Select from pH or ORP measurements and from five output options. Use "In-Range" to control a solenoid valve to dump a batch treatment tank when measurement value is within limits, or program for "Out-of-Range Alarm" in waste treatment applications when the measurement value is too high or low.

### Ideal for Harsh Environments

The NEMA 4X enclosure, combined with W-EL electrodes, provide a waterproof system with no BNC connectors exposed to wet or corrosive environments.

### Built-in Safety Features

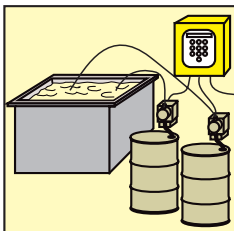
Programmable output limit timers prevent run-away chemical addition. Digital Interlock Input may be used from a flow switch or level input to prevent chemical addition based on a stagnant sample, or control of an empty batch tank.

### Simple, Integrated Data Collection

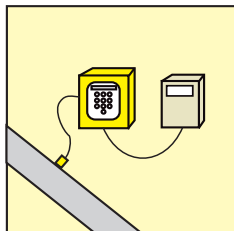
Download stored data from the controller to a USB stick with the press of a button. Use the data to simply and easily validate system performance, document compliance, and reduce liability. The data and event logs show pH/ORP and temperature values, as well as accumulated chemical feed and relay activation times.

'WPH' Series pH/ORP on-line process controllers will improve your treatment performance. Microprocessor-based, with a very easy-to-use menu format, 'WPH' Series controllers measure in pH or mV accurately and reliably. A versatile output configuration allows you to program up to four outputs in a variety of ways – with just one controller.

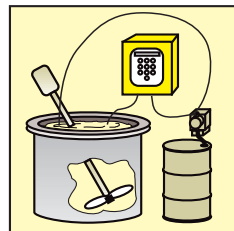
'WPH' Series controllers are available with either on/off mechanical relay outputs or direct pulse proportional control for metering pumps. Installation is as easy as unpacking the unit, mounting it and plugging it in. We also offer other wiring options to fit your requirements.



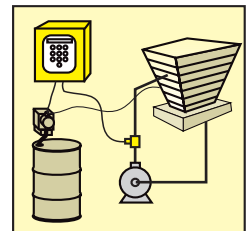
PROCESS CONTROL



WASTE STREAM  
MONITORING



WASTE NEUTRALIZATION/  
RECYCLING



COOLING  
TOWER



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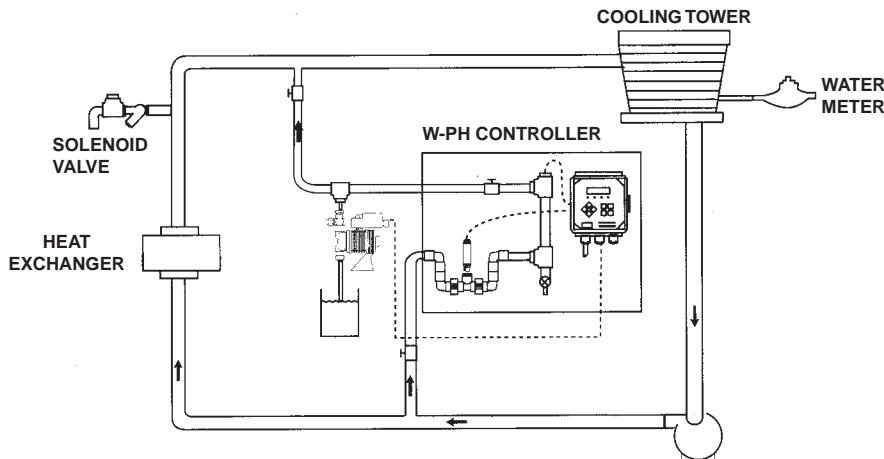
### W-PH410 Series On/Off Control

Four control relays may be set as all high or all low or any combination. The control deadband is fully adjustable.

### W-PH420 Series Pulse Proportional Control

Two pulse outputs that may be set independently, enhanced by an adjustable minimum and maximum pulse per minute setting, plus three dry-contact relays for control or alarm.

- **Microprocessor-based with intuitive menu format** - No potentiometers to adjust, all set points are known precisely, no repetition of adjustments is necessary.
- **pH or ORP measurement** is configurable via a software menu setting - Reduces inventory requirements.
- **Versatile relay configuration** - Control outputs can be set as high or low set points via keypad. Auxiliary outputs can be set as:  
High alarm  
Low alarm  
In-range output  
Out-of-range alarm  
Probe wash
- **Probe wash feature** - For applications that require frequent electrode cleaning, automatic probe wash stretches out reliable measurement life between maintenance interruptions.
- **Auto buffer recognition** - software selectable for U.S. or European calibration standards.
- **Optional 4-20 mA output** - internally powered and fully isolated, for sending clear signal to a chart recorder, PLC or other control device.
- **At-a-glance status display** - Look at any set point without interrupting control or needing the access code. Able to view:  
Analog graph relative to set points  
pH-ORP values  
Status of alarms, outputs
- **Calibration reminder** - Calibration menu displays the date of the last sensor calibration and allows the user to set the number of days between calibrations. The controller will prompt the user to perform a calibration at the specified time.
- **Self diagnostics** - Software and electronics are constantly monitored, without having to take the controller off line. Any operator-action-needed messages are displayed in plain English. A fifth relay is activated by any diagnostic failures.
- **Self test** - selected via menu, a simulated pH and temperature signal is input to the controller. This on-line diagnostic allows sensor or controller problems to be deciphered quickly.
- **Optional USB feature** - Easily create charts and graphs that demonstrate system performance and identify system upsets



W-PH Controller with In-Line Electrode



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**AGENCY CERTIFICATIONS**

UL ANSI/UL 61010-1:2004, 2nd Edition\*  
 CAN/CSA C22,2 No.61010-1:2004 2nd Edition\*  
 CE Safety EN 61010-1 2nd Edition (2001)\*  
 CE EMC EN 61326 :1998 Annex A\*

Note: For EN61000-4-6,-3 the controller met performance criteria B.  
 \*Class A equipment: Equipment suitable for use in establishments other than domestic, and those directly connected to a low voltage (100-240 VAC) power supply network which supplies buildings used for domestic purposes.

**MEASUREMENT PERFORMANCE**

Range -2 to 16 pH  
 ± 1500 mV (ORP)  
 Resolution .0015 pH units (.01 pH displayed)  
 92 µV (1 mV displayed) (ORP)  
 Accuracy (Calibrated) ± .01 pH  
 ± 1 mV (ORP)  
 Temperature Range 32 to 212°F (0 to 100°C)  
 Temperature Resolution ± .09°F (.05°C)  
 Temperature Accuracy ± .9°F (± .5°C)

**INPUTS**

Power 100-240 VAC, 50/60 Hz, 8A  
 Preamp Power ± 5 VDC, 5 mA  
 Signal pH/ORP ± 1500 mV  
 Temperature Comp. (opt.) Pt 100 or Pt 1000  
 Interlock (opt.) isolated dry contact closure required (i.e. flow, level, etc.)

**MECHANICAL**

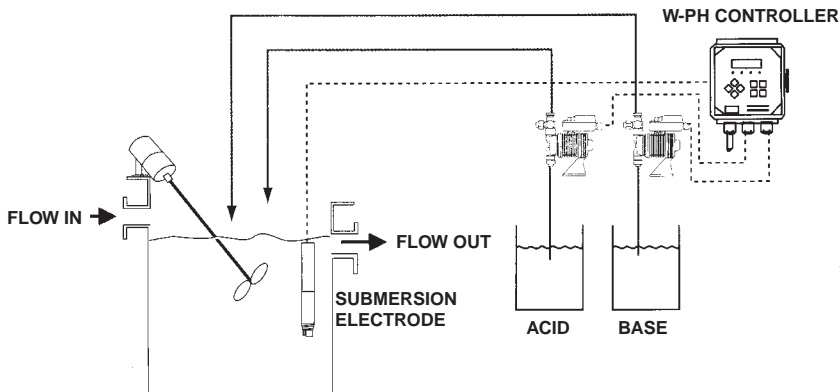
Controller  
 Enclosure Polycarbonate  
 NEMA Rating NEMA 4X (IP 65)  
 Dimensions 7.25" x 7.5" x 5.0"

Display 2 x 16 character backlit liquid crystal  
 Ambient Temperature 32 to 122°F (0 to 50°C)  
 Shipping Weight 7 lbs (3kg) (approximately)

**OUTPUTS**

Powered Relays Internally powered relays switching line voltage  
 6A (resistive), 1/8 HP  
 All relays are fused together as one group, total current for this group must not exceed 6A  
 Pulse Outputs Opto-isolated, Solid state relay  
 150 mA, 40 VDC Max.  
 VLOWMAX = .13V @ 18 mA  
 Dry contact relays 6 A (resistive), 1/8 HP  
 Dry contact relays are not fuse protected

MODEL	CTRL1	CTRL2	CTRL3	CTRL4	ALARM
W-PH410	Powered			Dry	
W-PH420	Pulse			Dry	



**W-PH Controller with Submersion Electrode**

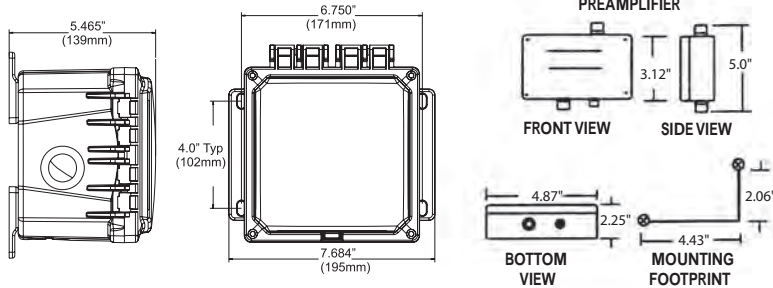




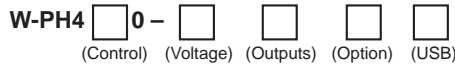
**SERIES 'WPH' pH/ORP CONTROLLERS (cont'd)**

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**DIMENSIONS**



**ORDERING INFORMATION**



**CONTROL OUTPUTS**

- 1 = Two powered, three dry contact relays
- 2 = Two proportional relays, three dry contact relays

**VOLTAGE**

- 1 = 120 VAC, prewired, 6" pigtails (WPH410) or 10 ft. cables (WPH420 only)
- 3 = 120 VAC, prewired, 10 ft. cables with connectors (EW pumps)
- 5 = Hardwired, cable glands

**OUTPUT**

- N = NONE
- 4 = 4-20 mA
- 2 = Two 4-20 mA

**OPTIONS**

- N = NONE (requires electrode with pre-amp)
- 1 = Prewired preamp with 10 ft. cable (electrode not included. Electrode should have BNC connector)

**USB FEATURES**

- N = Software upgrade capability only
- U = Integrated datalogging

**ELECTRODE ASSEMBLY without PREAMP**

Cartridge type, gel-filled double junction, CPVC with 20 ft. cable and BNC connections. Wetted materials of construction: CPVC, HDPE, Viton®, glass (pH) and platinum for (ORP)			
			<b>PRICE CODE NO.</b>
pH	Submersion, 1" NPT	N-TC <sup>1</sup>	W-ELPHF41
ORP	(User supplies pipe and coupling)	N-TC <sup>1</sup>	W-ELMVF41
pH		A-TC <sup>2</sup>	W-ELPHF31
pH	In-line, 1¼" NPT	N-TC <sup>1</sup>	W-ELPHF42
ORP	(User supplies pipeline tee)	N-TC <sup>1</sup>	W-ELMVF42
pH		A-TC <sup>2</sup>	W-ELPHF32

**ELECTRODE ASSEMBLY with PREAMP**

Cartridge type, gel-filled double junction, CPVC with 20 ft. cable and finned leads. Wetted materials of construction: CPVC, HDPE, Viton®, glass (pH) and platinum for (ORP)			
			<b>PRICE CODE NO.</b>
pH	Submersion, 1" NPT	N-TC <sup>1</sup>	W-ELPHF21
ORP	(User supplies pipe and coupling)	N-TC <sup>1</sup>	W-ELMVF21
pH		A-TC <sup>2</sup>	W-ELPHF11
pH	In-line, 1¼" NPT	N-TC <sup>1</sup>	W-ELPHF22
ORP	(User supplies pipeline tee)	N-TC <sup>1</sup>	W-ELMVF22
pH		A-TC <sup>2</sup>	W-ELPHF12

<sup>1</sup> Non-temperature compensated.

<sup>2</sup> Automatic temperature compensated.

**REPLACEMENT ELECTRODES**

DESCRIPTION	PRICE CODE NUMBER
pH electrode, flat surface	W-ELPHFNN
ORP electrode, flat surface	W-ELMVFNN

**CABLE ASSEMBLY**

DESCRIPTION	PRICE CODE NUMBER
4 pin pulse connection for AA7, B7 and C7 metering pumps	L-33796





# ANALOG pH and ORP CONTROLLERS, RECORDERS and MONITORS

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**For use in the addition of acids and alkalis to plating solutions, neutralization of waste streams, chemical reactions, cooling tower and boiler feed preparation, process control monitoring and recording.**

## MODEL 440 pH CONTROLLER / MODEL 443 ORP CONTROLLER - For use indoors



MODEL 440 pH CONTROLLER is designed to provide alkaline or acid addition to cooling towers, plating and chromatating solutions and process streams to adjust pH to a desired setpoint. Output connections to the meter will actuate a metering pump or solenoid valve. Readings are indicated on a 5.5" taut-band analog meter. Solid state setpoint actuation avoids troublesome meter contacts. The aluminum case is ideal for panel or wall mounting. Output power is wired to a grounded output receptacle at bottom of case.

- With single or dual set points
- Easy to read 5.5" analog meter

TO ORDER, use Price Code No.		
MODEL	METER FUNCTION	PRICE CODE NO. *
440	pH	56-0045
443	ORP	56-0044

\* For 220V/1/50, add **C** to Price Code No.

MODEL 443 ORP CONTROLLER is designed to provide addition of oxidation/reduction agents to process streams. It is possible to control chlorine or sulfur dioxide gas or liquid sodium hypochlorite, sodium thiosulfate or chromic acid additions and DTC type metal precipitants.

OPTIONAL	
Dual set point	add 56-0200

## MODEL 436 pH or ORP CONTROLLER - For use in outdoor or corrosive atmospheres



- With single, dual, triple or quad setpoints
- Weatherproof case
- Similar to Models 440 & 443

MODEL 436 pH and ORP CONTROLLERS are designed for outdoor and corrosive atmosphere environments. The case is NEMA 4x rated to protect the instrumentation from corrosion. Combination electrodes are used with both pH and ORP. Function and major features are the same as parallel Models 440 and 443 above.

TO ORDER, use Price Code No.	
MODEL	PRICE CODE NO. *
436-pH	56-0065A
436-ORP	56-0065B

\* For 220V/1/50, add **C** to Price Code No.

OPTIONAL	
Dual setpoint	add 56-0200
Viewing window in cover	add 56-0089
Audible alarm (Requires add'l setpoint)	add 56-0139
Automatic temperature compensation	add 56-0179

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FEATURE	MODEL 440 pH	MODEL 443 ORP	MODEL 436-pH	MODEL 436-ORP
Accuracy	Meter $\pm 0.2$ pH	Meter $\pm 15$ mv	Meter $\pm 0.1$ pH	Meter $\pm 5$ mv
pH meter (ORP meter)	5.5" taut-band movement			
pH range (ORP range)	0 to 14 pH	0 - 1000 mV, 10 mV div.	0 to 14 pH	0 - 1000 mV, 10 mV div.
Setpoint range	2 to 12 pH	0 - 1000 mV	2-12 pH, accuracy $\pm 0.2$ pH	0 - 1000 mV
Setpoint stability	$\pm 0.05$ pH per month	$\pm 5$ mV per month	$\pm 0.05$ pH per month	$\pm 5$ mV per month
Input current	2 picoamperes maximum			
Temperature compensation	0° C to 100° C in 2° C divisions			
pH electrode connector	Teflon <sup>®</sup> insulated BNC			
Reference electrode connector	Pin jack			
Automatic temp. compensation connector	Standard phone jack			
Electrode to controller distance	100 ft. nominal w/o preamp			
Power requirements	115 V/1/60, 10 watts		115 V/1/60, 8 watts	
Output	Single, 115V AC 5 amp controlled by the setpoint. May be alarm to indicate on or off condition. Front panel indicator light.			
Fuses	One 5 amp on pump circuit (1/6 HP motor load), one 1/4 amp for controller electronics			
Size	13" high x 9" wide x 3" deep		12" high x 10" wide x 6" deep	
Weight	4.3 lbs.		12 lbs.	
Case	Designed for panel or wall mounting. Requires 12-1/8" x 8-1/8" panel cut out. Aluminum with baked enamel finish.		FRP NEMA 4X. Up to four setpoints may be provided. Neoprene door gasket with all inputs and outputs through the bottom of the case.	



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**MODEL 432 MONITOR pH or ORP RECORDER/CONTROLLER - For process, reaction and waste water**



- **Two set points: one for recorder, one for recorder/controller, with space for two optional setpoints and timer**
- **Weatherproof FRP NEMA 4x case**
- **Simple installation**
- **Select options and electrodes to suit your needs**

MODEL 432 pH or ORP RECORDER/CONTROLLER has two independent measuring channels - one with analog meter and the other with a chart recorder. Each channel is used with its own probe monitoring two separate locations, or both channels can share a common probe. The Model 432 is available as either a pH or ORP instrument. Two setpoints are standard.

The setpoints may be used as high / low when both acid and alkaline additions are needed as in a neutralization tank. The second probe can then be placed in the effluent stream to record final pH. If

only acid or alkaline is to be added for neutralization, only one setpoint will be connected to the meter and the other can be used as high alarm or recorder.

Hexavalent chrome or cyanide destruct is accomplished by ORP. In this case, only one setpoint is needed and only one reactant is added. Setpoint relays can activate metering pumps, solenoid valves or alarms. Two additional setpoints can be added for maximum versatility. The optional pulse timer prevents over-dispensing of reactant due to a probe or circuitry failure.

TO ORDER, use Price Code Number			
MODEL	POWER	PRICE CODE NO.	SHIPPING WEIGHT
432-pH	115V/1/60	56-0066	25 lbs.
	115V/1/50	56-0066B	
	220V/1/50	56-0066C	
432-ORP	115V/1/60	56-0142	
	115V/1/50	56-0142B	
	220V/1/50	56-0142C	

OPTIONAL	PRICE CODE NO.
Additional setpoints, to 5 total	add 56-0200
Dual channel setpoint for recorder	add 56-0140
Viewing window in cover	add 56-0089
Adjustable pulse timer, 0 to 60 seconds on and off	add 56-0141
Audible alarm (Requires additional setpoints)	add 56-0139

**MODEL 437 pH or ORP RECORDING CONTROLLER (Similar to Model 436 except has chart recorder instead of analog meter.)**



shown with window option

- **Weatherproof fiberglass enclosure (NEMA 4x standard.)**
- **5 amp control circuit**
- **Dual setpoint option**
- **5 amp control circuit**
- **Timer options**
- **2.6 inch strip chart**  
Includes one roll of chart paper.
- **100 ft. electrode extension without preamp**

TO ORDER, use Price Code No.	
MODEL	PRICE CODE NO.
437-pH	56-0178
437-ORP	56-0213

For 220V/1/50, add C to Price Code No.

OPTIONAL	
Dual setpoint	add 56-0200
Window	add 56-0089

FEATURE	MODEL 432-pH		MODEL 432-ORP		MODEL 437-pH	MODEL 437-ORP
	METER	RECORDER	METER	RECORDER	Does not apply	
Accuracy	± 0.1 pH	± 0.1 pH	5 mV		± 5 mV	
Range	0-14 in 0.1 div.	2 to 12 pH	0.00-1,000 mV	0 - 1,000 mV		
Indicator	5.5 taut band movement	2-9/16 press. sens. strip chart	5.5 taut band movement	2-9/16 press. sens. strip chart	2-9/16" pressure sensitive strip chart	
Setpoint accuracy	0.2 pH		20 mV		0.2 pH	20 mV
Setpoint range	2 to 12 pH		0 to 1,000 mV		2 to 12 pH	0 to 1000 mV
Setpoint stability	± 0.05 pH per month		± 5 mV per month		± 0.05 pH per month	± 5 mV per month
Setpoint dead band	0.05 pH		5 mV		0.05 pH	5 mV
Setpoint pilot light	Indicates when output relay is activated					
Cabinet size	16" high x 14" wide x 8" deep				12" high x 10" wide x 5" deep	
Temperature compensation	0° C to 100° C in 2° C divisions					
Power requirements	115 VAC / 1 / 60Hz, 10 watts					





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**MODEL 400 pH MONITOR RECORDER - For continuous pH recording of waste or process streams**



- **Benchtop or panel mount**
- **Compact 5.5" high x 3.5" wide x 7" deep**
- **Rugged— die cast metal with epoxy coating**
- **Inkless 30 day chart** (First roll included)

**MODEL 400 pH MONITOR RECORDER** weighs in at under 5 lbs., small enough to fit in a briefcase. The compact Model 400 pH recorder features inkless pressure sensitive paper which lasts up to 30 days. Teflon® insulated input circuit assures accurate measurement in severe conditions and allows the use of an electrode up to 100 ft. away without a pre-amp. Controls are conveniently located on the face of the instrument. Panel mount hardware included.

<b>TO ORDER, use Price Code Number</b>			
<b>MODEL</b>	<b>POWER PRICE</b>	<b>CODE NO. SHIPPING</b>	<b>WEIGHT</b>
400	115V/1/60 220V/1/60 220V/1/50	56-0046 56-0046B 56-0046C	5 lbs.

**MODELS 434 and 111 ANALOG pH MONITORS**



**MODEL 434 pH MONITOR**

**MODEL 434 MONITOR** has the same reliable circuitry found in our laboratory instruments. Its NEMA 4X case provides excellent corrosion-proof and chemical resistant protection.

**MODEL 111 MONITOR** is identical in function to Model 434, but is designed for panel mount. The same reliable monitor is used where weather resistant feature is not needed.



**MODEL 111 pH MONITOR**

<b>TO ORDER</b>	
<b>MODEL</b>	<b>PRICE CODE NO.</b>
434	56-0176
111	56-0177

<b>FEATURE</b>	<b>MODEL 400</b>	<b>MODEL 434</b>	<b>MODEL 111</b>
Accuracy	± 0.1 pH	0.05 pH when within 2 pH of a buffer solution, 0.1 pH when beyond 2 pH of a buffer solution.	
pH range	2 to 12 pH	0 to 14 scale with 0.1 pH divisions	
Display	2-9/16" chart	5.5" taut band meter	
Input current	2 picoamperes maximum	2 picoamperes maximum	
Temperature compensation	0° C to 100° C in 2° C divisions	0° C to 100° C in 2° C divisions	
pH electrode connector	BNC	BNC	
Power requirements	115V/1/60, 8 watts	115V/1/60, 10 watts	
Size	5-1/2" high x 3-1/2" wide x 7" deep	10" high x 8" wide x 5" deep	8" high x 8-1/2" wide x 2" deep

**CONTROLLER AND RECORDER ACCESSORIES**

<b>ITEM AND DESCRIPTION APPLICABLE TO</b>	<b>MODEL NOS.</b>	<b>PRICE CODE NO.</b>
<b>DUAL CONTROL OPTION</b> - Includes a second DPDT relay and a second setpoint control. Valuable when adding to solutions. - Specify this option when second setpoint is to be wired to the recorder - useful as an alarm or to control the addition of a final neutralization treatment. - Specify this option when second setpoint is to be used as an over-range safety shutoff in the event fouling of the electrode poses a problem. The recorder setpoint is connected in series with the controller setpoint. The recorder setpoint is then adjusted 1 or 2 pH units beyond that of the controller.	436, 437, 440, 443	56-0200
	432, 436, 437	56-0201
	432	56-0202
<b>ADJUSTABLE CYCLE TIMER</b> - A solid state timer which will start timing when the setpoint is reached. At any preset point between 0 and 50 minutes, the timer will reverse the output relay. This safety feature is designed to stop an acid pump in a closed system in the event of a mechanical or electrode failure.	432	56-0203
	432, 436, 437, 440	56-0204
<b>BNC to BNC EXTENSION CABLE</b> (to 100 ft. maximum)	400, 432, 436, 440, 443	Base 56-0207 + 56-0207A per ft.
<b>pH / ORP CHART PAPER</b> (inkless 30 day) - 50 divisions, 63 foot roll	400, 432, 437	56-0211
<b>ELECTRODE FILLING SOLUTION</b>		56-0304A



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**For pH and ORP controllers, recorders, and monitors  
Models 111, 400, 432, 434, 436, 437, 440 and digital**

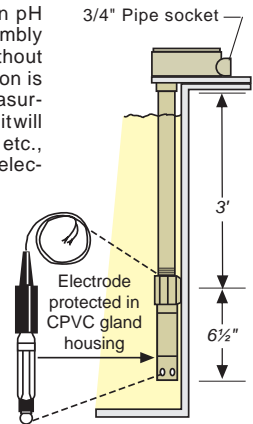
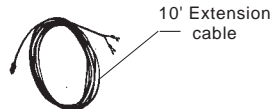
Combination pH electrodes have an all glass seal design allowing high temperature operation, easier cleaning and less carry over between solutions. The small silver-silver chloride internals provide rapid temperature equilibrium

and the low bulb impedance allows rapid response even at low sample temperatures. These electrodes are designed for all pH meters having a zero potential near pH 7. For portable or lab use electrodes, see Bulletin A-303.

**IMMERSION ASSEMBLY WITH REPLACEABLE ELECTRODES**

- **Double junction design**
- **Sealed peripheric junction combination pH electrode** with extension cable and spade lug connections
- **Annular non-fouling reference junction**
- **Removable guard** for ease of cleaning
- **Permits use where high solution currents prevail**
- **Easy mounting**  
CPVC 36" x 3/4" NPT pipe extension and terminal with terminal strip for No. 6 spade lug connector and junction box. 10' extension cable (BNC to spade lug). Available with 8" x 3" x 1/2" PVC mounting bracket.
- **CPVC electrode gland**

Features a peripheric junction combination pH electrode housed in a CPVC immersion assembly and can be replaced in a matter of minutes without tools. The special peripheric reference junction is designed in an annular form around the pH measuring electrode. With this special junction design, it will allow operation where sulfides, heavy metals, etc., would normally foul a standard combination electrode reference. This immersion assembly will satisfy the requirements of almost any continuous process application in which a pH electrode must be submerged into a tank, trough or manhole. ORP ± 5000 mV, pH 0-14, Temp -5 to 100°C.



TO ORDER, use Price Code No.	
DESCRIPTION	PRICE CODE NO.
IMMERSION ASSEMBLY with double junction pH electrode	56-0301
with double junction ORP electrode	56-0302

OPTIONAL & REPLACEMENT EQUIPMENT		
DESCRIPTION		PRICE CODE NO.
Replacement electrodes with 36" leads & spade lug connector	pH	56-0115
	ORP	56-0086
Immersion pipe (3/4" MNPT) & terminal box, CPVC		56-0539
Electrode gland housing, CPVC		56-0540
10' extension cable - BNC x spade lug		56-0311
PVC mounting bracket, 8" x 3" x 1/2"		56-0568

**DISPOSABLE COMBINATION ELECTRODE ASSEMBLY**

A single junction probe features both the pH measuring and reference constructed in a single stem for a single probe convenience. The sealed reference needs no pressurization or filling during entire probe life. The combination pH electrode is potted permanently into the PVC housing with a 3/4" NPT fitting.

1" outside diameter x 6" overall length. pH 0 to 14. Temperature - 5 to 80 °C. To 100 PSI.

DESCRIPTION	PRICE CODE NO.
In-line general purpose, 3/4" MNPT with 10 ft. BNC cable. (Fig. 1)	56-0305
Refillable immersion general purpose - extra life, 3/4" FNPT w/10' BNC to spade. May be used with immersion pipe above. (Fig. 2)	56-0541
Drum pH probe assembly - 42" long (Fig. 3)	56-0543
Extension cable BNC (female) by BNC (male) 10 ft.	56-0542

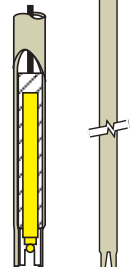


FIGURE 1 Refillable reference junction

FIGURE 3



# CONDUCTIVITY CONTROLLER / MONITOR

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## CONDUCTIVITY CONTROLLER

*Ideal for plating rinse water*

**MODEL CC-97 (wall mounted)**



MODEL CC-97 WALL MOUNTED SYSTEM

### BENEFITS:

- **Conserve rinse water - up to 85%**
- **Eliminate rejects from spotty rinsing**
- **Reduce waste treatment load**
- **Reduce sewer use charges**

### FEATURES:

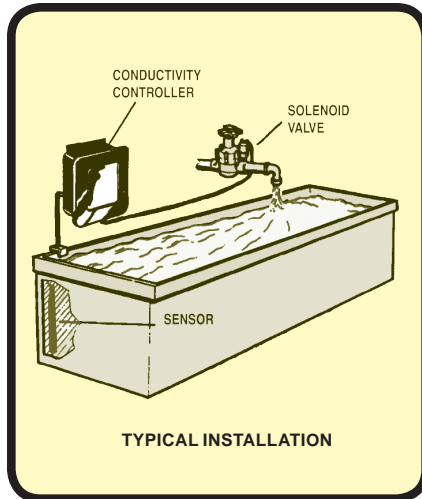
- **Corrosion resistant enclosure**  
Wall mount NEMA 12 enclosure  
LED lamps: POWER ON, VALVE OPEN
- **Submersion sensor - dual range**  
0 to 500 micromhos  
500 to 5,000 micromhos  
Variable set-point
- **Solenoid valve**  
Nylon (glass reinforced), 1" NPT  
24 volt for safety

### What it does -

The CC-97 controller is a fully automatic system which will greatly reduce the amount of water used in continuous flow rinse tanks. At the same time, it automatically maintains water quality, ensuring effective rinsing in water up to 180°F (82°C).

### How it works -

The three parts of the system are easily installed. Submersible conductivity sensor is adjusted to either of the two microsiemens scales and immersed in rinse tank. Controller set-point is then selected. Generally, rinse water contamination is caused by chemicals being "dragged in" and salts that are dissolved from the parts being rinsed. These solutions ionize and can be measured and controlled by their electrical conductivity. Rinse water cannot flow into the tank until the contamination level rises above the set-point. Sensor then signals for solenoid valve to open and add fresh water. When the dilution lowers the contamination to below the set-point, the solenoid valve will close. Indicator lights on controller signal operating power and valve position.



TYPICAL INSTALLATION

## WATER CONDUCTIVITY

ppm (NaCl)	Microsiemens	Water Quality
1 - 150	2 - 300	D. I.
10 - 20	20 - 40	Demineralized
20 - 100	40 - 200	Soft
100 - 300	200 - 600	Medium
300 +	600 +	Hard

For specifications, refer to next page.



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**SPECIFICATIONS**

<b>MODEL CC-97 CONTROLLER SYSTEM</b>	
<b>CONTROLLER - NEMA 12 wall mount, NEMA 3 panel mount</b>	
<b>Input power</b>	Choice of 120 or 240 VAC, 50/60 Hz. Automatic voltage regulation insures operation of the systems from 105-125V or 210-250V respectively.
<b>Output to valve</b>	24 volts @ 600 milliamps AC (stepdown transformer included)
<b>Maximum power consumption</b>	@ 117V, 12 watts (103 milliamps)
<b>Lights</b>	LEDs indicate POWER (red) and VALVE (yellow)
<b>Electrical installation</b>	Either hard wire with 5/8" conduit or plug-in with 2.4M (8 ft.), 18 gauge, 3-conductor plug (supplied with 120V systems only)
<b>Enclosure dimensions</b>	7¼"H x 7¼"W x 5"D (184mm H x 197mm W x 127mm D)
<b>Shipping weight</b>	8 lbs. (3.6 kg)
<b>Ranges</b>	5-500 micromhos (for high quality water) 500-5000 micromhos (for normal tap water) } field select
<b>ON - OFF span</b>	Approximately 5% of set-point
<b>SUBMERSION SENSOR</b>	
<b>Temperature compensation</b>	Automatic to 180° F (82° C)
<b>Materials</b>	Epoxy and 316 stainless steel
<b>Cord</b>	10 foot (3 M ), 22 ga., 4-conductor, vinyl jacketed
<b>Solenoid valve operating pressure</b>	10 - 100 PSI (69-690 kPa)
<b>SOLENOID VALVE - Nylon (glass reinforced), 24 VAC</b>	
<b>Operating pressure</b>	10 - 100 PSI (69-690 kPa)
<b>Connections</b>	1 NPT inlet, 1/2 NPT conduit

**TO ORDER**

**REPLACEMENT ITEMS**

MODEL	MOUNT	POWER PRICE	CODE NO.
CC-97	Wall mount NEMA 12	120V/1/60	56-0552
		240V/1/50-60	56-0552 B

DESCRIPTION	PRICE CODE NO.
Submersion sensor replacement (dual range CC models)	56-0554
1" solenoid valve	56-0108 A

**CONDUCTIVITY MONITOR / CONTROLLER**

**IDEAL FOR: D.I. WATER / WASTE TREATMENT / REVERSE OSMOSIS LABORATORIES / POWER PLANTS / ELECTRONICS**



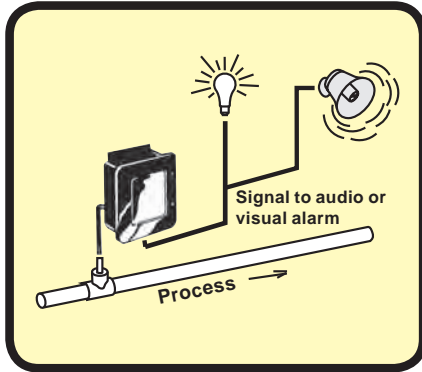
**MODEL CCM-57 PANEL MOUNTED SYSTEM**

**ANALOG MODEL CCM-57**

- **Corrosion resistant enclosure**  
Panel mount NEMA 3 enclosure (optional wall mount plate)  
Seven microsiemen ranges available  
LED lamps: ABOVE or BELOW set-point  
Adjustable set-point, 0-100% full scale  
"PUSH-TO-TEST" set-point check
- **In-line sensor**  
316SS, epoxy, TFE  
¾" NPT, 1¼" lg., 100 PSI max. at 212°F (100°C)
- **Solenoid valve with 115 V to 24V transformer**  
Nylon (glass reinforced), 1" NPT  
24 VAC for safety  
(Optional, required for use as controller)



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TYPICAL MONITOR - ALARM SYSTEM

**What it does -**

The CCM-57 Monitor / Controller is a precision instrument which accurately measures solution conductivity in a variety of microsiemens ranges. It is ideal for reverse osmosis water treatment systems, as well as applications in laboratories, plating, electronics production and general industrial process control. The CCM-57 is exceptionally reliable and includes many convenient features such as push button set-point check. When used as a Monitor/ Controller, optional solenoid valve and transformer are required.

**How it works -**

Rugged 316 stainless steel sensor is mounted in a pipeline tee or directly in the side of a tank. The attached sensor cable (10' standard, 25' optional) is connected to the instrument. Desired conductivity set-point is then easily adjusted using the push button on the front panel and a potentiometer on the internal circuit board. By changing a jumper on the circuit board, the 10 amp alarm relay can be activated by choice of increasing or decreasing readings.

**MODEL CCM-57 MONITOR (When used as controller, order optional solenoid valve and transformer)**

**CONTROLLER - NEMA 3 panel mount with optional wall mount brackets**

Readout	2½" (63 mm) analog meter
Accuracy	± 2% of span
Sensitivity	0.05% of span
Repeatability	0.1% of span
Calibration check	Built-in (push to test)
Voltage output for chart recorder	0-10 VDC @ 5 mA max. (linear)
Relay function for alarm	Single set-point control continuously adjustable 0-100% of full scale Indicators: ABOVE (red) and BELOW (green) set-point LEDs Contact rating: SPDT 10 amp @ 250 VAC, 30 VDC. Relay operates increasing or decreasing reading (selectable)
Input power	115 VAC, 50-60 Hz, ± 15% (user changeable to 220 VAC)
Maximum power consumption	@ 115V; 3 watts (25 milliamps)
Dimensions	6" (152 mm) H x 4.8" (122 mm) W x 3.8" (96 mm) D
Ambient temperature range	-22° F (-30° C) to 140° F (60° C)
Shipping weight	2 lbs (0.9 kg)

**IN-LINE SENSOR**

Temperature compensation	Automatic to 77°F (25°C) between 32° to 212° F (1 - 100°C)
Pressure / temperature limits	100 PSI (690 kPa) @ 212° F (100°C)
Bushing	Polypropylene threaded 3/4" NPT
Materials	316 stainless steel, EPDM, TFE
Cable	24 ga. shielded; 10' (3 meters) standard
Dimensions	Metal portion 1.2" (30 mm) L; 0.5" (13 mm) diameter

**OPTIONAL SOLENOID VALVE - Nylon (glass reinforced), 24 VAC with separate 115V to 24V transformer**

Operating pressure	10 - 100 PSI (69-690 kPa)
Connections	1" NPT inlet, 1/2" NPT conduit
Output to valve	24 volts @ 600 milliamps AC (115V to 24V transformer included)

**TO ORDER MONITOR**

MODEL NO.	MICROSIEMENS	PCN
CCM-57-20	O - 20	56-0555
CCM-57-50	O - 50	56-0556
CCM-57-100	O - 100	56-0557
CCM-57-200	O - 200	56-0558
CCM-57-500	O - 500	56-0559
CCM-57-2000	O - 2000	56-0560
CCM-57-5000	O - 5000	56-0569

**OPTIONAL**

DESCRIPTION	ADD SUFFIX TO PCN
For 50 Hz, 220V monitor w/o cord	C
<b>For use as Monitor / Controller</b>	
Solenoid valve with transformer for 115V/60 Hz	A
Solenoid valve for 220V/50 Hz (requires 220V to 24V transformer)	B
Wall mount plate	56-0563
25 ft sensor cable	56-0565
In-line sensor replacement w/10' cable (CCM models)	56-0561
1" solenoid valve	56-0108 A





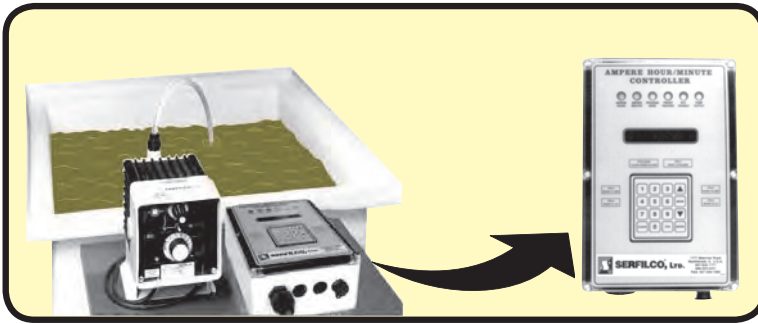
# ELECTROPLATING BRIGHTENER CONTROLLERS & TOTALIZERS

335

A-104\_U

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**INTEGRATING AMPERE-TIME CONTROLLER / TOTALIZERS**  
*for replacement of additives and brighteners at precise rate of consumption*



**IDEAL FOR:**  
**ANODIZING;**  
**PULSE PLATING;**  
**ZINC, NICKEL, CHROME**  
**& PRECIOUS METAL**  
**ELECTROPLATING**

## **SERIES 1200 CONTROLLER / TOTALIZER** Monitors plating current for 1 or 2 rectifiers

The Series 1200 system is suitable for 1 - 99,999 amp rectifiers. The unit features keypad data input for user programming of shunt current rating, ampere-hour or ampere-minute totalizing, totalizer reset, preset reset and preset values plus factory / field calibration. Internal circuitry converts an input signal to activate pump(s) at a near continuous flow rate determined by the user programmed setting. Temporary power loss does not affect last totalizer reading.

- Eliminates manual additions
- Increases safety and precision of operation
- Verifies metal consumption
- Activates electronic pulse or motor driven pumps
- Eight digit LED display
- Digital totalizing Ampere-Time
- System accuracy  $\pm 0.5\%$
- Programmable for Amp-Hours or Amp-Minutes
- Programmable for millivolt and current values of shunts

### **STATUS INDICATORS INCLUDE:**

- 8-digit LED display — *shows power is supplied*
- Ampere-Hour or Ampere-Minute LED display
- Program LED — *shows unit is in programming mode and not running*
- Preset LED — *shows a preset event has occurred*
- Low chemical LED — *shows the chemical supply level is low causing the alarm relay to operate*
- Pump output LED — *pulses with each stroke of the electronic chemical pump*

Brightener is replenished at precise rate of consumption in relation to metal deposited, automatically compensating for variation in work load or rate. Compact solid state circuitry is protected in a corrosion resistant plastic case. System includes an 8 foot, 3-wire cord and molded plug.



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**Output signal:** 4-20 mAdc isolated output for recording total shunt current

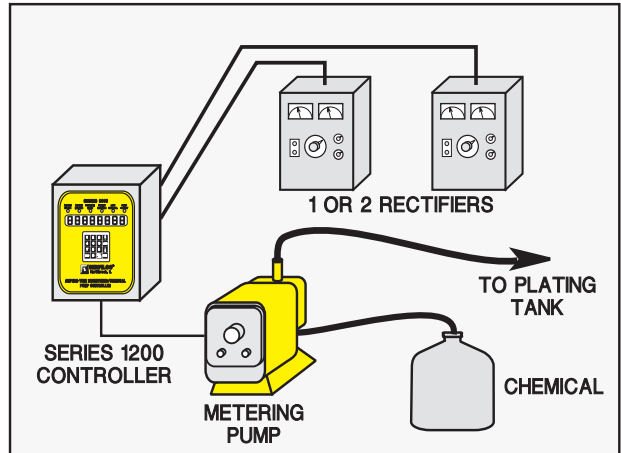
**Control output:** SPST relay, 5 ampere, N.O. control output for percentage ON/OFF controlling a 115/230 VAC motor driven pump

**Control relay:** SPDT, 0.1 mAdc control relay for pulsing electronic metering pumps

**Alarm relay:** SPST, 115/230 VAC, 5 ampere, N.O.

**Dimensions:** 12" H x 6.25" W x 3.75" D

**Shipping weight:** 5 lbs.



TO ORDER	
SERIES 1200	PRICE CODE NO.
	56-0578

OPTIONS

DESCRIPTION	PRICE CODE NO.
Low level chemical sensor	56-0566
Connecting cable for external pulse pumps (to connect pump to controller): For SERIES 'A', 'B' & 'C' pumps	56-0567

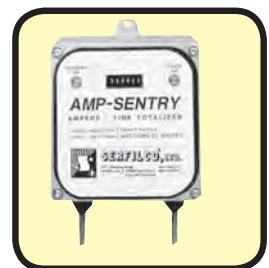
See Metering Pump Bulletin P-607 for pump selections.

AMP-SENTRY TOTALIZER

Ampere totalizer with non-resettable, 6-digit electro-mechanical counter, power and shunt cables, mounted in a NEMA 4X enclosure, features:

- **Solid state with dual LED indicators for power and rectifier**
- **Correlates plating bath chemistry, plating thickness or emissions evolved** (required when chrome plating)
- **Field programmable** - for shunt size, amp-hours or amp-minutes

VOLTAGE	PRICE CODE NO.
115V/1/50-60	56-0182
230V/1/50-60	56-0182A





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## INDICATORS, CONTROLLERS AND SENSORS USED FOR:

*FILTRATION SYSTEMS*

*WASTE WATER MONITORING*

*PROCESS FLOW CONTROL AND MONITORING*

*WATER TREATMENT SYSTEMS*

*BATCH PROCESSING AND BOTTLING*

*FEED PUMP PULSING AND CHEMICAL ADDITIONS*



### **FEATURES and BENEFITS**

- *1/2" to 4" pipe size, 0 - 800 GPM*
- *Highly accurate*  
 $\pm 1\%$  full scale,  $\pm 0.5\%$  repeatability
- *Local or remote readout and control*
- *Easy to install and use*
- *Convenient field calibration*
- *Highly flexible*  
Interface with metering pumps, chart recorders, alarms or programmable logic controllers.
- *Intrinsically safe model available*
- *Quality standards:*  
UL, CSA, CE (except Model 5600)  
Manufactured to ISO 9001

These high performance electronic flow monitoring/control systems consist of three components:

1. Flow Meter
2. In-line/Insertion Flow Sensor
3. Installation Fitting

A variety of different configurations is available to provide a system that will monitor or control the movement of fluids and is compatible with corrosive chemicals. The instruments are waterproof for long life in shop environments.

A system may be assembled to monitor a process flow rate (GPM, LPM or any other units) or keep track of accumulated flow for a period of time (totalize gallons or liters). Instruments can be selected that provide a pre-set electrical output signal for batch-

mixing applications or triggering acid and caustic feed pumps. They can also be interfaced with other instruments in your plant, including a computer.

The accuracy and reliability come from patented Flow Sensor designs that convert fluid velocity in a pipe into an electronic signal. The signal is measured and channeled through microprocessor based solid state circuitry to the appropriate meter: flow rate, totalizer or controller.

Cost effectiveness of this equipment makes plant applications feasible. The initial investment pays for itself quickly by providing cost savings from improved process efficiency. These systems are an excellent choice for the simple to the complex industrial application.



# FLOW INSTRUMENTATION Specifications

A-306\_K

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## MODEL 509 - ANALOG FLOW RATE INDICATOR



An economical feature packed flow monitor, the Model 509 is designed exclusively for use with the Model 515 Flow Sensor to provide a completely independent flow monitoring system.

- Sensor powered
- Front panel calibration
- Economical flow monitoring
- Splash-proof, shatter-resistant acrylic front panel
- Factory Mutual (FM) approved for intrinsic safety in Classes I, II

MODEL	PRICE CODE NO.
509	56-0576

### Environmental:

Operating temperature: 14°F - 149°F

### Display:

Type: Taut-band suspension meter movement, 250° deflection - not suitable for prolonged exposure to vibration.

### Dials:

Reversible dial kit included (0-2, 4, 6, 8, 10, 100)

Electrical power: none required

### and III, Division I SPECIFICATIONS:

Compatible sensor: Model 515  
 Minimum full scale range: 7 fps  
 Accuracy: ± 2% of full scale  
 Repeatability: ± 1% of full scale

## MODEL 815 BATTERY POWERED DIGITAL FLOW METER/TOTALIZER

### INTEGRAL MOUNT



Integral field mount comes complete with sensor.

### PANEL MOUNT



- Three totalizers - 2 resettable
- Displays flow rate and totalized flow volume simultaneously
- Accuracy ± 0.5% of reading
- "No-flow" indicator
- Simple push - button operation
- Users selectable access code

MOUNTING VERSION	DESCRIPTION	MODEL	PRICE CODE NO.
Integral Mount	PP sensor for 1/2"-4" pipe*	815-PO	56-0759
Panel Mount	used with 515PO sensor	815-1P	56-0760
--	Replacement battery - 3.6V (2 required)		56-0761

\* For PVDF sensor change **P** to **N** in model and add **-N** to price code No.

## OPTIONAL for all models

DESCRIPTION	PRICE CODE NO.
Surface mounting bracket	56-0571
Splashproof rear cover kit	56-0573

DESCRIPTION	PRICE CODE NO.
Power supply 120 / 220 VAC-24 VDC (5600 & 855)	56-0758
120 VAC - 24 VC (5600 only)	56-0757

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431**MODEL 5600 BATCH CONTROLLER**

The Model 5600 Batch Controller is an accurate and reliable instrument that combines complex control capability with operational simplicity. Batch progress is displayed on the analog dial, while the backlit LCD is used for calibration, set-up, and to show totalized flow volumes. Requires 12 to 24 VAC or VDC. The intuitive software design and four button keypad arrangement is user friendly.

- Dual totalizers, 0 to 99,999,999
- Two SPDT alarm relays
- 4 - 20 mA non-isolated output
- CE compliant
- Accuracy  $\pm 0.5\%$  of reading

MODEL	PRICE CODE NO.
5600	56-0752

**MODEL 855 - FLOW TRANSMITTER****PANEL MOUNT**

The Model 855 Flow Transmitter is an advanced, cost effective instrument that converts the flow sensor signal into a 4 to 20 mA signal for long distance transmission. Configuration flexibility is maximized with two packaging options for field mounting or panel installation, two optional relays for process control and scalability for virtually any flow range or engineering unit. State-of-the-art electronic design ensures long term reliability, signal stability and simple user set-up and operation.

- Permanent and resettable totalizers
- Isolated 4 to 20 mA output, fully adjustable and reversible
- Two optional SPDT relays: Hi, Lo, Pulse, Off (Max. 300 pulses / min.)
- 2 x 16 ohmeter LCD display
- Power: 12 to 24 VDC  $\pm 10\%$ , regulated
- Field mount includes universal

**FIELD MOUNT**

MOUNTING VERSION	DESCRIPTION	MODEL	PRICE CODE NO.
Panel	Flow transmitter	855-1P	56-0753
Panel	Flow transmitter with 2 relays	855-2P	56-0754
Field	Flow transmitter	855-1F	56-0755
Field	Flow transmitter with 2 relays	855-2F	56-0756

**mounting kit****NOTE:**

All scale ranges shown are examples. When ordering installation fittings, please specify desired scale range. Instrument bodies measure 3.8" x 3.8" x 3.5" and include panel mounting hardware (except Model 855 field mount and Model 815-PO integral mount).



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**MODEL 515 ROTOR-X™ FLOW SENSOR**

*Polypropylene or optional pure PVDF*

Optional local or remote capability lets you place your meter up to 200 ft. away without signal amplification. The Model 515 can be installed in pipes ranging in size from 1/2" to 4". Patented rotor design ensures a linear output with minimal head loss and no cavitation. The Model 515 can be used with any of the flow meters shown on the preceding pages.

**SPECIFICATIONS:**

- Output signal:** 1 volt peak to peak
- Flow rate range:** 1-30 FPS
- Output accuracy:** ±1% of full range
- Maximum % of solids:** 1% of fluid volume
- Linearity:** ± 1% of full range
- Repeatability:** ± 0.5% of full range
- Standard cable length:** 25 feet
- Pressure rating:** 200 PSI @ 80°F



\*For PVDF body and Hastelloy® C shaft, change **P** to **N** in Model Number and add **N** to Price Code Number.

PIPE SIZE	MATERIAL*	MODEL	PRICE CODE NO.
1/2" - 4"	Polypropylene body and titanium shaft	515-PO	56-0428

17

**SENSOR INSTALLATION FITTINGS**

*for Model 515 flow sensors*



PIPE SIZE	RECOMMENDED SCALE RANGES GPM	MINIMUM FLOW GPM	PVC 80		CPVC 80	
			MODEL NUMBER	PRICE CODE NO.	MODEL NUMBER	PRICE CODE NO.
1/2"	0-18	1	PV8T005	56-0440	CP8T005	56-0454
3/4"	0-30	1.5	PV8T007	56-0441	CP8T007	56-0455
1"	0-50	2.7	PV8T010	56-0442	CP8T010	56-0456
1 - 1/4"	0-80	4.5	PV8T012	56-0443	CP8T012	56-0457
1 - 1/2"	0-120	6.2	PV8T015	56-0444	CP8T015	56-0458
2"	0-180	10.5	PV8T020	56-0445	--	--
			PV8S020	56-0446	--	--
2 - 1/2"	0-300	15	PV8T025	56-0447	--	--
			PV8S025	56-0448	--	--
3"	0-500	23	PV8T030	56-0449	--	--
			PV8S030	56-0450	--	--
4"	0-800	39	PV8T040	56-0451	--	--

**NOTE:** OTHER PIPING MATERIALS AVAILABLE SUCH AS STEEL, COPPER, PVDF, ETC. FITTINGS ARE SOCKET-TYPE



# PLASTIC LEVEL CONTROL SYSTEM

341

A-109\_A

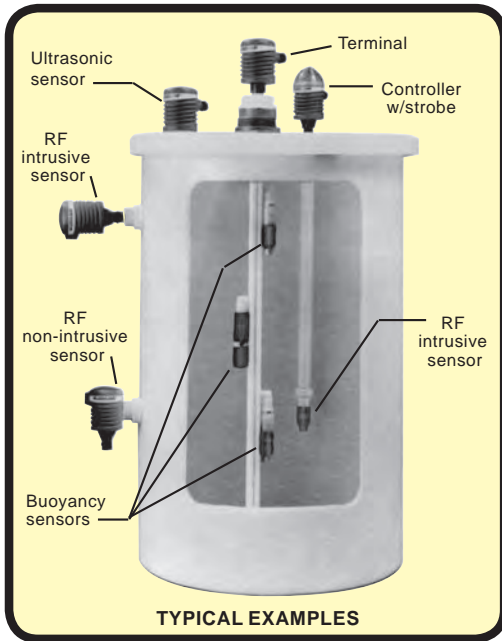
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## FIRST ALL- PLASTIC LEVEL CONTROL SYSTEM DESIGNED FOR PLASTIC AND FIBERGLASS TANKS

ACIDS / ALKALIES  
SOLVENTS / FOOD PRODUCTS  
OILS / WASTE STREAMS  
PLATING SOLUTIONS / PAINTS  
WATER / D.I. WATER  
PHOTOGRAPHIC SOLUTIONS

This system allows you to solve industrial liquid level problems with a value added all-plastic system. Select a reliable industrial all-plastic level sensor in four technologies, a controller or output option and a mounting system. These point level switches will offer high and low alarms, automatic pump up or pump down (automatic empty or fill operations) and leak detection.

- Replace unreliable level sensors
- Eliminate corrosion problems
- Protect pumps and other equipment
- Prevent operator errors
- Improve process quality with more monitoring
- Detect leaks and piping failures immediately
- Reduce installation and maintenance costs



### Build a system in 3 easy steps

**1. Sensing technology:** Select the appropriate level sensing technology from this unique family of four plastic liquid level sensors. All offer a liquid tight package in polypropylene or PVDF. Each sensor provides an output for a controller and each comes with 8 ft. of cable coated in the same material as the sensor.



**2. Controller:** Select the appropriate controller configuration (Ultrasonic, Buoyancy, Intrusive RF capacitance or Non-intrusive RF capacitance), rail or panel mounted. In selecting the controller, consider the specific control and installation requirements of the application, including the type and number of sensing points.

*Note: Rail terminal head is required when panel mounted controller is selected.*

**3. Sensor configuration:** Select the appropriate sensor mounting configuration: in-tank rail system mount, outside-tank mount or above solution mount. Consider the specific parameters of the application, including the number of sensors to be mounted and the total length of in-tank rail required.

Rail mounted controller with two sensors and 2" NPT adapter.





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**ULTRASONIC TRANSMITTER**  
(LED DIGITAL DISPLAY)

for water-based, viscous, high purity or very hazardous liquids, process and storage tanks

Provides non-contact continuous level measurement. LED display indicates level in inch or centimeter values. Internal relay for alarm, auto fill / empty operation. SPDT relays rated for ½ hp. or 10 amp resistive at 230 VAC. Mounted above liquid tank cover, 2" NPT. Unit is constructed of polypropylene and PVDF. It can be used with 66-1416 controller if LED display is desired; otherwise controller is not required for operation.

PRICE CODE NO.

66-1415

in bracket or

**VERTICAL BUOYANCY SENSOR**

for any clean, non-coating, non-clogging liquid, high level alarms

Dynamically stabilized floats minimize surface chatter, increase reliability and accuracy. Shrouded body resists turbulence and process debris. Reed switch rated 15 VA @ 120 VAC. ¾" NPT. -40° to 194°F. For rail mounting only. Use with PLC or with a controller.

PP 66-1403

PVDF 66-1403K

**RF CAPACITANCE SENSOR**  
(INTRUSIVE)

for any water based liquids, waste sumps, caustic soda, D.I. water, process and storage tanks

High frequency circuit, factory calibrated for plastic ungrounded tanks with conductive and non-conductive liquids. Eliminates metal grounding straps and reference rods. Resists coating and works with a wide range of liquids. Mounts on rail or through tank wall. ¾" NPT. -40° to 194°F

PP 66-1405

PVDF 66-1405K

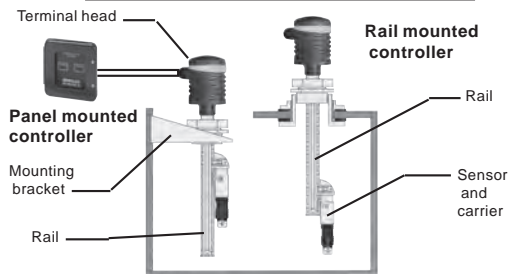
**RF CAPACITANCE SENSOR**  
(NON-INTRUSIVE)

for water-based, high purity or very hazardous liquids, process and storage tanks

Mounted on exterior wall of plastic or fiberglass tank, this unit senses liquid through 1" of non-metallic material. Patented two-point calibration ensures accuracy and easy installation. Includes polyethylene mounting pad for welding, adhesives, or glassing. NEMA 4X polysulfone housing.

66-1406

**TYPICAL INSTALLATION**



**CONTROLLERS**

These controllers feature SPDT relays rated for ½ hp. or 10 amp resistive at 230 VAC. Adjustable time delay from 0-60 seconds prevents frequent relay-cycling.

Choose single sensor controllers for single point/alarm applications. Two sensor controllers perform automatic fill/empty operations. Three sensor controllers perform automatic fill/empty operations and offer a separate relay for level alarm.

**Panel mount controllers** can be mounted up to 1000 ft. from sensor. LED's indicate wet/dry sensor condition and on/off relay status. Mount controllers on any 35mm DIN rail or screw directly to panel. Cord and plug not included.

**Rail mount controllers** have a ¼" NPT fitting that connects directly to the sensor's threaded end or to the mounting rail's end cap. Polypropylene NEMA 4X housing with ½" conduit fitting withstands industrial environments. The unit with strobe is a standard single point controller with a high intensity strobe light mounted on top to call immediate attention to alarm conditions.

**PANEL MOUNTED CONTROLLERS**

SENSORS	RELAYS	APPLICATION	PRICE CODE NO.
1	1	Single point, switch/alarm	66-1400
2	1	Two-point, auto fill/empty	66-1401
3	2	Three-point, auto fill/empty w/alarm	66-1402
3	2	Three-point, LED display*	66-1416

**RAIL MOUNTED CONTROLLERS**

1	1	Single point, switch/alarm	66-1410
1	1	Single point, switch/alarm w/strobe	66-1411
2	1	Two-point, auto fill/empty	66-1412

\* Available w/ultrasonic transmitter only

**IN-TANK MOUNTING RAIL**

Make system setup easy with these rail kits and accessories. The rails allow you to position the sensor anywhere along the length of the rail. Slide sensors up or down to adjust level easily. To change sensor, simply snap sensor out of carrier and snap in a new sensor.

Rails come with adapters to fit 2" NPT tank openings. Or, mount rail on tank wall using optional mounting bracket. Cut rail sections to form shorter lengths.

**DESCRIPTION**

**PRICE CODE NO.**

2 ft. rail kit.	Includes 2" NPT adapter, rail and carrier for one sensor. For additional carriers, see below.	66-1407
4 ft. rail kit.		66-1408
6 ft. rail kit.		66-1409
Terminal head. Provides terminals for up to four sensors. Attaches to top of rail. For use with panel mount controllers.		66-1413
Mounting bracket. Use to install a rail to the top of the side wall of an open top tank. 2" NPT.		66-1414
Sensor carrier kit.		66-1417



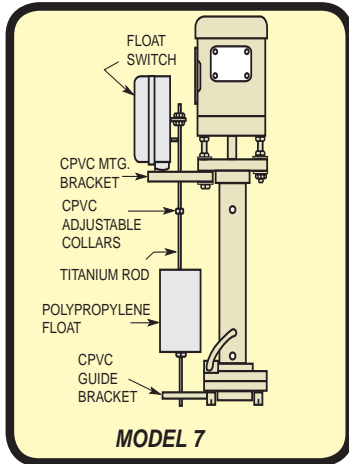


# HI-LO LIQUID LEVEL CONTROLS FOR PUMPS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## MECHANICAL FLOAT SWITCHES

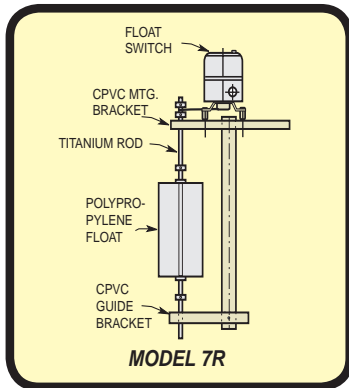
Refer to Bulletin A-103 for Motor Starters and order separately. One starter is required for each pump on duplex assembly.



### MODEL 7 FLOAT SWITCH ASSEMBLY (for pump mounting)

Double pole switch for inline stop and start of 115-230V, 460-575V motors. Use as two-pole con troller on 3 phase circuit. Switch rating: 2 HP @ 115V/1 phase, 3 HP @ 230V/1 phase, 5 HP @ 230V/3 phase or 5 HP @ 460-575V/3 phase. This unit can be used as a pilot device for single or three phase magnetic and manual motor starters. Float assembly consists of a polypropylene float, titanium float guide rod, CPVC float guide brackets and adjustable CPVC collars. Standard length is 24".

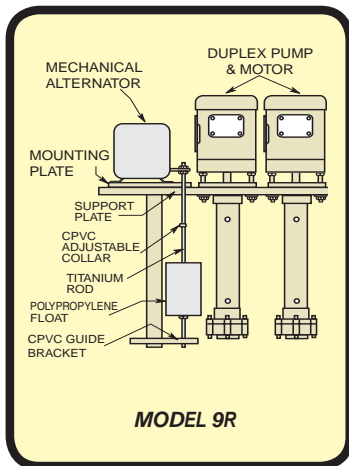
DESCRIPTION	PRICE CODE NUMBER
NEMA 1 Float switch	66-0726 A
NEMA 4 Float switch	66-1117 A
NEMA 7 & 9 Float switch (Class I, Group C, D & Class II, Group E, F, G)	66-1118 A



### MODEL 7R FLOAT SWITCH ASSEMBLY (for independent tank mounting)

Similar to model above with the following additions: CPVC support column and CPVC switch mount- ing bracket. The switch mounting bracket can be clamped to the top of the tank or holes can be drilled through the mounting bracket for a permanent installation. Standard length is 24 inches.

NEMA 1 Float switch	66-0732 A
NEMA 4 Float switch	66-1119 A
NEMA 7 & 9 Float switch (Class I, Group C, D & Class II, Group E, F, G)	66-1121 A



### MODEL 9R ALTERNATOR FLOAT SWITCH ASSEMBLY (for independent mounting)

Double pole mechanical alternator switch alternates the operation of two pumps installed in a duplex pump system in a common tank or sump. If one pump cannot handle the flow demand, the second pump is automatically energized and continues to function until one pump can handle the load. The float switch assembly consists of a polypropylene float, titanium float guide rod, CPVC float guide brackets and adjustable CPVC collars. A high level alarm circuit is available. The assembly is mounted on a support plate independent of the pumps. Standard length is 24". Switch rating: 1-1/2 HP @ 115V single phase or 2 HP @ 230V single phase. Can also be used as a pilot device for single or three phase magnetic motor starters.

NEMA 1	Mechanical alternator	66-0730 A
NEMA 4	Mechanical alternator	66-0961 A
NEMA 4	Mechanical alternator with high level alarm circuit	66-0962 A
NEMA 7 & 9	Mechanical alternator	66-0963 A
NEMA 7 & 9	Mechanical alternator with high level alarm circuit (Class I, Group C, D & Class II, Group E, F, G)	66-0964 A

### OPTIONAL (for Models 7, 7R & 9R)

CPVC sleeve over titanium rod	Add 66-0830
High level alarm circuit (Models 7 & 7R) (Not for NEMA 1), 115-230V	Add 66-1211

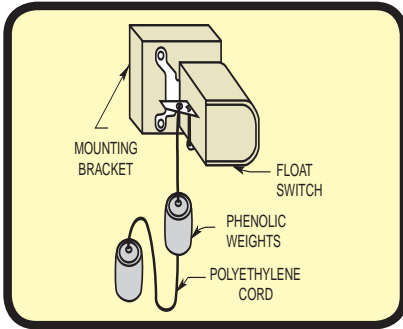
### FOR LONGER FLOAT GUIDE, ADD . . .

TOTAL LENGTH (INCHES)*	PRICE CODE NUMBERS		
	MODEL 7	MODEL 7R	MODEL 9R
36	66-1163 A	66-1164 A	66-1165 A
48	66-1163 B	66-1164 B	66-1165 B
60	66-1163 C	66-1164 C	66-1165 C
72	66-1163 D	66-1164 D	66-1165 D
84	66-1163 E	66-1164 E	66-1165 E
96	66-1163 F	66-1164 F	66-1165 F
108	66-1163 G	66-1164 G	66-1165 G
120	66-1163 H	66-1164 H	66-1165 H
132	66-1163 J	66-1164 J	66-1165 J
144	66-1163 K	66-1164 K	66-1165 K

\*This includes the standard 24" length. It is not a separate added length.



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**MODEL 8 FLOAT SWITCH ASSEMBLY (Pump mounted for shallow tanks)**

Double pole switch NEMA 1 enclosure for inline stop and start of single phase motor to 1 HP @ 115 or 230 volts. This unit can also be used as a pilot device for single or three phase magnetic starters. Operated by two phenolic weights sliding on a high density polyethylene cord. Float switch is fastened to a PVC bracket which is mounted to the pump-motor mounting plate. Maximum operating depth is 30 inches.

<b>PRICE CODE NUMBER</b>
66-0855 A

**LIQUID CONDUCTIVITY LEVEL CONTROLS**

**CAUTION:** Probes function in a low energy control circuit. Possible electrical hazard exists at the probe tip. See Operating Instructions.

**MODEL 6 PROBE SWITCH ASSEMBLY**

Standard assembly consists of Hastelloy® C probes attached to insulated PVC wire. The wire suspended probes are mounted on a PVC holder by which the probe wire length can be adjusted to the various liquid levels. Standard length - 24"

The induction relay included in the system has the following rating: 1 HP @ 120 or 240 VAC single phase. For horsepower greater than 1 HP a corresponding magnetic motor starter is required. The 66-0230-2 & 66-0231-2 systems consist of two & three probes respectively. A ground probe is needed when the sump pump or tank is constructed of any material other than steel. The probe holder and induction relay are each mounted in a NEMA 4 watertight enclosure.

	PRICE CODE NUMBER
High & low level control without ground probe	66-0230 2
High & low level control with ground probe	66-0231 2

**PROBE SWITCH ASSEMBLY - with Alarm Circuit**

A choice of high or low level alarm control signals is available with four suspended probes and two induction relays, in a NEMA 4X enclosure. Ground probe is included as standard. The alarm mechanism is not supplied.

	PRICE CODE NUMBER
High & low level control with high level alarm circuit	66-0232 2
High & low level control with low level alarm circuit	66-0244 2

**ALTERNATOR PROBE SWITCH ASSEMBLY**

Provides for the operation of two pumps installed in a duplex system. If one pump cannot handle the flow, the second pump automatically is activated until the low level is reached.

66-0236
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**CAUTION:** Probes and housing are not explosion-proof.

**TO ORDER - SPECIFY:** (1) AC line voltage to relay (2) Length of longest probe (3) pH of solution

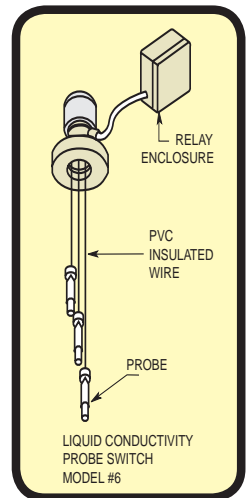
**AGITATION SHIELD**

PRICE CODE NUMBER	66-0245 B
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The agitation shield should be used to isolate the wire suspended probes from a solution in high velocity, thus preventing twisting of wire leads, resulting in misleading liquid level sensing. The shield is constructed of all CPVC material. The length of the shield corresponds to the "C" dimension of the sump pump and length of probe suspension. Standard length - 24" 36" and longer, refer to chart below.

TOTAL LENGTH (INCHES) *	FOR LONGER PROBE WIRE, ADD . . .			FOR LONGER AGITATION SHIELD, ADD . . .
	2-WIRE SET	3-WIRE SET	4-WIRE SET	
	PRICE CODE NUMBERS			
36	66-1166 A	66-1167 A	66-1168 A	66-1169 A
48	66-1166 B	66-1167 B	66-1168 B	66-1169 B
60	66-1166 C	66-1167 C	66-1168 C	66-1169 C
72	66-1166 D	66-1167 D	66-1168 D	66-1169 D
84	66-1166 E	66-1167 E	66-1168 E	66-1169 E
96	66-1166 F	66-1167 F	66-1168 F	66-1169 F
108	66-1166 G	66-1167 G	66-1168 G	66-1169 G
120	66-1166 H	66-1167 H	66-1168 H	66-1169 H
132	66-1166 J	66-1167 J	66-1168 J	66-1169 J
144	66-1166 K	66-1167 K	66-1168 K	66-1169 K

\*This includes the standard 24" length. It is not a separate added length.





# MODEL P-10 PUMP PROTECTOR

345

A-313

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



## **DIGITAL MOTOR LOAD MONITOR shuts down pump in the event of:**

- DRY RUN
- CAVITATION
- DAMAGED IMPELLER
- CLOSED INLET VALVE
- CLOSED OUTLET VALVE
- BLOCKAGES

The P-10 digital motor load monitor uses a unique and patented method of measuring the torque of a pump's drive motor. By monitoring the "normal" load level any deviation from this range changes the state of the internal relay activating a red LED alarm light. The output relay will shut down the pump, activate additional alarm and / or communicate with other equipment in the process. Designed for use in conjunction with a motor starter, the

P-10 protector will monitor motor underload OR overload. In pumping applications, conditions such as dry run, cavitation, damaged impeller, closed valves or blockages will create an "abnormal" underload condition, which the P-10 will detect and subsequently shut down the pump and provide communication to users and / or processes.

TECHNICAL DATA	
<b>Dimensions</b>	1.77" W x 3.54" H x 4.53" D (45 mm x 90 mm x 115 mm)
<b>Weight</b>	5.25 oz. (0.15 kg)
<b>Supply voltage</b>	1 x 100-240 (± 10%) 3 x 100-600 (± 10%) 3 x 600-690 (± 10%)
<b>Frequency</b>	50 or 60 Hz
<b>Current input</b>	Current transformers only; CTM 010, 025 or 050 (Max. 50 A motor)
<b>Start-up delay</b>	1 - 64 s
<b>Response delay</b>	0.05 - 64 s
<b>Relay output</b>	5 A 240 VAC Resistive, 1.5 A 240 VAC Pilot duty / AC 12
<b>Fuse</b>	Maximum 10 A
<b>Terminal wire size</b>	Use 75°C copper (CU) wire only. 0.2 - 4.0 mm <sup>2</sup> single core (AWG12) 0.2 - 2.5 mm <sup>2</sup> flexible core (AWG14), stripped length 8 mm (0.32")
<b>Terminal tightening torque</b>	5 - 7 in.-lbs. (0.56 - 0.79 Nm)
<b>Repeatability</b>	±2.5% FS, 24 H, @ +77 °F (+25 °C)
<b>Temperature tolerance</b>	<0.1% / °C
<b>External RESET on term. 5</b>	24 - 48 VDC or 24 - 240 VAC, 50 / 60 Hz
<b>Operating temperature</b>	4°F — 122°F (-20°C — +50°C)
<b>Storage temperature</b>	22°F — 176°F (-30°C — +80°C)
<b>Protection class</b>	IP 20
<b>Approved by</b>	UL and cUL up to 600 V, CE

AMP RANGE	MODEL NO.	PRICE CODE NO.
.4 - 10	P-10-10	99-1170
10.1 - 25	P-10-25	99-1171
26 - 50	P-10-50	99-1172

Each P-10 pump protector comes complete with monitor, current transformer and complete installation instruction manual.

**To order, use Price Code No.**

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# DRI-STOP PUMP PROTECTOR

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## DRI-STOP 2R and 2RE (Flow activated)



### Cooling water service for double mechanical seal pumps and vertical pump bearings.

These flow activated models use a state-of-the-art PCB to monitor a minimum flow to stop the pump motor. They are adjustable for flow rates from 0.1 GPM to 2.5 GPM. These units are factory set for 0.1 GPM. If used for a multiple bearing sump pump, the unit must be reset to a higher set point per the pump's operating instructions.

These models are plastic enclosed, include 8 feet of extension cable and mounting bracket for 56, 140 and 180 "C" face motor frames. Select a model for either factory or field installation.

When used with magnetic H-O-A starter: In the AUTO position, the DRI-STOP will allow the motor to start if the seal/bearing water flow is 6 GPH or higher. The HAND position should not be wired into the control circuit.

Note that a push button magnetic starter may be used instead of the recommended H-O-A. For motor starters, see Bulletin A-103.

**CAUTION:** In the AUTOMATIC mode the motor will come on automatically when the water supply is turned on.

## TO ORDER, use Price Code No.

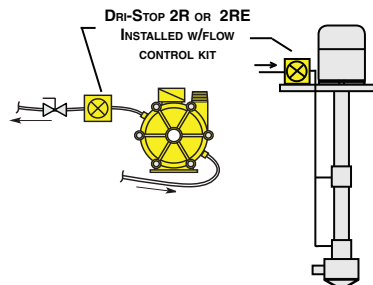
DESCRIPTION	MODEL NUMBER	SOLUTION CONTACT	MAXIMUM OPER. TEMP.		CONN.	DIM.	FLOW	PRESS.		CONTROL CIRCUIT	PRICE CODE NO.
			°C	°F				MIN.	MAX.		
DRI-STOP 2R Factory installed	DSWF-1/4	PVDF (Kynar®), polypropylene, 316SS, polysulfone, V ton	180°	82°	1/4" FNPT	3" x 2-3/4" x 2 5/8" deep	6 GPH (23 LPH)	100 PSI (690 kPa)	24V	99-1116R*	
									115V	99-1152R*	
DRI-STOP 2RE Field installed	DSWFE-1/4	PVDF (Kynar®), polypropylene, 316SS, polysulfone, V ton	180°	82°	1/4" FNPT	3" x 2-3/4" x 2 5/8" deep	6 GPH (23 LPH)	100 PSI (690 kPa)	24V	99-1116RE *	
									115V	99-1152RE *	

\* PCB (3" x 2-3/4" x 1 5/8") is mounted in motor starter (ordered separately).

\*\* PCB is enclosed in DRI-STOP case. Motor starter ordered or provided separately, and field wired to DRI-STOP. Includes mounting bracket for 56, 140 & 180 "C" face motor frames.

## OPTIONAL

FLOW CONTROL KIT	
Provides precise cooling water flow on stationary applications. City water flow is controlled with a petcock valve and pressure gauge to permit convenient installation and adjustment prior to start-up. Order motor starter separately. <b>DO NOT USE WITH DEIONIZED WATER.</b>	
DESCRIPTION	PRICE CODE NO.
Includes petcock, pressure gauge and fittings	99-1387





**DRI-STOP 3**

**DRI-STOP 3C and 3K  
(Pressure activated)**

*With body and diaphragm protection suitable for*

Pressure activated models must be used with a magnetic push button starter. This allows the operator to temporarily and manually "hold-in" the circuit until the pump

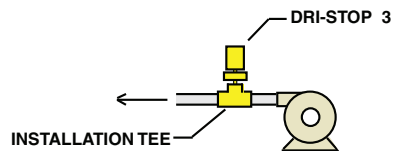
**TO ORDER, use Price Code No.**

DESCRIPTION	MODEL NUMBER	SOLUTION CONTACT	MAXIMUM OPER. TEMP.		CONN.	DIM.	SET-POINT	OPERATING PRESSURE	CONTROL CIRCUIT	PRICE CODE NO.
			°C	°F			PSI.	MAX. PSI	1ø/50-60 Hz	
<b>DRI-STOP 3C</b>	DSCP-1/2	CPVC, Viton	200°	93°	1/2" NPT	7" x 3" DIA	Fixed 4	80	24-115-230V	99-0377A
<b>DRI-STOP 3K</b>	DSCK-1/2	PVDF, Viton								99-0379A

**OPTIONAL**

INSTALLATION TEE		
For convenient installation of DRI-STOP on pump discharge		
DESCRIPTION	PIPE SIZE NPT	PRICE CODE NO.
Installation tee (CPVC)* with 1/2" NPT connection for DRI-STOP 3 and NPT in-line connections.	3/4"	99-0393
	1"	99-0388
	1 1/2"	99-0384
	2"	99-0386

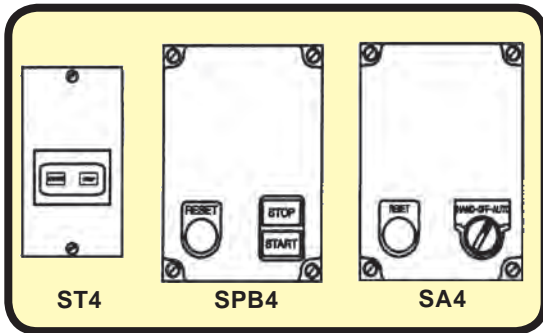
\* To order PVDF, add -K to Price Code No.





# MAGNETIC MOTOR STARTERS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



- UL Class 10 overload relay trip time
- Corrosion resistant PVC enclosures
- Ambient temperature compensated -20° to +60°C
- Adjustable thermal overload protection with reset
- Full approvals  $\text{UL}$   $\text{CSA}$   $\text{CE}$   $\text{S}$   $\text{D}$   $\text{BS}$  -IEC type
- Coil voltage +10% to -30% of rated voltage
- 1,000,000 cycles electrical life
- 10,000,000 cycles mechanical life
- Differential single phasing protection
- Magnetic three pole starter with reset button

### ST4 MAGNETIC PUSH-BUTTON -

#### IP 54 watertight enclosure (NEMA 4X)

For STOP-START control of single or three phase motors. Full voltage control.

### SPB4 MANUAL MAGNETIC PUSH-BUTTON -

#### IP 54 watertight enclosure (NEMA 4X)

For STOP-START control of single or three phase motors, or pilot duty with all DRI-STOP switches. Will not allow automatic restart. Includes fused industrial control transformer (230/460 to 24 VAC) for low voltage control circuit.\*

### SA4 MANUAL MAGNETIC SELECTOR SWITCH -

#### IP 557 watertight enclosure (NEMA 4X)

For manual HAND-OFF-AUTO control of single or three phase motors used for sump pumps equipped with floatswitch or DRI-STOP switch on water flushed, mechanical seal or bearings. Includes fused industrial control transformer (230/460 to 24 VAC) for control circuit.\*

\* NOTE: 115 volt starters have 115 volt energizing coil, no control transformer.

**TO ORDER, use Price Code No.**  
Specify operating voltage, motor HP and current (amps).

VOLTAGE	MAXIMUM HP	PHASE / CYCLE	PRICE CODE NUMBER		
			ST4	SPB4	SA4
115	.5	1/60	66-2161A	66-1197C	66-1197A
230	1.5	1/50-60	66-2161B	66-1197DB	66-1197BB
115	1	1/60	66-2162A	66-1198C	66-1198A
230	2	1/50-60	66-2162B	66-1198DB	66-1198BB
115	1.5	1/60	66-1110A	66-1111C	66-1111A
230	3	1/50-60	66-1110B	66-1111DB	66-1111BB
200 - 230	.5	3/50-60	66-2163A	—	—
380 - 460	1		66-2163B		
200 - 230	1.5	3/50-60	66-2165A	66-2164CB	66-2164AB
380 - 460	3		66-2165B	66-2164DB	66-2164BB
200 - 230	3	3/50-60	66-2166A	66-1160CB	66-1160AB
380 - 460	5		66-2166B	66-1160DB	66-1160BB
575 - 600	7.5		66-2166C	66-2167CB	66-2167AB
200 - 230	5	3/50-60	—	66-1112CB	66-1112AB
380 - 460	7.5			66-2168CB	66-2168AB
575 - 600	10			66-2168DB	66-2168BB
380 - 460	10	3/50-60	—	66-1112DB	66-1112BB
575 - 600	15			66-2169CB	66-2169AB
200 - 230	7.5	3/50-60	—	66-2170BB	66-2170AB
380 - 460	15			66-1113EB	66-1113BB
200 - 230	10	3/50-60	—	66-1113DB	66-1113AB
380 - 460	20			66-1114EB	66-1114BB
230	15			66-1114DB	66-1114AB

The motor starters described are industry approved and recommended for use with most pumps and filtration systems. For horizontal and vertical pump / motor assemblies, the starters are neither mounted nor wired unless specified and ordered. (See OPTIONAL).

Starters for filtration systems should be ordered as options from respective bulletins.

### OPTIONAL

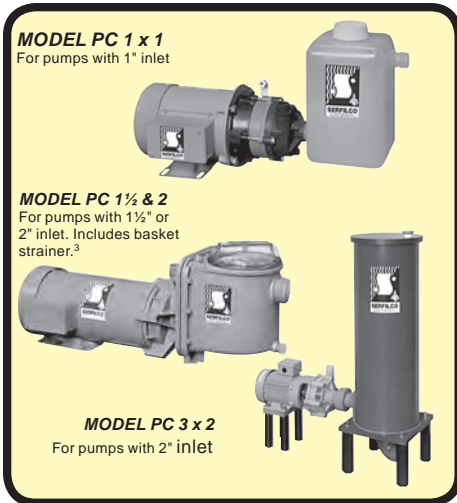
Starter wired to motor with 6 foot (1.8m) PVC conduit, connectors and lead wire.

PRICE CODE NO.	66-1170
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# PUMP PRIMING CHAMBERS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



## FOR USE WITH MAGNETIC-COUPLED AND DIRECT DRIVE CENTRIFUGAL PUMPS, OFFERING:

- Convenient start-up and re-start
- Unique design for mounting to all horizontal pumps
- Less chance of cavitation
- Four sizes available to handle lifts to 6 ft. (1.8m)

Centrifugal pumps may require a priming chamber as an auxiliary means of lifting liquid from below the pump centerline to the pump inlet or from the liquid surface over a tank wall. The answer to this requirement is this line of easy to use and install priming chambers. Once the priming chamber is filled, the pump can be started and re-started without subsequent re-priming.

Each time the pump is turned off, the priming chamber retains a volume of liquid. When the pump is re-started, it pumps the entrapped liquid out of the priming chamber, creating a vacuum in its place. Atmospheric pressure then forces liquid from the tank or sump up the suction hose or pipe to the pump, completing the prime.

### TO ORDER, use Price Code Number.

Order BSP connections, pipe, fittings and suction strainers separately.

MODEL <sup>1</sup>	MATERIAL	FLOW	VOLUME	SUCTION LIFT <sup>2</sup>	CONNECTIONS	DIMENSIONS	PRICE CODE NUMBER
		GPM (LPM)	in. <sup>3</sup> (cm <sup>3</sup> )	FEET (m)	IN x OUT, FILL	INCHES (mm)	
PC 1 x 1* <sup>†</sup>	Polyethylene w/ Viton <sup>®</sup> gasket	40 (151)	215 (3523)	6 (1.8)	1" MNPT x 1" MNPT w/2" threaded cap	6 X 6 X 9 H (152x152x228)	99-0336
PC 1½ x 1½ *	CPVC, Noryl <sup>®</sup> & PP <sup>†</sup> w/ EPDM gasket	80 (302)	190 (3114)	4 (1.2)	1½" x 1½" FNPT w/5" threaded cap	9 x 9 x 12 H (228x228x304)	99-1159 1
PC 1½ x 1½ RCV *	Ryton <sup>®</sup> , CPVC & PP <sup>†</sup> w/ Viton gasket						99-1159 R
PC 2 x 2 *	CPVC, Noryl & PP <sup>†</sup> w/ EPDM gasket	100 (379)	3456 (.05 m <sup>3</sup> )	2 (.6)	2" MNPT x 2" FNPT w/5" threaded cap		99-1159 3
PC 2 x 2 RCV *	Ryton <sup>®</sup> , CPVC & PP <sup>†</sup> w/ Viton gasket					99-1159 R2	
PC 3 x 2	PVC w/EPDM gasket	180 (681)	3456 (.05 m <sup>3</sup> )	3 (.91)	3 FNPT x 2 MNPT w/ 1½" NPT plug	14 Dia. X 36 H (355 D. x 914 H)	99-0308

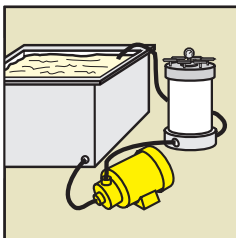
<sup>1</sup> To order Viton gasket, add suffix **V** to Model and Price Code Number.

<sup>2</sup> Based on water (1.0 SG) at 68° F (20° C). Suction lift is approximate and determined by air volume in suction piping.

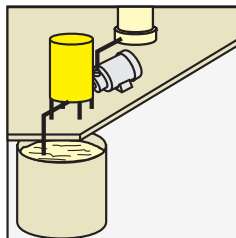
<sup>3</sup> Max operating temp. 150°

\* Not for use with 2" suction pumps.

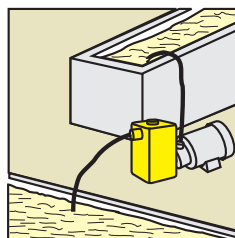
<sup>†</sup> Removable polypropylene basket strainer.



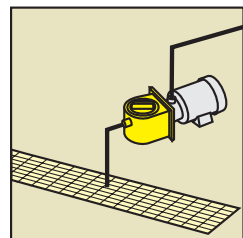
SELF-PRIMING FILTRATION SYSTEM



LIFTING FROM BELOW PUMP LEVEL



LIFTING OVER SIDE OF TANK



EMERGENCY STANDBY and SUMP PUMPING

18



# IN LINE GAUGE GUARD ASSEMBLY

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



## FOR USE WITH SERFILCO PUMPS AND SER-DUCTOR® AGITATION SYSTEMS

- **Non-metallic solution contact**  
Diaphragm guard isolates gauge from pumped fluid
- **Material selection**  
CPVC, Polypropylene or PVDF with EPDM or Viton® elastomers (See a Chemical Resistant chart)
- **Sizes 1" to 4"**

The **In Line Gauge Guard Assembly** is designed for use with SERFILCO pumps and SER-DUCTOR agitation systems to provide performance feedback for optimization of the pump operating point. Pumps which have too little system backpressure operate far out on the pump curve where NPSH requirements

are highest. This can lead to pump cavitation with corresponding premature wear and seal failure.

Use of the In Line Gauge Guard Assembly along with a flow control valve allows the user to determine where on the curve the pump is operating and to control the pump output for best performance.

18

IN LINE GAUGE GUARD ASSEMBLY

SIZE	TYPE <sup>1</sup>	CPVC / EPDM	CPVC / VITON	POLYPRO / EPDM	PVDF / VITON
		PCN	PCN	PCN	PCN
1"	THD	99-1240	99-1240 V	99-1240 PP	99-1240 KV
1 1/4"	THD	99-1241	99-1241 V	99-1241 PP	—
1 1/2"	THD	99-1242	99-1242 V	99-1242 PP	99-1242 KV
2"	THD	99-1243	99-1243 V	99-1243 PP	99-1243 KV
3"	THD	99-1244	99-1244 V	99-1244 PP	—
3"	SOC	99-1244 1	99-1244 1V	—	—
4"	THD	99-1245	99-1245 V	—	—
4"	SOC	99-1245 1	99-1245 1V	—	—

FLOW CONTROL VALVE<sup>2</sup>

CPVC	PP	PVDF
PCN	PCN	PCN
33-0572	33-0572 PP	33-0572 K
33-0573	33-0573 PP	—
33-0574	33-0574 PP	33-0574 K
33-0575	33-0575 PP	33-0575 K
33-0576	33-0576 PP	33-0576 K
33-0584	33-0584 PP	33-0584 K
33-0577	—	—
33-0585	—	—

<sup>1</sup> Threaded Gauge Guard is MNPT X MNPT

<sup>2</sup> Double union ball valve with female threaded or socket connections





# HEATERS and HEAT EXCHANGER COILS

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A-102\_N

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**HEATERS WITH "SAFEGUARD"  
CONTROLS PROVIDE SAFE,  
EFFICIENT AND ECONOMICAL  
HEATING FOR:**

***PLATING / PICKLING / RINSING  
ANODIZING / D.I. WATER / DYES  
ACIDS / ALKALIES / CLEANERS  
and OTHER AQUEOUS SOLUTIONS***

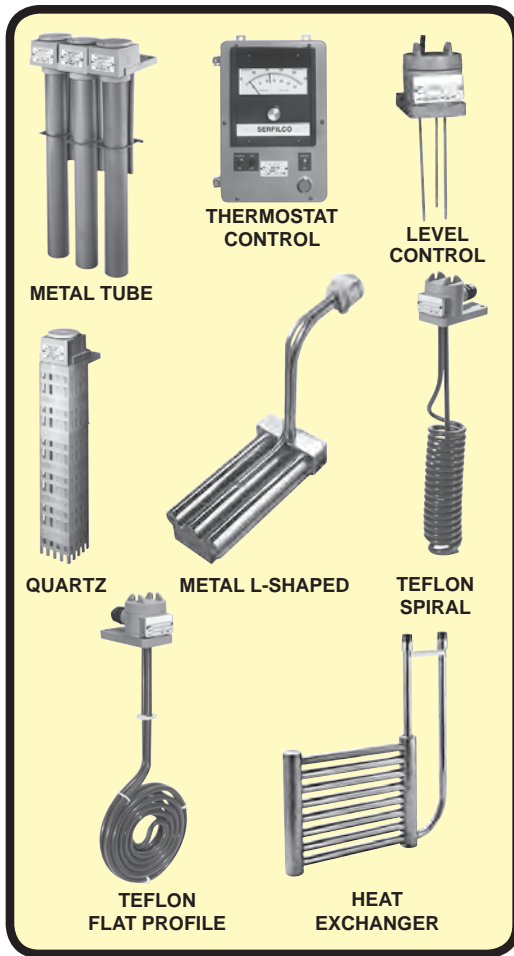


LISTED



CERTIFIED

- **Heaters**  
Available in a variety of configurations in steel, 304 SS, 316 SS, titanium, quartz, and Teflon®
- **Thermostat controls and liquid level sensors for safe operation**
- **Heat exchanger coils**  
Metal coils in 316 SS and titanium; fluoropolymer tube coils



## THERMAL OVERLOAD PROTECTION Protector I, II and III-Series

### **PROTECTOR I SERIES (Standard on all electric immersion heaters)**

The Protector I over-temperature control system utilizes a heat sensitive fuse to detect overheating conditions. The fuse, placed inside a thermowell, positioned in contact with the heater sheath, will cut power to the heater in the event of a low liquid level.

### **PROTECTOR II AND PROTECTOR III SERIES (Optional - Consult Sales Dept.)**

The Protector II and Protector III systems provide the same

reliable over-temperature protection as the Protector I; however, the control systems feature a heat sensing thermostat. Should the tank's liquid level drop to a preset over-heat point, the thermostat will trip and an audible alarm will sound, as well as cutting power to the heater. This eliminates dangerous operating conditions. After filling the tank, the immersion heater can be quickly made operational by pushing the reset button on the control to restore power.



# DETERMINING SPECIFIC HEATING REQUIREMENTS FOR IMMERSION HEATERS

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## TO DETERMINE THE HEATING REQUIREMENT OF A TANK

### Obtain the following information:

1. TOTAL CUBIC FEET OF TANK. - Multiply the inside dimensions of the tank (depth x width x length). If the solution is normally 6" below the top of the tank, allow for this when calculating.
2. TOTAL GALLONS OF SOLUTION - Multiply by 7.48 the cubic feet of the tank occupied by solution.
3. AVERAGE AMBIENT (ROOM) TEMPERATURE WHERE TANK IS LOCATED.
4. TEMPERATURE LEVEL AT WHICH SOLUTION IS TO BE HELD.
5. HEAT-UP TIME DESIRED (HOURS).

$$\frac{A \times 1.0^* \times 8.35^{**} \times B}{3412 \times C} = \underline{\hspace{2cm}}$$

$$D \times E = \underline{\hspace{2cm}}$$

**Add the results of both calculations. The total is the Kilowatt requirement of the tank.**

### LEGEND

\* Specific heat of water. Insert specific heat of your solution here. If unavailable, use water value.

\*\* Weight of water. Insert specific weight of your solution here. If unavailable, use water value.

A = Total gallons of solution

B = Difference between ambient temperature and desired solution temperature.

C = Desired heat-up time (hours).

D = Heat loss of tank. Refer to "Surface Losses" chart below.

E = Square feet of top of tank (multiply length x width)

**After this information is known, use the legend at right to make the calculations.**

### SURFACE LOSSES IN KW from open hot water tank

80°	--	130°	.16	180°	.50
85°	.01	135°	.18	185°	.55
90°	.02	140°	.21	190°	.60
95°	.04	145°	.24	195°	.66
100°	.05	150°	.27	200°	.72
105°	.065	155°	.30	205°	.80
110°	.09	160°	.34	210°	.87
115°	.10	165°	.37	215°	.95
120°	.12	170°	.41	220°	1.04
125°	.14	175°	.45		

### TYPICAL HEATER INSTALLATION

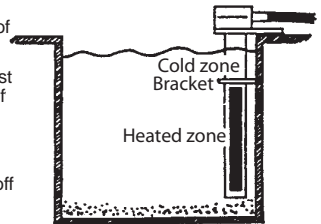
Be certain heater is properly connected in compliance with all codes and per instructions which accompany heater.

Solution level must always remain above heated zone of heater.

Heater should remain at least 2" above sludge at bottom of tank.

**CAUTION:** All heated tanks should be equipped with an emergency automatic shut-off device.

Solution level must be at least one inch below junction box. Junction box must not be submerged.



### AMPS FOR SELECTION OF CONTROLS

HEATER WATTS	AMPS FOR HEATING LOAD											
	SINGLE PHASE						THREE PHASE (BALANCED)					
	120V	208V	230V	240V	460V	480V	208V	230V	240V	460V	480V	
1,000	8.4	4.8	4.4	4.2	2.2	2.1	2.8	2.6	2.5	1.3	1.2	
2,000	16.7	9.7	8.7	8.4	4.4	4.2	5.6	5.1	4.9	2.6	2.5	
3,000	25.0	14.5	13.1	12.5	6.6	6.3	8.4	7.6	7.3	3.8	3.7	
4,000	33.4	19.3	17.4	16.7	8.7	8.4	11.2	10.1	9.7	5.9	4.9	
6,000	50.0	28.9	26.1	25.0	13.1	12.5	16.7	15.1	14.5	7.6	7.3	
8,000	66.7	38.5	34.8	33.4	17.4	16.7	22.3	20.2	19.3	10.1	9.7	
9,000	75.0	43.3	39.2	37.5	19.6	18.8	25.1	22.7	21.7	11.4	10.9	
12,000	100.0	57.7	52.2	50.0	26.1	25.0	33.4	30.2	29.0	15.1	14.5	
18,000	150.0	86.6	78.3	75.0	39.2	37.5	50.1	45.3	43.4	22.7	21.7	
27,000	225.0	129.9	117.4	112.5	58.7	56.3	75.1	67.9	65.1	34.0	32.6	
36,000	300.0	173.1	156.6	150.0	78.3	75.0	100.1	90.5	86.8	45.3	43.4	

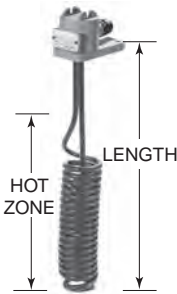


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**SINGLE ELEMENT SPIRAL OVER - THE - SIDE TEFLON IMMERSION HEATERS**

Compatible with most plating tank solutions, inert to acids, anodizing and pickling solutions up to 212°F. temperature. Check Chemical Resistance Chart or with chemical supplier for proper material selection. Replaces alumina or graphite heaters.

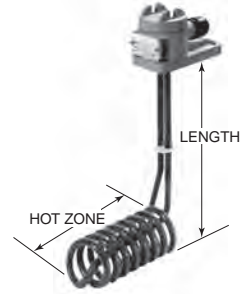
**SINGLE ELEMENT SPIRAL L-SHAPED TEFLON IMMERSION HEATERS**



10 watts/square inch nominal.  
240 volts standard as listed - other voltages available.

**FEATURES:**

- Low watt density for long service life.
- Non-contaminating Teflon covered stainless steel elements.
- PTI or PTLI thermal protection standard.
- Grounded internal metal element for safety.
- U.L. listed, CSA certified.
- Lightweight, non-floating construction.
- Standard 3' flexible PVC liquid-tight conduit.
- Polypropylene or Teflon guards optional. Consult Sales Dept.
- Single phase only
- Longer lengths available.
- Vapor-tight polypropylene terminal enclosure.



Bottom design for even heating and varying liquid levels.

WATTS	VOLTS*	HOT ZONE Inches	VERT.* LENGTH Inches	PRICE CODE NUMBER	SHIP WT. lbs.
500	240	5	11	79-1000XAA1	6
1,000	240	7	11	79-1001XAA1	7
2,000	240	12	17	79-1002XAA1	8
3,000	240	16	23	79-1003XAA1	13
4,000	240	20	29	79-1004XAA1	15
5,000	240	25	35	79-1005XAA1	18
6,000	240	29	40	79-1006XAA1	21
8,000	240	37	47	79-1007XAA1	25
9,000	240	44	54	79-1008XAA1	28

WATTS	VOLTS*	HOT ZONE Inches	VERT.* LENGTH Inches	PRICE CODE NUMBER	SHIP WT. lbs.
500	240	6	12	79-1009XAA1	6
1,000	240	8	12	79-1010XAA1	7
2,000	240	12	18	79-1011XAA1	8
3,000	240	17	18	79-1012XAA1	13
4,000	240	20	18	79-1013XAA1	15
5,000	240	24	18	79-1014XAA1	18
6,000	240	29	18	79-1015XAA1	21
8,000	240	37	18	79-1016XAA1	26
9,000	240	44	18	79-1017XAA1	29

\* Consult Sales Dept. for other choices.

**PRICE CODE IDENTIFICATION**

Price Code Number: 79- \_\_\_\_\_ #1 #2 #3 #4 #5

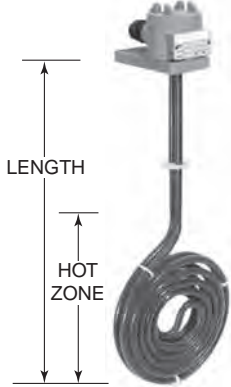
#1 HEATER MATERIAL	#2 VOLTAGE	#3 PROTECTOR Consult Sales Dept.	#4 PHASE
X = PTFE (Teflon) Q = Quarts P = Plain steel F = 304 stainless steel S = 316 stainless steel T = Titanium	A = 240V B = 480V C = 120V D = 208V E = 415V G = 600V H = 380V	Replaceable PI Resettable PII or PIII	1 = 1φ 3 = 3φ <b>#5 OPTIONS</b> Blank = No guard C = w/guard G = Guard only J = Tube only E = Element only





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**SINGLE ELEMENT FLAT OVER-THE-SIDE TEFLON**



Flat, low profile design.

Compatible with most plating tank solutions, inert to acids, anodizing and pickling solutions up to 212°F. temperature. Check Chemical Resistance Chart or with chemical supplier for proper material selection. Replaces alumina or graphite heaters.

**FEATURES:**

- Low watt density for long service life.
- Non-contaminating Teflon covered stainless steel element.
- PTI or PTLI thermal protection standard
- U.L. listed, CSA certified.
- Lightweight, non-floating construction.
- Vapor-tight polypropylene terminal enclosure.
- Standard 3' flex ble PVC liquid-tight conduit.
- Polypropylene or Teflon guards optional. Consult Sales Dept.
- Single phase only
- Grounded internal metal element for safety.
- Longer vertical lengths available.

**SINGLE ELEMENT FLAT L-SHAPED TEFLON IMMERSION HEATERS**



10 watts/square inch nominal  
240 volts standard as listed - other voltages available.

Low profile bottom design for even heating and varying liquid levels.

19

WATTS	VOLTS*	HOT ZONE Inches	VERT.* LENGTH Inches	DIA.* inches	PRICE CODE NUMBER	SHIP WT. lbs.
500	240	6	14	5	79-1018XAA1	6
1,000	240	7	14	6	79-1019XAA1	7
2,000	240	9	17	8	79-1020XAA1	8
3,000	240	10	23	9	79-1021XAA1	13
4,000	240	12	29	11	79-1022XAA1	15
5,000	240	13	35	12	79-1023XAA1	18
6,000	240	14	40	13	79-1024XAA1	22

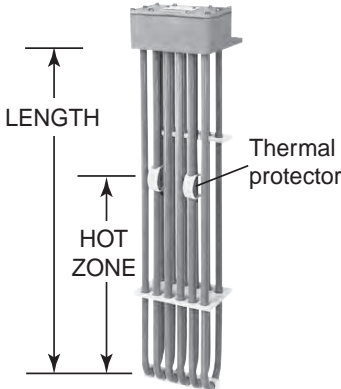
WATTS	VOLTS*	HOT ZONE Inches	VERT.* LENGTH Inches	DIA.* inches	PRICE CODE NUMBER	SHIP WT. lbs.
500	240	5	12	5	79-1027XAA1	6
1,000	240	6	12	6	79-1028XAA1	7
2,000	240	8	18	8	79-1029XAA1	8
3,000	240	9	18	9	79-1030XAA1	13
4,000	240	11	18	11	79-1031XAA1	15
5,000	240	12	18	12	79-1032XAA1	18
6,000	240	13	18	13	79-1033XAA1	22

\* Consult Sales Dept. for other choices.



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**SIX ELEMENT  
OVER - THE - SIDE TEFLON  
IMMERSION HEATERS**



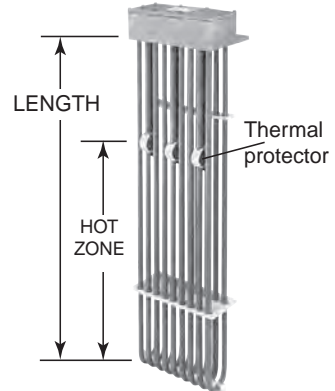
10 watts/square inch nominal  
240 volts standard as listed -  
other voltages available.

Compatible with most plating tank solutions, inert to acids, anodizing and pickling solutions up to 212°F. temperature. Check Chemical Resistance Chart or with chemical supplier for proper material selection. Replaces alumina or graphite heaters.

**FEATURES:**

- U.L. listed, CSA certified.
- Low watt density for long service life.
- Non-contaminating Teflon covered stainless steel elements.
- PTI thermal protection standard.
- Grounded internal metal element for safety.
- Lightweight, non-floating construction.
- Vapor-tight polypropylene terminal enclosure.
- Standard 3' flexible PVC liquid-tight conduit.
- Polypropylene or Teflon guards optional. Consult Sales Dept.
- Standard 3-phase wiring. Consult Sales Dept. for optional single phase.

**NINE ELEMENT  
OVER - THE - SIDE TEFLON  
IMMERSION HEATERS**



3 to 18 kw, 10 watts/square inch  
nominal 240 volts standard as  
listed - other voltages available.

WATTS	VOLTS*	HOT ZONE inches	LENGTH* inches	PRICE CODE NUMBER	SHIP WT. lbs
2,000	240	9	17	79-1069XAA3	19
3,000	240	15	23	79-1070XAA3	22
4,000	240	21	29	79-1071XAA3	24
6,000	240	28	35	79-1072XAA3	27
8,000	240	38	47	79-1073XAA3	33
10,000	240	47	59	79-1074XAA3	40
12,000	240	55	68	79-1075XAA3	45

WATTS	VOLTS*	HOT ZONE inches	LENGTH* inches	PRICE CODE NUMBER	SHIP WT. lbs
3,000	240	9	17	79-1076XAA3	28
4,500	240	15	23	79-1077XAA3	33
6,000	240	21	29	79-1078XAA3	36
9,000	240	28	35	79-1079XAA3	40
12,000	240	38	47	79-1080XAA3	49
15,000	240	47	59	79-1081XAA3	60
18,000	240	55	68	79-1082XAA3	67

\* Consult Sales Dept. for other choices.



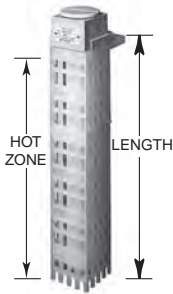


**OVER-THE-SIDE HEATERS (OTS) - Tubular**

A-102\_N

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**SINGLE TUBE**



26 watts/square inch nominal.  
240 volts standard as listed, other voltages available.

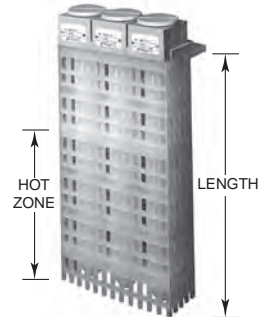
For plating tanks, pickling and other acidic aqueous solutions. Check Chemical Resistance Chart or with chemical supplier for proper material selection.

**Not for use in hydrofluoric acid or alkaline solutions.**

**FEATURES:**

- Heavy duty, long lasting construction.
- PQI thermal protection standard
- Grounded for safety.
- U.L. listed, CSA certified.
- Vapor-tight polypropylene terminal enclosure.
- Standard 3' flexible PVC liquid-tight conduit.
- Replaceable elements and quartz tube.
- Complete standard heater provided with polypropylene guard, optional Teflon guard available for solutions over 200°F. and chromic acid.

**TRIPLE TUBE**



26 watts/square inch nominal.  
240 volts standard as listed, other voltages available.

19

WATTS	VOLTS*	HOT ZONE inches	LENGTH* inches	PRICE CODE NUMBER	SHIP WT. lbs.
500	240	6	10	79-1136QAA1C	9
1,000	240	7	11	79-1137QAA1C	10
1,000	240	7	17	79-1138QAA1C	11
2,000	240	12	17	79-1139QAA1C	11
2,000	240	12	23	79-1140QAA1C	14
3,000	240	18	23	79-1141QAA1C	14
3,000	240	18	29	79-1142QAA1C	17
3,500	240	21	29	79-1143QAA1C	17
4,000	240	28	35	79-1144QAA1C	20
4,000	240	28	41	79-1145QAA1C	23
5,000	240	33	41	79-1146QAA1C	23
5,000	240	33	47	79-1147QAA1C	26
6,000	240	39	47	79-1148QAA1C	26
6,000	240	39	52	79-1149QAA1C	29
8,000	240	49	59	79-1150QAA1C	31
10,000	240	62	71	79-1151QAA1C	34

WATTS	VOLTS*	HOT ZONE inches	LENGTH* inches	PRICE CODE NUMBER	SHIP WT. lbs.
1,500	240	6	10	79-1152QAA1C	21
3,000	240	7	11	79-1153QAA1C	22
3,000	240	7	17	79-1154QAA1C	26
6,000	240	12	17	79-1155QAA1C	26
6,000	240	12	23	79-1156QAA1C	30
9,000	240	18	23	79-1157QAA1C	30
9,000	240	18	29	79-1158QAA1C	34
10,500	240	21	29	79-1159QAA1C	34
12,000	240	28	35	79-1160QAA1C	38
12,000	240	28	41	79-1161QAA1C	44
15,000	240	33	41	79-1162QAA1C	44
15,000	240	33	47	79-1163QAA1C	48
18,000	240	39	47	79-1164QAA1C	48
18,000	240	39	52	79-1165QAA1C	52
24,000	240	49	59	79-1166QAA1C	55
30,000	240	62	71	79-1167QAA1C	65

Single phase standard. Consult Sales Dept. for optional 3 phase.

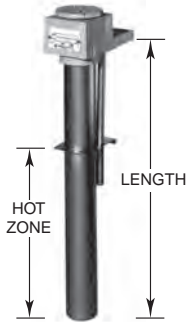
\* Consult Sales Dept. for other choices.

Standard design consists of three individual single phase heaters, which can be wired delta in the field to achieve a three phase balanced operating system. Individual elements are field replaceable.



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**SINGLE TUBE**  
**METAL OVER - THE - SIDE**  
**IMMERSION HEATERS**



35 watts/square inch nominal  
240 volts standard as listed - other voltages available.

Single phase standard. Consult Sales Dept. for optional 3 phase.

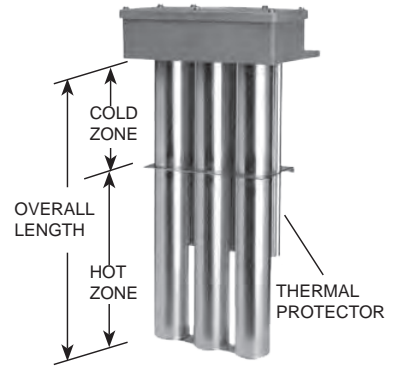
Standard 3' flexible PVC liquid-tight conduit.

For plating tanks, rinse tanks and other aqueous solutions. Check Chemical Resistance Chart or with chemical supplier for proper material selection.

**FEATURES:**

- Heavy duty, long lasting construction.
- PI thermal protection standard
- U.L. listed except plain steel, all CSA certified.
- Grounded for safety.
- Vapor tight polypropylene terminal enclosure.

**TRIPLE TUBE**  
**METAL OVER - THE - SIDE**  
**IMMERSION HEATERS**



35 watts/square inch nominal  
240 volts standard as listed - other voltages available.

Standard units consist of a single head with 3' flexible PVC liquid-tight conduit.

Single phase standard. Consult Sales Dept. for optional 3 phase.

WATTS	VOLTS <sup>1</sup>	HOT ZONE inches	LENGTH <sup>1</sup> inches	316 STAINLESS STEEL <sup>2</sup>	SHIP WT. lbs.
1,000	240	6	11	79-1168SAA1	7
2,000	240	10	17	79-1169SAA1	10
3,000	240	16	23	79-1170SAA1	11
4,000	240	20	29	79-1171SAA1	13
5,000	240	25	35	79-1172SAA1	15
6,000	240	30	40	79-1173SAA1	17
8,000	240	37	47	79-1174SAA1	23
9,000	240	44	54	79-1175SAA1	24
10,000	240	49	59	79-1176SAA1	25
12,000	240	58	68	79-1177SAA1	28

WATTS	VOLTS <sup>1</sup>	HOT ZONE inches	LENGTH <sup>1</sup> inches	316 STAINLESS STEEL <sup>2</sup>	SHIP WT. lbs.
3,000	240	6	11	79-1178SAA1	21
6,000	240	10	17	79-1179SAA1	30
9,000	240	16	23	79-1180SAA1	33
12,000	240	20	29	79-1181SAA1	39
15,000	240	25	35	79-1182SAA1	45
18,000	240	30	40	79-1183SAA1	51
24,000	240	37	47	79-1184SAA1	63
27,000	240	44	54	79-1185SAA1	69
30,000	240	49	59	79-1186SAA1	75
36,000	240	58	68	79-1187SAA1	84

<sup>1</sup> Consult Sales Dept. for other choices.

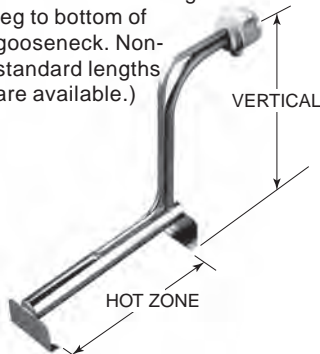
<sup>2</sup> For 304SS heater, change **S** to **F** in Price Code Number.  
For titanium heater, change **S** to **T** in Price Code Number.  
For plain steel, change **S** to **P** in Price Code Number.



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**SINGLE TUBE  
METAL L-SHAPED  
IMMERSION HEATERS**

(Riser height measured from bottom of sludge leg to bottom of gooseneck. Non-standard lengths are available.)



35 watts/square inch nominal  
240 volts standard as listed - other voltages available.  
Single phase standard. Consult Sales Dept. for optional three phase.

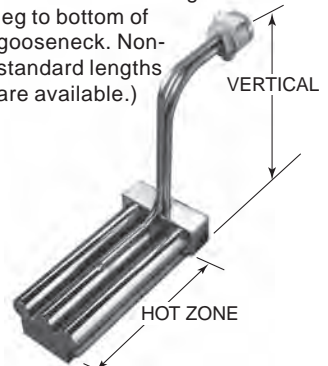
For plating tanks, rinse tanks and other non-sludging aqueous solutions. Check Chemical Resistance Chart or with chemical supplier for proper material selection.

**FEATURES:**

- Bottom mount design for even heating and varying solution levels.
- Standard 2" sludge legs (longer available).
- Heavy duty, long lasting construction.
- PLI thermal protection standard
- U.L. listed except plain steel, all CSA certified.
- Grounded for safety.
- Vapor- tight polypropylene terminal enclosure.
- Standard 3' flex ble PVC liquid-tight conduit.
- Optional Teflon flexible riser or straight vertical configuration available.(Consult Sales Dept).

**TRIPLE TUBE  
METAL L-SHAPED  
IMMERSION HEATERS**

(Riser height measured from bottom of sludge leg to bottom of gooseneck. Non-standard lengths are available.)



35 watts/square inch nominal  
240 volts standard as listed - other voltages available.  
Three phase standard. Consult Sales Dept. for optional single phase.



WATTS	VOLTS <sup>2</sup>	HORIZ. <sup>2</sup> inches	VERT. <sup>2</sup> inches	316 STAINLESS STEEL <sup>1</sup>	SHIP WT. lbs.
1,000	240	13	15	79-1208SAA1	10
2,000	240	17	19	79-1209SAA1	11
3,000	240	22	25	79-1210SAA1	12
4,000	240	26	25	79-1211SAA1	13
5,000	240	31	37	79-1212SAA1	14
6,000	240	36	50	79-1213SAA1	15
8,000	240	44	50	79-1214SAA1	18
9,000	240	50	50	79-1215SAA1	20
10,000	240	55	50	79-1216SAA1	22
12,000	240	64	50	79-1217SAA1	25

WATTS	VOLTS <sup>2</sup>	HORIZ.2 inches	VERT.2 inches	316 STAINLESS STEEL1	SHIP WT. lbs.
3,000	240	13	15	79-1218SAA3	30
6,000	240	17	37	79-1219SAA3	33
9,000	240	22	37	79-1220SAA3	36
12,000	240	26	37	79-1221SAA3	39
15,000	240	31	37	79-1222SAA3	42
18,000	240	36	50	79-1223SAA3	45
24,000	240	44	50	79-1224SAA3	54
27,000	240	50	50	79-1225SAA3	60
30,000	240	55	50	79-1226SAA3	66
36,000	240	64	50	79-1227SAA3	75

<sup>1</sup> For 304SS heater, change **S** to **F** in Price Code Number.  
For titanium heater, change **S** to **T** in Price Code Number.  
For plain steel, change **S** to **P** in Price Code Number.

<sup>2</sup> Consult Sales Dept. for other choices.

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**WARNING**

**ELECTRIC IMMERSION HEATERS WILL IGNITE  
MANY PLASTIC TANKS SUCH AS  
POLYPROPYLENE AND POLYETHYLENE AND  
SUBJECT PERSONNEL TO SHOCK HAZARD IF  
NOT PROPERLY INSTALLED AND MAINTAINED.**

**IGNITION SOURCE**      **SHOCK HAZARD**





# THERMOSTATS AND LIQUID LEVEL SENSORS

A-102\_N

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## DIGITAL COMBINATION CONTROLS WITH STEPDOWN TRANSFORMER

Provides digital indication of setpoint and control point temperature.

- Single setpoint
- 1 or 3 phase controls with 5 ft. FEP sleeved sensor.
- -58°F to 302°F temperature range. (-50° to 150°C).
- cULus listed.
- ±1°F accuracy.
- Optional 10 ft. sensor
- Large LED readout.



ORDERING INFORMATION						OPTIONS*
PRICE CODE NO.	MODEL NUMBER	VOLTS	MAX. AMPS	SHIP/ WT. lbs/(Kg.)		
79-1660 A	DLC 302	240	30	16	Add -LT to Price Code Number and Model Number for "less transformer".	
79-1660 B	DLC 304	480		(7.5)		
79-1661 A	DLC 502	240	50	17	Transformer must be used at 480 volts.	
79-1661 B	DLC 504	480		(8)		
79-1662 A	DLC 752	240	75	23	PII or PIII resettable systems (Consult Sales Dept.)	
79-1662 B	DLC 754	480		(10.5)		
79-1663 A	DLC 902	240	90	25	*Consult Sales Dept. for other choices	
79-1663 B	DLC 904	480		(11.5)		
79-1664 A	DLC 1202	240	120	27		
79-1664 B	DLC 1204	480		(12.5)		
79-1665 A	DLC 1502	240	150	33		
79-1665 B	DLC 1504	480		(15)		

## DIGITAL COMBINATION CONTROLS WITH STEPDOWN TRANSFORMER

Provides digital indication of setpoints and control point temperatures.

- Dual setpoints for heat / cool applications.
- 1 or 3 phase controls with 10 ft. FEP sleeved sensor.
- 0-500°F temperature range (Field selectable 0 - 260°C).
- cULus listed
- ±.25% accuracy (full span).
- Large LED readout.



ORDERING INFORMATION						OPTIONS*
PRICE CODE NO.	MODEL NUMBER	VOLTS	MAX. AMPS	SHIP/ WT. lbs/(Kg.)		
79-1670 A	DO 302	240	30	19	Add -LT to Price Code Number and Model Number for "less transformer".	
79-1670 B	DO 304	480		(8.5)		
79-1671 A	DO 502	240	50	20	Transformer must be used at 480 volts.	
79-1671 B	DO 504	480		(9)		
79-1672 A	DO 752	240	75	26	PII or PIII resettable systems (Consult Sales Dept.)	
79-1672 B	DO 754	480		(12)		
79-1673 A	DO 902	240	90	28	*Consult Sales Dept. for other choices	
79-1673 B	DO 904	480		(13)		
79-1674 A	DO 1202	240	120	30		
79-1674 B	DO 1204	480		(13.5)		
79-1675 A	DO 1502	240	150	36		
79-1675 B	DO 1504	480		(16.5)		

## NON-INDICATING COMBINATION CONTROLS WITH STEPDOWN TRANSFORMER

For temperature control of heated aqueous solutions.

- Single setpoint
- 30°F to 220°F temperature range.
- 1 or 3 phase controls with 5 ft. FEP sleeved sensor.
- cULus listed.
- ±5°F accuracy.



FEP is fluorinated ethylene propylene fluoro polymer.

ORDERING INFORMATION						OPTIONS*
PRICE CODE NO.	MODEL NUMBER	VOLTS	MAX. AMPS	SHIP/ WT. lbs/(Kg.)		
79-1534A	NR302	240	30	15	Add -LT to Price Code No. and Model No. for "less transformer".	
79-1534B	NR304	480		(7)		
79-1535A	NR502	240	50	16	Transformer must be used at 480 volts.	
79-1535B	NR504	480		(7.5)		
79-1536A	NR752	240	75	22	Add -H to Price Code No. and Model No. for high temp. model (150°F to 550°F)	
79-1536B	NR754	480		(10)		
79-1537A	NR902	240	90	24	PII or PIII resettable systems (Consult Sales Dept.)	
79-1537B	NR904	480		(11)		
79-1538A	NR1202	240	120	26	*Consult Sales Dept. for other choices	
79-1538B	NR1204	480		(12)		
79-1539A	NR1502	240	150	32		
79-1539B	NR1504	480		(14.5)		

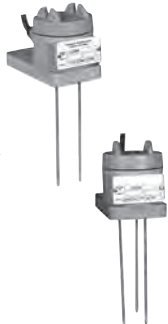
## LIQUID LEVEL SENSOR - SINGLE AND DUAL FUNCTION

For fluid processing and leak detection

**SERIES LC2** Single function probe  
Designed to control power to immersion heater should process solution drop below upper probe.

**SERIES LC3** Dual function probe  
Style same as above and also controls power to pump, solenoid valve or other equipment. 10 amp maximum.

- Prevents heater burn out from low liquid level.
- Designed for use in conductive solutions up to 70K OHMS resistance.
- PTFE covered stainless steel, titanium, Hastelloy® C or graphite probes available.



ORDERING INFORMATION					
LC SERIES — 2 PROBES			LC SERIES — 3 PROBES		
PRICE CODE NO.	MODEL NUMBER	PROBE LENGTH (FIELD TRIM) in.	PRICE CODE NO.	MODEL NUMBER	PROBE LENGTH (FIELD TRIM) in.
79-1510_*	LC2(* )6	6	79-1517_*	LC3(* )6	6
79-1511_*	LC2(* )12	12	79-1518_*	LC3(* )12	12
79-1512_*	LC2(* )18	18	79-1519_*	LC3(* )18	18
79-1513_*	LC2(* )24	24	79-1520_*	LC3(* )24	24
79-1514_*	LC2(* )30	30	79-1521_*	LC3(* )30	30
79-1515_*	LC2(* )36	36	79-1522_*	LC3(* )36	36
79-1516_*	LC2(* )48	48	79-1523_*	LC3(* )48	48

\* Designate material selection in Price Code Number and Model Number.  
 S = 316 Stainless steel      T = Titanium  
 H = Hastelloy                      G = Graphite (Not field trimmable)





2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

**TEFLON and METAL**

**QUICK ESTIMATION (BASED ON STEAM) HEAT-UP**

- STEP 1** Determine gallons in tank.  
(U.S. Gal. = Tank Width \_\_\_" x Length \_\_\_" x Depth \_\_\_" ÷ 231.)  
Enter this amount at (A) in Formula 1.
- STEP 2** Subtract temperature of media to be heated from the temperature to which it must be heated.  
(Δ Temperature = Desired Temp. \_\_\_°F - Initial Temp. \_\_\_°F)  
Enter this amount at (B).
- STEP 3** Locate your useable steam pressure in Steam Pressure Factor chart and find the factor number. Enter this at (C).
- STEP 4** Multiply (A) times (B) times (C). Divide the product by 1000. This is the square foot area you require for a one hour heat-up. If more time is available, coil surface area may be reduced by dividing the square foot area by the heat-up time available, up to 4 hours maximum.

**Formula 1**

$$(A) \frac{\text{GALLONS}}{\text{}} \times (B) \frac{\text{}}{(\Delta T)} \times (C) \frac{\text{}}{(\text{STEAM FACT.})} \div 1,000 = \text{FT}^2$$

**FORMULA FOR HOT WATER HEATING MEDIA**

- STEP 1** Determine gallons in tank. Enter at (A) in Formula 2.
- STEP 2** Subtract temperature of media to be heated from the temperature to which it must be heated. Enter at (B).
- STEP 3** Multiply (A) times (B) times 8.33. Enter answer at (C).
- STEP 4** Subtract the required tank temperature from the temperature of your hot water supply. Enter this figure at (D).
- STEP 5** Multiply (D) by 100 for all metals or 30 for Teflon and enter answer at (E).
- STEP 6** Divide (C) by (E) to determine square feet of area required. If more time is available, coil surface area may be reduced by dividing the square foot area by the heat-up time available, up to 4 hours maximum.

**Formula 2**

$$(A) \frac{\text{gallons}}{\text{}} \times (B) \frac{\text{}}{(\Delta T)} \times 8.33 = \frac{\text{FT}^2 \text{ OF AREA REQ'D FOR ONE HOUR HEAT-UP}}{\text{}} = \frac{(C)}{(E)}$$

100 (all metals) or 30 (Teflon) x (D) (Temp. rise required)

**STEAM PRESSURE FACTORS**

Steam Pressure Available PSI	5	10	15	20	25	50
Steam Factor for Metal	.55	.50	.42	.37	.30	.25
Steam Factor for Teflon	2.75	2.50	2.10	1.85	1.50	___

Consult Sales Dept. for pressures above 50 lb. for metal and 30 lb. for Teflon.

**FORMULA FOR COOLING WITH ANY MEDIUM**

This formula assumes that all electrical energy is dissipated in the tank as heat. In more efficient electrochemical conversions, the energy dissipated as heat may be less.

- STEP 1** Determine watts by multiplying voltage times amperage delivered by the tank rectifier. Multiply this product times 3.412 to determine BTU's. Enter answer at (A) in Formula 3.
- STEP 2** Subtract cooling liquid temperature from required tank temperature. Enter at (B). CAUTION: If this number is less than 15, consult Sales Dept. for assistance in determining proper coil size.
- STEP 3** Multiply (B) times 100 for all metals or 30 for Teflon and enter answer at (C).
- STEP 4** Divide (A) by (C) to determine square feet of surface area required.

**Formula 3**

$$(A) \frac{\text{volts x amps x 3.412}}{\text{}} = \frac{(A)}{(C)} = \text{FT}^2 \text{ OF SURFACE AREA REQUIRED}$$

(B) (Req'd. tank temp. minus cooling liquid temp.) x 100 (all metals) or 30 (Teflon)

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**FOR A MORE IN-DEPTH ANALYSIS OF YOUR SPECIFIC HEAT REQUIREMENTS, PROVIDE THE FOLLOWING INFORMATION AND WE WILL GLADLY SIZE YOUR HEAT EXCHANGER.**

Initial temperature \_\_\_\_\_

Desired temperature \_\_\_\_\_

Tank size: Length \_\_\_\_\_ Width \_\_\_\_\_ Height \_\_\_\_\_

Solution depth \_\_\_\_\_

Type of solution to be heated or cooled \_\_\_\_\_

Production load: Lbs./hr. \_\_\_\_\_ & load temp. \_\_\_\_\_

Agitation (type) \_\_\_\_\_

Rectifiers: Number \_\_\_\_\_ Voltage \_\_\_\_\_ Amp \_\_\_\_\_

Covered or uncovered tank \_\_\_\_\_

Insulated tank & tank material \_\_\_\_\_

Steam pressure at coil hook-up point \_\_\_\_\_

Cooling media \_\_\_\_\_ Inlet temp. \_\_\_\_\_ Flow rate \_\_\_\_\_

**Maximum flow rates, performance curves and pressure drops are determined at the factory for optimum design efficiency. Contact us for performance data.**

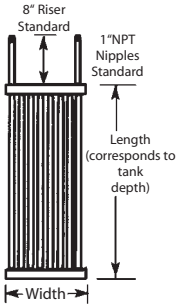


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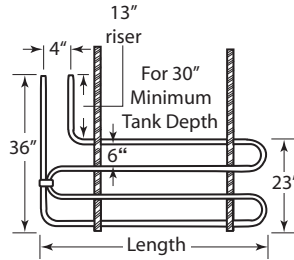
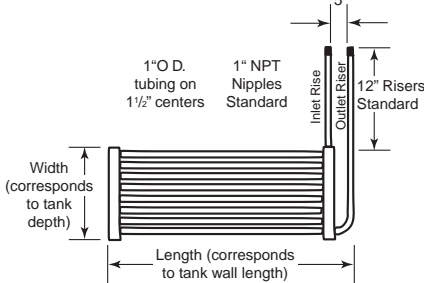
**GRID COILS**

**SERPENTINE COILS (4-pass)**

**VERTICAL GRID**



**HORIZONTAL GRID**



Where tank space is at a premium, the gridcoil is only 2" thick. The gridcoil permits full flow-through of solution for efficient heat transfer. Every square inch of surface is an active heat transfer area. Gridcoils can be banked or stacked for greater heat transfer.

Standard connections are 1" NPT nipples on 4" centers for serpentine and vertical, and 5" centers for grids. 1" NPT nipples on variable centers for vertical models.

Gridcoils are offered in two styles - horizontal and vertical. However, the horizontal gridcoil is more commonly specified. Also, gridcoils can be operated in shallow

SURFACE AREA Sq. ft.	LENGTH in.	PRICE CODE NO. **	
		316 SS	TITANIUM
2.75	24	79-1432SA	79-1432TA
3.75	36	79-1432SB	79-1432TB
4.75	48	79-1432SC	79-1432TC
5.75	60	79-1432SD	79-1432TD
7.25	78	79-1432SE	79-1432TE
8.75	96	79-1432SF	79-1432TF

solutions - as low as 12". The vertical style is ideal for deep, narrow tanks or wells.

Serpentine coils offer lower cost per heating surface area. The design allows them to be installed in tanks with limited space.

**GRIDCOIL SPECIFICATIONS**

SURFACE AREA Sq. ft.	COIL DIMENSIONS (inches)		NUMBER OF TUBES	PRICE CODE NUMBER 1,2,3 316 SS
	WIDTH	LENGTH		
5.6	12-1/2	30	8	79-1442SB
6.7	12-1/2	36	8	79-1442SC
6.8	18-1/2	24	12	79-1443SA
8.4	18-1/2	30	12	79-1443SB
8.8	12-1/2	48	8	79-1442SD
9.4	24-1/2	24	16	79-1444SA
10.0	18-1/2	36	12	79-1443SC
11.5	24-1/2	30	16	79-1444SB
13.2	18-1/2	48	12	79-1443SD
13.6	24-1/2	36	16	79-1444SC
13.7	12-1/2	72	8	79-1442SF
13.7	36-1/2	24	24	79-1446SA
15.1	12-1/2	84	8	79-1442SG
15.8	42-1/2	24	28	79-1447SA
16.3	18-1/2	60	12	79-1443SE
16.8	36-1/2	30	24	79-1446SB
17.2	12-1/2	96	8	79-1442SH
17.8	24-1/2	48	16	79-1444SD
19.2	12-1/2	108	8	79-1442SJ
19.5	18-1/2	72	12	79-1443SF
19.5	42-1/2	30	28	79-1447SB
20.0	36-1/2	36	24	79-1446SC
22.0	24-1/2	60	16	79-1444SE
22.6	18-1/2	84	12	79-1443SG
23.2	42-1/2	36	28	79-1447SC
23.4	12-1/2	132	8	79-1442SL
25.7	18-1/2	96	12	79-1443SH
26.1	24-1/2	72	16	79-1444SF
26.3	36-1/2	48	24	79-1446SD
28.9	18-1/2	108	12	79-1443SJ
30.3	24-1/2	84	16	79-1444SG
30.6	42-1/2	48	28	79-1447SD

SURFACE AREA Sq. ft.	COIL DIMENSIONS (inches)		NUMBER OF TUBES	PRICE CODE NUMBER 1,2,3 316 SS
	WIDTH	LENGTH		
32.0	18-1/2	120	12	79-1443SK
32.5	36-1/2	60	24	79-1446SE
34.5	24-1/2	96	16	79-1444SH
35.2	18-1/2	132	12	79-1443SL
38.0	42-1/2	60	28	79-1447SE
38.3	18-1/2	144	12	79-1443SM
38.7	24-1/2	108	16	79-1444SJ
38.8	36-1/2	72	24	79-1446SF
42.9	24-1/2	120	16	79-1444SK
45.1	36-1/2	84	24	79-1446SG
45.4	42-1/2	72	28	79-1447SF
47.1	24-1/2	132	16	79-1444SL
51.3	24-1/2	144	16	79-1444SM
51.4	36-1/2	96	24	79-1446SH
52.8	42-1/2	84	28	79-1447SG
57.7	36-1/2	108	24	79-1446SJ
60.2	42-1/2	96	28	79-1447SH
64.0	36-1/2	20	24	79-1446SK
67.6	42-1/2	108	28	79-1447SJ
70.3	36-1/2	132	24	79-1446SL
75.0	42-1/2	120	28	79-1447SK
76.6	36-1/2	144	24	79-1446SM
82.4	42-1/2	132	28	79-1447SL
89.8	42-1/2	144	28	79-1447SM

<sup>1</sup> For titanium grid coil change 'S' to 'T' in price code no.

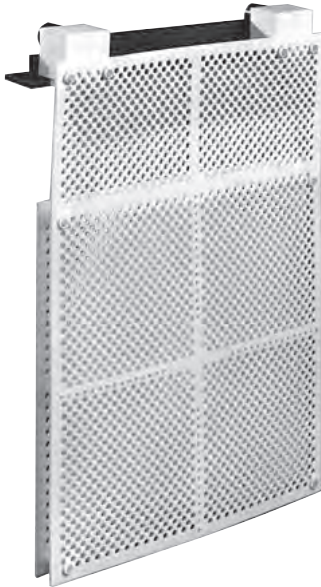
<sup>2</sup> Add 'V' to end of price code no. for vertical style.  
Add 'H' to end of price code for horizontal style.

<sup>3</sup> Add 'S' to end of price code number for steam.  
Add 'W' to end of price code number for water



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**STATE-OF-THE-ART IN HEAT**



Unmatched for operating performance, installation ease and quality construction, tube coils are produced from high grade FEP with PTFE guard construction.

Compact tube coil exchangers maximize heating/cooling efficiency through a design that not only creates extremely high surface area, but also ensures outstanding flow-through circulation of the process bath by creating uniform spacing between the tubing. No other heat exchanger is faster or cheaper to install/service thanks to a unique design that incorporates a manifold into the heat exchanger package.

Only the highest quality components and craftsmanship go into the manufacture of these tube coils . . . so that you can expect outstanding performance and dependability over a long service life.

- **CONSTRUCTION FROM HIGH GRADE MATERIALS**  
**Frame** - high strength mechanical grade Teflon  
**Guard and fittings** - mechanical grade Teflon  
**Coil** - FEP ( virgin fluorinated ethylene propylene) to 30 PSI steam or water (For up to 60 PSI steam or water, consult Sales Dept.)
- **NON-CONTAMINATING**
- **OUTSTANDING RESISTANCE TO VIRTUALLY ALL ACIDS AND ALKALIES**
- **SIZES FROM 2.25 FT.<sup>2</sup> OF EXCHANGE AREA TO 46.5 FT.<sup>2</sup>**
- **OTHER SIZES AVAILABLE**

**TO ORDER - Select Price Code Number**

1/4 TUBE COIL - Rectangular			
SURFACE AREA sq. ft.	CONNECTIONS in.	SIZE in	PRICE CODE NUMBER
2.25	½" FNPT	11½ x 11½ x 1½	79-1478X
4.5	½" FNPT	11½ x 11½ x 2	79-1479X
4.5	½" FNPT	15½ x 15½ x 1½	79-1480X
9.25	½" FNPT	15½ x 15½ x 2	79-1481X

1/2 TUBE COIL - Round			
SURFACE AREA sq. ft.	CONNECTIONS in.	PRICE CODE SIZE in.	PRICE CODE NUMBER
6	1" FNPT	17½ x 17½ x 2	79-1482X
12	1" FNPT	17½ x 17½ x 3¼	79-1483X
18	1½" FNPT	17½ x 17½ x 4½	79-1484X
24	1½" FNPT	17½ x 17½ x 5¾	79-1485X
11.5	1" FNPT	23½ x 23½ x 2	79-1486X
23	1" FNPT	23½ x 23½ x 3¼	79-1487X
34.5	1½" FNPT	23½ x 23½ x 4½	79-1488X
46.5	1½" FNPT	23½ x 23½ x 5¾	79-1489X

**CUSTOM COIL CAPABILITIES**

We offer many standard model heat exchangers in a wide range of materials such as stainless steel, titanium and FEP. Custom configurations, high density exchange areas, special fittings on connections, and consideration for heating and/or cooling media (as in using a coil for an evaporator for a refrigeration system) are just a few. Consult Sales Dept.

**MAINTENANCE**

Due to the well known anti-stick properties of FEP, very little maintenance is required. However, when excessive build-up does occur, either chemically clean or pressure spray to clean.

**DO NOT ATTEMPT TO CLEAN BY SCRAPING.**

Manifold fittings may require slight re-tightening after the first 24 hours of use due to the cold flow properties of FEP. However, once re-tightened, no further tightening should be required.



# AIR FILTER / DRYERS AND COALESCERS

363

K-101\_L

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431



**MODEL C418-1**  
w/Metal Automatic  
Drain (optional)

**AIR  
COALESCER  
MODEL BFCD201**

*Designed for use with tools, instruments, and paint booth equipment operated with compressed air, as well as for cleaning and drying parts.*

**Prevents damage to air devices and systems**

SERFILCO Kompressed-Air-Konditioners provide acid-free, clean, dry air at the lowest dewpoints attainable without refrigeration. They extend operating life and improve performance of pneumatic instruments, tools and equipment.

- Removes free water and oil
- Removes water and oil vapors
- Removes particles to one micron
- Lowers dewpoint  
25°F with dehydrated clay element  
80°F with molecular sieve element
- Pipe sizes from ¼" to 2" NPT
- Flow rates to 550 SCFM at 100 PSI

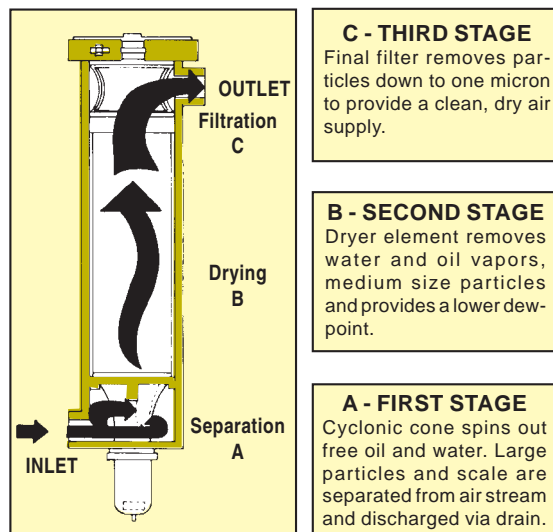
## WHAT CAUSES A PNEUMATIC DEVICE TO FAIL?

First, a mist of oil and water vapor escapes from the compressor and condenses as oil and water droplets in the air tank and lines. In a rotating or reciprocating device the water and oil are mixed into an emulsion. When reheated, this will build up a varnish residue between contacting surfaces which will slow down, and may eventually even stop the air device.

In addition, most petroleum oils contain sulfur compounds. These can react with condensate to form corrosive sulfuric acid. This acid not only deteriorates 'O'-rings and seals, but also pits and corrodes metal surfaces. Once initiated, the pits become progressively bigger and eventually the metal part will have to be replaced.

Another factor that contributes to wear is pipe scale. Vibration of the pipe will loosen the scale and the rust particles will travel and collect at critical points. When these mix with oil and/or water, the resulting "grinding compound" causes considerable wear of moving parts.

## THREE STAGE FILTER / DRYER SOLVES THE PROBLEM





**KOMPRESSED-AIR-KONDITIONERS Ordering Information**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

**TO ORDER use Price Code Number**

Select Kompressed-Air-Konditioner based on flow rate or pipe size. Assembly includes dryer element and filter pads. Select choice of drain style. Pressure ratings for

both components are shown. System maximum pressure is limited by the lowest pressure rating of filter / dryer and drain.

**KOMPRESSED-AIR-KONDITIONERS**

MODEL	SCFM @ 100 PSI*	MAX. PSI	PRESS. DIFF. @ 150 PSI MAX. SCFM	CONNS. NPT	DIMENSIONS		SHIPPING WEIGHT LBS.	WITH ELEMENT		
					DIA.	HT.		Dehydrated Clay	Molecular Sieve	Dehydrated Clay / Carbon
SF-B25-¼	7	250	3.5 PSI	¼"	2½"	7"	3	79-0070	79-0094	79-0301
SF-A38-½	30	250	4.0 PSI	½"	3½"	11½"	8	79-0002 A	79-0004	79-0302
SF-C418-1	70	250	3.5 PSI	1"	4½"	20"	18	79-0034 A	79-0036	79-0303
SF-E625-1½	150	200	3.5 PSI	1½"	6"	21¼"	29	79-0050	79-0056	—
SF-D832-2	300	150	11.0 PSI	2"	8¾"	34"	25	79-0072	79-0093	—

\* Maximum flow - intermittent operation

**DRAINS FOR KONDITIONERS**

MODEL	DESCRIPTION		FOR KONDITIONERS				
			B25	A38	C418	E625	D832
			PRICE CODE NUMBERS				
D3	Metal Manual	Metal bowl with sight bubble & petcock. 250 PS	79-0078	79-0083			
D4	Metal Automatic	Metal bowl. Float operated drain. 175 PSI	79-0062	79-0084			
D5	Electronic Automatic	115V/1/60, 175 PSI	—	79-0309			

**REPLACEMENT ELEMENTS <sup>1</sup>**

FOR MODEL	DESCRIPTION	PRICE CODE NO.	DESCRIPTION	PRICE CODE NO.
SF-B25-¼ SF-A38-½ SF-C418-1 SF-E625-1½ SF-D832-2	<b>DEHYDRATED CLAY</b> media hydro-philically removes water and oil vapors and medium size particles from the air stream. Pressure dewpoint is lowered approximately 25°F below the entering air temperature.	79-0071 A 79-0003 A 79-0035 A 79-0051 A 79-0073 A	<b>MOLECULAR SIEVE</b> media is recommended for those applications requiring exceptionally pure air at low dewpoints free of oil vapor. Pressure dewpoint is lowered approximately 80°F below the entering air temperature. For use with oilless compressors or a coalescer upstream.	79-0021 A 79-0022 A 79-0023 A 79-0024 A 79-0025 A
SF-B25-¼ SF-A38-½ SF-C418-1	<b>DEHYDRATED CLAY / CARBON</b> combination media bag removes rough materials, water, oil aerosols and other solvents.	79-0006 A 79-0005 A 79-0037 A	<sup>1</sup> Element sets include desiccant media packaged in PP bag, one micron filter pads, "O"-ring seal and instructions. For Kompressed-Air-Konditioners purchased prior to 1993, drop the <b>A</b> from the Price Code Number of the replacement media.	



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**AIR COALESCERS**

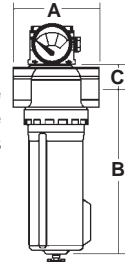
• **Remove aerosols economically**

The use of SERFILCO Air Coalescers is recommended to stop the negative effects of water, oil and solids concentrations on instruments, air tools, valves and desiccant dryers. The result is longer lasting equipment, fewer production stoppages and higher quality products.

• **99.98% efficiency, to 0.3 micron**

Models starting with B have metal bowls. Others have plastic bowls with metal guards. The letter **D** in the model signifies an internal automatic drain which is standard on 1/2" and larger models. The 1/4" model has a manual drain.

Plastic bowls are rated 150 psig at 125°F. Metal bowls are rated 200 psig at 175°F.



MODEL	CAPACITY SCFM @ 100 PSIG	CONNECTION NPT	DIMENSIONS			WEIGHT Lbs.	PRICE CODE NO.
			A	B	C		
FC101-2	20	1/4"	3 1/2"	5 3/4"	5/8"	2 1/4	79-0310
FCD101H-4	60	1/2"	3 1/2"	10 1/4"	5/8"	3 1/4	79-0311
BFCD201-6	185	3/4"	4 1/2"	10 1/8"	1"	3 1/2	79-0312
BFCD201-8	220	1"	4 1/2"	10 1/8"	1"	3 3/2	79-0313
BFCD201-12	278	1 1/2"	5 1/2"	10 3/4"	1 5/8"	4 3/8	79-0314
BFCD101-16	430	2"	7 3/4"	22"	1 5/8"	19 3/4	79-0315

**5 MICRON AIR FILTERS**

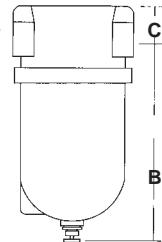
**REMOVE COARSE PARTICLES ECONOMICALLY AND EXTEND LIFE OF AIR DRYER AND COALESCING ELEMENTS**

SERFILCO 5 Micron Air Filters are designed to be used independently for less sensitive filtration applications and as prefilters for the high efficiency air coalescer designs, thereby extending the operating life of the high efficiency coalescing element.

These air filters cover a wide variety of sizes

and flow rates. Models starting with **B** have metal bowls. Others have plastic bowls with metal guards. All models come standard with an internal automatic drain.

Plastic bowls are rated 150 psig at 125°F. Metal bowls are rated 200 psig at 175°F.



MODEL	CAPACITY SCFM @ 100 PSIG	CONNECTION NPT	DIMENSIONS			WEIGHT Lbs.	PRICE CODE NO.
			A	B	C		
FC101-2	45	1/4"	2 5/8"	4 5/8"	5/8"	1 1/4	79-0320
FCD101H-4	130	1/2"	3 1/2"	5 3/4"	5/8"	2 1/4	79-0321
BFCD201-6	225	3/4"	4 1/2"	8"	13/16"	2 1/2	79-0322
BFCD201-8	275	1"	4 1/2"	8"	13/16"	2 1/2	79-0323
BFCD201-12	950	1 1/2"	8"	13 1/4"	1 3/4"	14 1/2	79-0324
BFCD101-16	950	2"	8"	13 1/4"	1 3/4"	14 1/2	79-0325

**20**



**SERFILCO Kompressed-Air-Konditioners** remove water and oil vapor to prevent condensation downstream. Three choices of desiccant elements are available:

**DEHYDRATED CLAY ELEMENT**

Effective for both water and oil removal Requires no coalescing or air preparation A general purpose desiccant which produces initial dew point de-pressions (pressure dew points) of 20° to 25°F. Life expectancy is up to three months depending on humidity, flow rate and frequency of operation.

**DEHYDRATED CLAY WITH ACTIVATED CARBON ELEMENT**

A layer of activated carbon following the clay desiccant produces slightly lower initial dew points. It provides

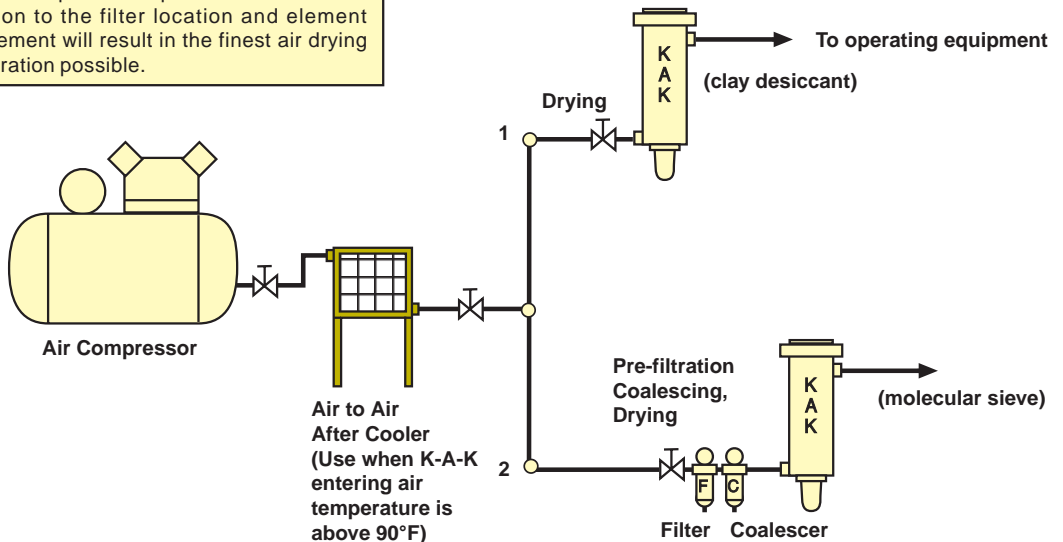
better removal of noxious gasses and oil aerosols. It is to be used where a higher degree of purification is required.

**MOLECULAR SIEVE ELEMENT**

Highly porous alumina s licate complexes produce exceptionally low dew points - as much as an 80°F initial pressure dew point depression Molecular sieve material will be coated with oil passing through the system thereby reducing efficiency and life expectancy. They are generally used with oil-less compressors or a coalescing filter is used to remove the oil before the air enters the Filter/Dryer. The addition of a general purpose filter will extend the life of the coalescing filter element, further reducing cost. Always install filters before the Molecular Sieve models.

**TYPICAL INSTALLATIONS**

**INSTALLATION RECOMMENDATION**  
It is intended that all models be located as far from the compressor as practical. Reasonable attention to the filter location and element replacement will result in the finest air drying and filtration possible.







# SERIES 'G' STEAM / GAS FILTERS

367

K-103

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## IMPROVE PLANT PRODUCTION MINIMIZE MAINTENANCE COSTS

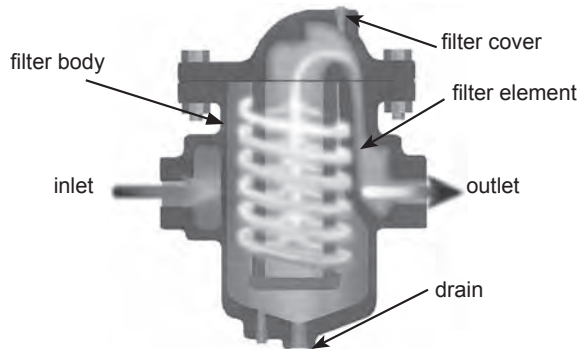
- Two step separation process
- Rugged design and construction provides long term reliability
- Inline connections easy to install
- Durable permanent element withstands repeated cleanings to extend tube life

Sizes 1/2" to 6" with steam flow rates up to 28,000 lb/hr. or gas flow rates to 6,900 SCFM



### STEAM FILTER

- Nominal two micron filtration Poro-Carbon element
- Operating temperatures to 500°F
- Standard units with design pressure to 200 psi are available from stock.
- Complies with 3A accepted practices, meets requirements for culinary steam systems



### GAS FILTER

- Nominal five micron filtration Poro-Stone element
- Operating temperatures to 650°F
- Standard units with design pressure to 300 psi are available from stock.
- Designed for and can be certified to ASME Code, Section VIII, Division 1

GP Filters for Saturated Steam Service						
Capacity in lb/hr based on operating pressure noted below						
Size	Model	50 PSIG	100 PSIG	125 PSIG	150 PSIG	200 PSIG
1/2"	GP-22	95	160	195	225	290
3/4"	GP-31	165	285	340	400	515
1"	GP-47	270	460	555	650	835
1-1/2"	GP-99	635	1,090	1,310	1,530	1,965
2"	GP-132	1,050	1,800	2,165	2,525	3,240
3"	GP-283	2,310	3,965	4,773	5,570	7,145
4"	GP-508	3,985	6,825	8,215	9,590	12,305
6"	GP-1527	9,045	15,495	18,650	21,770	27,930

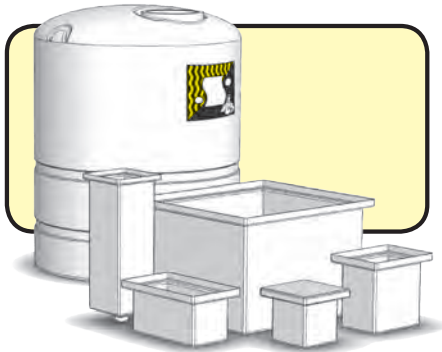
GP Filters for Gas Service						
Capacity in SCFM based on operating pressure noted below						
Size	Model	50 PSIG	100 PSIG	150 PSIG	200 PSIG	300 PSIG
1/2"	GP-22	30	40	50	65	70
3/4"	GP-31	95	130	155	195	215
1"	GP-47	125	165	195	250	275
1-1/2"	GP-99	235	310	375	475	515
2"	GP-132	335	450	540	685	745
3"	GP-283	705	935	1,120	1,425	1,550
4"	GP-508	835	1,115	1,335	1,695	1,850
6"	GP-1527	3,145	4,185	5,015	6,360	6,935



# PLATING, PROCESSING and STORAGE TANKS

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## CHEMICAL RESISTANT, SELF-SUPPORTING LINEAR HIGH DENSITY POLYETHYLENE TANKS



- Molded as one piece — No seams to leak
- Excellent chemical resistance — Ideal for handling acids or caustics
- Operating temperatures to 140° F
- Excellent impact resistance for long, dependable service
- Translucent\* for viewing content level
- Tank covers and stands available

\* The degree of translucency varies with wall thickness and tank color.

### RECTANGULAR TANKS

CAPACITY (Gallons)	DIMENSIONS (Inches) L x W x D	TANK ONLY PRICE CODE NO.	COVER ONLY PRICE CODE NO.
7	12 x 12 x 12	88-0600	88-0606
11	12 x 12 x 28	88-1551	88-0606
14	12 x 12 x 15	88-1552	88-3311
15	12 x 24 x 12	88-3065	88-3310
18	12 x 18 x 18	88-3066	88-3311
25	18 x 18 x 18	88-3067	88-3312
30	12 x 24 x 24	88-3068	88-3310
37	18 x 24 x 18	88-0603	88-0609
44	18 x 24 x 24	88-3069	88-0609
56	24 x 30 x 18	88-3070	88-3314

CAPACITY (Gallons)	DIMENSIONS (Inches) L x W x D	TANK ONLY PRICE CODE NO.	COVER ONLY PRICE CODE NO.
62	20 x 36 x 20	88-0604	88-0607
75	24 x 24 x 30	88-3071	88-3315
90	24 x 36 x 24	88-0610	88-0611
115	30 x 30 x 30	88-3072	88-3316
150	24 x 48 x 30	88-3073	88-3317
270	36 x 48 x 36	88-3660	88-3661
390	42 x 66 x 33	88-3301	88-3319
530	54 x 54 x 42	88-3302	88-3320
670	36 x 72 x 60	88-3303	88-3321

### CYLINDRICAL TANKS

CAPACITY (Gallons)	DIMENSIONS (Inches) Dia. x Ht.	TANK ONLY PRICE CODE NO.	COVER ONLY PRICE CODE NO.
30	18 x 29	88-0612	88-0622
55	22 x 36	88-0613	88-0623
100	28 x 42	88-0614	88-0624
200	36 x 48	88-0615	88-0625
360	48 x 48	88-0616	88-0626
500	52 x 60	88-3304	88-3322
650	48 x 84	88-3305	88-0626
800	60 x 66	88-3306	88-3323

### CYLINDRICAL CONE BOTTOM TANKS

Open top tanks for convenient filling and mixing of chemicals to 140° F.

Cone bottom design allows for complete drainage.

CAPACITY (Gallons)	DIMENSIONS (Inches) Dia. x Ht.	TANK ONLY PRICE CODE NO.	STANDw/MOUNT PRICE CODE NO.
30	18 x 29	88-3077	77-1304
55	22 x 36	88-3078	77-1305
75	30 x 24	88-3079	77-1306
100	30 x 36	88-3080	77-1307
125	42 x 24	88-3081	77-1308
200	31 x 65	88-3082	77-1309
250	42 x 46	88-3083	77-1310
350	42 x 60	88-3307	77-1311
500	52 x 64	88-3308	77-1312
750	62 x 58	88-3309	77-1313

### CYLINDRICAL DRUM LINERS

CAPACITY (Gallons)	DIMENSIONS (Inches) Dia. x Ht.	TANK ONLY PRICE CODE NO.	COVER ONLY PRICE CODE NO.
30	18 x 28	88-0617	88-0627
55	22 x 35	88-0618	88-0628

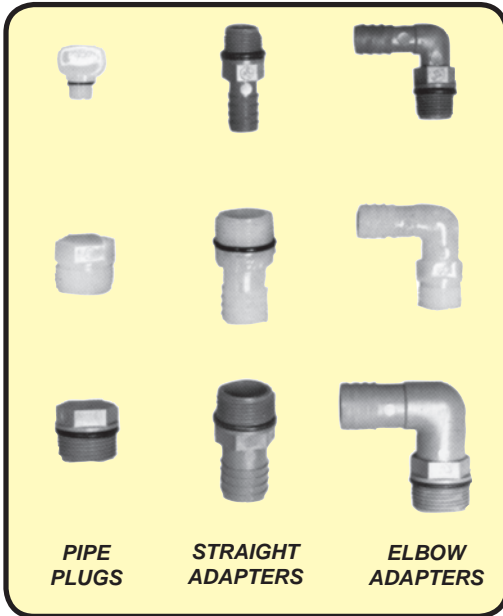
Consult Sales Dept. for optional pipe connections, larger capacities, special assemblies with pumps and level controls and F.O.B point.



# PLASTIC FITTINGS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## FOR TOTAL SOLUTION CONTAINMENT



PIPE / VALVES / FITTINGS / FLANGES  
HOSE / CLAMPS / STRAINERS  
TANK CONNECTIONS AND MORE . . .

*Polypropylene, CPVC and PVDF*  
**(See a chemical resistance guide)**

All fittings are designed to be used conventionally with tape or other types of thread lubricant, but to achieve total solution containment, fittings with "O"-rings are offered which enable the installer to seal the joint even if the fitting is slightly unscrewed as might be required to achieve the proper location of an elbow.

These "O"-rings also provide the necessary expansion to seal a joint when the fitting is cold and the plastic shrinks, as well as when the plastic expands. There is simply no better way to assure that a sealed joint has been established with disjoinable fittings than with the use of "O"-rings.

Make certain your pumping, agitation & filtration systems are properly piped. Select installation components from this bulletin. Always refer to operating instructions to ensure trouble-free and efficient performance.

Contact our sales application engineering dept. for recommendations and a complete selection of plastic pumps, filters, agitation and filtration systems.

### ADAPTERS - HOSE I.D. x MNPT















DESCRIPTION	MATERIAL (molded)	5/8" x 1/2"	5/8" x 3/4"	3/4" x 3/4"	3/4" x 1"	1" x 1"
		PRICE CODE NUMBERS				
STRAIGHT ADAPTER	CPVC PVDF	33-0710 33-0710 K	33-0503 33-0503 K	33-0711 33-0711 K	33-1360 33-1360 K	33-0712 33-0712 K
ELBOW ADAPTER	CPVC PVDF	33-1336 33-1336 K	33-0504 33-0504 K	33-1337 33-1337 K	33-1342 33-1342 K	33-1338 33-1338 K
OPTIONAL "O"- RING	EPDM VITON	22-0569 22-0568	22-0570 22-0563	22-0570 22-0563	22-0442 22-0533	22-0442 22-0533

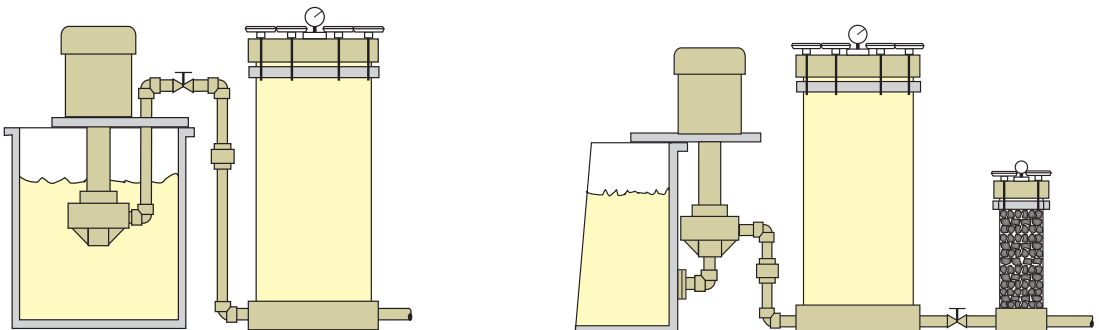
DESCRIPTION	MATERIAL (machined)	1 1/4" x 1 1/4"	1 1/2" x 1 1/2"	2" x 2"
		PRICE CODE NUMBERS		
STRAIGHT	CPVC	33-1157	33-1158	33-1159
STRAIGHT / W/"O"-RING	CPVC & EPDM	33-0713	33-0714	33-0759
ELBOW	CPVC	33-1482	33-1483	33-1484
ELBOW / W/"O"- RING	CPVC & EPDM	33-0788	33-0790	33-0758



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**CPVC, POLYPROPYLENE & PVDF**  
**for total solution containment**

DESCRIPTION				PART NUMBERS for CPVC <sup>1</sup>						
				For polypropylene add <b>-PP</b> , for PVDF add <b>-K</b>						
				1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"
<b>NIPPLE (NPT)</b>  Close Short  Threaded both ends	3" Long	33-0197	33-1005	33-1011	33-1017	33-1023	33-1029	33-1041		
	4" Long	33-0198	33-1006	33-1012	33-1018	33-1024	33-1030	33-1042		
	5" Long	33-1001	33-1007	33-1013	33-1019	33-1025	33-1031	—		
	6" Long	33-1002	33-1008	33-1014	33-1020	33-1026	33-1032	33-1043		
		33-1003	33-1009	33-1015	33-1021	33-1027	33-1033	33-1044		
<b>BALL VALVE</b>  Double union w/Viton "O"-ring	Threaded (NPT)	33-0570	33-0571	33-0572	33-0573	33-0574	33-0575	33-0576		
	Socket	33-0578	33-0579	33-0580	33-0581	33-0582	33-0583	33-0584		
<b>UNION</b>  w/Viton "O" ring	Socket	33-0196	33-0287	33-0288	33-0289	33-0290	33-0291	33-0292		
	Threaded (NPT)	33-0293	33-0294	33-0295	33-0296	33-0297	33-0298	33-0299		
<b>TEE</b> 	Socket	33-0195	33-0950	33-0951	33-0952	33-0953	33-0954	33-0956		
	Threaded (NPT)	33-0958	33-0959	33-0960	33-0961	33-0962	33-0963	33-0965		
<b>90° ELBOW</b> 	Socket	33-0193	33-0984	33-0985	33-0986	33-0987	33-0988	33-0990		
	Threaded	33-0992	33-0993	33-0994	33-0995	33-0996	33-0997	33-0999		
<b>45° ELBOW</b> 	Socket	33-0194	33-0967	33-0968	33-0969	33-0970	33-0971	33-0973		
	Threaded (NPT)	33-0975	33-0976	33-0977	33-0978	33-0979	33-0980	33-0982		
<b>COUPLING</b> 	Socket	33-0882	33-0883	33-0884	33-0885	33-0886	33-0887	33-0889		
	Threaded (NPT)	33-0891	33-0892	33-0893	33-0894	33-0895	33-0896	33-0898		
<b>FLANGE</b> 	Socket	33-0829	33-0830	33-0831	33-0832	33-0833	33-0834	33-0836		
	Threaded (NPT)	33-0839	33-0840	33-0841	33-0842	33-0843	33-0844	33-0846		
<b>FLANGE GASKET</b> 	EPDM	22-0517	22-0518	22-0236	22-0237	22-0238	22-0239	22-0243		
<b>CAP</b> 	Socket	33-1140	33-1141	33-1142	33-1143	33-1144	33-1145	33-1147		
	Threaded (NPT)	33-0873	33-0874	33-0875	33-0876	33-0877	33-0878	33-0880		
<b>PLUG</b> 	Threaded (NPT)	33-0866	33-0211	33-0212	33-0867	33-0868	33-0869	33-0871		
	Threaded with EPDM "O" ring	33-0791	33-0755	33-0792	—	—	—	—		
<b>"O"-RING</b> 	EPDM	22-0569	22-0570	22-0442	—	—	—	—		
	Viton	22-0568	22-0563	22-0533	—	—	—	—		
<b>REDUCING BUSHING</b> 	Socket	1/2" x 1/4"	3/4" x 1/2"	1" x 3/4"	1 1/4" x 1"	1 1/2" x 1 1/4"	2" x 1 1/2"	3" x 2"		
	Threaded (NPT)	33-1110	33-1111	33-1112	33-1113	33-1114	33-1115	33-1118		
		33-1130	33-1131	33-0184	33-0183	33-1137	33-1132	33-1862		












**PIPE, HOSE, CLAMPS, STRAINERS, TANK CONNECTIONS & VALVES**

A-213\_G

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DESCRIPTION		PRICE CODE NUMBERS							
		1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	3"
<b>CPVC PIPE per ft.</b> 	Schedule 40 Socket only	33-0233	—	33-0234	33-0235	33-0236	33-0237	33-0238	33-0228
	Schedule 80 Unthreaded	33-0216	—	33-0217	33-0218	33-0219	33-0220	33-0221	33-0223
<b>HOSE</b> 	Vinyl w/PVC	—	—	—	22-0392	22-0393	22-0394	22-0395	—
	Vinyl, clear, wire reinforced	22-0494	22-0484	22-0482	22-0483	22-0527	22-0528	22-0529	—
	Vinyl, clear (Discharge only)	22-0490	22-0491	22-0492	22-0493	—	—	—	—
	Vinyl, clear, nylon reinforced	22-0424	22-0480	22-0481	22-0432	22-0433	22-0434	22-0435	—
	Teflon® ribbed, 8 ft. length	—	—	22-0462	22-0463	—	—	—	—
	Vinyl, cross linked, PE lined	—	—	22-0548	22-0549	—	—	—	—
<b>CLAMPS</b> 	Stainless steel	22-0502	22-0502	22-0505	22-0505	22-0503	22-0503	22-0504	—
<b>STRAINERS</b> 	PE, NPT	33-1948	—	33-6078	33-6058	—	—	99-0744 1	99-0745
	PE, BSP	—	—	—	—	—	—	—	64-1339 01
	ECTFE (Halar®), NPT BSP	—	—	—	—	—	—	99-1030	99-1031
		—	—	—	—	—	—	—	64-1339 91
		—	—	—	—	—	—	—	—
<b>BULKHEAD TANK CONNECTION</b> 	PP	33-0690	—	33-0691	33-0692	33-0693	33-0694	33-0695	33-0696
<b>BALL VALVE</b>	PP, threaded w/EPDM "O"-ring	33-0560	—	33-0561	33-0609	—	—	—	—
<b>FOOT VALVE</b>	PVC, threaded with strainer	33-0541	—	33-0542	33-0543	33-0544	33-0545	33-0546	33-0547
<b>VERTICAL CHECK VALVE</b>	PVC, threaded	33-0593	—	33-0594	33-0595	33-0596	33-0597	33-0598	33-0599
<b>VENT VALVE</b>	PP (1/4") CPVC (3/8")	33-8108 PP 33-0051	<b>THUMBSCREW / PLUG, 1/4"</b> w/"O" ring 				w/EPDM 88-1282A 88-2833	w/Viton 88-1282B 88-2822	

**316 SS SPRING CLAMPS**

WITH HOOKS



WITH HOSE CLAMP

WITH HOOKS	FORCE TO OPEN FROM CLOSED	PRICE CODE NUMBER
Small - 4.5"	12 lbs.	99-0190
Large - 7.0"	22 lbs.	99-0191

WITH HOSE CLAMP	FOR HOSE SIZE I.D.	PRICE CODE NUMBER
Small - 4.5"	1/2" to 1"	99-0190A
Large - 7.0"	1-1/4" to 2"	99-0191A













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**POLYPROPYLENE QUICK-CONNECT COUPLINGS**

**FOR: PLATING, ANODIZING, FERTILIZER, CHEMICALS, PETROLEUM**

Working Pressures: 100 PSI at 0°F, 125 PSI at 70°F, 70 PSI at 150°F  
 Vacuum - 28 inches Mercury

- MOLDED OF GLASS REINFORCED POLYPROPYLENE
  - NYLON LEVERS
  - STAINLESS STEEL PINS AND RINGS
  - INTERCHANGEABLE WITH OTHER BRANDS
  - RESISTANT TO MANY CHEMICALS, RUST-PROOF
  - MANUFACTURED TO MILITARY SPECIFICATIONS
  - RETAINED GASKETS IN COUPLERS WILL NOT FALL OUT WHEN CONNECTIONS ARE OPEN
  - SIZE IDENTIFICATION MOLDED INTO EACH PART
  - NPT OR BSP THREADS
- (Consult Application Engineering Dept. for BSP.)

FEMALE COUPLER w/EPDM GASKET							
DESCRIPTION	PRICE CODE NO.						
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"
DUST CAP 	33-1586	33-1587	33-1588	—			
MALE THREADS 	33-1334	33-1287	33-1352	—	33-1353	33-1497	33-1581
HOSE ADAPTER 	33-1572	33-1573	33-1574	33-2275	33-1329	33-1506	33-1585
FEMALE THREADS 	33-1454	33-1455	33-1285	— 33-1589	33-1456 33-1590	33-1498 33-1591	33-1582
MALE ADAPTER							
HOSE ADAPTER 	33-1564	33-1565	33-1566		33-1567	33-1568	33-1569
MALE THREADS 	33-1335	33-1288	33-1286	—	33-1284	33-1499	33-1583
FEMALE THREADS 	33-1466	33-1467	33-1468	33-2276	33-1469	33-1496	33-1580
DUST PLUG 	33-1592	33-1593	33-1594	—	33-1595	33-1596	33-1597
REPLACEMENT GASKETS for quick-connect couplings							
EPDM 	33-1475	33-1476	33-1477	—	33-1478	33-1500	33-1584
BUNA N	64-1481 71	64-1482 71	64-1483 71	—	64-1625 71	64-1626 71	64-1627 71
VITON	—	—	—	—	64-1625 73	64-1626 73	64-1627 73
STREET ELBOWS							
POLYPROPYLENE							
NPT 	—	—	—	—	64-0753 40	64-0752 40	64-0756 40
BSP	—	—	—	—	64-1366 40	64-1367 40	64-1368 40



# HOSE KITS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## KITS FOR LABMASTER® AND SPACE-SAVER® SYSTEMS

PUMP MODEL	CHAMBER MODEL	SUCTION HOSE PRICE CODE #, SIZE	DISCHARGE HOSE PRICE CODE #, SIZE	CLAMPS QTY., PRICE CODE #	FITTINGS QTY., PRICE CODE #	SUCTION STRAINER PRICE CODE #	HAND PUMP PRIMER PRICE CODE #	TOTAL KIT PRICE CODE #	
A X40	L (CPVC, PVC)	22-0484 6 ft., 5/8" VW	22-0484 6 ft., 5/8" VW	(2) 22-0502	(1) 33-0503	33-1948	99-0160	99-1600	
A X40	L (PP)	22-0480 6 ft., 5/8" VN	22-0480 6 ft., 5/8" VN	(2) 22-0502	(1) 33-0503 K			99-1601	
B X50 / X100	L (CPVC, PVC)	22-0482 10 ft., 3/4" VW	22-0482 10 ft., 3/4" VW	(2) 22-0505	(1) 33-0711			99-1602	
B X50 / X100	L (PP)	22-0481 10 ft., 3/4" VN	22-0481 10 ft., 3/4" VN	(2) 22-0505	(1) 33-0711 K			99-1603	
B	S (CPVC, PVC)	22-0482 10 ft., 3/4" VW	22-0482 10 ft., 3/4" VW	(2) 22-0505	(1) 33-1360			99-1604	
B	S (PP)	22-0481 10 ft., 3/4" VN	22-0481 10 ft., 3/4" VN	(2) 22-0505	(1) 33-1360 K			99-1605	
X200 / X250	S (CPVC)	22-0483 10 ft., 1" VW	22-0483 10 ft., 1" VW	(2) 22-0505	(1 ea.)33-1468/33-1574 (1 ea.)33-1286/33-1574			99-0741	99-0161
X200 / X250	S (PP, PVC)	22-0432 10 ft., 1" VN	22-0432 10 ft., 1" VN	(2) 22-0505	(1 ea.)33-1468/33-1574 (1 ea.)33-1286/33-1574	99-1607			
HC1x3/4 D1x3/4 M1x3/4	S (CPVC)	22-0483 10 ft., 1" VW	22-0483 10 ft., 1" VW	(2) 22-0505	(2 ea.)33-1286/33-1574	99-1608			
HC1x3/4 D1x3/4 M1x3/4	S (PP, PVC)	22-0432 10 ft., 1" VN	22-0432 10 ft., 1" VN	(2) 22-0505	(2 ea.)33-1286/33-1574	99-1609			
D1½x1 M1½x1 F1½x1¼	S (CPVC)	22-0528 10 ft., 1-1/2" VW	22-0527 10 ft., 1-1/4" VW	(2) 22-0503	(1 ea.)33-1284/33-1329 (1 ea.)33-2276/33-2275	—	99-1610		
D1½x1 M1½x1 F1½x1¼	S (PP, PVC)	22-0434 10 ft., 1-1/2" VN	22-0433 10 ft., 1-1/4" VN	(2) 22-0503	(1 ea.)33-1284/33-1329 (1 ea.)33-2276/33-2275	—	99-1611		
HK1½x1½	S (CPVC)	22-0528 10 ft., 1-1/2" VW	22-0527 10 ft., 1-1/4" VW	(2) 22-0503	(1 ea.)33-1469/33-1329 (1 ea.)33-2276/33-2275	—	99-1612		
HK1½x1½	S (PP, PVC)	22-0434 10 ft., 1-1/2" VN	22-0433 10 ft., 1-1/4" VN	(2) 22-0503	(1 ea.)33-1469/33-1329 (1 ea.)33-2276/33-2275	—	99-1613		
G2x2	S (CPVC, PVC, PP)	22-0529 10 ft., 2" VW	22-0527 10 ft., 1-1/4" VW	(1) 22-0503 (1) 22-0504	(1 ea.)33-1496/33-1506 (1 ea.)33-2276/33-2275	99-0744	—	99-1614	

## KITS FOR SUPER SPACE-SAVER® AND GUARDIAN® SYSTEMS

PUMP MODEL	CHAMBER MODEL	SUCTION HOSE PRICE CODE #, SIZE	DISCHARGE HOSE PRICE CODE #, SIZE	CLAMPS QTY., PRICE CODE #	FITTINGS QTY., PRICE CODE #	SUCTION STRAINER PRICE CODE #	TOTAL KIT PRICE CODE #
HC1x3/4 D1x3/4 M1x3/4	G	22-0483 10 ft., 1" VW	22-0432 10 ft., 1" VN	(2) 22-0505	(2 ea.) 33-1286 / 33-1574 (1 ea.) 33-1137 / 33-0183	99-0741	99-1615
M1½x1 D1½x1 F1½x1¼	G, GC	22-0528 10 ft., 1-1/2" VW	22-0394 10 ft., 1-1/2" PVC	(2) 22-0503	(2 ea.) 33-1284 / 33-1329	99-0743	99-1616
HK1½x1½	G	22-0528 10 ft., 1-1/2" VW	22-0394 10 ft., 1-1/2" PVC	(2) 22-0503	(1 ea.) 33-1284 / 33-1329 (1 ea.) 33-1469 / 33-1329	99-0743	99-1617
HE2x1½	G	22-0529 10 ft., 2" VW	22-0394 10 ft., 1-1/2" PVC	(1) 22-0503 (1) 22-0504	(1 ea.) 33-1499 / 33-1506 (1 ea.) 33-1284 / 33-1329	99-0744	99-1619
HE2x1½ F2X2 S2X2	GC	22-0529 10 ft., 2" VW	22-0395 10 ft., 2" PVC	(2) 22-0504	(2 ea.) 33-1499 / 33-1506	99-0744	99-1620
G2x2	G, GC	22-0529 10 ft., 2" VW	22-0394 10 ft., 1-1/2" PVC	(1) 22-0503 (1) 22-0504	(1 ea.) 33-1496 / 33-1506 (1 ea.) 33-1284 / 33-1329	99-0744	99-1622





# SKIMMER ASSEMBLY & FLOATING BALLS

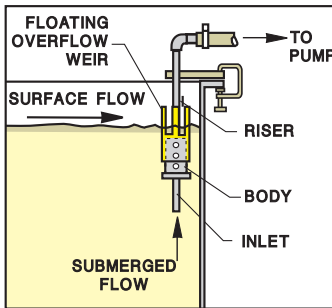
2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## SKIMMER ASSEMBLY

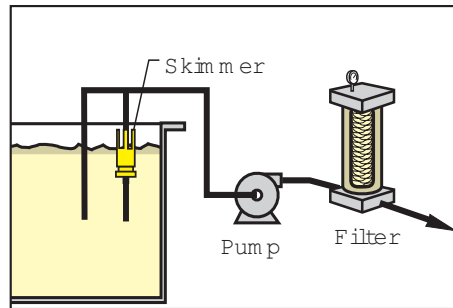
To remove floating oil & particulates from cleaners, plating baths and other two-phase liquids.

MODEL NUMBER	SKIM RATE GPM	CONNS.	INLET LENGTH	RISER LENGTH	BRACKET 1/2" THICK	LIQUID LEVEL DIFF.	PRICE CODE NO.
SK 1/2	2-5	1/2"	15"	13"	4" x 2"	2"	99-0475
SK 3/4	5-10	3/4"	18"	18"	4" x 2"	2"	99-0476
SK 1	10-15	1"	18"	18"	6" x 2"	4"	99-0477
SK 1 1/4	15-20	1 1/4"	18"	18"	6" x 2"	4"	99-0478
SK 1 1/2	25-40	1 1/2"	24"	24"	8" X 4"	6"	99-1458
SK 2	40-60	2"	24"	24"	8" X 4"	6"	99-1459
SK 3	60-80	3"	24"	24"	10" X 6"	8"	99-1460

SK 1/2 to SK 1 1/4 have NPT inlet and hose adapter outlet.  
SK 1 1/2 to SK 3 have NPT inlet and outlet.

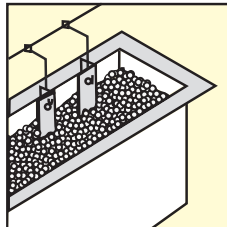
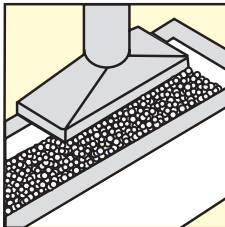


## AUXILIARY MOUNTING



## BALLS, SOLID POLYPROPYLENE

"FLOATING SOLUTION BLANKET" - for all processing chemicals



PLATING / CLEANING / ETCHING  
ANODIZING / HOT RINSE

## SAVE ENERGY - REDUCE POLLUTION

- **ELIMINATES MIST & EXCESS EVAPORATION**  
Prevents noxious fumes
- **INSULATES - Keeps hot or cold**  
Saves heating or refrigeration energy
- **SELF-ADJUSTING - No hang-ups or sinking**  
Automatically maintains coverage
- **EASY ACCESS TO TANK - In or out**
- **SIZES: 1" & 1-1/2" (25mm & 38mm)**

Solid polypropylene balls floating on an open tank will reduce the exposed surface area - up to 90%, thereby greatly lessening the emission of objectionable fumes and odors. A carpet of "Energy Controlling Balls" will reduce heat or refrigeration loss and evaporation in open tank installations, such as those used in plating. Access to the tank is not impaired. Balls maintain compact coverage as parts move in and out. Solid polypropylene balls will not sink and have a longer service life than hollow balls. Polypropylene is non-toxic and resistant to most chemicals. (Consult Chemical Resistance Chart.) Withstands temperatures to 230°F. (110°C)

DIAMETER		QUANTITY *	COVERAGE		SHIPPING WEIGHT		PRICE CODE NUMBER
In.	mm		Sq. ft.	Sq. M	Lbs.	Kg.	
1	25	1,000	6.1	.56	17.6	8	99-0640
1-1/2	38		13.8	1.28	52.8	24	99-0641

\* Sold by weight — quantity may vary slightly.





# GENERAL CHEMICAL RESISTANCE GUIDE

375

T-102\_L

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- 1. Good for 200°F (93°C)
- 2. Good for 185°F (85°C)
- 3. Good for 140°F (60°C)
- 4. Good for 70°F (21°C)
- Q - Questionable
- NR - Not recommended
- No data available

	PLASTICS										METALS					LINERS, RINGS and SEALS		ELASTOMERS								
	ABS	ECTE (HALAR®)	PTFE (TEFLON®)	PVDF (KYNAR®)	ETFE (TEFZEL®)	POLYESTER*	PVC	CPVC	POLYPROPYLENE	NORYL®	RYTON®	CARBON STEEL	304 ST. STEEL	316 ST. STEEL	HASTELLOY®	TITANIUM	CERAMIC (M1 x M2)	NICKEL GRAPHITE	G. F. F. (RULON®)	BUNA N	VITON®	EPDM (ETH. PROP.)	HYPALON®	NEOPRENE®	CORK-NITRILE	
Acetaldehyde	—	—	1	—	4	4	NR	NR	4	—	1	Q	NR	1	1	1	1	1	1	NR	3	Q	NR	NR	Q	3
Acetic Acid, 20%	—	1	1	1	1	NR	4	4	3	3	2	1	Q	1	1	1	1	1	1	NR	3	NR	2	NR	Q	3
Acetic Acid, Glacial	—	3	1	4	4	NR	NR	NR	4	1	1	NR	1	1	1	1	1	1	1	NR	4	NR	1	NR	Q	3
Acetic Anhydride	—	4	1	NR	NR	NR	NR	NR	4	3	1	NR	1	1	1	1	1	1	1	NR	NR	2	Q	NR	Q	NR
Acetone	—	3	1	NR	Q	—	—	—	4	NR	1	1	1	1	1	1	1	1	1	NR	NR	1	Q	NR	NR	NR
Aluminum Chloride	—	1	1	1	1	NR	3	1	2	1	1	NR	Q	Q	1	1	1	NR	NR	1	1	1	1	1	1	3
Aluminum Fluoride	—	1	1	1	1	NR	3	1	2	4	1	NR	Q	Q	3	Q	NR	NR	1	1	1	1	1	1	1	3
Aluminum Sulfate	—	1	1	1	1	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Ammonia, Aqueous	—	1	1	1	4	NR	4	4	2	4	4	—	Q	1	1	1	1	1	1	4	NR	1	1	1	—	—
Ammonium Carbonate	—	1	1	1	1	Q	3	1	2	3	1	Q	1	1	1	1	1	1	1	NR	4	1	1	1	1	—
Ammonium Chloride	—	1	1	1	1	4	3	1	2	1	1	Q	Q	Q	2	3	1	NR	1	2	1	1	1	1	1	3
Ammonium Hydroxide	—	1	1	1	1	4	4	NR	2	1	1	Q	1	1	1	1	1	1	1	4	1	1	1	1	1	—
Ammonium Nitrate	—	1	1	1	1	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	3
Ammonium Phosphate	—	1	1	1	1	4	3	1	2	4	1	NR	Q	Q	1	1	1	1	1	Q	1	1	1	1	1	3
Ammonium Sulfate	—	1	1	1	1	4	3	1	2	1	1	Q	1	1	1	1	1	1	1	1	Q	1	1	1	1	3
Amyl Acetate	—	3	1	NR	Q	4	NR	NR	NR	NR	1	—	—	1	1	1	1	1	1	NR	4	NR	Q	NR	Q	3
Amyl Alcohol	—	—	1	1	1	4	4	NR	Q	2	4	1	1	1	1	1	1	1	1	4	NR	4	2	NR	Q	3
Aniline	—	4	1	3	4	NR	NR	NR	Q	NR	NR	Q	Q	1	1	1	1	1	1	NR	2	2	Q	NR	Q	Q
Aqua Regia	—	2	2	NR	4	NR	NR	Q	Q	NR	1	NR	NR	NR	Q	1	1	1	1	NR	2	NR	4	Q	Q	3
Arsenic Acid	—	1	1	1	1	NR	3	1	2	4	1	NR	NR	NR	Q	1	1	1	1	1	1	1	1	1	1	3
Barium Hydroxide	—	1	1	1	1	Q	3	1	2	3	1	—	—	1	3	1	1	1	1	1	1	1	1	1	1	—
Barium Chloride	—	1	1	1	1	4	3	1	2	1	1	—	—	4	1	1	1	Q	1	NR	1	1	1	1	1	3
Barium Sulfate	—	1	1	1	1	4	3	1	2	4	1	—	—	3	1	1	1	1	1	1	1	1	1	1	1	3
Benzaldehyde	NR	4	1	—	4	4	NR	NR	4	2	3	—	—	1	1	1	1	1	1	NR	NR	Q	NR	NR	Q	3
Benzene (Benzol)	NR	3	1	2	2	4	NR	NR	NR	3	1	1	1	1	1	1	1	1	1	NR	3	NR	NR	NR	NR	3
Benzene Sulfonic Acid	—	3	1	3	4	Q	NR	NR	Q	1	1	—	—	1	1	1	1	1	1	NR	2	NR	NR	NR	NR	—
Benzoic Acid	—	1	1	1	1	4	3	1	2	4	1	—	—	3	1	1	1	1	1	NR	2	NR	NR	NR	NR	Q
Borax (Sodium Borate)	—	1	1	1	1	4	3	1	2	4	1	—	—	1	1	1	1	1	4	1	3	1	3	4	4	3
Boric Acid	—	1	1	1	1	4	3	1	2	4	1	—	—	2	1	1	1	1	1	2	2	1	2	1	3	3
Bromine Water	—	1	1	2	1	NR	3	4	NR	4	Q	NR	NR	NR	1	1	1	1	1	NR	1	Q	NR	Q	NR	Q
Butyl Acetate	—	3	1	NR	4	4	NR	NR	NR	2	1	Q	1	1	1	1	1	Q	1	NR	NR	Q	NR	NR	NR	NR
Butyl Alcohol	—	1	1	1	1	Q	4	Q	2	4	1	1	1	1	1	1	1	1	1	Q	3	3	3	3	—	—
Butyl Amine	—	—	1	NR	4	Q	NR	Q	3	2	4	—	—	1	1	1	1	1	1	NR	Q	4	4	NR	NR	—
Butyl Phthalate	—	—	1	3	3	Q	NR	NR	NR	3	4	—	—	1	1	1	1	1	1	NR	Q	4	NR	NR	NR	—
Butyric Acid	—	1	1	1	1	4	4	NR	2	4	1	NR	1	3	1	1	1	Q	1	NR	4	3	NR	NR	NR	NR
Cadmium Cyanide	—	3	1	1	1	Q	3	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—
Calcium Bisulfite	—	1	1	1	1	NR	3	1	2	4	1	—	—	3	1	4	1	1	Q	1	1	4	1	1	1	3
Calcium Chloride	4	1	1	1	1	4	3	1	2	1	1	—	—	Q	1	1	1	Q	1	1	1	1	1	1	1	3
Calcium Hypochlorite	—	1	1	1	1	4	3	2	3	4	1	—	—	NR	2	1	1	1	1	4	1	Q	1	NR	3	3
Calcium Nitrate	—	1	1	1	1	Q	3	1	2	1	1	—	—	3	1	1	1	1	1	1	1	1	1	1	1	—
Calcium Phosphate	—	—	1	1	1	Q	3	1	2	—	1	—	—	3	1	1	1	1	1	1	1	1	1	1	1	—
Calcium Sulfate	4	1	1	1	1	4	3	1	2	1	1	—	—	3	1	1	1	1	1	1	1	NR	NR	NR	NR	3
Carbon Disulfide	—	4	1	1	4	Q	NR	NR	NR	4	2	Q	Q	1	1	1	1	1	1	NR	Q	3	NR	NR	NR	—
Carbon Tetrachloride	NR	1	1	1	Q	4	Q	NR	NR	NR	3	Q	1	1	1	1	1	1	1	Q	3	NR	NR	NR	NR	3
Carbonic Acid	—	1	1	1	1	4	2	1	2	4	1	Q	1	1	1	1	1	1	1	4	1	1	1	1	1	3
Cellosolve	—	1	1	1	4	Q	NR	NR	NR	2	1	4	—	1	1	1	1	1	1	NR	NR	Q	Q	2	NR	NR
Chloroacetic Acid	—	1	1	1	4	NR	4	Q	Q	NR	1	Q	1	NR	Q	3	1	1	1	NR	NR	Q	1	Q	NR	Q
Chlorine Water	—	1	1	1	1	NR	4	2	4	4	Q	1	1	Q	3	1	1	1	1	NR	1	1	NR	NR	NR	Q
Chlorobenzene	—	3	1	2	4	NR	NR	NR	4	3	2	1	Q	1	1	1	1	1	1	NR	4	NR	NR	NR	NR	Q
Chloroform	—	1	1	1	Q	4	NR	NR	NR	2	4	1	—	Q	1	1	1	1	1	NR	3	NR	NR	NR	NR	Q
Chlorosulfonic Acid	—	4	1	NR	4	4	4	NR	2	NR	—	—	—	NR	1	1	NR	NR	1	NR	NR	NR	NR	NR	NR	NR
Chromic Acid up to 30%	—	1	1	2	4	NR	4	3	4	NR	3	NR	NR	NR	1	1	1	3	1	NR	1	Q	2	NR	NR	NR
Chromic Acid, 50%	—	1	1	2	4	NR	NR	4	NR	NR	Q	NR	NR	NR	1	1	1	NR	1	NR	1	Q	3	NR	NR	NR
Citric Acid	—	1	1	1	1	4	3	2	2	4	1	—	—	2	1	1	1	1	2	1	1	1	1	1	3	3
Copper Chloride	—	1	1	1	1	NR	3	1	2	4	1	NR	NR	NR	1	1	1	1	1	2	2	1	2	1	3	3
Copper Cyanide	—	1	1	1	1	NR	3	1	4	4	1	1	1	1	1	1	1	1	2	4	1	2	1	3	3	3
Copper Nitrate	—	1	1	1	1	4	3	1	2	4	1	—	—	1	1	1	1	1	1	1	1	1	1	1	1	3
Copper Sulfate	—	1	1	1	1	NR	3	1	2	4	1	NR	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Cresol	—	3	1	2	1	Q	NR	NR	Q	2	1	—	—	1	1	1	1	1	1	Q	1	NR	NR	NR	NR	—
Cyclohexane	4	1	1	1	1	Q	NR	NR	NR	2	1	1	1	1	1	1	1	1	1	1	1	NR	NR	NR	NR	—





# GENERAL CHEMICAL RESISTANCE GUIDE (cont'd)

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- No data available

	PLASTICS											METALS				LINERS, RINGS and SEALS			ELASTOMERS						
	A B S	E C C T F E (HALAR®)	P T F E (TEFLON®)	P V D F (KYNAR®)	E T F E (TEFZEL®)	P O L Y E S T E R	P V C	C P V C	P O L Y P R O P Y L E N E	N O R Y L®	R Y T O N®	C A R B O N S T E E L	3 0 4 S T. S T E E L	3 1 6 S T. S T E E L	H A S T E L L O Y®	T I T A N I U M	C E R A M I C (M x M2)	N I C K E L G R A P H I T E	G. F. T F E (RULON®)	B U N A N	V I T O N®	E P D M (ETH. PROP)	H Y P A L O N®	N E O P R E N E®	C O R K - N I T R I L E
Decalin	—	—	1	—	1	Q	NR	Q	NR	—	1	—	1	1	1	1	1	1	NR	1	NR	NR	NR	Q	—
Detergents	—	1	1	2	1	Q	Q	Q	Q	3	NR	1	1	1	1	1	1	1	1	1	1	NR	NR	Q	—
Diesel Fuel	—	1	1	1	4	Q	Q	NR	NR	3	NR	1	1	1	1	1	1	1	1	1	NR	NR	NR	Q	—
Dowtherm	—	—	1	2	4	Q	Q	NR	NR	1	1	1	1	1	1	1	1	1	1	1	NR	NR	NR	Q	—
Ethanolamine	—	—	1	NR	1	Q	Q	Q	Q	3	NR	1	1	1	1	1	1	1	1	1	NR	NR	NR	Q	—
Ether	—	—	1	3	4	Q	NR	NR	NR	NR	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	Q	—
Ethyl Acetate	NR	3	1	NR	4	Q	NR	NR	Q	4	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	NR	—
Ethyl Alcohol (Ethanol)	—	—	1	1	4	Q	NR	NR	Q	4	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	NR	—
Ethylene Dichloride	—	4	1	1	Q	NR	NR	NR	Q	NR	3	—	1	1	1	1	1	1	NR	3	NR	NR	NR	NR	—
Ethylene Glycol	—	1	1	1	1	4	Q	Q	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3
Ferric Chloride	—	1	1	1	4	3	1	2	1	1	—	NR	NR	NR	Q	1	NR	1	1	1	Q	1	1	1	3
Ferric Hydroxide	—	—	1	1	1	Q	3	1	2	1	—	—	3	2	1	1	1	1	1	4	1	1	1	1	—
Ferric Nitrate	—	1	1	1	4	3	1	2	4	1	—	—	3	3	1	1	1	1	1	1	1	1	1	1	3
Ferric Sulfate	—	1	1	1	4	3	1	2	4	1	Q	NR	Q	1	1	1	1	1	1	1	1	1	1	1	3
Ferrous Chloride	—	1	1	1	4	3	1	2	4	1	Q	NR	Q	NR	1	1	1	1	1	1	1	1	1	1	3
Ferrous Sulfate	4	1	1	1	4	3	1	2	4	1	NR	—	Q	1	1	1	1	1	1	1	1	1	1	Q	4
Fluoboric Acid	—	3	1	2	1	4	3	3	3	2	1	NR	NR	Q	3	NR	NR	1	1	2	3	3	3	3	4
Fluosilicic Acid	—	1	1	1	Q	3	3	2	3	1	NR	Q	Q	2	1	NR	NR	1	3	4	Q	Q	1	1	3
Formaldehyde	—	3	1	3	1	4	NR	Q	2	1	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	NR	3
Formic Acid	—	1	1	1	4	NR	NR	Q	2	1	1	NR	NR	Q	1	1	1	3	Q	NR	NR	NR	NR	NR	3
Freons (Fluorocarbons)	NR	3	1	1	2	Q	Q	Q	NR	4	1	1	1	1	1	1	1	1	Q	Q	NR	NR	NR	NR	3
Fuel Oils	—	—	1	1	4	NR	NR	NR	Q	NR	NR	1	1	1	1	1	1	1	1	1	Q	NR	NR	NR	3
Furfural	—	—	1	—	4	NR	NR	NR	NR	NR	1	1	1	3	1	1	1	1	NR	NR	NR	NR	NR	NR	3
Gasoline	NR	1	1	1	4	Q	NR	NR	NR	NR	1	1	1	1	1	1	1	1	4	NR	NR	NR	NR	NR	3
Glycerine (Glycerol)	—	1	1	1	4	4	2	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3
Heptane	—	1	1	1	3	4	2	4	4	1	1	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	3
Hexane	—	1	1	1	3	4	2	4	NR	1	1	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	3
Hydrobromic Acid, 20%	NR	1	1	1	NR	4	2	2	4	3	NR	NR	NR	4	4	Q	1	NR	4	1	1	1	NR	NR	3
Hydrochloric Acid, 0 - 25%	NR	1	1	1	NR	4	2	3	3	3	NR	NR	NR	Q	4	Q	4	Q	Q	1	1	1	1	1	3
Hydrochloric Acid, 25 - 37%	NR	1	1	1	NR	4	2	4	3	3	NR	NR	NR	NR	4	Q	Q	2	NR	Q	Q	Q	3	4	—
Hydrofluoric Acid, 10%	—	1	1	1	NR	3	NR	2	4	3	NR	NR	NR	2	NR	NR	2	NR	4	2	4	2	2	Q	3
Hydrofluoric Acid, 30%	—	1	1	1	NR	3	NR	3	NR	3	NR	NR	NR	3	NR	NR	4	NR	NR	3	4	2	3	Q	0
Hydrofluoric Acid, 50%	—	1	1	1	NR	Q	NR	Q	NR	3	NR	NR	NR	3	NR	NR	4	NR	NR	4	4	Q	NR	Q	0
Hydrogen Peroxide, 30%	—	3	1	1	4	NR	4	4	2	3	Q	NR	1	Q	1	3	Q	1	NR	1	NR	NR	NR	NR	3
Hydrogen Peroxide, 50%	—	3	1	—	4	Q	Q	Q	NR	NR	—	—	—	Q	1	Q	NR	NR	NR	1	NR	NR	NR	NR	3
Kerosene	4	1	1	1	4	4	NR	4	NR	1	1	1	1	1	1	1	1	4	3	NR	NR	NR	NR	NR	3
Ketones	NR	—	1	NR	4	NR	NR	Q	NR	1	—	NR	NR	4	2	4	1	4	NR	2	1	1	NR	NR	3
Lactic Acid	—	4	1	—	3	4	NR	4	1	1	NR	NR	1	2	4	1	1	4	3	1	1	1	NR	NR	3
Lead Acetate	—	1	1	1	4	3	1	2	4	1	NR	NR	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	3
Lubricants	—	1	1	1	2	4	3	1	2	NR	1	1	1	1	1	1	1	1	1	NR	NR	NR	NR	NR	3
Magnesium Chloride	—	1	1	1	4	3	1	2	1	1	NR	Q	Q	1	1	1	1	1	1	1	1	1	1	1	3
Magnesium Hydroxide	—	1	1	1	Q	3	1	2	3	1	—	—	—	1	1	1	1	1	1	1	1	1	1	1	—
Magnesium Nitrate	—	1	1	1	4	3	1	2	4	1	—	—	1	1	1	1	1	1	1	1	1	1	1	1	3
Magnesium Sulfate	—	1	1	1	4	3	1	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Methyl Alcohol (Methanol)	—	—	1	3	1	4	NR	NR	4	4	1	1	1	1	1	1	1	1	4	NR	Q	1	1	1	3
Methyl Chloride	NR	1	1	—	Q	NR	NR	NR	NR	4	—	—	1	1	1	1	1	1	NR	Q	NR	NR	NR	NR	Q
Methyl Ethyl Ketone	NR	3	1	NR	4	NR	NR	4	NR	4	1	1	1	1	1	1	1	1	NR	Q	1	NR	NR	NR	Q
Methylene Chloride	—	4	1	—	Q	NR	NR	NR	NR	4	4	—	1	1	1	1	1	1	NR	NR	NR	NR	NR	NR	3
Naphtha	4	1	1	1	4	4	Q	4	NR	1	1	1	1	1	1	1	1	1	4	3	NR	NR	NR	NR	3
Nickel Chloride	—	1	1	1	1	4	3	2	2	4	1	NR	NR	Q	1	1	1	1	2	2	2	2	2	Q	3
Nickel Sulfate	—	1	1	1	4	3	2	2	4	1	NR	NR	1	1	1	1	1	1	1	1	1	1	1	1	3
Nitric Acid, 10%	—	1	1	2	1	4	3	2	4	2	3	NR	NR	1	2	1	Q	4	1	NR	1	Q	1	4	NR
Nitric Acid, 20%	—	1	1	3	2	4	3	3	4	3	Q	NR	Q	2	3	1	Q	4	1	NR	1	Q	3	Q	NR
Nitric Acid, 50%	—	3	1	3	3	NR	Q	4	Q	4	Q	NR	1	3	4	2	Q	Q	2	NR	3	Q	Q	Q	NR
Nitric Acid (Concentrate)	—	3	1	NR	4	NR	NR	NR	4	Q	Q	NR	4	3	4	1	Q	NR	1	NR	4	NR	NR	NR	NR
Nitrobenzene	—	3	1	3	4	NR	NR	4	NR	1	Q	1	1	1	1	1	1	1	NR	Q	4	NR	NR	NR	NR
Oil, Vegetable	—	1	1	1	1	4	3	Q	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	—
Oil, Sour Crude	—	—	1	1	1	4	3	Q	4	NR	1	1	1	1	1	1	1	1	4	1	1	1	1	1	—
Oleic Acid	—	1	1	1	1	4	Q	4	4	1	NR	NR	3	3	1	1	1	1	4	1	1	1	1	1	3
Oxalic Acid	—	3	1	3	1	NR	4	1	3	4	1	—	NR	4	3	4	1	1	4	1	2	2	4	4	3



# GENERAL CHEMICAL RESISTANCE GUIDE (cont'd)

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

- 1. Good for 200°F (93°C)
- 2. Good for 185°F (85°C)
- 3. Good for 140°F (60°C)
- 4. Good for 70°F (21°C)
- Q - Questionable
- NR - Not recommended
- No data available

	PLASTICS									METALS				LINERS, RINGS and SEALS		ELASTOMERS											
	A B S	E C T F E (HALAR®)	P T F E (TEFLON®)	P V D F (KYNAR®)	E T F E (TEFZEL®)	P O L Y E S T E R *	P V C	C P V C	P O L Y P R O P Y L E N E	N O R Y L®	R Y T O N®	C A R B O N S T E E L	3 0 4 S T E E L	3 1 6 S T E E L	H A S T E L L O Y® C	T I T A N I U M	C E R A M I C (M1 x M2)	N I C K E L G R A P H I T E	G. F. T F E (RULON®)	B U N A N	V I T O N®	E P D M (ETH. PROP.)	H Y P A L O N®	N E O P R E N E®	C O R K - N I T R I L E		
Perchloroethylene	—	—	1	1	Q	Q	NR	NR	NR	2	1	1	1	1	1	1	1	1	1	Q	NR	Q	NR	NR	NR	—	Q
Phenol	NR	3	1	3	4	NR	NR	3	4	2	1	1	NR	NR	—	1	1	1	1	Q	NR	NR	NR	NR	NR	—	Q
Phosphoric Acid, 0 - 50%	—	1	1	1	1	4	4	2	2	1	1	1	1	1	1	1	1	1	1	Q	NR	2	1	1	3	Q	4
Phosphoric Acid, 50 - 100%	—	1	1	1	1	NR	4	2	2	1	1	1	1	1	1	1	1	1	1	NR	1	1	1	1	1	3	Q
Potassium Bromide	—	1	1	1	1	4	3	1	2	4	1	—	—	3	3	1	1	1	1	1	1	1	1	1	1	1	3
Potassium Carbonate	4	1	1	1	1	4	3	1	2	4	1	—	—	3	3	1	Q	1	1	1	1	1	1	1	1	1	3
Potassium Chlorate	—	1	1	1	1	4	3	1	2	4	1	—	—	3	3	1	1	1	1	Q	1	1	1	1	1	1	3
Potassium Chloride	—	1	1	1	1	4	3	1	2	4	1	1	1	Q	2	1	1	1	1	1	1	1	1	1	1	1	3
Potassium Cyanide	—	1	1	1	1	4	3	1	2	4	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	3
Potassium Dichromate	—	1	1	1	1	NR	3	1	2	1	1	—	—	1	3	1	1	1	1	Q	1	Q	1	1	1	1	3
Potassium Hydroxide	—	2	1	3	1	NR	2	2	2	4	1	Q	2	2	2	Q	NR	1	1	4	NR	4	1	4	1	3	
Potassium Nitrate	—	1	1	1	1	4	3	1	2	4	1	—	—	3	3	1	1	1	1	1	2	2	2	1	3	3	
Potassium Permanganate	—	1	1	1	2	NR	3	1	3	1	1	Q	2	2	1	1	1	1	1	4	3	3	3	1	3	3	
Potassium Sulfate	—	1	1	1	1	4	3	1	2	4	1	2	2	2	3	1	1	1	1	1	1	1	1	1	1	3	
Propyl Alcohol	—	—	1	—	1	4	3	Q	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
Silver Nitrate	4	1	1	1	1	Q	3	1	2	4	1	NR	1	1	1	1	1	1	1	4	1	1	1	1	1	—	
Soaps	4	3	1	1	1	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1	1	1	3	
Sodium Acetate	—	1	1	1	1	4	3	1	2	4	1	1	NR	1	3	1	1	1	1	Q	Q	1	1	Q	Q	3	
Sodium Bicarbonate	4	1	1	1	1	4	3	1	2	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	3	
Sodium Bisulfate	4	1	1	1	1	4	3	1	2	4	1	NR	NR	1	3	1	1	1	1	1	1	1	1	1	1	3	
Sodium Carbonate	4	1	1	1	1	4	3	1	2	1	1	Q	1	1	3	1	Q	1	1	1	1	1	1	1	1	3	
Sodium Chlorate	—	1	1	1	1	4	3	1	2	4	1	—	—	3	3	1	1	1	1	NR	1	1	1	1	1	3	
Sodium Chloride	—	1	1	1	1	4	3	1	2	1	1	Q	Q	Q	3	1	1	1	1	1	1	1	1	1	1	3	
Sodium Cyanide	—	1	1	1	1	4	3	1	2	4	1	Q	1	1	1	1	1	4	1	1	1	1	1	1	1	3	
Sodium Hydroxide, 20%	4	1	1	2	1	NR	4	1	2	1	1	1	Q	1	1	1	NR	1	1	4	NR	1	1	1	1	3	
Sodium Hydroxide, 50%	4	1	1	3	1	NR	Q	2	2	1	3	Q	3	3	1	1	NR	1	1	4	NR	2	1	1	1	3	
Sodium Hypochlorite, 5%	NR	1	1	1	2	NR	3	1	3	1	1	Q	Q	NR	3	1	1	Q	1	Q	2	1	1	Q	Q	3	
Sodium Nitrate	—	1	1	1	1	4	3	1	2	4	1	—	1	1	3	1	1	1	1	4	4	1	1	1	1	3	
Sodium Silicate	—	1	1	1	1	4	3	1	2	4	1	1	1	2	3	1	1	1	1	1	1	1	1	1	1	3	
Sodium Sulfate	4	1	1	1	1	4	3	1	2	1	1	1	Q	1	1	1	1	1	1	1	1	1	1	1	1	3	
Sodium Sulfide	4	1	1	1	1	4	3	1	2	1	1	1	Q	2	2	1	1	1	1	1	1	1	1	1	1	Q	
Stannic Chloride	—	1	1	1	1	NR	3	1	2	4	1	1	NR	Q	NR	Q	2	1	1	1	1	Q	1	1	1	3	
Sulfuric Acid, 0 - 10%	4	1	1	1	1	4	4	1	2	1	1	NR	Q	Q	1	4	1	1	1	4	1	1	1	1	Q	3	
Sulfuric Acid, 10 - 75%	NR	1	1	1	1	NR	Q	1	3	1	4	NR	NR	NR	Q	3	Q	2	2	2	NR	1	NR	Q	NR	—	
Sulfuric Acid (Concentrate)	—	4	1	Q	2	NR	NR	4	Q	1	1	NR	NR	Q	3	NR	Q	3	4	1	NR	2	NR	Q	NR	—	
Sulfurous Acid	—	1	1	1	1	Q	4	2	2	1	1	NR	NR	3	3	2	1	1	1	Q	1	NR	4	NR	—	3	
Tannic Acid	NR	1	1	1	1	Q	3	1	2	4	1	1	NR	2	2	1	1	1	1	NR	1	1	1	1	1	3	
Tartaric Acid	—	1	1	1	1	4	3	1	2	4	1	Q	Q	1	1	1	1	1	1	NR	1	4	1	1	Q	Q	
Tetrahydrofuran	—	NR	1	—	2	4	NR	NR	NR	Q	NR	1	—	—	1	1	1	1	1	NR	4	NR	NR	NR	Q	Q	
Toluene (Toluol)	NR	3	1	2	2	4	NR	NR	Q	NR	1	1	1	1	1	1	1	1	1	NR	3	NR	NR	NR	NR	3	
Trichloroethylene	NR	1	1	1	Q	NR	NR	NR	Q	NR	NR	1	Q	1	Q	1	1	1	1	NR	1	NR	NR	NR	NR	—	
Triethanolamine	—	4	1	NR	2	Q	3	Q	2	3	1	1	Q	1	1	1	1	1	1	Q	NR	Q	2	2	NR	—	
Turpentine	—	1	1	—	3	4	NR	4	4	1	1	1	1	1	1	1	1	1	3	1	NR	3	NR	Q	3	Q	
Urea	—	1	1	—	1	NR	3	1	2	3	1	—	—	1	1	1	1	1	1	NR	1	1	1	1	1	Q	
Vinegar	4	1	1	1	1	4	3	1	2	4	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	3	
Water, Deionized	4	3	1	1	1	4	3	1	2	1	1	—	2	1	1	1	1	1	1	1	1	1	1	1	1	—	
Water, Sea (Salt)	4	1	1	1	1	4	3	1	2	1	1	NR	NR	Q	1	1	1	1	1	1	1	1	1	1	1	—	
Xylene (Xylo)	NR	3	1	2	1	4	NR	NR	Q	NR	1	1	1	1	1	1	1	1	1	NR	1	NR	NR	NR	NR	3	
Zinc Chloride	—	1	1	1	1	NR	3	1	2	4	1	—	—	Q	2	1	1	NR	1	1	1	1	1	1	1	3	
Zinc Sulfate	—	1	1	1	1	4	3	1	2	4	1	NR	1	1	2	1	1	1	1	1	1	1	1	1	1	3	

\* Polyester tested only at 80°F (27°C).

## CAUTION

The data presented is based on information furnished by material manufacturers. We assume no liability for its accuracy. It should be used only as a guide and not as a guarantee of performance. Please remember that in any given application, many factors such as concentration, time, temperature and pressure influence chemical resistance. Also, in addition to changes in conditions, be aware that different chemical suppliers utilize different formulations or may utilize proprietary additives. Therefore, users should consult their chemical suppliers when considering the selection of equipment materials and the materials should be tested under actual service conditions.

Registered trademarks: Noryl - General Electric; Ryton - Phillips Chemical; Kynar - Atochem; Teflon, Tefzel - DuPont; Kalrez, Neoprene, Viton, Hypalon - DuPont Dow Elastomers; Halar - Ausimont; Rulon - Dixon; Hastelloy - Haynes, International





# CHEMICAL RESISTANCE GUIDE FOR COMMON METAL FINISHING SOLUTIONS

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ACCEPTANCE LEGEND 1 - Resistant to 200°F (93°C) 2 - Resistant to 180°F (82°C) 3 - Resistant to 160°F (71°C) 4 - Resistant to 140°F (60°C) 5 - Resistant to 110°F (43°C) 6 - Resistant to 80°F (27°C) Q - Questionable X - Not recommended Δ Without organic additives	PVC	CPVC	PP (POLYPROPYLENE)	PP (H-TEMP POLYPRO)	NORYL®	RYTON®	PVDF (KYNAR®)	PTFE (TEFLON®)	ETFE (TEFZEL®)	ECTFE (HALAR®)	304 SS	316 SS	HASTELLOY® B	HASTELLOY® C	TITANIUM	CARBON	CERAMIC	G.F.TFE (RULON®)	SIC	BUNAN	SILICONE	NEOPRENE®	EPPDM (ETH PROP)	VITON®	HYALON®	KALREZ®	
	COMMON PLATING SOLUTIONS	PLASTICS							METAL							SEALS & BUSHINGS			ELASTOMERS								
Alkaline Soak Cleaner (typical)	6	Q	3	2	2	4	X	1	1	1	1	1	1	1	1	3	3	3	1	6	6	6	2	6	1	1	
Alkaline Electrocleaner (typical)	6	Q	3	2	2	4	X	1	1	1	1	1	1	1	1	3	3	3	1	6	6	6	2	6	1	1	
Anodizing - Sulfuric Acid	5	2	4	3	3	3	2	1	1	1	X	X	1	1	6	3	3	2	1	X	X	X	1	1	2	1	
Anodizing - Chromic Acid	5	1	X	X	X	4	1	1	1	1	X	X	2	6	3	3	3	2	1	X	X	X	6	2	1	1	
Brass - Cyanide Copper / Zinc	6	X	3	2	5	3	X	1	1	1	3	3	1	1	1	3	4	2	1	X	X	6	2	X	3	1	
Bronze - Cyanide Copper / Tin	6	X	3	2	5	3	X	1	1	1	3	3	1	1	1	3	5	2	1	6	6	6	2	X	3	1	
Cadmium - Cyanide	6	6	3	2	5	3	X	1	1	1	3	3	1	1	1	3	5	2	1	6	5	6	2	X	3	1	
Chromium - Hex, Decor & Hard	6	4	X	X	X	4	2	1	2	2	X	X	6	4	1	6	3	2	1	X	X	X	X	4	4	1	
Chromium - Trivalent	5	4	6	5	6	4	1	1	1	1	X	X	1	1	1	5	3	3	1	X	6	6	3	3	1	1	
Copper - Cyanide	4	2	4	3	5	3	X	1	1	1	3	3	1	1	1	3	4	2	1	X	6	6	3	X	1	1	
Copper - Pyro	6	5	3	2	4	4	6	1	1	1	4	4	4	4	1	3	5	2	1	X	6	6	3	6	1	1	
Electroless Copper	6	5	5	4	5	4	X	1	1	1	X	X	X	X	4	X	5	4	1	X	X	X	X	4	1	1	
Copper Sulfate, Decor & PCB	5	3	4	3	5	2	1	1	1	1	X	X	X	X	4	6	4	3	1	X	X	X	X	4	2	1	
Copper Fluoborate	6	5	4	3	6	2	5	1	1	3	X	X	6	6	X	6	Q	4	3	6	X	5	4	3	4	1	
Gold - Acid	6	5	4	3	5	4	2	1	1	2	X	6	6	5	4	5	6	3	2	6	6	6	4	3	2	1	
Gold - Neutral	6	5	4	3	4	4	3	1	1	2	6	6	6	5	2	4	5	2	1	6	6	6	4	3	2	1	
Gold - Cyanide	6	5	4	3	5	4	X	1	1	2	6	6	6	5	2	4	5	2	1	6	6	6	4	4	3	1	
Gold - Immersion	6	6	5	4	3	4	X	1	1	2	X	X	X	X	Q	5	5	3	1	6	6	6	4	5	4	1	
Nickel - Watts	4	2	3	2	4	2	2	1	1	1	X	X	2	3	1	3	3	2	1	3	5	6	2	2	2	1	
Nickel - Sulfamate	5	2	3	2	4	2	2	1	1	1	X	X	2	3	1	3	3	2	1	3	5	6	2	2	2	1	
Nickel - Woods	5	2	3	2	4	2	2	1	1	1	X	X	3	4	Q	3	3	2	1	6	6	6	3	2	2	2	
Electroless Nickel *	X	1*	5	4	6	4	1*	1	1	2	X	Q	X	X	3	Q	3	2	1	6	6	6	3	1	2	1	
Palladium - Amine	6	X	5	4	6	5	Q	2	1	2	2	2	3	3	3	2	3	2	1	6	6	6	4	Q	3	2	
Palladium / Nickel	6	5	4	3	3	2	5	1	1	1	X	X	2	3	2	2	2	3	2	1	5	6	6	2	5	1	
Rhodium	6	3	3	2	4	2	2	1	1	1	X	X	X	X	6	3	3	2	1	3	6	6	3	2	1	1	
Silver - Cyanide	6	6	4	3	5	3	X	1	1	1	X	X	X	X	X	3	3	2	1	6	6	6	3	Q	2	1	
Tin - Sulfuric	5	4	4	3	3	3	2	1	1	1	X	X	X	X	X	3	3	2	1	6	6	6	3	2	1	1	
Tin - MSA	6	5	4	4	6	4	2	1	1	3	X	X	X	X	6	3	3	2	1	6	6	6	3	3	1	1	
Tin - Alkaline	X	X	4	3	4	4	X	1	1	2	2	2	2	2	2	4	3	2	1	6	6	6	3	X	2	1	
Tin / Lead	6	5	4	4	6	4	2	1	1	3	X	X	X	X	6	3	3	2	1	6	6	6	3	3	1	1	
Tin Fluoborate	6	5	4	3	6	2	4	1	1	3	X	X	6	6	X	6	Q	3	1	6	X	5	4	3	4	1	
Zinc Acid Chloride	5	2	4	3	4	2	2	1	1	2	X	X	6	5	2	3	3	3	1	X	X	6	5	2	2	1	
Zinc, Alkaline	4	Q	4	3	5	4	X	1	1	2	2	2	1	1	1	3	3	3	1	6	6	6	3	6	2	1	
Zinc - Cyanide	X	6	4	3	5	4	X	1	1	2	2	2	1	1	1	3	3	3	1	6	6	6	3	6	2	1	
<b>WET PROCESSING - PCB</b>																											
Sodium Persulfate Microetch	6	4	4	5	6	3	4	1	1	2	X	X	X	X	X	3	3	2	1	X	X	X	4	3	2	1	
Peroxide / Sulfuric Microetch	6	6	5	4	6	6	4	1	1	3	X	X	X	X	X	4	4	3	2	X	X	X	4	3	2	2	1
Black Oxide	6	Q	5	4	4	4	X	2	2	3	X	X	6	6	1	6	X	5	1	X	X	X	6	X	3	1	
Solvent Conditioner	X	X	X	X	X	X	X	6	6	6	2	1	2	2	1	6	3	2	1	X	X	X	6	3	1	1	
Permanganate - Etch Back / Desmear	X	X	X	X	X	6	5	2	2	3	6	2	2	2	1	5	3	2	1	X	X	X	2	5	3	1	
Spray Etchant - Alkaline	5	5	4	3	5	5	5	1	2	3	X	6	5	4	2	4	4	3	1	X	6	6	4	6	3	2	
Spray Etchant - Chloride	5	4	5	4	5	4	3	1	1	1	X	X	6	4	2	4	4	3	2	X	6	6	5	3	2	1	
Catalyst / Activator	5	4	6	5	6	5	4	3	1	2	X	X	X	X	X	X	4	3	2	X	X	6	5	4	3	2	
Electroless Copper	6	5	5	4	5	4	X	1	1	1	X	X	X	X	X	X	5	4	1	X	X	X	3	X	1	1	
Photoresist Developer	5	4	4	4	5	4	6	1	1	1	1	1	1	1	1	4	4	3	2	6	6	6	4	6	2	1	
Photoresist Stripper	6	5	4	4	4	4	X	1	1	1	1	1	1	1	1	4	4	3	2	6	6	6	4	X	2	1	
<b>COMMON ACIDS</b>																											
Fluoboric Acid - 15% vol.	6	5	4	4	4	2	2	1	1	3	X	X	6	6	X	6	6	5	3	6	X	6	3	2	2	2	
Hydrochloric Acid - 30% vol.	6	3	5	4	3	3	1	1	1	1	X	X	4	5	6	6	6	4	2	6	6	5	3	1	1	1	
Nitric Acid - 50% vol.	6	6	6	6	6	6	4	3	1	3	X	6	6	5	2	X	6	3	2	X	X	X	6	3	3	2	
Phosphoric Acid - 30% vol.	6	3	2	2	2	2	1	1	1	1	X	6	4	3	3	5	5	3	1	6	X	6	3	3	3	2	
Sulfuric Acid - 15% vol.	6	4	4	4	5	2	1	1	1	1	X	6	2	3	4	5	3	3	1	6	6	6	3	2	1	1	
Hydrofluoric Acid - 30% vol.	6	6	5	5	Q	3	2	1	1	2	X	X	3	4	X	6	Q	3	2	Q	X	6	5	3	3	2	
<b>COMMON ALKALIES</b>																											
Sodium Hydroxide - 50% vol.	6	5	4	3	3	3	X	1	1	1	3	2	1	1	1	4	3	3	2	4	6	5	2	X	1	1	
Potassium Hydroxide - 25% vol.	5	4	3	3	4	3	6	1	1	2	3	2	1	1	1	4	3	3	2	4	6	5	2	X	1	1	
Sodium Carbonate - 25% vol.	4	3	3	2	3	2	3	1	1	1	2	1	1	1	1	3	3	2	1	3	4	3	2	2	1	1	
Sodium Hypochlorite - 5% vol.	6	4	6	5	5	2	2	1	1	1	X	X	4	4	1	6	3	2	1	Q	Q	Q	3	2	1	1	

**NOTE:** Use information as a guide only. Contact your SERFILCO Applications Engineer for specific recommendations.

\* CPVC housing with PVDF impeller

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# TERMS & CONDITIONS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

## OPENING AN ACCOUNT

It's easy to establish an open account with us. Give us a call and request a credit application. We also accept these credit cards: MasterCard, VISA, Discover, American Express

When ordering, please be sure to include the following information:

- Purchase order number and name of person authorized to purchase.
- "Ship to" address if different from "bill to"
- Your phone and FAX numbers, including area code.
- Complete catalog description including Price Code Number, quantity, size, etc.
- If it is your policy to issue a confirming order following phone orders, be certain the order is clearly marked as confirming.

\* **PHONE:** 847-509-2900 or 800-323-5431

\* **FAX:** 847-559-1995

\* **E-MAIL:** [sales@serfilco.com](mailto:sales@serfilco.com)

\* **WEB:** [www.serfilco.com](http://www.serfilco.com)

\* see inside back cover for INTERNATIONAL locations

## ACCOUNTING

If you have questions concerning an invoice, freight charges, credit memo, etc., please call our Accounting Dept.

## CUSTOMER SERVICE

If you have a part number and would like to place an order, or if you have placed an order and would like to determine shipping status please request our customer service department.

## SALES

If you need help selecting a product or part, or if you need a quotation please request the sales department.

## TECHNICAL SERVICE

If you have questions concerning the installation or operation of a product or if you need a return authorization, please contact the Technical Service Department

## CERTIFICATION OF DRAWINGS IN CATALOG

Includes 1 to 5 copies . . . U.S. \$75.00

Each additional copy . . . U.S. \$2.00

Certified copies of drawings not in catalog will be quoted upon request.

## PLEASE NOTE

Dimensions, flow rates, specifications and other technical information contained herein are offered only as a guide. Consult SERFILCO Sales Dept. regarding the above and also any questionable applications where improved technology may be available at the time of your requirements, but not at the time of this printing.

## IMPORTANT

All SERFILCO products are shipped from the UNITED STATES in accordance with Export Administration Regulations. Diversion contrary to U.S. Law is prohibited

**Acceptance of orders with contrary terms: Acceptance of buyer's order is conditioned upon buyer's consent to the following terms and conditions, and any inconsistent provisions of any purchase order or other writing shall not constitute a part of the contract of sale.** If any of these terms and conditions are not acceptable to Buyer, SERFILCO must be notified promptly.

## PAYMENT TERMS

Open account terms of net 30 days after shipment are extended to firms listed and satisfactorily rated by Dun and Bradstreet. Unrated or unlisted firms are requested to submit two major trade references and the name of their bank. Buyer may expedite an order by including payment with the order, while SERFILCO establishes open account status.

**NOTE:** SERFILCO also accepts MasterCard, VISA, American Express and Discover.

**SPECIAL PRICING:** SERFILCO also offers special volume discounts and annual contracts. Call for information.

**MINIMUM ORDER:** U.S. \$50.00

**RESTOCKING CHARGE:** 25% of invoiced amount for product(s) returned. (See Return Authorization Policy)

## SHIPPING DAMAGE OR LOSS

**DO NOT RETURN DAMAGED MERCHANDISE TO US.**

**FILE YOUR CLAIM AS FOLLOWS:**

All merchandise is thoroughly inspected and carefully packed before leaving SERFILCO. Ownership and, therefore, risk of loss is transferred to customer when goods are placed on carrier's vehicle. The carrier assumes responsibility for its safe delivery at the time of shipment. Claims for loss or damage to the contents should be made upon the carrier as follows:

**CONCEALED LOSS OR DAMAGE** means loss or damage, which does not become apparent until the merchandise has been unpacked. The contents may be damaged in transit due to rough handling even though the carton may not show external damage. When the damage is discovered, make a prompt written request for inspection by the carrier's agent. Then file a claim with the carrier since such damage is the carrier's responsibility. By following these instructions carefully, we guarantee our full support of your claims to protect you against loss from concealed damage.

**VISIBLE LOSS OR DAMAGE.** Any external evidence of loss or damage must be noted on the freight bill or express receipt and signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier refusing to honor a damage claim. The carrier will supply the form required to file such a claim.

**NOTE:** To avoid waiving your rights to claim loss or damage after a shipment has been received, we recommend that you write the following statement above the space for your signature on the freight company-receiving document — "SUBJECT TO INSPECTION AND COUNT".

Alternately, when damage is insignificant and can obviously be remedied by replacement of certain components, clarify your position with the carrier and then place your order for the needed components with us to ensure that your needs can be met as quickly as possible. Then submit your invoice to the carrier for the charges.



## WARRANTY

2900 MacArthur Blvd. Northbrook, IL. USA 60062 [WWW.SERFILCO.COM](http://WWW.SERFILCO.COM) (800) 323 - 5431

SERFILCO warrants products\* of its own manufacture will be free from defects in raw materials and manufacture under normal use and service for a period of not more than one year after date of shipment. SERFILCO's obligation under this warranty is limited to repair or replacement of its products which shall be returned to SERFILCO's headquarters, with all transportation and associated charges prepaid, and which examination shall disclose to SERFILCO's satisfaction to have been thus defective at time of shipment, provided that SERFILCO had received immediate written notice upon discovery of such alleged defect and the alleged defective products shall have returned to SERFILCO not later than 30 days after SERFILCO has issued a Return Authorization Number. This warranty shall not apply to any of the products which shall have been used other than for their intended use, nor to any of the products, the composition of which shall have been changed in any way, nor to any of the products which have been subject to adverse storage conditions, misuse, negligence or accident.

SERFILCO shall not be held liable for damage or delays caused by defective raw materials and manufacture, nor shall SERFILCO be liable for consequential damages in cases of failure to meet the conditions of warranty. The full liability of SERFILCO under this clause is the repair or replacement of defective parts, at its discretion.

The customer is responsible for the proper installation and operation of the equipment. A factory representative is available at startup at

cost of travel expenses plus charge per diem. Consult Sales Dept.

\* Products such as filter cartridges do not normally last one year and may require frequent replacement. In addition, certain components such as mechanical seals, springs, "O"-rings, hose, ceramic liners, impeller magnet assemblies, diaphragms, etc. may be subject to wear and, therefore, wear should not be construed as evidence of the existence of a defect, and as such will not be honored in a warranty claim, nor should it be inferred that items such as these will last a year without occasional, or even frequent, replacement depending upon the severity of the application. Items not of SERFILCO's manufacture, such as motors, carry similar warranties by the manufacturer, and can often be serviced through local authorized repair center or handled through our office.

**This express warranty is given in lieu of all other warranties. All other warranties and, specifically, the implied warranties of merchantability and fitness for particular purposes, are excluded.** No person, agent or representative of SERFILCO is authorized to give any other warranties on SERFILCO's behalf or to assume for it any other liability in connection with any of the products.

**WARNING** — Any modification, alteration or other changes to SERFILCO's products will void any warranty and could cause damage or injury to the user of the products.

## RETURN AUTHORIZATION POLICY

### TERMS

No equipment may be returned for credit without first receiving permission to do so. All requests shall be addressed to the company from whom purchase originally made or our factory if purchase was made direct from **SERFILCO**. A minimum 25% restocking charge is made on our current designs within warranty period, to cover inspection, testing, handling and accounting expenses. We will not accept return of customer's surplus inventory. Non-standard equipment or other than current designs, or parts thereof, may not be returned for credit.

1. All materials must be shipped within 30 days.
2. All materials must be new and unused.
3. Material must be shipped prepaid.
4. **SERFILCO** will pay the freight on any items we ship incorrectly.
5. Credit will be issued with a restocking fee.
6. Merchandise received in damaged or used condition is subject to renegotiations of terms.
7. Any deviation from above terms & Conditions makes this Authorization null and void, and subject to renegotiations.

### USER RESPONSIBILITY

It is assumed that the users of **SERFILCO** products are in compliance with all aspects of legislation dealing with hazardous substances. To that end, the procedures for the legal transportation and disposal of such substances are the sole responsibility and liability of the user. Prior to any return of used merchandise the user shall:

1. Contact **SERFILCO** to obtain a Return Authorization number and specific shipping instructions. Number valid for 60 days.
2. **Thoroughly cleanse the merchandise to be returned so that no detectable residue of any substances remains on any surface.** We will not dispose of any chemicals or contaminated parts at the factory.
3. Prepare a legal shipping container suitable for the return of this merchandise to **SERFILCO**. The shipping container must have the Return Authorization number clearly and legibly imprinted above the shipping label.
4. The user is responsible for shipping the merchandise to **SERFILCO** and for the freight charges in both directions.
5. On valid warranty claim items, **SERFILCO** will prepay the return

freight back to the customer.

6. **PLEASE NOTE:** In the presence of the delivering carrier, **SERFILCO** personnel will open and inspect all returned merchandise, and will refuse and return to shipper all merchandise not meeting these conditions.
7. Assume responsibility for the final disposition of any used merchandise or otherwise reusable product, or the legal disposal of a defective or otherwise unusable product.

### RETURN GOODS AND REPAIR POLICIES

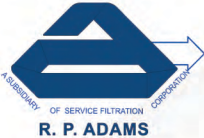
1. Our Service Department will provide a report by Fax or E-mail of our inspection and any cost to repair estimates within 10 working days after we receive the product.
2. Our inspection fee on non-warranty claims is \$75 net per returned item. This charge is waived if **SERFILCO** is authorized to complete the repair or replace the item.
3. We will repair and return any item within 10 working days of receiving the customer's authorization or our determination of warranty.
4. If we do not receive authorization to repair within 30 days, the product in question will be returned freight collect.
5. Used filter media, carbon or ion-exchange resins may not be returned to **SERFILCO** and will be refused.
6. Samples for test will not be accepted. **SERFILCO** offers rental and test equipment for field testing, subject to the above conditions.
7. **PLEASE NOTE:** We will not ship replacement parts or pumps out "No Charge" as exchange items. We will ship these items only after we receive a Purchase Order for the new item. Our warranty explicitly gives **SERFILCO** the option to repair or replace. If we later determine that we should replace the warranty claimed product that has been sent to us, we will issue full credit against the new Purchase Order. However, if we determine that a minor repair will fix the original product satisfactorily, it will be repaired and returned to the customer. **In this instance, we will expect payment for the second Purchase Order.**

In the event that used merchandise is returned to **SERFILCO** without strict compliance to this policy, **SERFILCO** reserves the right to refuse receipt of such products. **SERFILCO** will direct that carrier involved return same to sender in accordance with the above policy and procedure.



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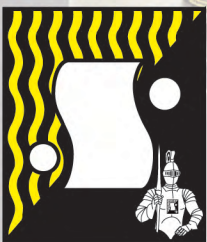
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OF COURSE, WE FILTER OUR RINSES



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