



SERFILCO[®], LTD.

Pumps | Filters | Systems | Purification Media | Accessories

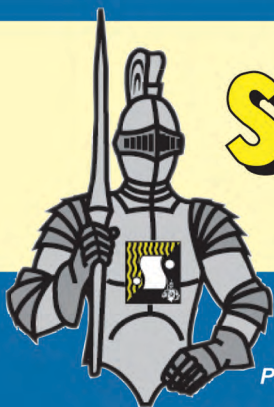
www.serfilco.com 800-323-5431

VOL
28

Your Guide to Liquid Processing and Purification for ...

50 years



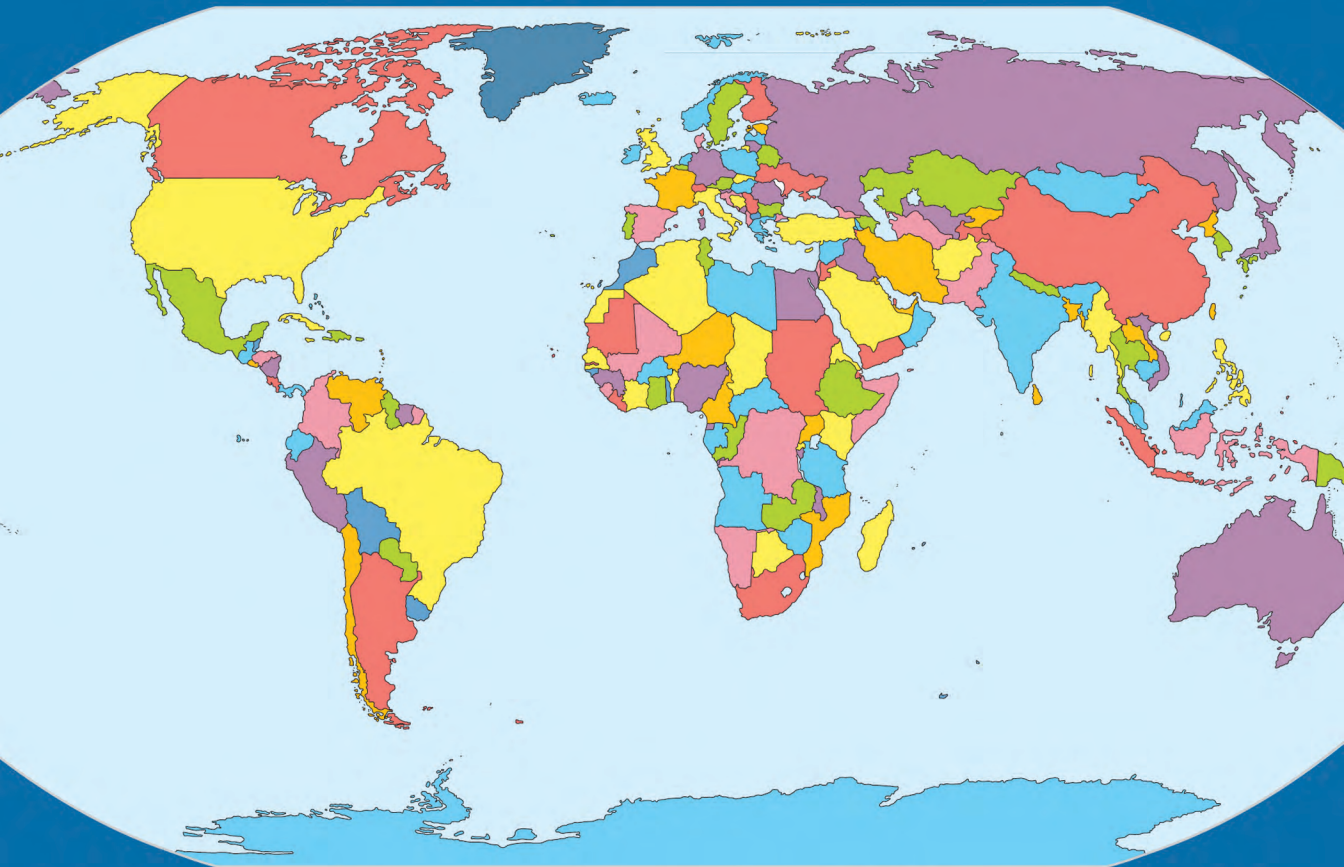


SERFILCO®

SERVING INDUSTRY WORLDWIDE

"SIR FILCO"
Protector of Industry &
Environment

for over 50 years



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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

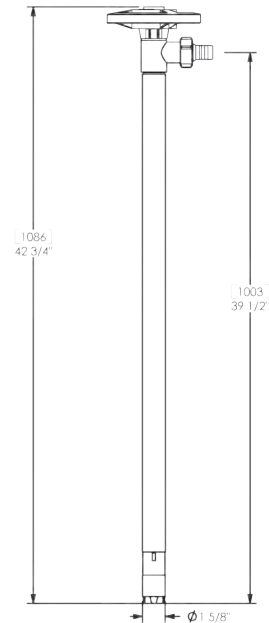
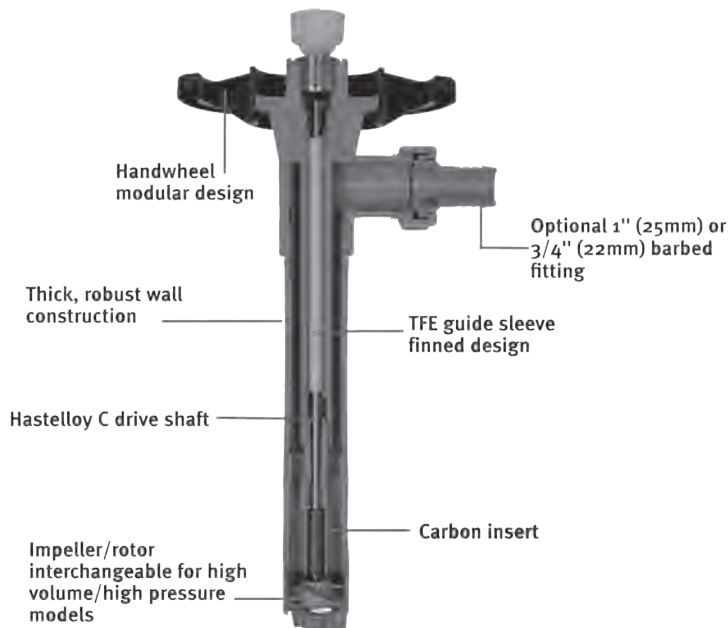
Batch and flow control systems



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

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.

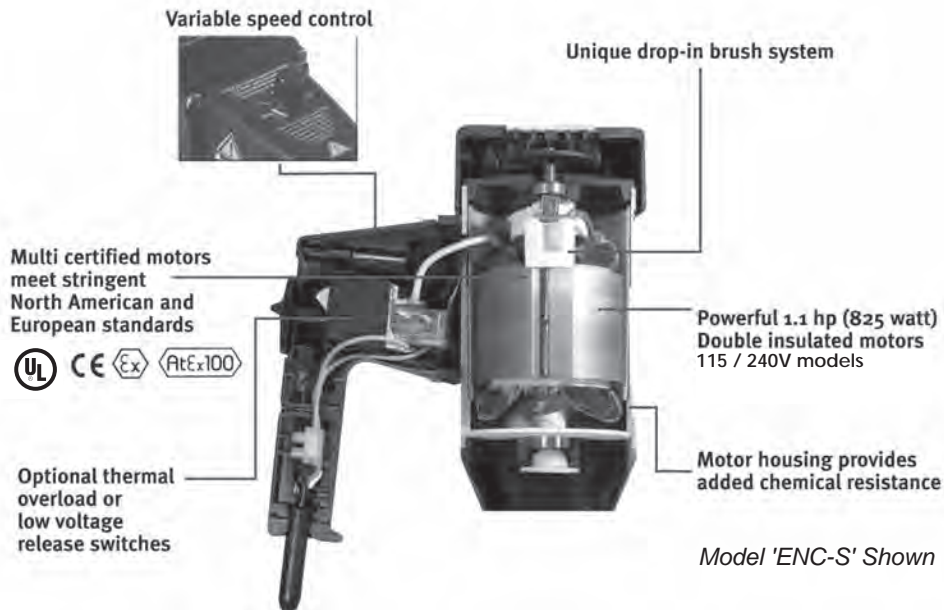
A ground wire should be used on any explosion-proof motor as well as the container when transferring explosive material. This warning pertains to electric and pneumatic motors.

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.



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TO ORDER, use Price Code Number

ODP-S

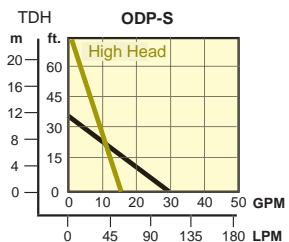


ODP-S OPEN DRIP-PROOF MOTOR w/speed control

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

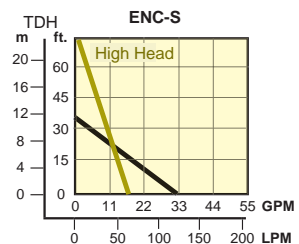


ENC-S SEVERE DUTY TOTALLY ENCLOSED MOTOR w/speed control

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 up 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.



**DRUM PUMP ACCESSORIES**

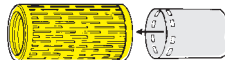
P-402_AG

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



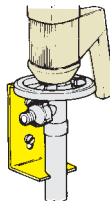
	PRICE CODE NO.
PP for PP or PVDF	55-0282A
SS for SS Pumps	55-0283A

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

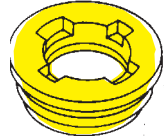
A wall bracket is recommended for every pump. Proper storage will increase the life of the unit.

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



DRUM PUMP FLOW METERS

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

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.



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

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

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

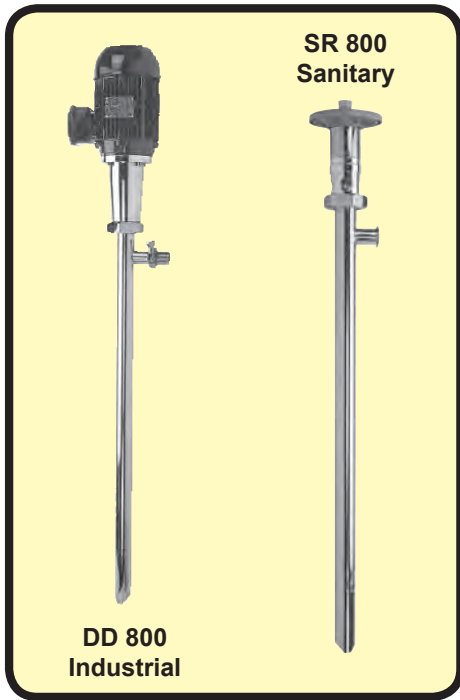


HIGH VISCOSITY DRUM PUMPS

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P-411_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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



Warning: Not suitable for pumping flammable or combustible 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.
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



Warning: Not suitable for pumping flammable or combustible liquids

EXP-UL

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_x de 11C T6

** 620 watt input / 430 watt output



May be used for pumping flammable or combustible liquids

AIR (F)



AIR (F) AIR DRIVEN MOTOR

.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**

P-411_B

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



DRUM PUMP ACCESSORIES

HOSE & CLAMPS

Price Code

NYLON REINFORCED HOSE CLEAR

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

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. Maximum temperature: 180°F

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

52-9039

PLICORD® GRAY FOOD TRANSFER HOSE

Construction: White Chemivulc synthetic rubber (FDA/USDA 3A Sanitary Standard 18-03 compliant). Cover: Spiral-plaid synthetic fabric with Galvanized Wire. Maximum working pressure: 150 psi. Maximum temperature: 180°F

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

52-9037

VINTNER™ FOOD TRANSFER HOSE (High Pressure)

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

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

52-9036

DISCHARGE HOSE CLAMP

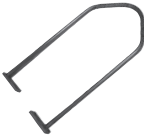
Maleable iron two bolt clamp. Gripping ridges reinforced lugs.

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

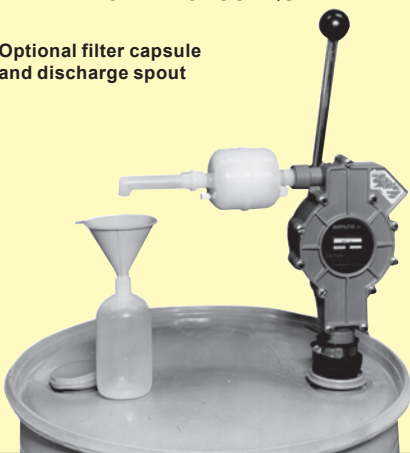
P-404_AB

2900 MacArthur Blvd. Northbrook, IL. USA 60062 www.serfilco.com (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



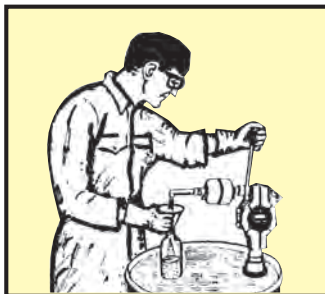
Designed for the transfer or dispensing of concentrates, additives or other liquids which are purchased in bulk but are used in small quantities. This low cost pump delivers one pint per stroke or one quart with the forward and back push/pull of the handle. The variety of materials of construction enables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

A tough, quality engineered pump

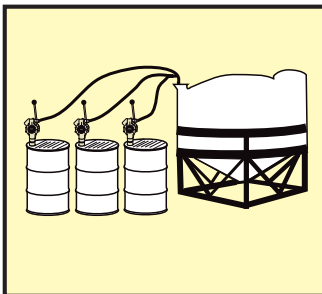
- **QUALITY ENGINEERED THERMOPLASTIC CONSTRUCTION**
- **CONTROLLED DISCHARGE RATE**
The pump discharges approximately one (1) quart on every complete forward and backward cycle.
- **SUCTION LIFT:** Tested for 15 ft. minimum
- **DISCHARGE HEAD:** Up to 25 ft.
- **VISCOSITIES UP TO 2000 SSU**
- **TWO POSITION 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.

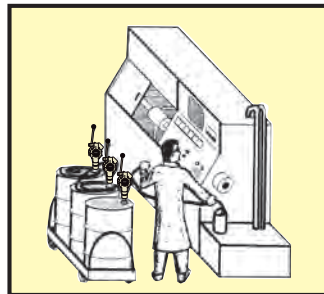
***See following page for specifications
and ordering information.***



**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.**

2900 MacArthur Blvd. Northbrook, IL. USA 60062 www.serfilco.com (800) 323 - 5431**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.

PLASTIC SYPHON PUMP

4A	56-0011C
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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.

PLASTIC PISTON PUMP

B	56-0003
---	---------

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.

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.

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"

SC25	56-0005A
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LP32	56-0022
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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.

316SS	56-0175
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Chrome plated steel with poly-
ethylene 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	



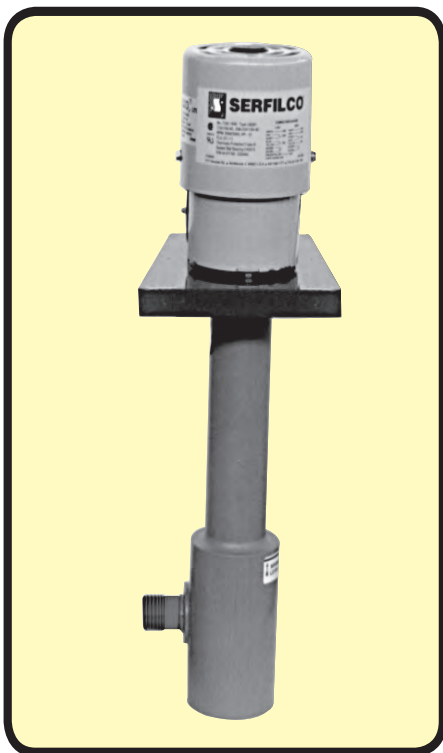
SERIES 'E' VERTICAL PUMPS

36

P-300_S

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2



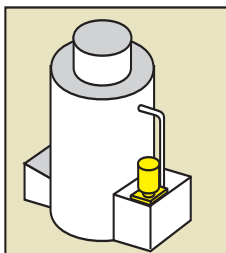
ACIDS / CAUSTICS / CLEANERS CHEMICALS / PCB / PLATING WATER / WASTE WATER

- **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**

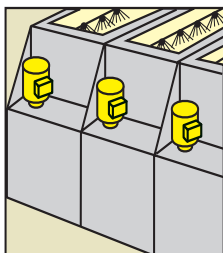
The rugged **Series 'E'** sump pump is a tough, all machined pump designed for years of trouble-free operation. This pump features a cantilevered, sleeved stainless steel shaft which eliminates bearings and seals, resulting in a pump that can run dry without damage. A vapor seal between the rotating 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.

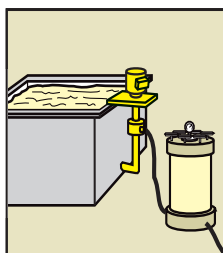
Discharge pipe assembly, suction extension and suction strainer are available options.



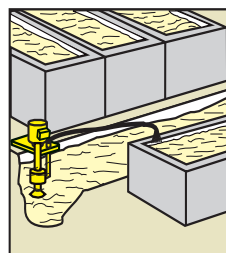
FUME
SCRUBBING



PCB WET
PROCESSING



OUT-OF-TANK PUMPING
and FILTRATION



SUMP DRAINING and
WASTE TREATMENT



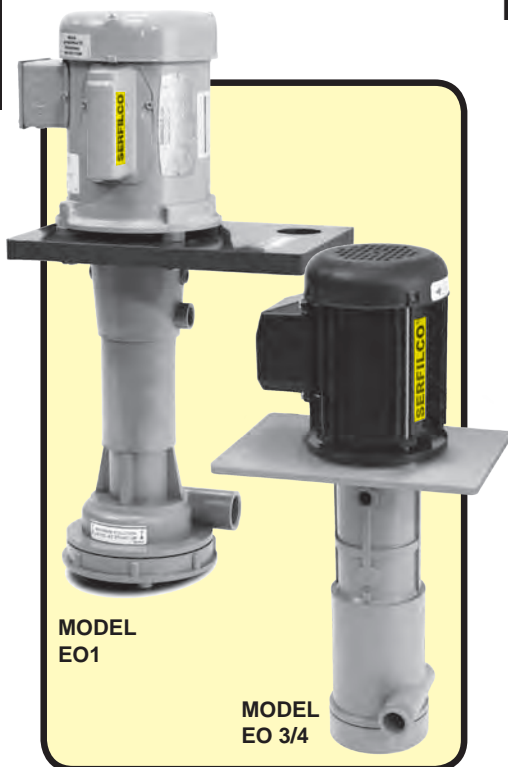
SERIES 'EO' MOLDED VERTICAL PUMPS

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P-312_K

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2



MODEL
EO1

MODEL
EO 3/4

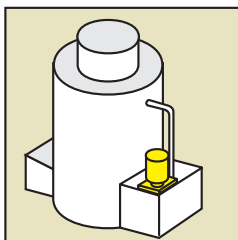
Efficient and dependable performance for:

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

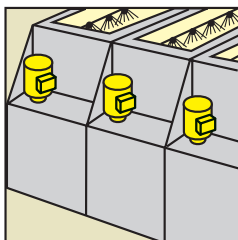
- **Flows to 92 U.S. GPM or 68 FT. TDH @ 60 Hz**
(110 LPM or 10m @ 50 Hz)
- **Non-metallic solution contact**
PPP Polypropylene, CPVC or 100% PVDF
Viton® or EPDM elastomers
(See a chemical resistance chart)
- **Runs Dry** — no bearings, bushings, spindles or liners to replace
- **Centrifugal** — quiet, 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.

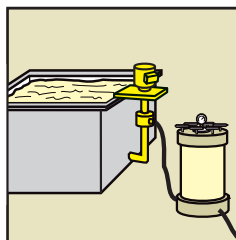
A vapor seal between the rotating shaft and the support column protects the motor. The compound impeller prevents liquid from rising in the column, even at maximum TDH, while the semi-enclosed bottom impeller provides efficient flow performance at low horsepower.



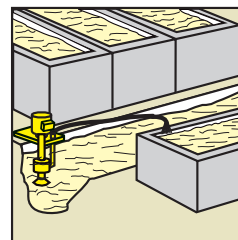
FUME SCRUBBING



PCB WET PROCESSING



OUT-OF-TANK PUMPING
and FILTRATION



SUMP DRAINING and
WASTE TREATMENT



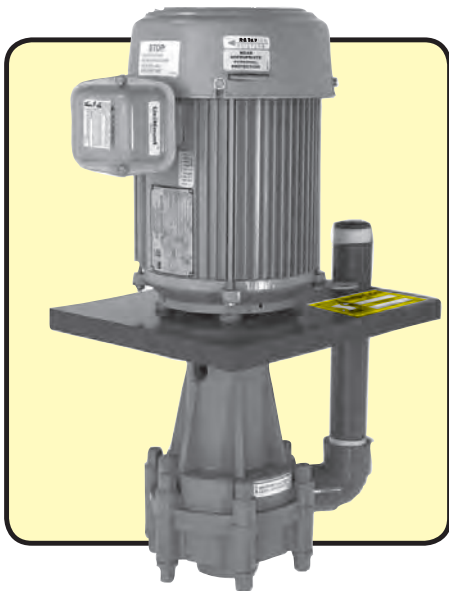
SERIES 'EH' VERTICAL PUMPS

42

P-301AD

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2



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

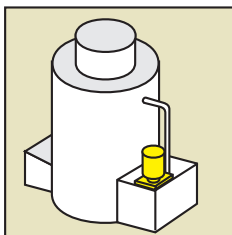
HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

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

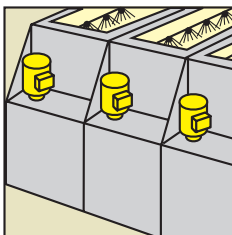
- **Flows to 185 U.S. GPM or 145 FT. TDH @ 60 Hz**
(580 LPM or 31m @ 50 Hz)
- **Non-metallic solution contact**
 - PPP high temperature polypropylene construction, CPVC, PVDF or ECTFE-T
(Refer to a chemical resistance chart)
- **Shaft vapor seal protects motor bearing and atmosphere**
- **Runs dry — 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

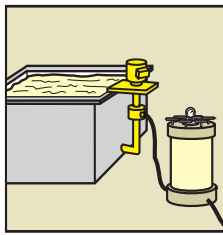
efficiency at low horsepower. A unique characteristic of all Series 'EH' pumps is their ability to lift solution with an optional suction extension pipe installed. With the motor energized, the pump will self-prime when liquid is at impeller level. The solution level will then be pumped down to the end 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.*



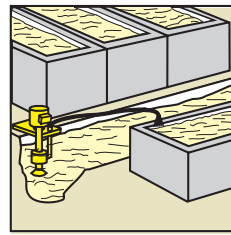
FUME SCRUBBING



**PCB WET
PROCESSING**



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



**SUMPS DRAINING AND
WASTE TREATMENT**

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



SERIES 'EF' VERTICAL PUMPS

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P-316_C

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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.

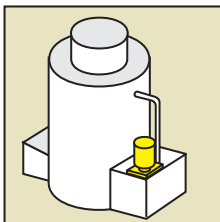
The Series 'EF' Vertical Pump represents the next generation of molded pumps from SERFILCO with flows to 400 U.S. GPM at 60 Hz. It is a robust design to meet the most demanding applications while providing the economy of operation found in all of SERFILCO's molded pumps.

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

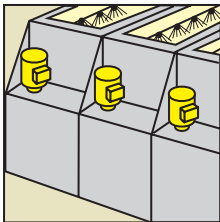
SERFILCO's vertical cantilever pumps, provides non-metallic solution contact. A compound impeller prevents liquid from rising in the column even at maximum TDH, while the fully enclosed bottom impeller provides high hydraulic efficiency at low horsepower.

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).

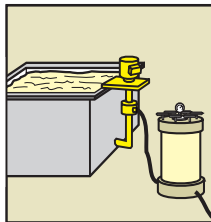
TYPICAL APPLICATIONS



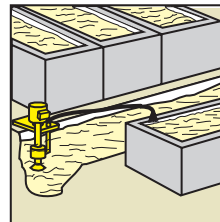
FUME SCRUBBING



PCB WET
PROCESSING



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



- SUMP DRAINING
- WASTE TREATMENT



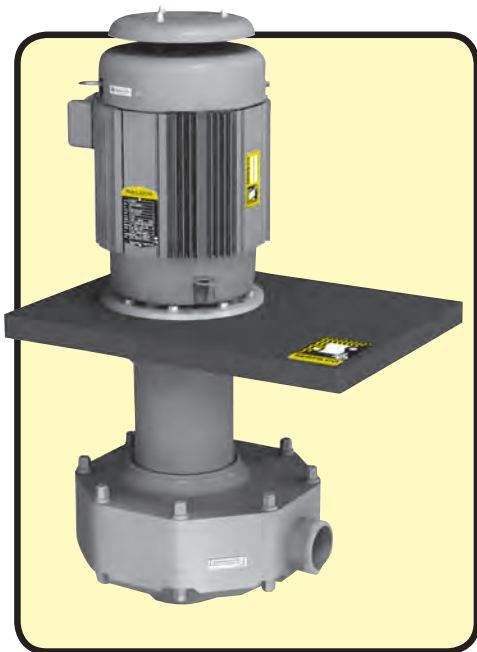
SERIES 'EHM' VERTICAL PUMPS

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2



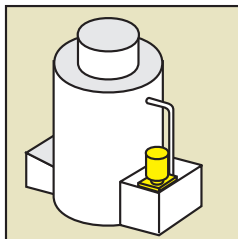
HIGH EFFICIENCY LOW ENERGY USAGE

- **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**

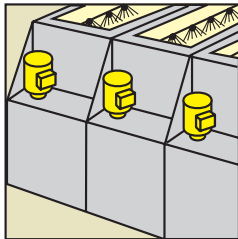
The **Series 'EHM' Vertical Pump** features a cantilevered CPVC sleeved stainless steel shaft which eliminates bearings and conventional pump seals, resulting in a pump that can run dry without damage. A compound impeller prevents liquid from rising in the column while the fully-enclosed bottom impeller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

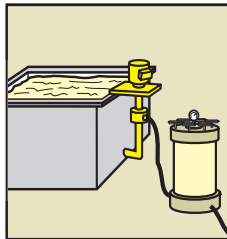
The high efficiency impeller provides "pump-down" capabilities to 9 ft. below the inlet when using a suction extension. Viton® "O"-rings, discharge pipe assembly and suction strainer are available as options.



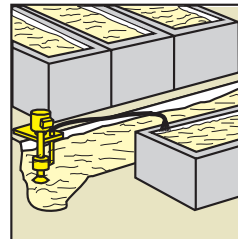
FUME SCRUBBING



**PCB WET
PROCESSING**



**OUT-OF-TANK
PUMPING and FILTRATION**



**SUMP DRAINING
and WASTE TREATMENT**



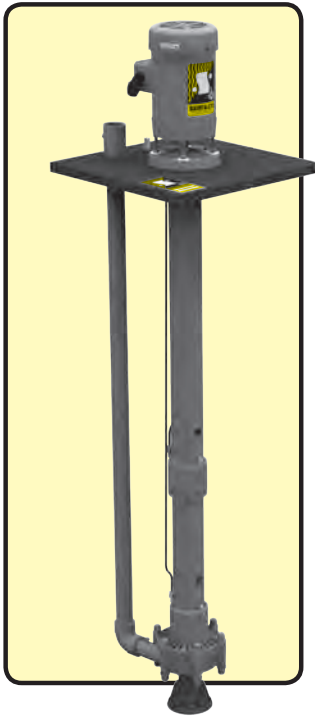
SERIES 'HB' VERTICAL PUMPS

53

P-302_U

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2



HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

WASTES / ACIDS / PLATING / CHEMICALS

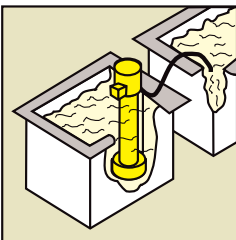
- **Flows to 140 U.S. GPM or 130 ft. TDH @ 60 Hz**
(450 LPM or 28m @ 50 Hz)
- **Corrosion resistant, CPVC construction**
(See a chemical resistance chart)
- **Pump lengths: 2 ft. to 10 ft. (.6m to 3.0m)**
- **Chemical duty motor**
Sealed oversized bearings, cast iron end bells, liquid/vapor seal and 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.

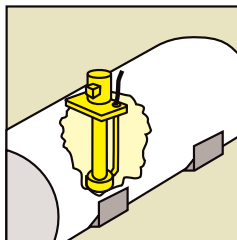
The shaft bearing and liner are positively lubricated with the product being pumped or clean water from a

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.

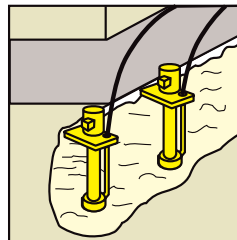
A suction extension can be utilized to pump to depths below impeller level. Thus, a shorter pump can be used, reducing shaft length and the number of bearings required.



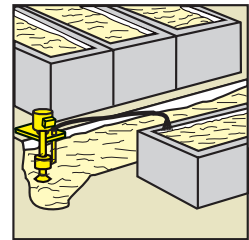
**CHEMICAL
TRANSFERRING**



STORAGE TANK



DEEP STANDBY PUMPING
when priming not possible



**SUMP DRAINING and
WASTE TREATMENT**



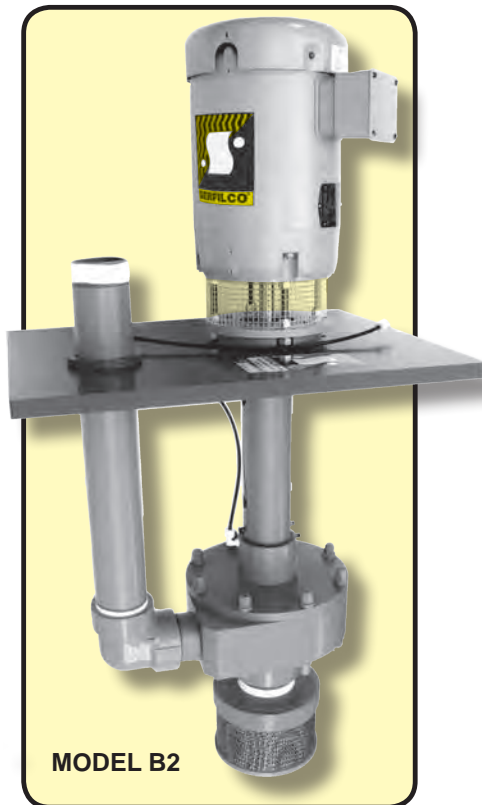
SERIES 'B' VERTICAL PUMPS

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P-303_X

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2



MODEL B2

HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

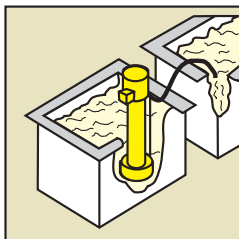
WASTES / ACIDS / PLATING / CHEMICALS

- **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**

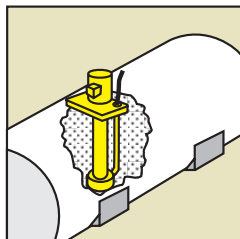
The Series 'B' Pump features corrosion resistant construction for deep sumps and demanding conditions. An oversized machined pump housing is utilized allowing for high flow rates using low RPM motors, thus extending pump life. A stainless steel shaft sleeved in CPVC offers unmatched strength and chemical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

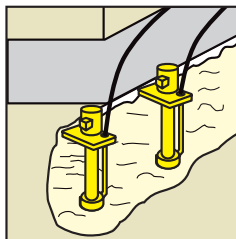
A suction extension can be utilized to pump to depths below impeller level. Thus, a shorter pump can be used, reducing shaft length and number of bearings required.



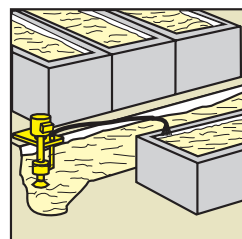
**CHEMICAL
TRANSFERRING**



STORAGE TANK



DEEP STANDBY PUMPING
when priming not possible



**SUMP DRAINING and
WASTE TREATMENT**



SERIES 'ECI' & 'ESS' METAL VERTICAL PUMPS

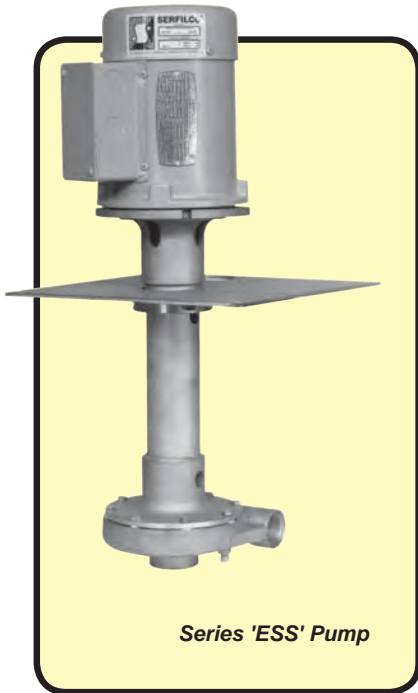
61

P-307_E

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

High efficiency and low energy usage for:

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

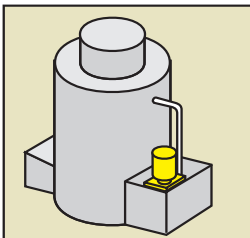


Series 'ESS' Pump

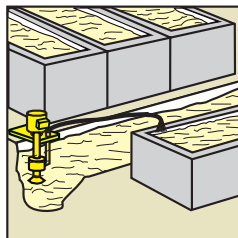
- **Flows to 180 U. S. GPM or 90 ft. TDH @ 60 Hz**
(565 LPM or 19.5m @ 50 Hz)
- **Standard column length is 13"**
Available in 20", 32" and 44" lengths
- **Available in cast iron or all 316 stainless steel solution contact**
- **Available in two sizes -**
1¼" x 1" and 2" x 1½" NPT
- **Motors are standard 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".

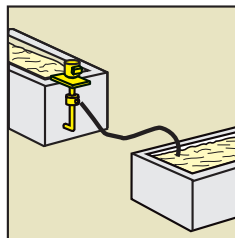
The bushing is lubricated by the product being pumped, thus no external flushing liquid is required. However, since the bushing is being product flushed, these pumps must be used inside the tank. The optional heavy duty mounting plate uses a clamp arrangement which allows it to be positioned anywhere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



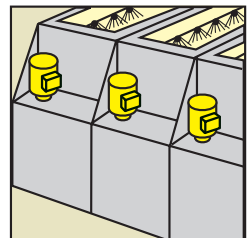
**FUME SCRUBBING
SUMP DRAINING**



CHEMICAL



**TRANSFERRING
PCB WET PROCESSING**



or CLEANING SOLUTIONS

2



COLLECTION AND PUMPING STATIONS

64

P-624_F

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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)	

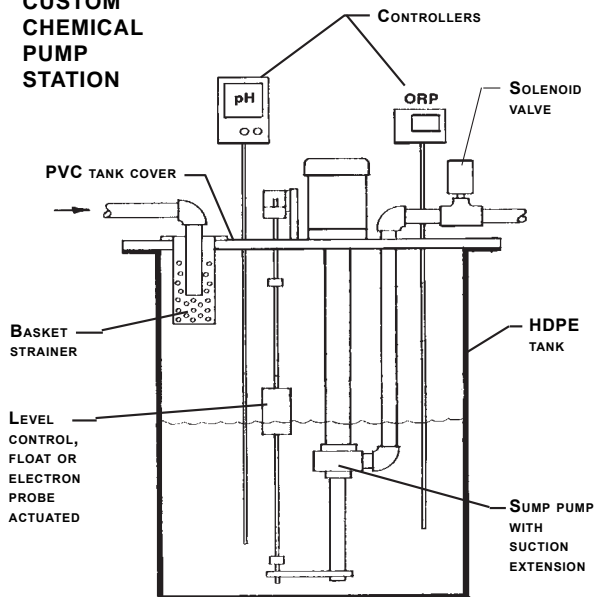
Select accessories individually to complete your chemical collection, treatment or transfer system.

CUSTOMIZED COLLECTION & PUMPING STATION

with filter chamber on pump discharge



CUSTOM CHEMICAL PUMP STATION



2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431**FOR COLLECTION AND TRANSFER OF:****WASTE TREATMENT
ACID NEUTRALIZATION / PLATING RINSE
PHOTOGRAPHIC & LABORATORY SOLUTIONS
CHEMICAL STORAGE**

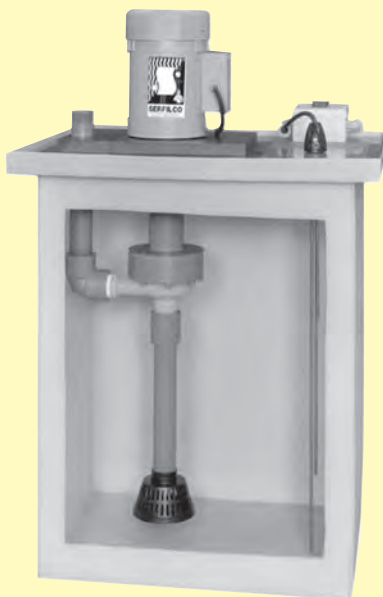
- **Flows to 120 U. S. GPM or 71 ft. TDH @ 60 Hz**
(380 l/m or 15m @ 50 Hz)
- **Corrosion resistant CPVC pump and HDPE tank**
for most acid/waste solutions to 140°F (60°C).
Consult Sales Dept. for selection of systems for use
up to 210°F (99°C)

(See a chemical resistance chart)

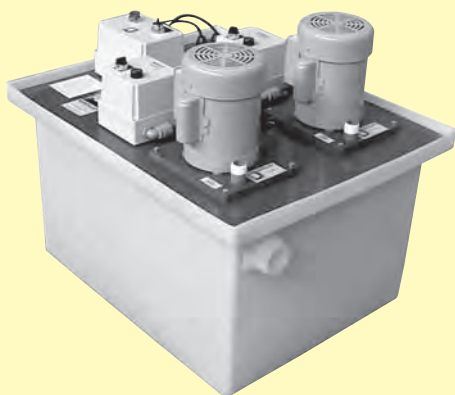
- **Automatic, self-contained units**
offer unattended operation
- **Compact and ready-to-use**
simply make connections and plug in;
models available to fit under counter tops
- **Maintenance-free vertical pump can run dry**
seal-less, no bearings, cantilever shaft
- **Duplex systems with high level 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



TIPS FOR THE PROPER SELECTION OF SEALS USED IN HORIZONTAL PUMPS

68

TP-112

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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.





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

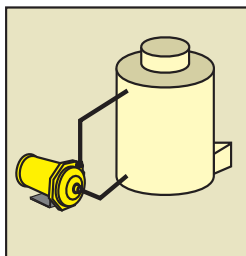
D.I. WATER / PHOTO PROCESSING PLATING / ETCHING / ELECTRONICS WATER TREATMENT / ACID TRANSFER

- **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**

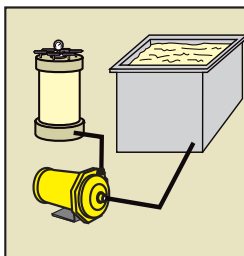
Series 'HH' Pumps are molded of natural CPVC or natural PVDF. They feature a volute designed for high TDH at high efficiency and all around optimum performance. The unique sleeved impeller design and non-metallic internally mounted mechanical seal combine to provide a compact assembly offering non-metallic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

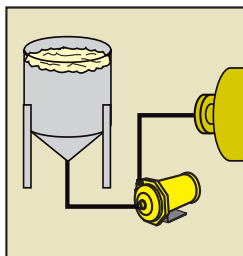
Pedestal mounted pump assemblies are available for ½ to 5 HP standard end bell motors. An optional long-coupled kit includes cast iron bearing, pedestal frame, flexible coupling, guard and FRP mounting channel.



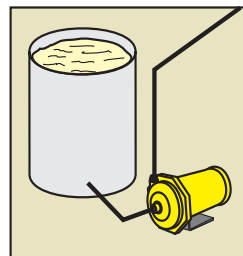
FUME
SCRUBBER



FILTRATION
SYSTEM
CHEMICAL



PROCESS
SOLUTION



TRANSFER



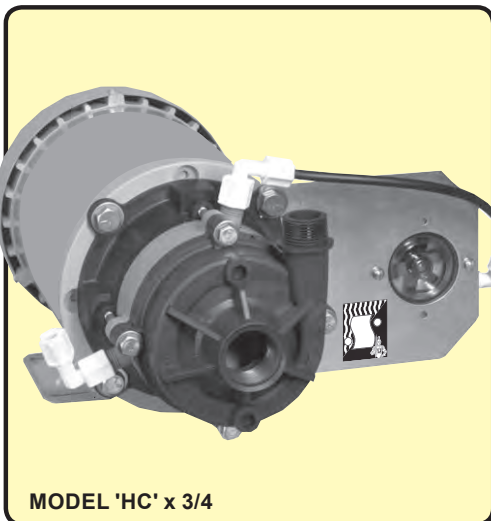
SERIES 'HC' HORIZONTAL PUMPS

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High Efficiency and Low Energy usage for:

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

3



MODEL 'HC' x 3/4

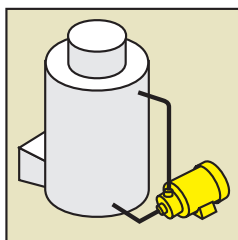
Shown with double mechanical water-flush seal and available DRI-STOP 2R

- **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

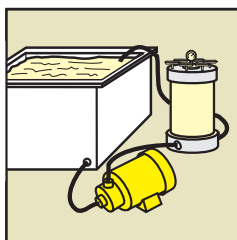
Series 'HC' Horizontal Pumps feature "total" chemical resistance with non-metallic construction of all wetted components. The molded, semi-enclosed impellers are designed to provide maximum pumping efficiency. These pumps feature external single seal or double water-flushed mechanical seal with choice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

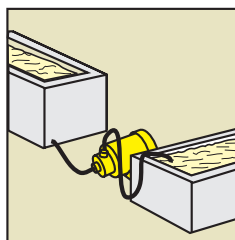
Pumps are ideal for transferring and recirculating industrial solutions, plating solutions, process chemicals and other fluid handling applications.



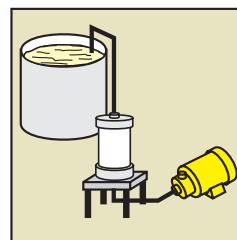
FUME SCRUBBING



CLEANING & DESCALING



WASTE TREATMENT



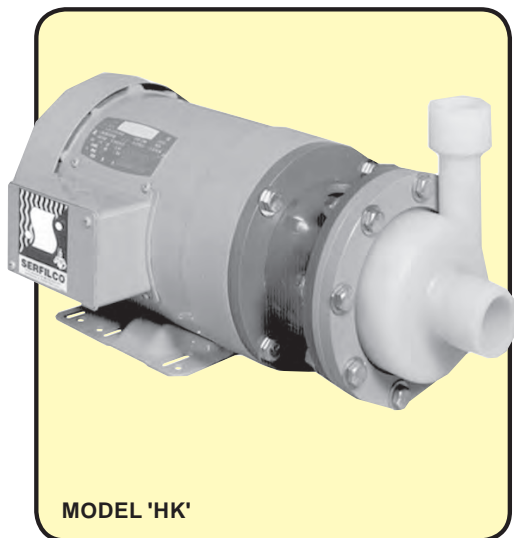
**SOLUTION TRANSFER
w/PRIMING CHAMBER**



SERIES 'HK' HORIZONTAL PUMPS

P-205

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MODEL 'HK'

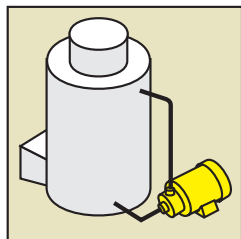
- **Flows to 78 U.S. GPM or 53 FT. TDH @ 60 Hz**
(246 LPM or 11m @ 50 Hz)
- **Non-metallic solution contact**
- **CPVC or 100% PVDF**
(See a chemical resistance chart)
- **Single or double mechanical seal**
Carbon/ceramic or silicon carbide
EPDM or Viton® elastomers
- **Centrifugal — quiet, vibration-free**
- **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

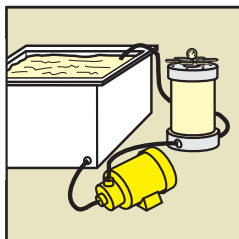
Series 'HK' Horizontal Pumps feature "total" chemical resistance with non-metallic construction of all wetted components. The molded, semi-enclosed impellers are designed to provide maximum pumping efficiency. These pumps feature external single seal or double water-flushed mechanical seal with choice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

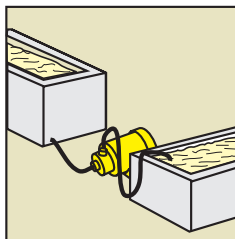
Pumps are ideal for transferring and recirculating industrial solutions, plating solutions, process chemicals and other fluid handling applications.



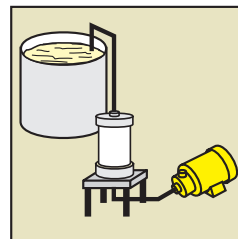
FUME SCRUBBING



CLEANING & DESCALING



WASTE TREATMENT



SOLUTION TRANSFER
w/PRIMING CHAMBER



SERIES 'HN' HORIZONTAL PUMPS

78

P-111_A

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RELIABLE CORROSION-RESISTANT PUMPS FOR

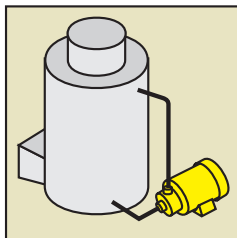
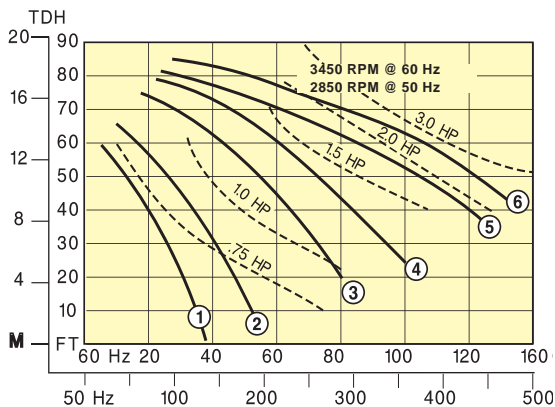
ACID / PHOTO PROCESSING PLATING / SCRUBBING WASTES AND WASTE WATER

- **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**

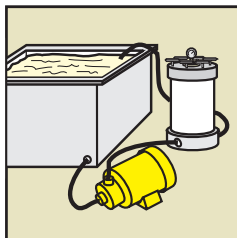
The Series 'HN' Pump is capable of "total" chemical resistance, both internally and externally with its non-metallic construction of all wetted components. Engineering grade thermoplastics provide application compatibility with a variety of chemicals that would be corrosive to other materials of construction.

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.

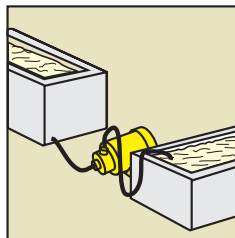
The unique mechanical seal eliminates any metal in contact with the solution pumped. All of these features allow this pump to properly handle many applications at a fraction of the cost of exotic alloys.



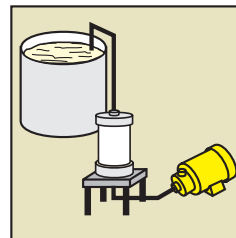
PRESSURE



FILTER



WASTE



SOLUTION TRANSFER



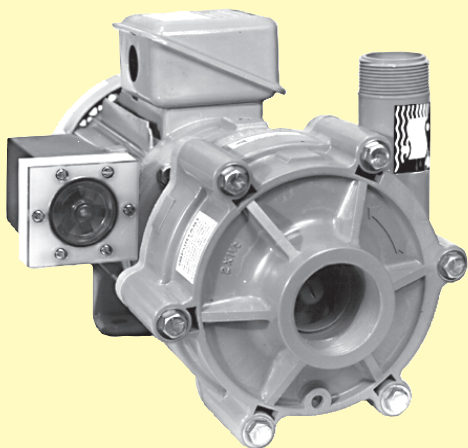
SERIES 'HE' HORIZONTAL PUMP

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:

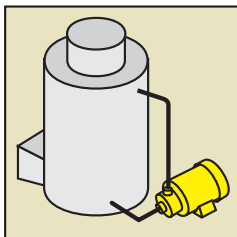
**ACID / AQUEOUS / CAUSTIC
CHEMICAL / ETCHING / PHOTOGRAPHIC
PLATING / SCRUBBING / WASTES**

- **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.

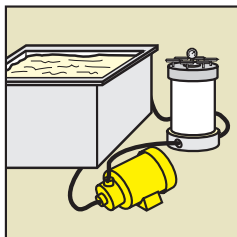
Here is a pump capable of "total" chemical resistance, both internally and externally with its non-metallic construction of all wetted components, choice of seal assembly and elastomer materials. The use of engineered plastics in a choice of materials provide excellent chemical compatibility for the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

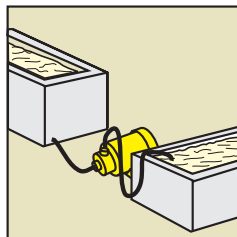
The external mechanical seal and impeller sleeve design isolates metal components to provide non-metallic solution contact with the pumped solution. The standard (M8) seal assembly has silicon carbide seal faces and is the most durable and longest lasting mechanical seal available. The double mechanical 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.



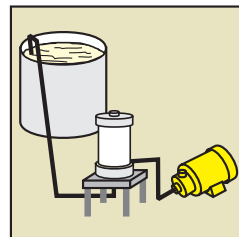
**PRESSURE
SPRAYING**



**FILTER
SYSTEM**



**WASTE
TREATMENT**



**SOLUTION TRANSFER
w/PRIMING CHAMBER**



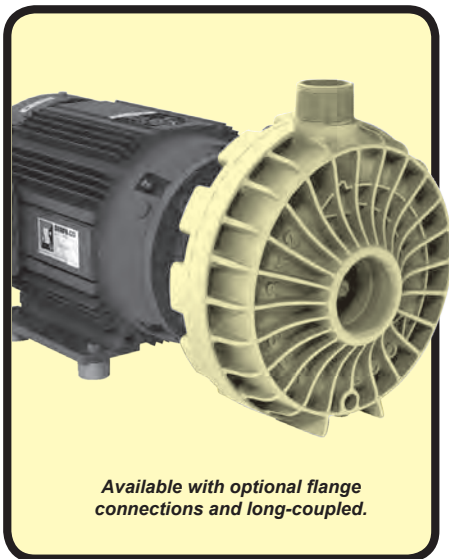
SERIES 'HF' HORIZONTAL PUMP

84

P-208_B

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3



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**

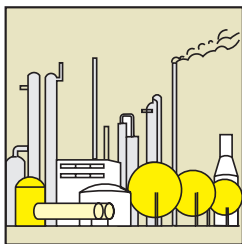
The Series 'HF' Horizontal Pump represents the next generation of molded pumps from SERFILCO. The 'HF' retains a robust design and non-metallic solution contact to meet the most demanding applications while providing the choice of materials of construction and economy found in all of our molded pumps.

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.

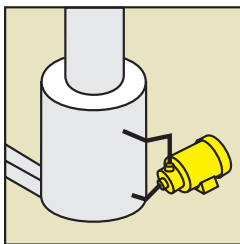
The totally enclosed impeller is molded to close tolerances which allows peak horsepower efficiency across a broad range of operational flow and head requirements.

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.

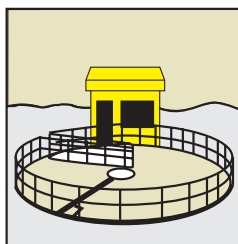
TYPICAL APPLICATIONS



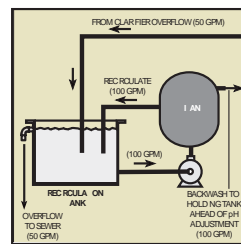
PETROCHEMICAL



– FUME SCRUBBING
– COOLING TOWER



– WASTE TREATMENT
– PROCESS WATER



FILTER SYSTEM



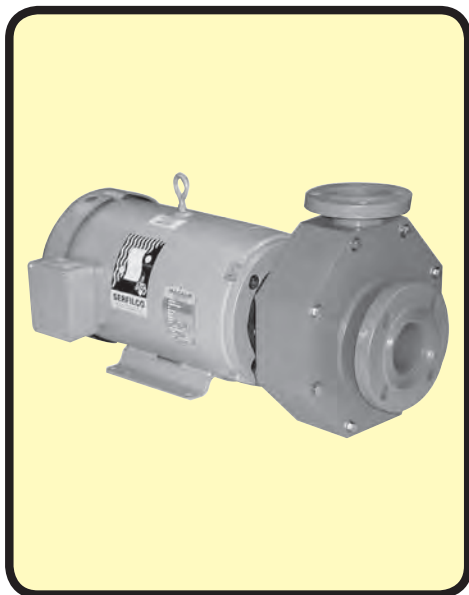
SERIES 'HA' HORIZONTAL PUMP

88

P-207_C

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3



ANSI DIMENSIONAL HEAVY DUTY CONSTRUCTION

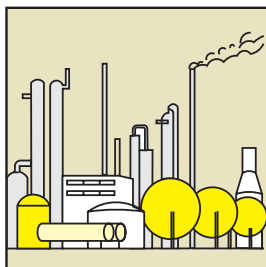
- **Flows to 1200 U.S. GPM or 115 ft. TDH @ 60 Hz**
(3800 l/min or 24 m @ 50 Hz)
- **Excellent chemical resistance**
Machined from solid CPVC (Corzan®)
(Refer to a chemical resistance chart)
- **Centrifugal – quiet, vibration free**
- **Single or double mechanical seal**
with EPDM or Viton® elastomers
- **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.

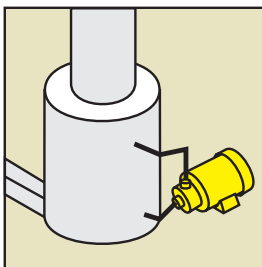
The Series 'HA' horizontal pump is available in three sizes with flow rates to 1200 U.S. GPM (3800 LPM),

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.

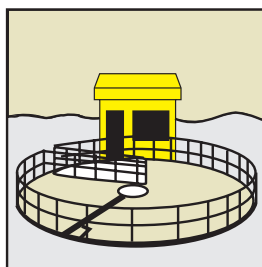
The Series 'HA' pump with its high flow rates, chemical resistance and durability makes it the perfect "workhorse" for chemical processing, transfer and filter pumping, fume scrubbers and cooling towers or for waste treatment applications.



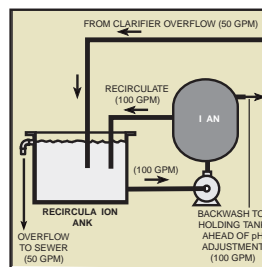
PETROCHEMICAL



FUME SCRUBBING
COOLING TOWER



WASTE TREATMENT



FILTER SYSTEM



SERIES 'HCI' & 'HSS' METAL HORIZONTAL PUMPS

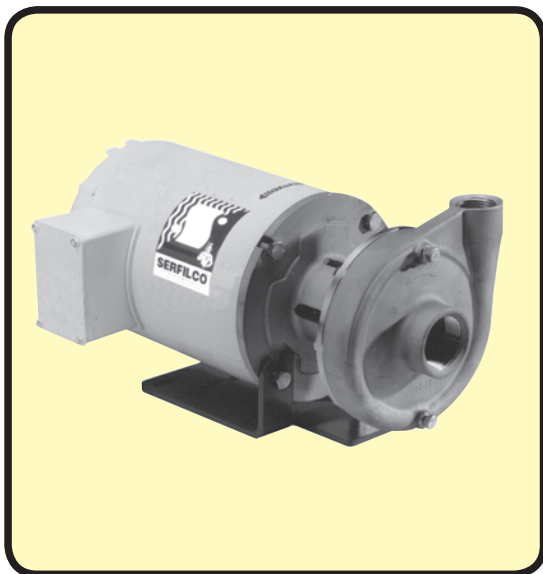
92

P-108_F

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HEAVY DUTY CAST IRON or 316SS CONSTRUCTION FOR:

3



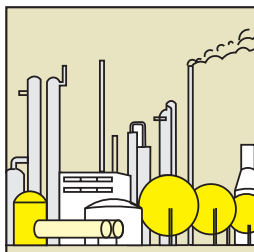
ACIDS / ALKALIES / SOLVENTS WET PROCESSING SOLUTIONS D. I. WATER / FERTILIZERS

- 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

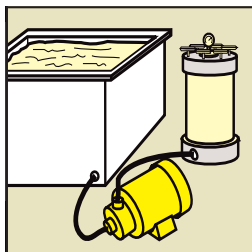
The Series 'HCI' and 'HSS' Horizontal Pumps feature compact close-coupled design. A high efficiency semi-open impeller allows for less clogging and quick cleaning.

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

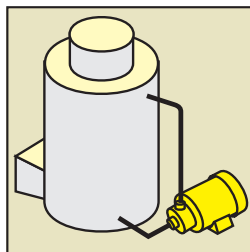
The Series 'HCI' and 'HSS' pumps feature the most widely accepted industrial mechanical seal designated as Type 21. This seal is mounted "in-board" and, thus tends to be self-cleaning. The seal is available as a single seal solution flush or as a double seal which uses external liquid as a flush. By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



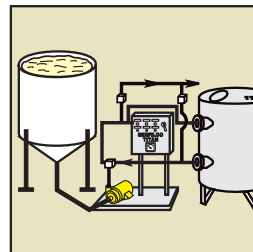
PETROCHEMICAL



CLEANING & DESCALING



FUME SCRUBBING
& SPRAYING



WASTE TREATMENT



SERIES 'RC' HORIZONTAL PUMPS

95

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

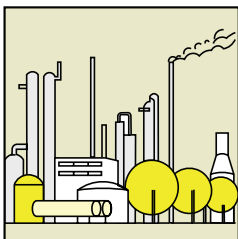
The Series 'RC' horizontal pump is a compact close-coupled design. A high efficiency, semi-open cast iron impeller allows for less clogging and quick cleaning. The components are cast so there are no welds to break. In addition, the cast iron construction provides improved corrosion resistance over similar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

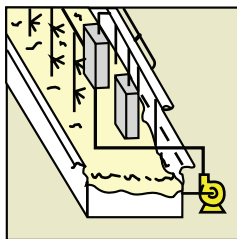
flush or as a double seal which requires external liquid to flush. When ordered with a double seal, the pump will better handle abrasives, solutions which tend to crystallize, and dry run operation.

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.

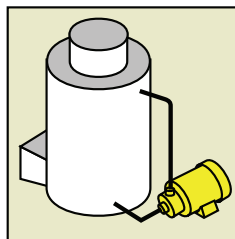
Viton is registered trademark of DuPont Dow Elastomers.



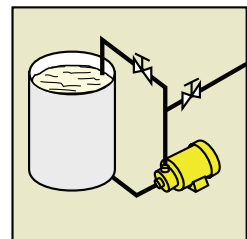
PETROCHEMICAL



SPRAY WASHERS



**RECIRCULATION OF
COOLING TOWERS**



**CHEMICAL
TRANSFER PUMPING**



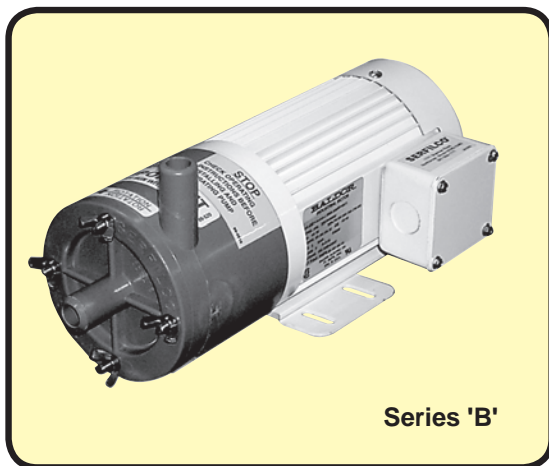
SERIES 'A' & 'B' MAGNETIC COUPLED PUMPS

97

P-503_R

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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.

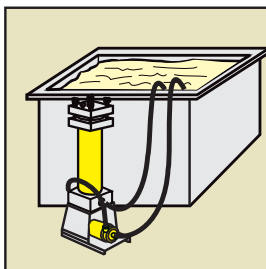
The pump body can be rotated to selected direction of discharge. Neutralizing fluid will normally flush the interior adequately without need for disassembly.

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

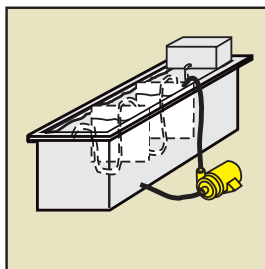
Liquids with a higher specific gravity can be pumped if:

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.

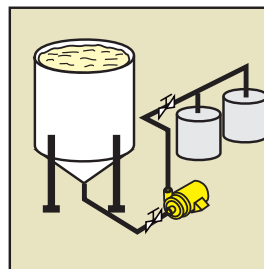
Use for filtering, circulation, processing and transfer.



FILTRATION



RECIRCULATION



TRANSFER

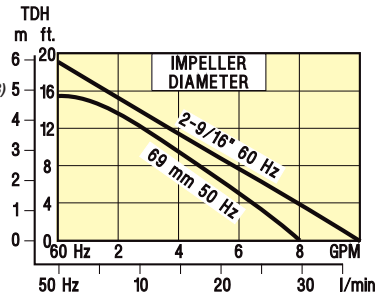
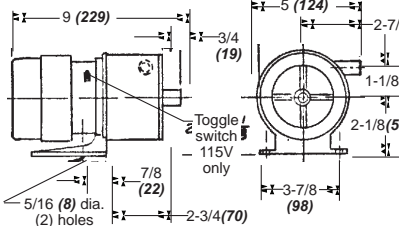


SERIES 'A' & 'B' PUMPS Specifications

P-503_R

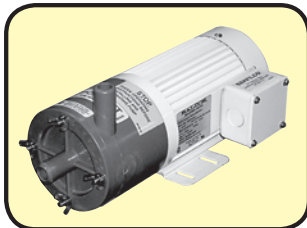
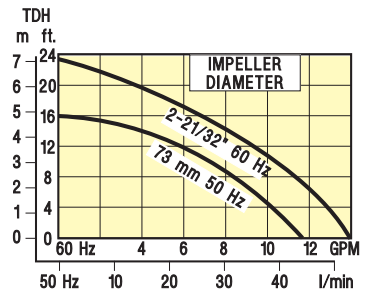
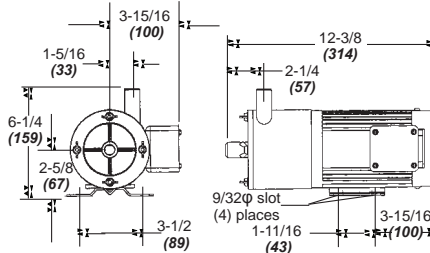
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SERIES 'A'

DIMENSIONS
Inches (mm)

CPVC ¹		POLYPROPYLENE ¹		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. ²	44-1372	w/polypropylene encapsulated impeller magnet, EPDM "O"-ring. 5/8" hose conn. ²	44-0852	w/ECTFE encapsulated impeller magnet, Viton® "O"-ring. 5/8" hose connection. ²	44-1495	w/ECTFE encapsulated impeller magnet, Viton "O"-ring. 5/8" hose connection. ²	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 ¹		POLYPROPYLENE ¹		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. ²	48-0120	w/polypropylene encapsulated impeller magnet, EPDM "O"-ring. 3/4" hose conn. ²	48-0140	w/ECTFE encapsulated impeller magnet, Viton "O"-ring. 3/4" hose connection. ²	48-0221	w/ECTFE encapsulated impeller magnet, Viton "O"-ring. 3/4" hose connection. ²	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.)

¹ To change "O"-ring from ethylene propylene to Viton, add V to Model Number and Price Code Number.² 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

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

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

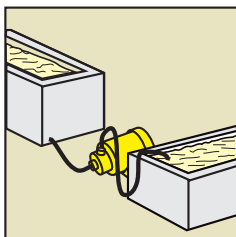
- **Flows from 1 to 25 U.S. GPM @ 60 Hz**
(3 - 78 LPM @ 50 Hz)
- **Non-metallic solution contact**
Polypropylene, PVDF, ETFE, Viton®
(See a chemical resistance chart)
- **NPT or hose barb connections**
- **Strong magnets will handle liquids to
1.3 specific gravity**
- **Continuous duty design**
- **Compact,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

4

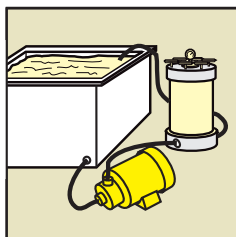
SERIES 'X' Magnetic Coupled Pumps are the latest in magnetic coupled pump technology. Tested and proven design features provide a pump that is seal-less and leakproof. Available materials of construction and flow capacities from 1 to 25 U.S. GPM make these pumps an excellent choice for a wide variety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

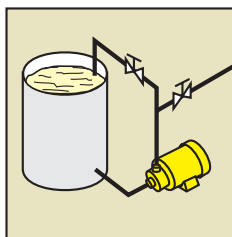
The following information covers standard Series 'X' models. For other models and magnetic coupled pumps to 250 GPM, consult our Sales Dept.



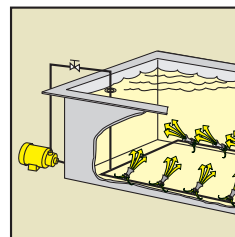
WASTE TREATMENT



FILTER SYSTEM



MIXING and TRANSFER
PUMPING



EDUCTOR AGITATION
and MIXING



SERIES 'M' MAGNETIC COUPLED PUMPS

102

P-509_F

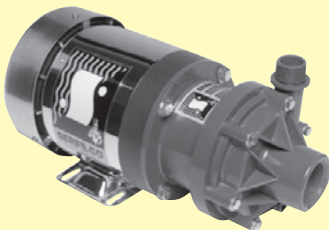
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EFFICIENT & DEPENDABLE, TROUBLE-FREE PERFORMANCE FOR:

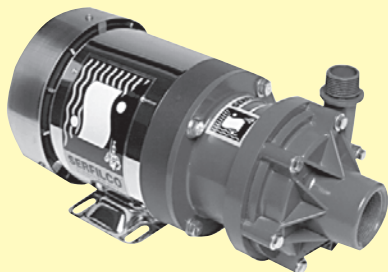
ACID / CAUSTIC / CHEMICAL PHOTOGRAPHIC / PLATING WATER / WASTE WATER

- **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

MODEL 1 x 3/4



MODEL 1 1/2 x 1

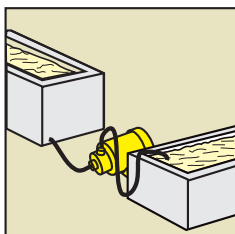


Series 'M' Magnetic-Coupled Pumps are seal-less and "leak-proof", providing total solution and vapor containment. They are available in two different materials of construction for a wide range of chemical and temperature compatibility.

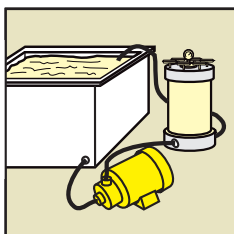
The relationship of the impeller magnet to the liner reflects an advanced design which allows extended operation at dry run or during loss of prime without causing damage to the pump. The impeller head is separate from the impeller magnet hub for field interchangeability. The mouth ring design eliminates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

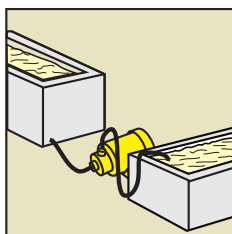
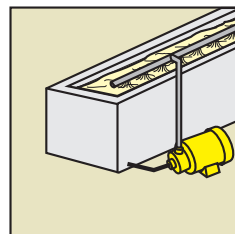
The balanced magnetic field eliminates loading on bearing surfaces, thus providing an extended life span of the bushing compared to that of other magnetic coupled pumps. The fluted bushing provides positive internal liquid circulation/flush along the shaft spindle. These pumps utilize a high-purity silica-free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



WASTE TREATMENT



FILTER SYSTEM

MIXING and TRANSFER
PUMPING

RECIRCULATION

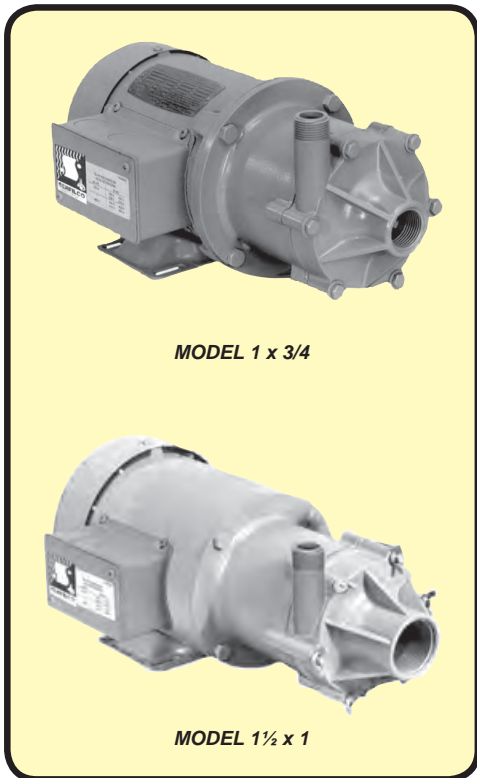


SERIES 'D' MAGNETIC COUPLED PUMPS

106

P-504_S

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

Reliable, trouble-free pumping for:

WASTE TREATMENT / FUME SCRUBBING CHEMICALS / PHOTOGRAPHIC ACIDS / PLATING

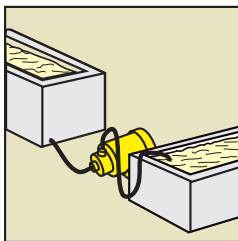
- **Flows to 53 U.S. GPM or 58 FT. TDH @ 60 Hz**
(167 LPM or 12m @ 50 Hz)
- **Non-metallic solution contact**
Polypropylene and Ryton
PVDF
316 stainless steel
(See chemical Resistance Chart)
- **Centrifugal** – quiet, vibration-free
- **Rugged construction**
Designed for continuous duty
Horizontal or 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.

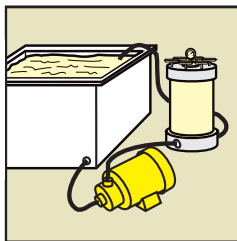
The impeller magnet assembly floats in the radial magnetic field set up by the motor driven external drive magnet. The impeller is designed to deliver the maximum flow

and pressure utilizing the available strength of the synchronized magnets.

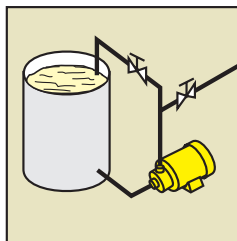
The standard diameter impeller is suitable for water-like liquids to 1.1 specific gravity. Liquids having a higher specific gravity can be pumped if the overall diameter of the impeller is reduced, the outlet flow is restricted, or the restrictions from a filter or other head loss is sufficient to keep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



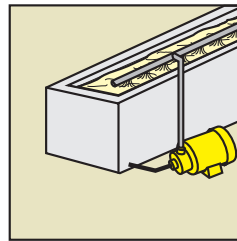
WASTE TREATMENT



FILTRATION



MIXING and
TRANSFER PUMPING



RECIRCULATION



SERIES 'D' PUMP Specifications

107

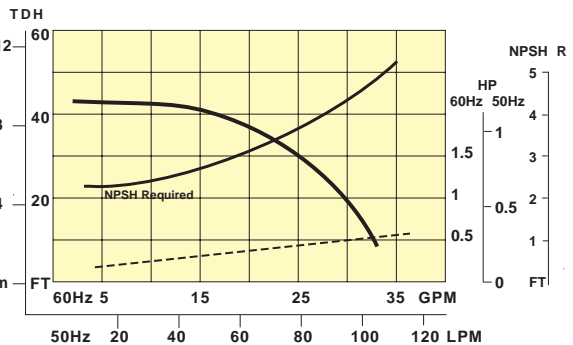
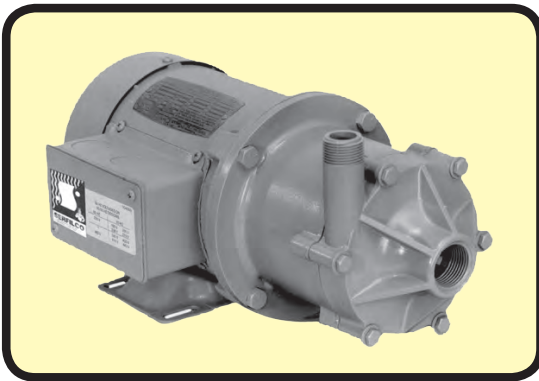
P-504_S

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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)



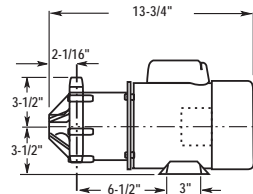
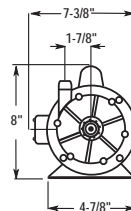
MODEL	SUCTION CASING	IMPELLER BUSHING ³	LINER	MAX.	TEMP	INLET PRESSURE
					°F (°C)	
MRGR ¹	Ryton	Polypro	Ryton	Ryton	150 (65)	50 (3.5)
MKGC ²	PVDF	PVDF	Carbon	PVDF	220 (104)	

¹ Glass filled casing, liner, and impeller

² Carbon fiber filled PVDF

³ Ryton bushings are a blend of Ryton, PTFE, and carbon

PORT SIZES - 1" F x 3/4" 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
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 ⁴	37 (17)	115/190-230/1/50-60
1 x 3/4 MKGC		44-4105			44-4302A ⁴		
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		

⁴ 60 Hz only

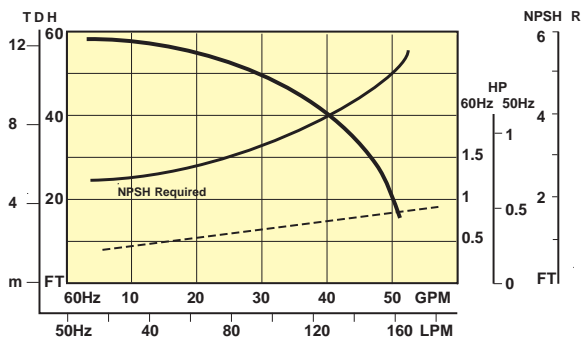
4



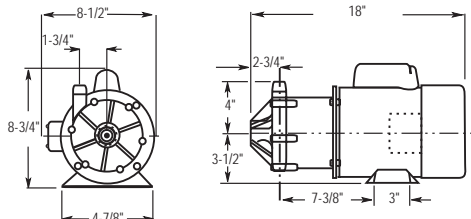
SERIES 'D' PUMP Specifications

P-504_S

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

**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 ³	LINER	MAX. TEMP °F (°C)	MAX. INLET PRESSURE PSI (BAR)
MPGR ¹	Polypro	Polypro	Ryton	Ryton	150 (65)	50 (3.5)
MSGR	316 SS	316 SS	Ryton	316 SS	250 (121)	200 (13.8)
MKGC ²	PVDF	PVDF	CARBON	PVDF	220 (104)	75 (5.2)

¹ Glass filled casing, impeller and liner³ Ryton bushings are a blend of Ryton, PTFE, and carbon² 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 °F (°C)	1.9 to 2.0 PSI (BAR)
IMPELLER DIAMETER 60 Hz	3-3/4 std	3-5/8	3-1/2	3-3/8	3-1/4	3-1/8
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 ⁴	49 (22)	115/190-230/1/50-60
1-1/2 x 1 MSGR	-C.75	44-0441	49 (22)	-E.75	44-0691A ⁴	56 (25)	
1-1/2 x 1 MKGC		44-0585	42 (19)		44-4304A ⁴	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)	

⁴ 60 Hz only**OPTIONAL**

Chemic (PTFE & mica) bushing ⁵
Carbon bushing
Stainless steel liner
Stainless steel spindle & thrust washer

change **R** to **K** in Model No.
change **R** to **C** in Model No.
add **S** to Model No.
change **G** to **S** in Model No.

EXAMPLE	ADD TO PRICE CODE NO.
MPGK	- K
MPGC	- L
MPSGR	- M
MSSR	- N

⁵ This is a replacement for bushings formerly referred to as Chem-

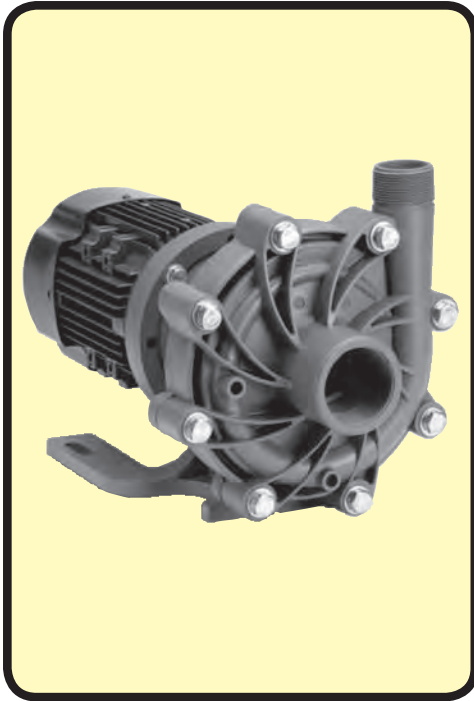


SERIES 'FE' MAGNETIC-COUPLED PUMPS

109

P-518

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



EFFICIENCY, RELIABILITY AND PERFORMANCE

WASTES / ACIDS CHEMICALS / PLATING PHOTOGRAPHIC ETCHING

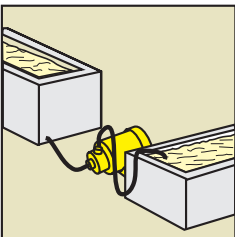
- **Flows to 130 GPM or 97 ft. TDH @ 60 Hz**
(483 LPM or 27.3 m @ 50 Hz)
- **Non-metallic solution contact**
Glass reinforced polypropylene or
carbon reinforced PVDF
(See a chemical resistance chart)
- **High operating efficiency – up to 70%**
- **Capable of running dry without damage**
- **Powerful 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**

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.

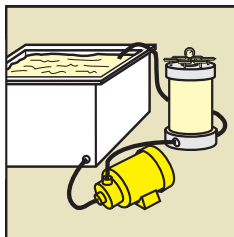
The Series 'FE' magnetic coupled pumps offer extremely high operating efficiencies for their size; up to 70%. This technological advancement results in smaller motor horsepower and means lower energy consumption and operating costs over the long life cycle of the pump.

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.

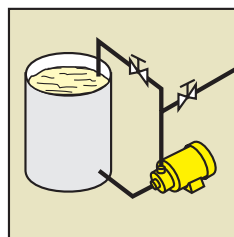
Additionally the Series 'FE' is capable of running dry without damage when equipped with the standard carbon bushing and under optimum operating conditions. This helps protect the pump from operator errors and system upsets. Their innovative and highly efficient design, and low energy consumption make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



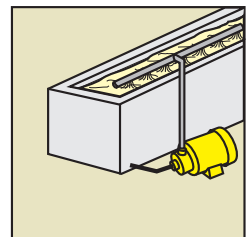
WASTE TREATMENT



FILTRATION



MIXING and
TRANSFER PUMPING



RECIRCULATION



SERIES 'Z' CENTRIFUGAL MAGNETIC COUPLED PUMPS

113

P-512_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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**

4

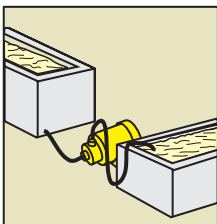


Series 'Z' Magnetic Coupled Pumps are the latest in magnetic coupled pump technology. Tested and proven design features provide a pump that is seal-less and leakproof. Available materials of construction and flow capacity to 145 U.S. GPM make this pump an excellent choice for a wide variety of applications.

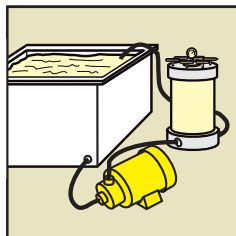
Standard 'Z' models have strong magnets, allowing them to provide continuous flow with liquids up to 1.1 specific gravity. Trimmed impellers allow continuous flow with liquids to 1.9 specific gravity. Durable and

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.

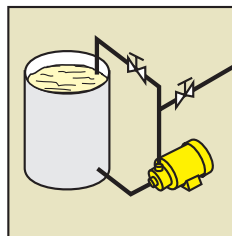
The following information covers standard Series 'Z' models for use with solutions to 1.1 specific gravity. For other models consult Sales Department.



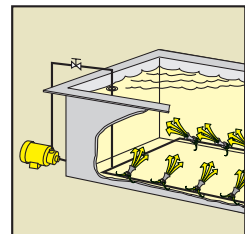
WASTE TREATMENT



FILTRATION



TRANSFER PUMPING
EDUCTOR AGITATION



and MIXING



SERIES 'TM-SS' CENTRIFUGAL MAGNETIC COUPLED PUMPS

116

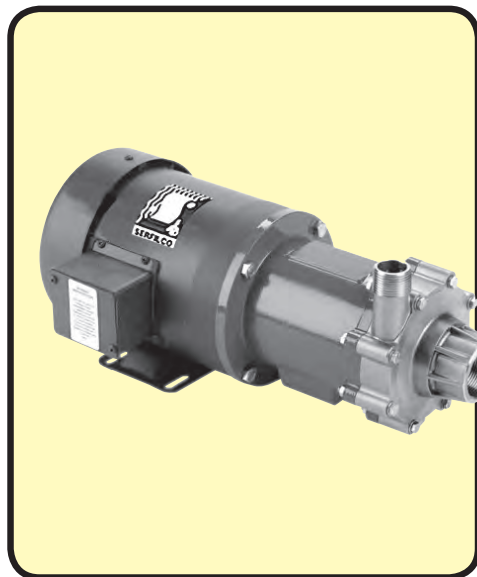
P 516_B

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

CAST 316 STAINLESS STEEL CONSTRUCTION
RUGGEDLY ENGINEERED FOR LONG TERM RELIABILITY IN DEMANDING

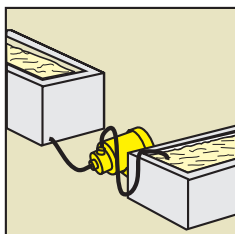
CLEANERS / SEMI-CONDUCTORS / INKS
FUME SCRUBBERS / PHOTO PROCESSING
WASTE WATER TREATMENT

- **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**

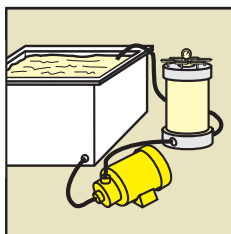


The Series 'TM-SS' Magnetic Coupled Pump directly addresses the weaknesses of other magnetic drive pumps. From high torque compact magnets to a large diameter, reduced length shaft to massive precision finished thrust bearings, the 'TM-SS' pump is designed to excel where other pumps fail. Heavy

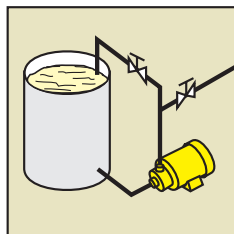
walled voluted casings improve pump strength, internal shaft support, chemical resistance, pressure and temperature capabilities as well as hydraulic efficiencies. Standard models are non-overloading with stated elevated specific gravity liquids.



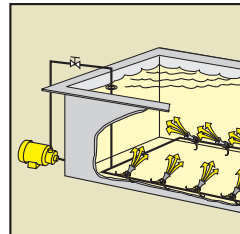
WASTE TREATMENT



FILTRATION



TRANSFER PUMPING



EDUCTOR AGITATION
and MIXING



SERIES 'UC' MAGNETIC COUPLED PUMPS

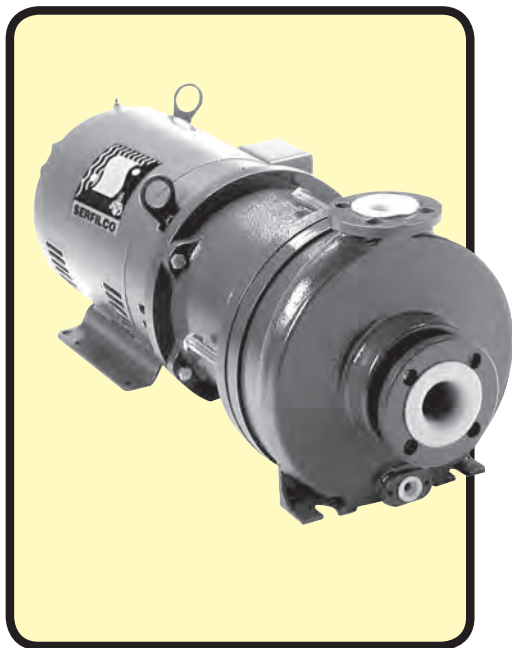
118

P-514_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.

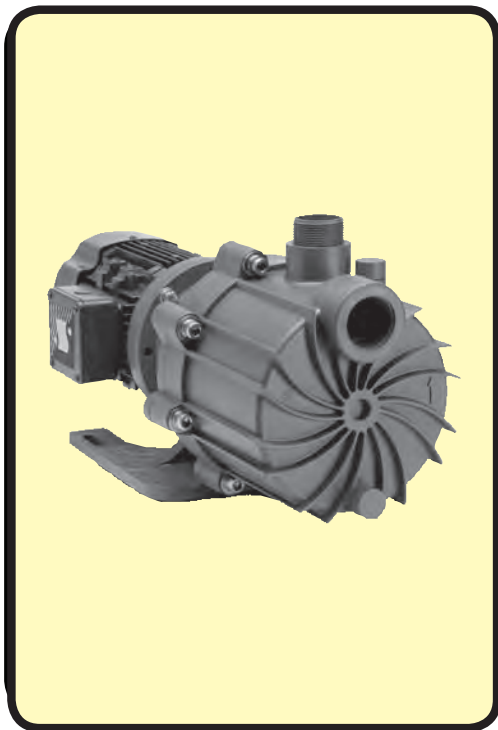


SERIES 'FES' SELF-PRIMING MAGNETIC COUPLED PUMPS

122

P-519

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



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

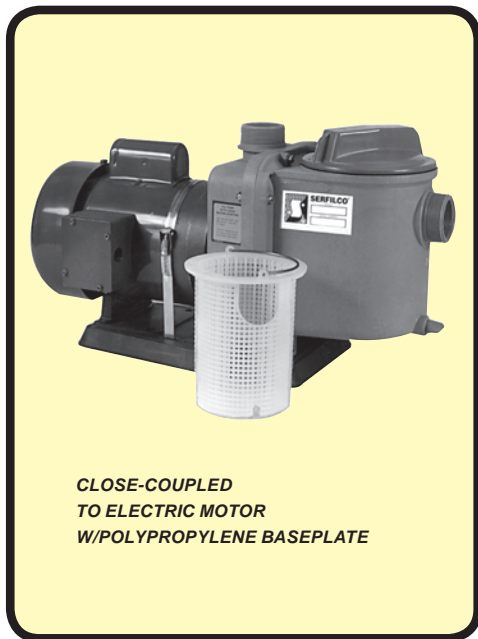


SERIES 'G' HORIZONTAL PUMPS

126

P-613_N

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



**CLOSE-COUPLED
TO ELECTRIC MOTOR
W/POLYPROPYLENE BASEPLATE**

SELF-PRIMING CENTRIFUGAL PUMPS FOR TRANSFER AND RECIRCULATION OF:

CHEMICAL SOLUTIONS / WASTE TREATMENT PHOTOGRAPHIC SOLUTIONS (inorganic)

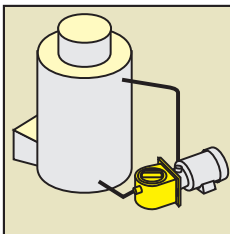
- **Flows to 100 U.S. GPM or 73 ft. TDH @ 60 Hz**
(315 LPM or 15m @ 50 Hz)
- **Noryl® or Ryton® construction**
with 316 SS internal hardware
(See a chemical resistance chart)
- **Non-metallic solution contact available**
- **Will reprime to 15 feet (4.6m)***
- **Close coupled - electric motor driven**
- **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

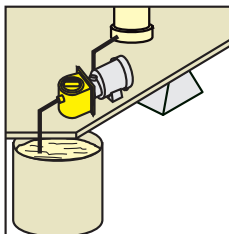
drive pumps. After initial prime, the Series 'G' Pump will lift up to 15 vertical feet (4.6m) and will remain primed even after shutdown. This pump also features an open, non-clogging impeller which is molded in conjunction with the shaft sleeve, thus isolating the shaft from solution contact.

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.

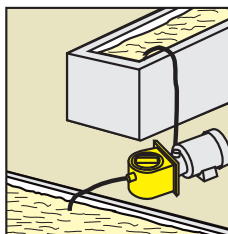
* Based on water-like liquids @ 70°F and 60 Hz (3450 RPM) operation after initial priming of pump housing.



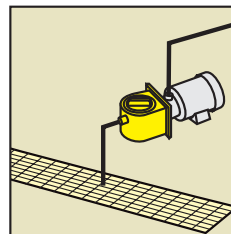
**RECIRCULATION OF
COOLING TOWERS, MIXING
VATS**



FILTRATION



**LIFTING FROM PONDS,
TANKS, SUMPS, PITS**



EMERGENCY STANDBY



SERIES 'S' SELF-PRIMING CENTRIFUGAL PUMPS

129

P-630_C

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

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



SERIES 'SP' HORIZONTAL PUMPS

132

P-600_C

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

Self-priming centrifugal pumps for transfer and recirculation of:

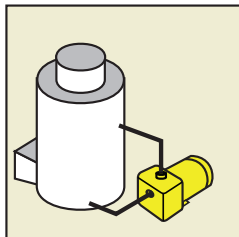
***CHEMICAL SOLUTIONS / WASTE TREATMENT
AGRICULTURAL SOLUTIONS / GROUND WATER***



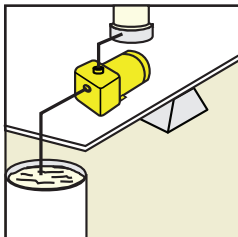
- **Flows to 142 U.S. GPM or 90 ft. TDH @ 60 Hz**
(448 LPM or 19.1m @ 50 Hz)
- **Cast iron – stainless fitted construction**
(See a chemical resistance chart)
- **316 SS impeller (semi-open design)**
- **Replaceable 316 stainless steel stub shaft**
- **Will reprime to 20 feet (6.1m)**
- **Back pull-out 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.

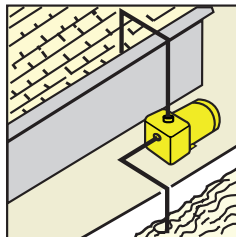
After initial prime, the Series 'SP' pump will lift up to 20 vertical feet (6.1m) and will remain primed even after shutdown. The self-priming ability, along with compact design, make Series 'SP' pumps ideal for chemical transfer, waste water treatment, emergency/backup or filter pumping.



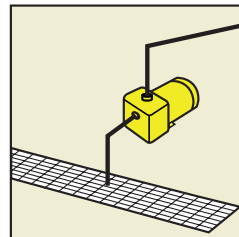
**RECIRCULATION OF
COOLING TOWERS,
MIXING VATS**



FILTRATION



**LIFTING FROM PONDS,
TANKS, SUMPS, PITS**



EMERGENCY STANDBY



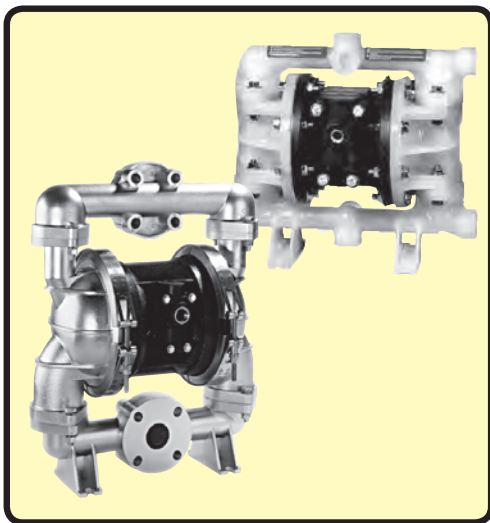
AIR OPERATED DIAPHRAGM PUMPS

134

P-605_U

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 - Santoprene/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**

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

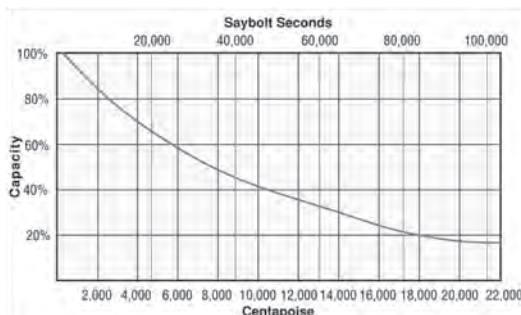
longer operating life and easier maintenance at a lower cost.

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

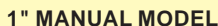
1. A lube-free, clean, dry compressed air source (or any non-flammable, compressed gas) is recommended. Use a filter that is capable of filtering out particles larger than 50 microns.
2. Pumps should be mounted in an upright position with the exception of 1/4" models which may be rotated 360° to suit 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





**DESIGNED TO ELIMINATE
PRESSURE SURGES AND PULSATIONS**

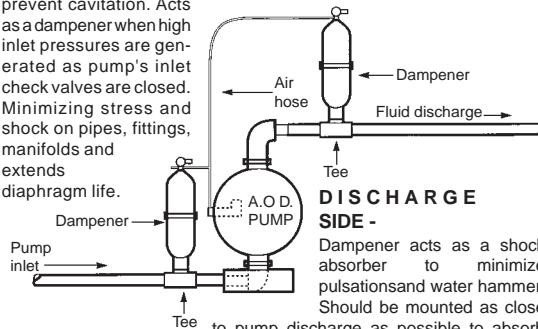



- **Non metallic solution contact**
Polypropylene to 125 psig @ 175°F
PVDF to 125 psig @ 225°F
- **Manual or automatic adjusting models.**
- **For pump sizes - 1/2" to 2"**
- **Improve accuracy and life of pumps and meters.**
- **One-way air inlet valve prevents product back flow if bladder is ruptured.**
- **Eliminates costly pipe system vibration and leakage.**

SUCTION SIDE -

Dampener acts as an accumulator to provide a close source of product when pump inlet check balls are opened. Helps prevent cavitation. Acts as a dampener when high inlet pressures are generated as pump's inlet check valves are closed. Minimizing stress and shock on pipes, fittings, manifolds and extends diaphragm life.

The diagram illustrates a pump system. A pump is connected to a Tee, which leads to a Dampener (a vertical cylinder with a piston) and then to Fluid discharge. An Air hose is connected to the top of the Dampener. A Tee is also shown on the pump's inlet line.

DISCHARGE
SIDE -

 Dampener acts as a shock absorber to minimize pulsations and water hammer. Should be mounted as close to pump discharge as possible to absorb shock at its source. Will prevent leaking joints and fittings due to pulsation. Allows meters to be used without damage and extends the life and reliability of pump components.

TO ORDER

PUMP SIZE	NPT SIZE	MODEL	PRICE CODE NO.	MATERIAL	ADD TO		ADJ	ADD TO		ADJ	ADD TO	
					MODEL NO.	PCN		MODEL NO.	PCN		MODEL NO.	PCN
1/2"	3/4"	Dampener-1/2	55-73	Polypro	PP	0	Manual	M	0	Buna N	B	-B
1"	1"	Dampener-1	55-74	PVDF	K	2	Auto	A	1	EPDM	L	-L
1-1/2" - 2"	2"	Dampener-2	55-75							Viton® TFE	V T	-V -T



SERIES 'A', 'AA', 'B' & 'C' METERING PUMPS

142

P-607_R

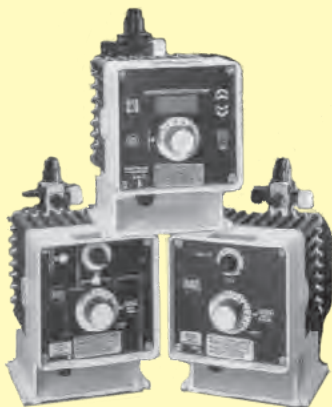
2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

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**

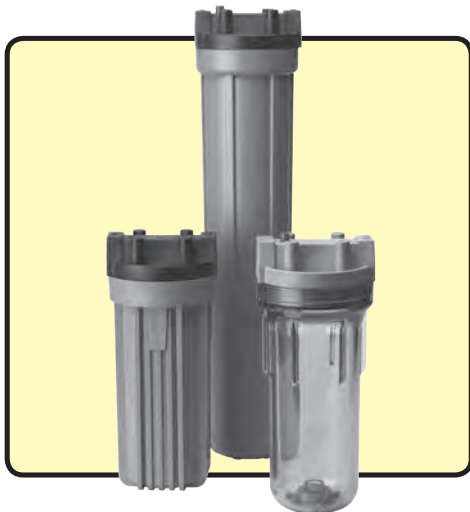
One moving unit, the armature-diaphragm assembly. No lubrication required. Modular construction provides easy replacement of components and major assemblies.
- **Free installation kit included**

Contains essential components for installation:
Polyethylene suction & discharge tubing
Foot valve & strainer
Injection check valve
- **UL Listed** **CE compliant**



IN-LINE PLASTIC FILTER CHAMBERS

C-101_L

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

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

ECTFE vent plug with EPDM "O"-ring (to replace button in cover). For non-metal. solution contact	ADD TO PCN
	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.	C

*See bulletin M-109 for filter media.

Specifications subject to change without

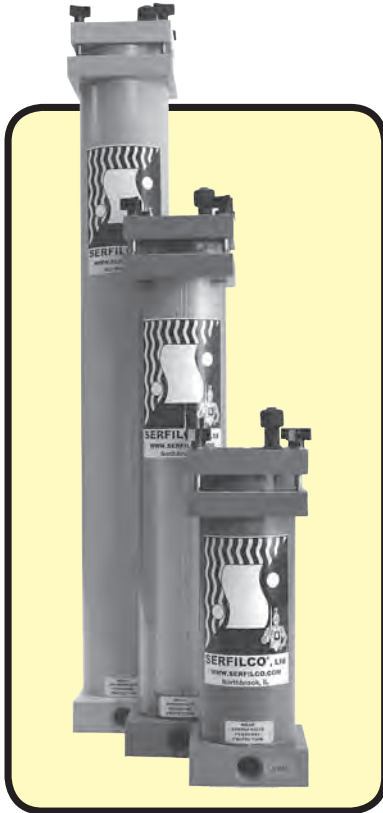


SERIES 'L' PLASTIC FILTER CHAMBERS

149

C-105_U

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



FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**ELECTROPLATING / CARBON PURIFICATION
WATER TREATMENT / CLEANING
PHOTOGRAPHIC / PHARMACEUTICAL
CHEMICAL / PETROCHEMICAL / BEVERAGE**

FEATURES:

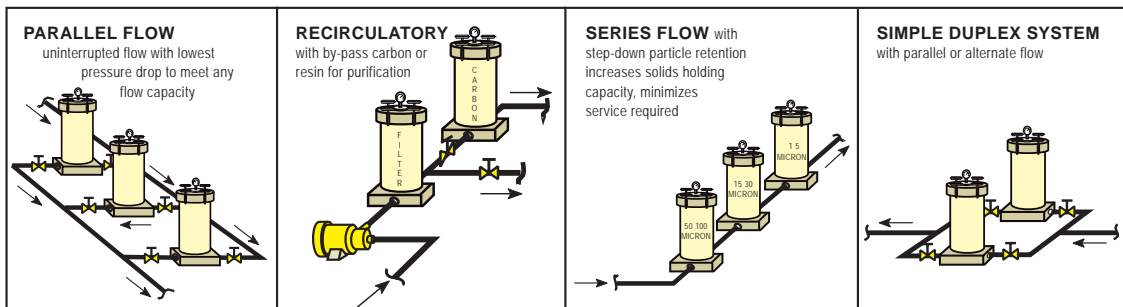
- **Non-metallic solution contact**
CPVC, polypropylene, PVC and pure PVDF construction
(See a chemical resistance chart)
- **Heavy duty construction**
 - Pressure ratings to 160 PSI (1103 KPa)
(See Pressure/temperature table on page 3)
 - Clamp ring closure or optional external tie rod
- **Variety of sizes**
From 4", 6" and 1 to 4 - 10" cartridge capacity
(or equivalent 20", 30", or 40" lengths.)
- **Port size ¾" 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





SERIES 'S' PLASTIC CARTRIDGE FILTER CHAMBERS

152

C-106_U

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



FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS:

**ELECTROPLATING / CARBON PURIFICATION
WATER TREATMENT / CLEANING
PHOTOGRAPHIC / PHARMACEUTICAL
CHEMICAL / PETROCHEMICAL / BEVERAGE**

FEATURES:

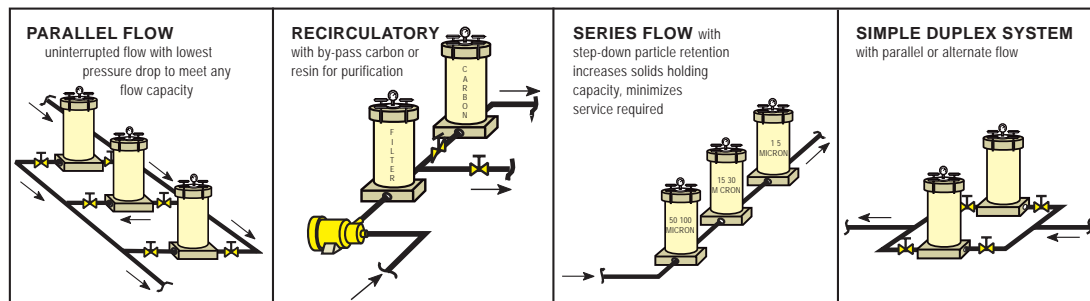
- **Non-metallic solution contact**
CPVC, polypropylene, PVC and pure PVDF construction
(See a chemical resistance chart)
- **Heavy duty construction**
 - Pressure ratings to 135 PSI (931 KPa)
(See Pressure/temperature table on next page)
 - Swing bolt cover closure with tee handle
- **Variety of sizes**
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**

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

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.





SERIES 'G' PLASTIC CARTRIDGE FILTER CHAMBERS

155

C-107_W

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



**FOR : WATER TREATMENT / FOOD PROCESSING
CLEANING / PHOTOGRAPHIC
ELECTROPLATING / PHARMACEUTICAL
CHEMICAL / PETROCHEMICAL / BEVERAGE**

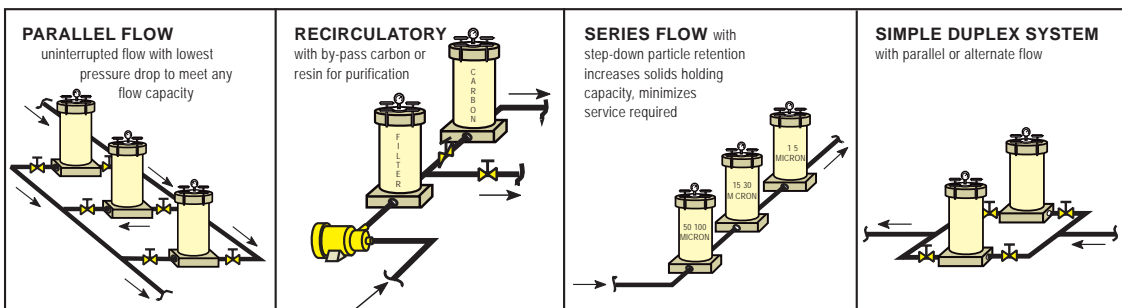
These filter chambers are designed for filtering process solutions where clarification will extend operating life and improve quality.

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.





SERIES 'GC' PLASTIC CARTRIDGE FILTER CHAMBERS

158

C-113_A

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

For: ACID / AQUEOUS / CHEMICAL / ELECTROPLATING / WASTE TREATMENT



SERIES 'GC'
MODEL CL480(4) SC 2 G3A

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:

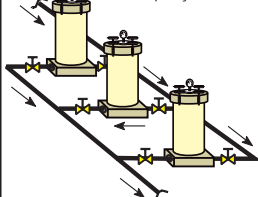
- **Will not leak at base.** Shell and base cemented together
- **Long service life** — will not rust or corrode
- **Easy to install and operate**
- **Improve finished goods quality**
Eliminate scrap and rework

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 $\frac{3}{4}$ " 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.

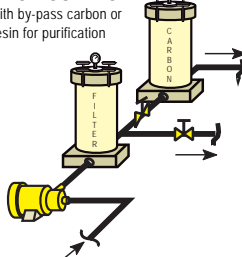
PARALLEL FLOW

uninterrupted flow with lowest pressure drop to meet any flow capacity



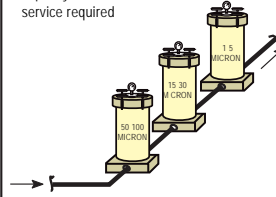
RECIRCULATORY

with by-pass carbon or resin for purification



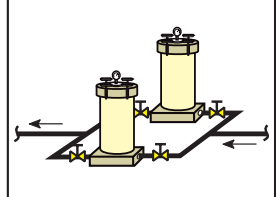
SERIES FLOW

with step-down particle retention increases solids holding capacity, minimizes service required



SIMPLE DUPLEX SYSTEM

with parallel or alternate flow





SERIES 'GH-HP' PLASTIC FILTER CHAMBERS

160

C-114_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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:

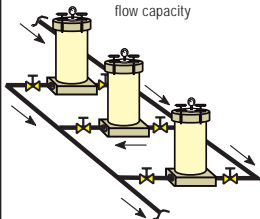
- **Non-metallic solution contact**
CPVC, PVC, polypropylene or pure PVDF construction
(See Chemical Resistance Chart)
- **Heavy duty construction**
 - High Pressure to 140 PSI (965 K Pa)
(See Pressure/temperature table)
 - SS tie rod cover closure with tee handles
 - Pressure gauge with gauge guard 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.

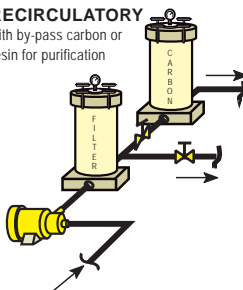
PARALLEL FLOW

uninterrupted flow with lowest pressure drop to meet any flow capacity

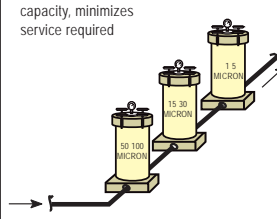


RECIRCULATORY

with by-pass carbon or resin for purification

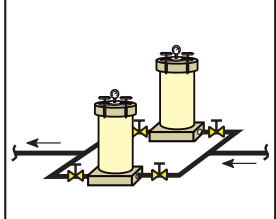


SERIES FLOW with step-down particle retention increases solids holding capacity, minimizes service required



SIMPLE DUPLEX SYSTEM

with parallel or alternate flow





SERIES 'HD' PLASTIC CARTRIDGE FILTER CHAMBERS

163

C-111_B

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 'HF' FILTER CHAMBERS

165

C-112_C

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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

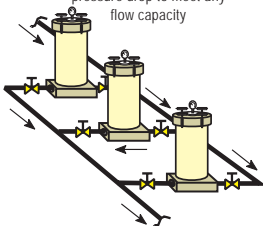
BENEFITS:

- 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



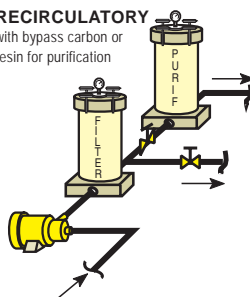
PARALLEL FLOW

uninterrupted flow with lowest
pressure drop to meet any
flow capacity

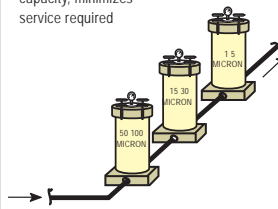


RECIRCULATORY

with bypass carbon or
resin for purification

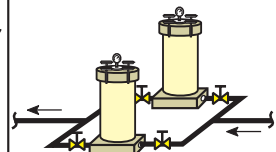


SERIES FLOW with
step-down particle retention
increases solids holding
capacity, minimizes
service required



SIMPLE DUPLEX SYSTEM

with parallel or alternate flow





SERIES 'WT' PLASTIC CARTRIDGE FILTER CHAMBERS

167

C-103_T

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



**Model
PL210S-2**

**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

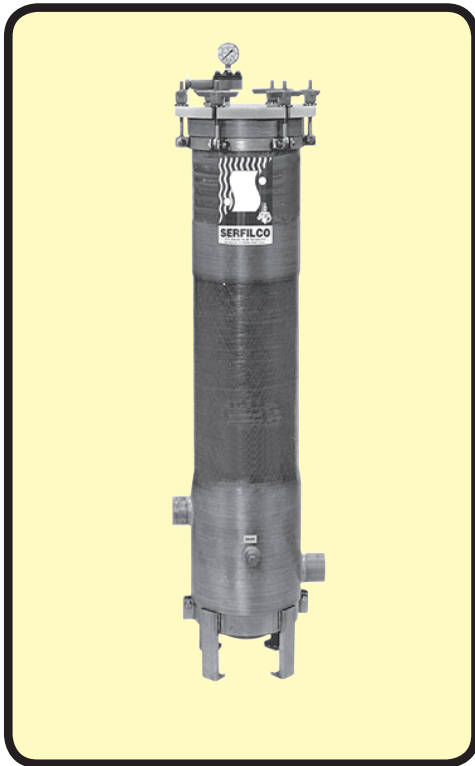


SERIES 'FRP' PLASTIC CARTRIDGE FILTER CHAMBERS

169

C-108_M

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 media¹:
- 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.

¹ Cartridges must be ordered separately.
Refer to Filter Media.



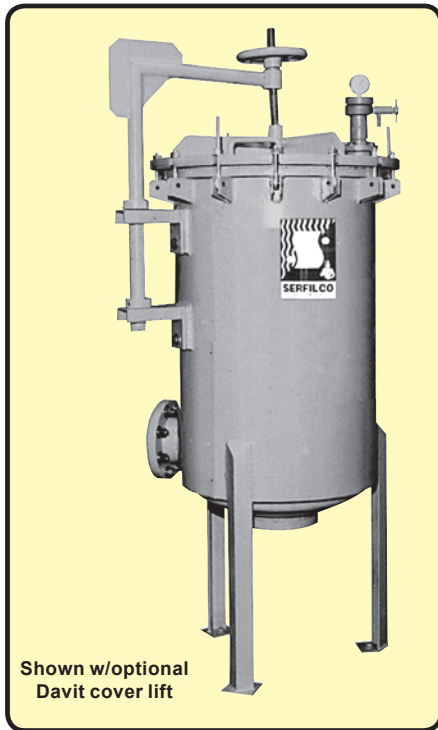


SERIES 'Y' RUBBER LINED STEEL CARTRIDGE FILTER CHAMBERS

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**

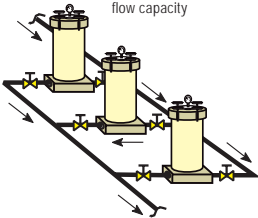
- **Non-metallic solution**
Rubber or Hypalon lined steel construction
- **Heavy duty construction**
75 PSI ASME code design standard
150 PSI code design optional
- **Large cartridge capacity & wide range of sizes**
24-445 of 10" cartridges
to 1557 sq ft. dirt holding capacity
- **High flow rates to 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.



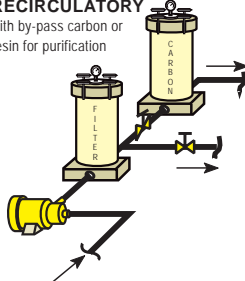
PARALLEL FLOW

uninterrupted flow with lowest
pressure drop to meet any
flow capacity

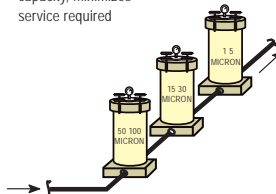


RECIRCULATORY

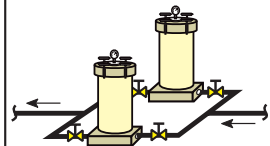
with by-pass carbon or
resin for purification



SERIES FLOW with
step-down particle retention
increases solids holding
capacity, minimizes
service required



SIMPLE DUPLEX SYSTEM
with parallel or alternate flow





SERIES 'YW' METAL CARTRIDGE FILTER CHAMBERS

174

C-208_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 ¹	CHAMBER DIAMETER (in)	FLANGE SIZE (in)	NUMBER OF COLUMNS	TOTAL NUMBER OF 10" CARTRIDGES ²	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

¹ Rubber lined steel chamber

² Using 50" length, 2 1/2" diameter cartridges

Specifications subject to change without notice



SERIES 410-430 BAG FILTER CHAMBERS

175

C-309

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



FOR FILTRATION & PURIFICATION OF PROCESS SOLUTIONS

FEATURES:

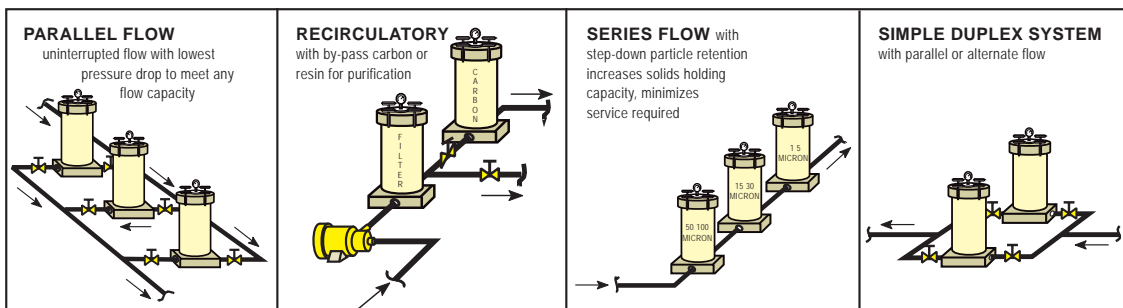
- **Non-metallic solution contact**
PVC, CPVC, polypropylene or PVDF construction
EPDM elastomers standard (Viton® optional)
- **Sizes to 2.25 square feet (0.23 sq/m)**
For flow rates to 20 GPM (75 LPM)
- **Top inlet – bottom outlet design**
- **Easy to service**
Clamp ring cover closure – No tools required
- **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.

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.

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

Because of their size, these chambers can provide a more economical solution for smaller filtration applications.





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**

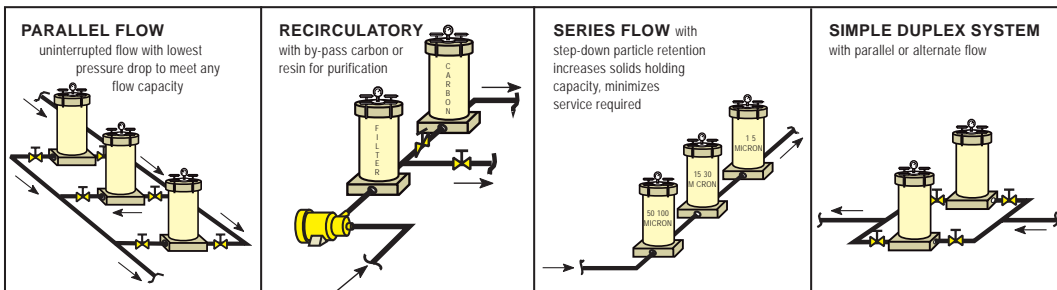
- **Non-metallic solution contact**
PVC, CPVC, polypropylene or PVDF construction
EPDM elastomers standard (Viton® optional)
- **Sizes to 5.0 square feet (0.5 sq/m)**
For flow rates to 40 GPM (151 LPM)
- **Bottom inlet – bottom outlet design**
Allows chamber to be hard piped
Change bags without disconnecting 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.





SERIES 1235 & 1255 BAG FILTER CHAMBERS

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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:

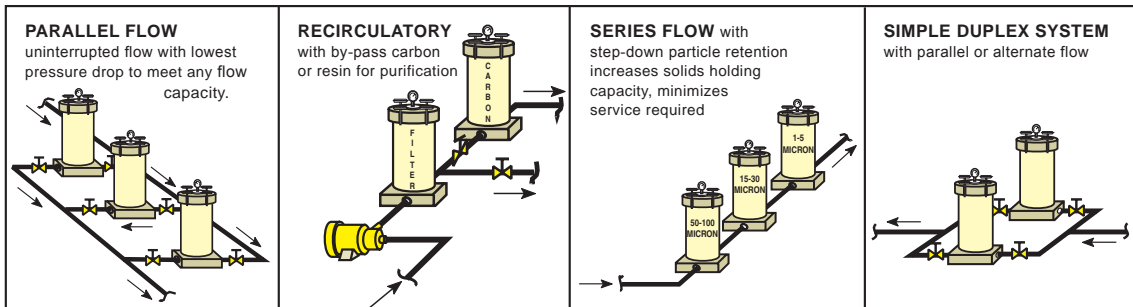
- **Non-metallic solution contact**
PVC, CPVC, or polypropylene construction
EPDM elastomer standard, Viton® optional
- **Sizes to 19.5 square feet (1.8 sq/m)**
For flow rates to 100 GPM (378 LPM)
- **Bottom Inlet – bottom outlet design**
Allows chamber to be hard piped
Change bags without disconnecting 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 'G' PLASTIC DISC FILTER CHAMBERS

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C-303_A

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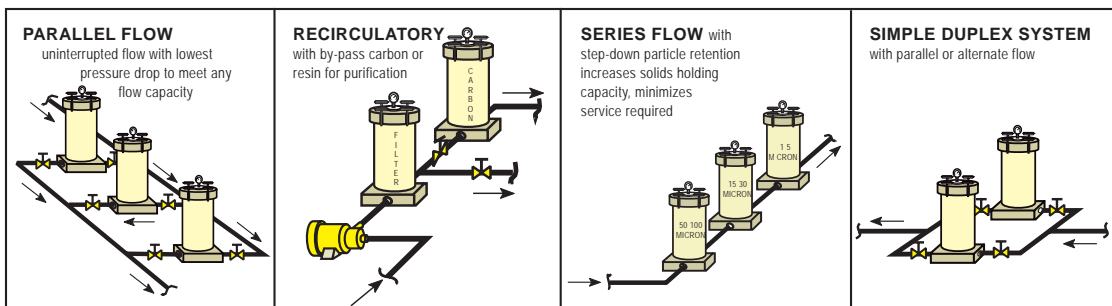
**FOR : WATER TREATMENT / FOOD PROCESSING
CLEANING / PHOTOGRAPHIC
ELECTROPLATING / PHARMACEUTICAL
CHEMICAL / PETROCHEMICAL / BEVERAGE**

- **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 ft² (1.4, 2.8, 4.2 m²) 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.



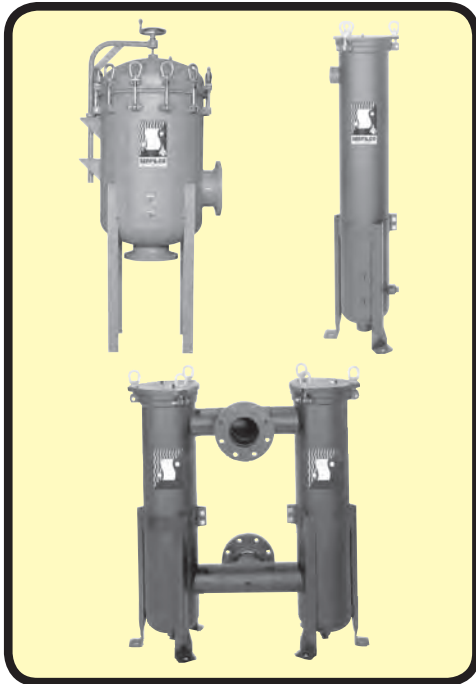


SERIES 'K' METAL CARTRIDGE & BAG FILTER CHAMBERS

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.

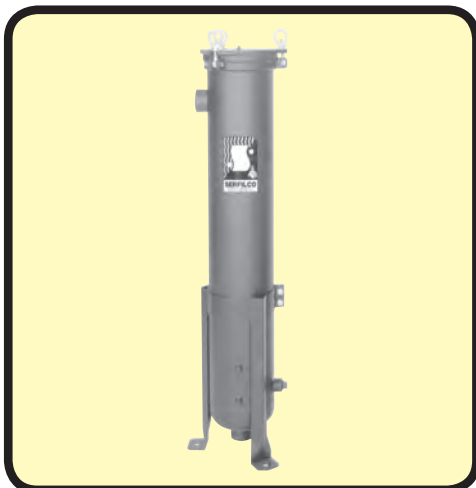
These chambers are ideal for either recirculatory or single pass filtration in either series or parallel flow configurations. They are offered in a wide range of sizes, styles and options to meet most applications that require a metal filter chamber.

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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MULTI-ROUND CARTRIDGE CHAMBERS

FEATURES:

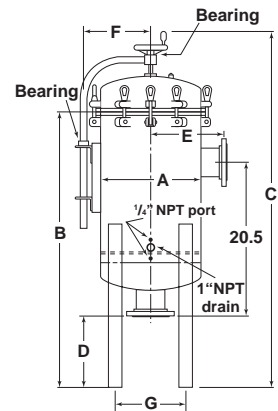
- Carbon steel or stainless steel construction
- EPDM elastomers standard (Viton optional)
- Bearing assisted davit assembly
- Swing bolt cover closure with eye nuts
- 150 PSI pressure rating
- 316 SS internals
- Differential, drain and vent ports
- Heavy duty support legs
- 2-part epoxy finish on carbon steel

Consult Sales Department for options

Filter cartridges ordered separately
see Bulletin M-109

TO ORDER, use Price Code Number

MODEL NUMBER ^{1,2}	NO. OF 10" CARTS.	DIA. A (in)	CONN. SIZE FLANGE	PRICE CODE NO ^{1, 2}	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



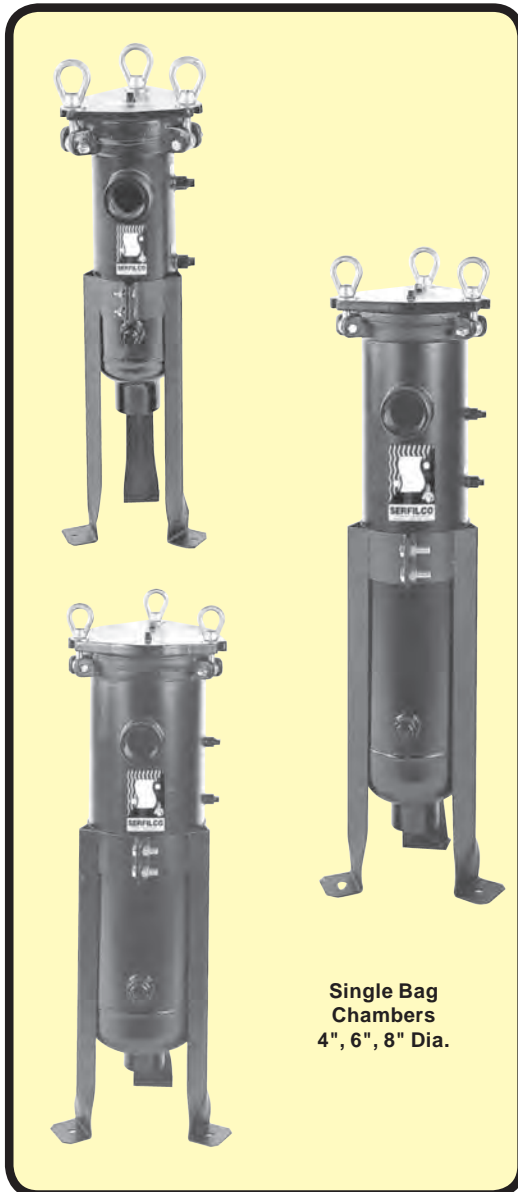
¹ Model and Price Code Number shown for carbon steel construction.

- 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.

² 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

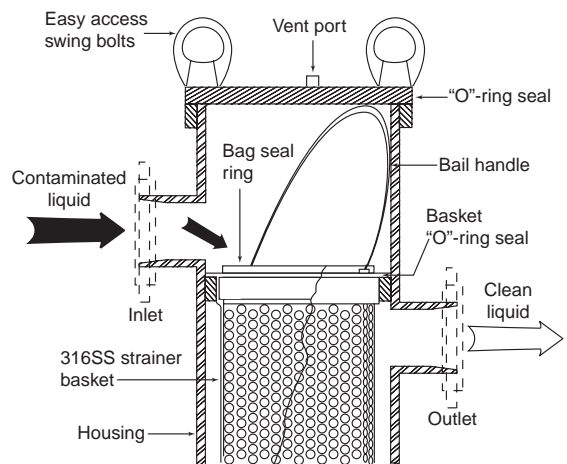
**BAG CHAMBERS****SINGLE BAG CHAMBERS**

Single Bag Chambers
4", 6", 8" Dia.

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

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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

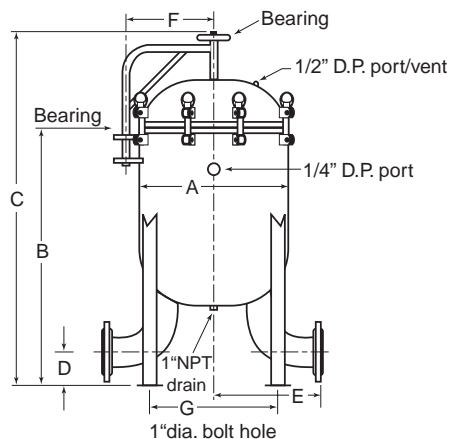
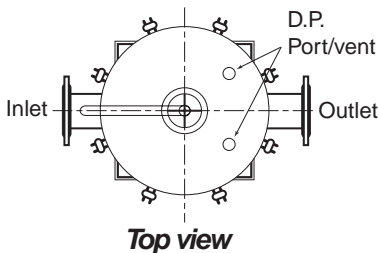
Consult Sales Department for options

Filter bags ordered separately



TO ORDER, use Price Code Number

MODEL NUMBER ^{1,2}	SURF. AREA ³ (sq.ft)	NUMBER OF BASKETS	DIA. A (in)	CONN. SIZE FLANGE	PRICE CODE NO. ^{1,2}	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

¹ 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.² For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.³ 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 ^{1,2}	SURF. AREA ³ (sq.ft)	CONN. SIZE	PRICE CODE NO. ^{1,2}
KBS882-3F	8.8	3" FNPT	78-1806

¹ 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.

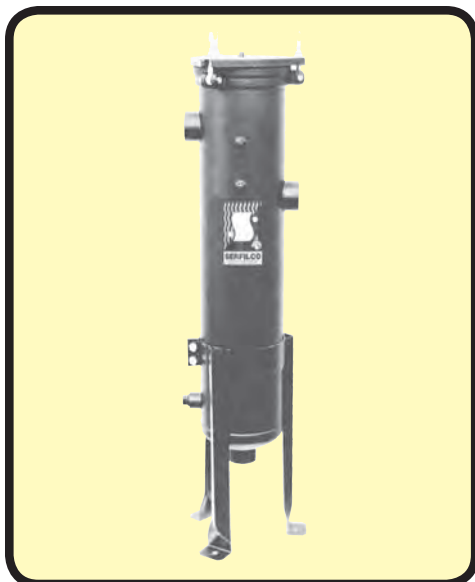
- for 316 SS change **S** in Model No. to **6SS** and

add **S6** to Price Code No.

² For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.

³ 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 ^{1,2}	SURF. AREA ³ (sq.ft)	CONN. SIZE	PRICE CODE NO. ^{1,2}
KBS100-2	5.5	2" NPT	78-1807

¹ 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.

² For Viton elastomers, add **-V** to Model No. and **V** to Price Code No.

³ Basket size 8" x 30" (#12)



**SERIES 'K' METAL FILTER CHAMBERS**

C-207_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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



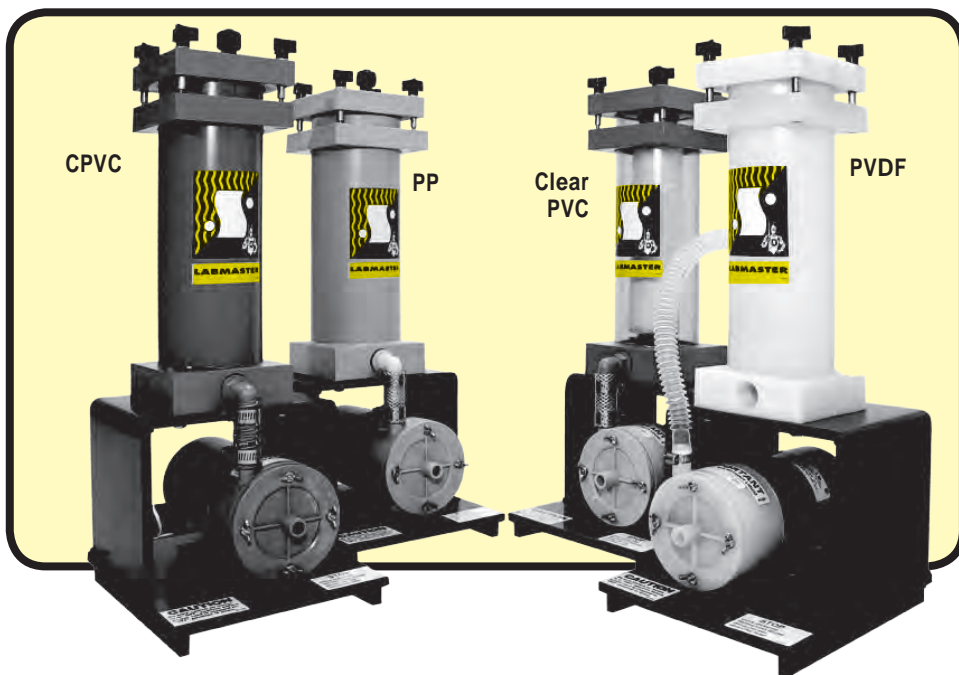
LABMASTER® FILTRATION SYSTEMS

194

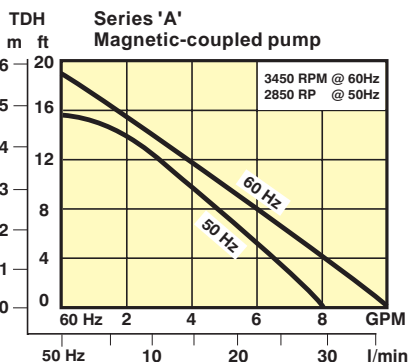
F-203_L

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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



LABMASTER® 'LX' FILTRATION SYSTEMS

196

F-212_E

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.



SPACE-SAVER® FILTRATION SYSTEMS

200

F-204_E

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



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.



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.





SPACE-SAVER® 'SM' FILTRATION SYSTEMS

207

F-214_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 'J' FILTRATION SYSTEMS

211

F-215_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 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.





SUPER SPACE-SAVER FILTRATION SYSTEMS

215

F-205_J

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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





GUARDIAN® FILTRATION SYSTEMS

219

F-301_K

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



- **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





BAG FILTRATION SYSTEMS

223

F-513_A

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

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.





GUARDIAN® DISC FILTRATION SYSTEMS

227

F-155_H

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.





MEGA-FLO® FILTRATION SYSTEMS

229

F-304_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.





SENTRY® FILTRATION PURIFICATION SYSTEMS

233

F-404_B

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

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





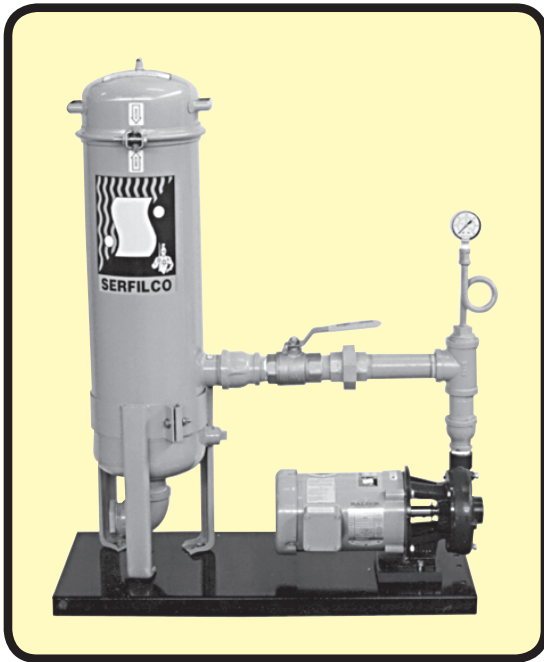
SERIES 'M' FILTRATION SYSTEMS

237

F-211_D

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

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 'HCl' (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.





KNIGHT FILTRATION SYSTEMS

239

F-217_A

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



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 'HCl', 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, 3ø, 3450 RPM, 60 Hz.





ADMIRAL[®] FILTRATION SYSTEMS

242

F-501_P

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



COMPACT, ECONOMICAL FILTRATION AND PURIFICATION

FOR IN-TANK OR OUT-OF-TANK INSTALLATION

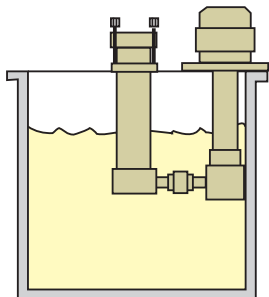
Admiral filtration systems are available for a wide range of tank sizes from laboratory scale to large production requirements. Corrosion resistance is achieved by the use of a variety of engineering plastics such as CPVC, PVC, PP and PVDF with stainless steel external parts.

- **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**

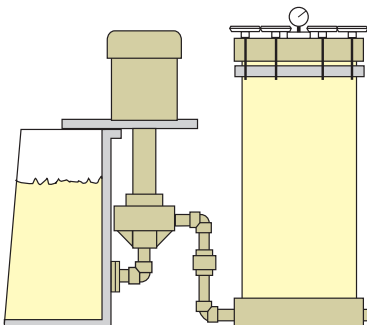
NOTE:

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.

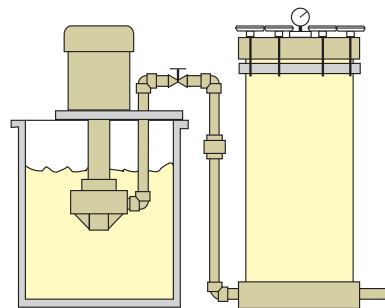
TYPICAL INSTALLATIONS



PUMP AND FILTER IN TANK



PUMP AND FILTER OUT OF TANK



**PUMP IN TANK AND
FILTER OUT OF TANK**



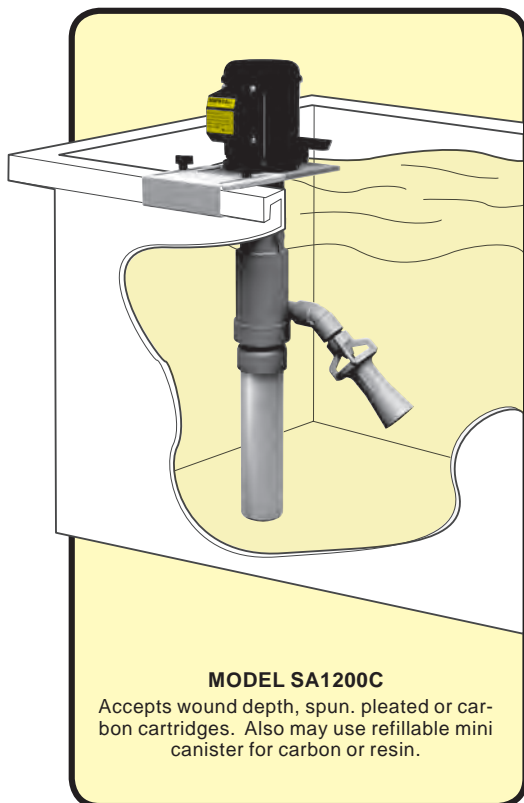
SUB-ADMIRAL[®] IN-TANK FILTRATION SYSTEMS

245

F-506_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.



ADMIRAL® 'EOL' FILTRATION SYSTEMS

247

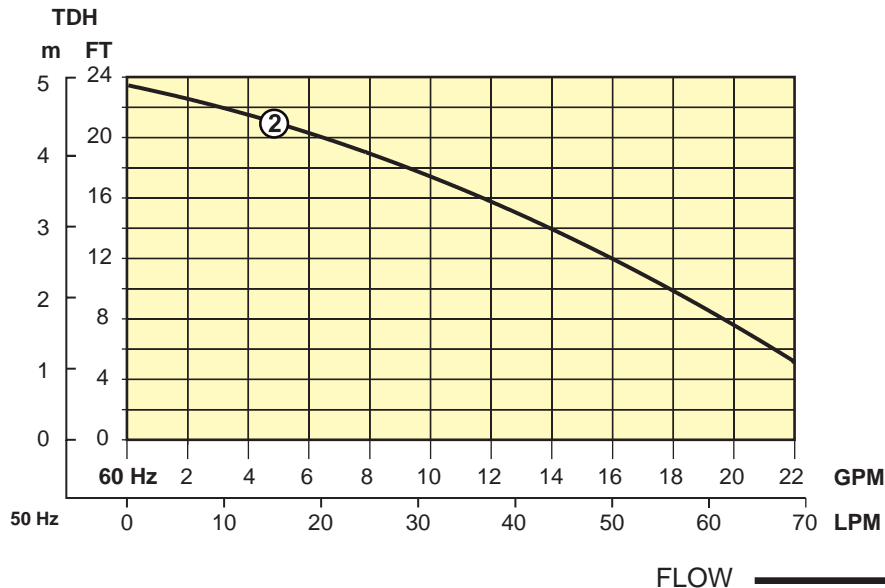
F-514

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

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**



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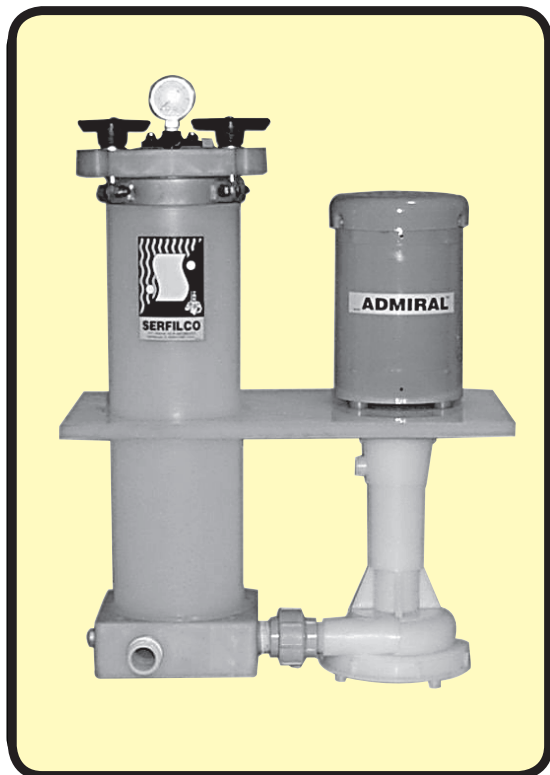
ADMIRAL 'EOS' FILTRATION SYSTEMS

249

F-510_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.



ADMIRAL® 'EHJ' FILTRATION SYSTEMS

251

F-508_C

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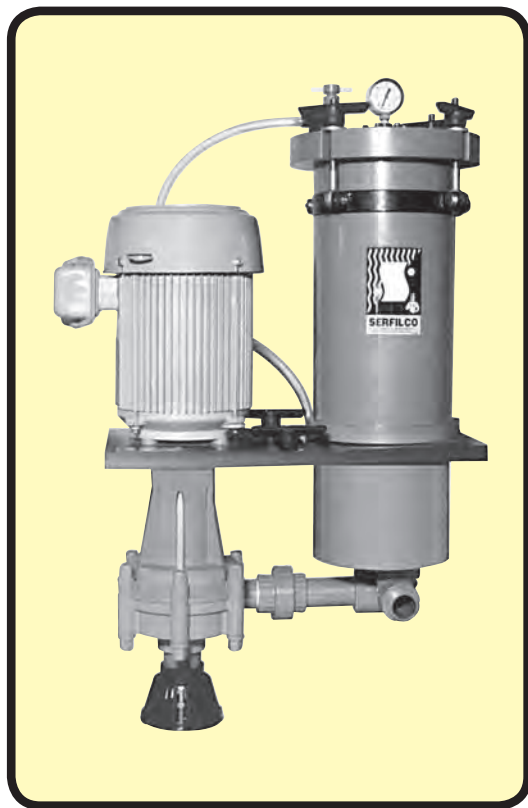
Electroplating, printed circuit board, fume scrubber

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.



TITAN FILTRATION SYSTEMS

F-455_N

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

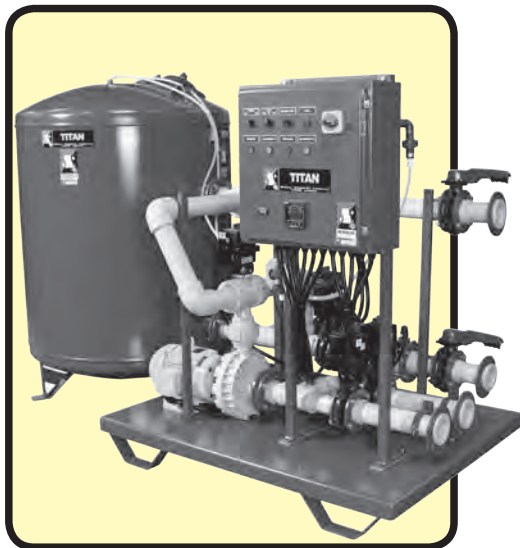
Automatic, Permanent media, High flow systems for — **Filtering Metal Finishing Process Solutions and Cleaners, and for Polishing Clarified Treated Waste Treatment Streams**

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.*

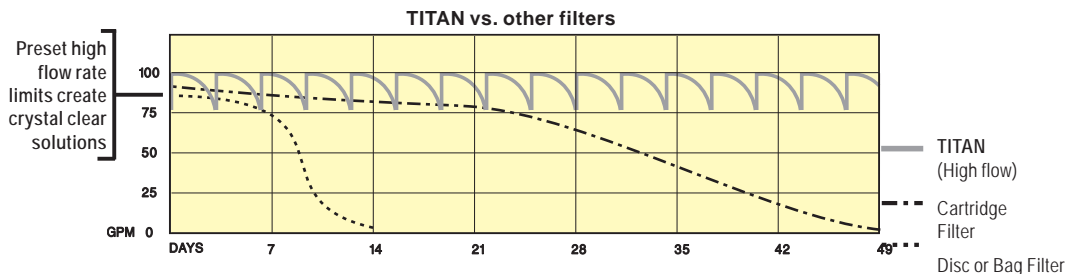


Unique to any other filtration system available, the TITAN series is the result of SERFILCO's ongoing commitment to developing "up flow" and "down flow" permanent media filtration technology.

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.





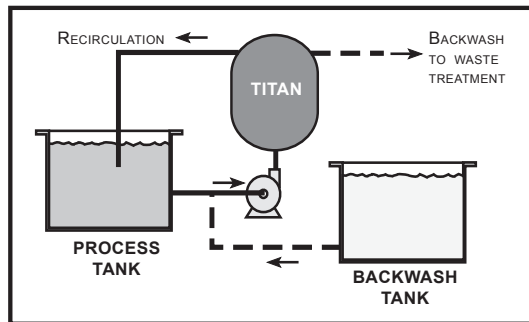
TITAN FILTRATION SYSTEMS For Metal Finishing Processes

F-455_N

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

- **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



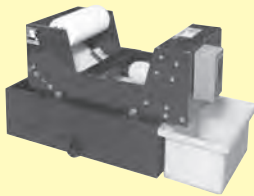
SERIES 'DF' FILTRATION SYSTEMS

259

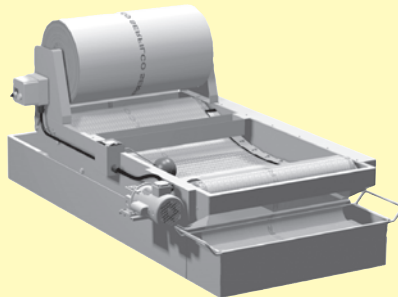
F-701_U

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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

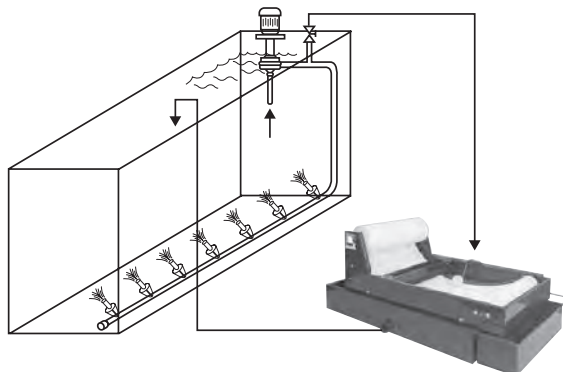
- **Unattended operation**
Automatically indexing media allows continuous filtration, even with varying input or solids content.
- **Choice of materials**
Carbon steel or 316 stainless steel
- **Sizes for any application**
From 1.5 to 113 sq. ft. of filter surface area
Flow rates to 650 GPM @ 80 micron
- **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 conveyer drive motor. Consumed fabric is advanced to the sludge box as fresh media is simultaneously indexed to the solution flow.

TYPICAL INSTALLATION





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 Inches	FILTERING AREA Sq. Ft.	SHIPPING WEIGHT Lbs.	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
RAYONIP	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

264

F-601_J

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Shown with
cover open

For recirculating filtration on a reservoir

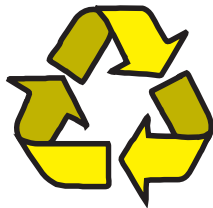
- COMPLETELY PRE-ENGINEERED AND ASSEMBLED
- QUICK CHANGE REUSABLE FILTER MEDIA MEANS FAST PAYBACK
- PERMITS WATER REUSE
- PREVENTS NOZZLE PLUGGING
- PROVIDES BETTER CLEANING
- PREVENTS POLLUTION
- NO BACKWASH REQUIRED
- AVAILABLE WITH AUTOMATIC ON / OFF PUMP CONTROL

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.² 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

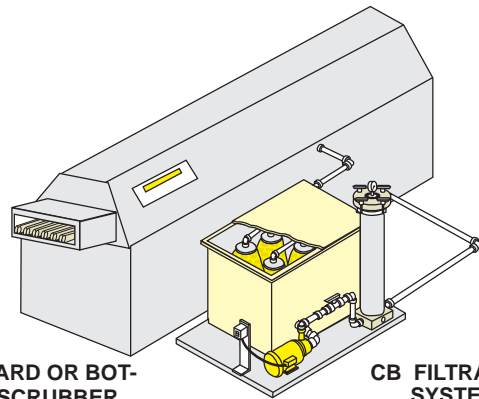
attached to a manifold with cam-lock quick-disconnect couplings for minimal down-time when servicing. The manifold includes an overflow vent which prevents back-up of system flow.

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



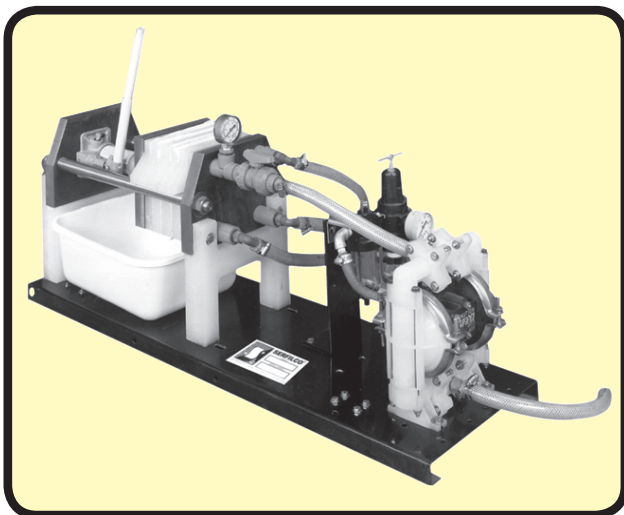
PC BOARD OR BOT-
TLE SCRUBBER

CB FILTRATION
SYSTEM



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

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 cm³) or .02 cu. ft. (566 cm³)
 Area per frame - 17in² (110 cm²)
- 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/cm²)

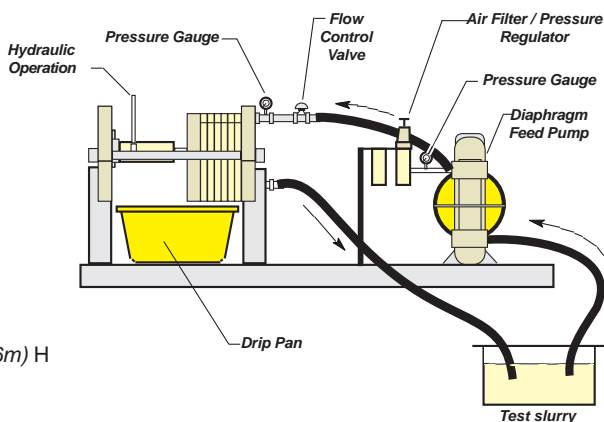
The **Lab Filter Press** is designed for lab analysis and small batch production. This press is also very useful for testing for upscaling to full production-size semi-automatic or manually operated presses. Includes polypropylene plates, filter cloth, air diaphragm pump, pneumatic controls, pressure 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

LAB FILTER PRESS	PRICE CODE NO.
MODEL .02 - 7PPMH	43-0857
REPLACEMENT CLOTHS (4 Req'd.)	PRICE CODE NO.
SF - 7 x 7	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)





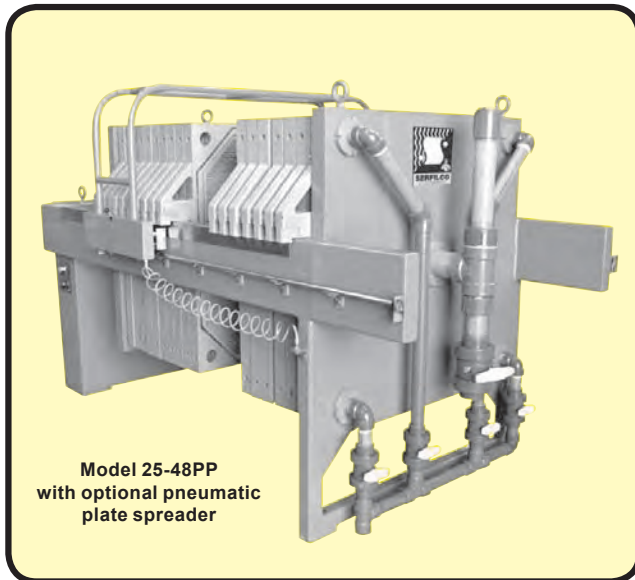
RECESSED PLATE FILTER PRESS

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F-705_T

12

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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

- 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.
- Percent by weight of filterable suspended solids.
- Average dry weight per cubic foot for a particular sludge (obtained from table.)

CALCULATIONS:

$$\frac{A \times B \times 8.33 \text{ LBS./GAL.}}{C} \quad \text{OR} \quad \frac{(\text{U.S. GALS./ 8 HRS.}) \times (\% \text{ SUSPENDED SOLIDS}) \times 8.33 \text{ LBS./GAL.}}{(\text{AVERAGE LBS. DRY WT. / CUBIC FT.})} = \text{CU. FT. CAPACITY FOR A DURATION}$$



OIL FILTRATION and RECONDITIONING SYSTEMS

270

O-104_G

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

13



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-FILTER¹ 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[®] 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[®] sight glass and coalescing element².

¹ For liquid temperatures up to 200°F. ² For liquid temperatures up to 160°F.

**OIL FILTRATION / RECONDITIONING SYSTEMS**

O-104_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431**13****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
- Ideal for field service personnel
- Designed motor starter (electric drive models)

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.**HAND-CARRY**

Includes protective hood and sturdy carrying handle. Painted machine tool gray.

PRICE CODE NO.	MODEL	FLOW GPH	NO. OF CARTS.*	FILTER SURFACE AREA	SUCTION x DISCHARGE HOSE SIZE	MOTOR H. P.	DIMENSIONS L x W x H Inches	SHIP WT. Lbs.
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		2 - 10"	7.0 sq. ft.			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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PORTABLE

	PRICE CODE NO.	MODEL	FLOW GPH	NO. OF CARTRIDGES *	FILTER SUR- FACE AREA	SUCTION x DISCHARGE HOSE SIZE	MOTOR H.P. / SCFM @ PSI	DIMENSIONS L x W x H Inches	SHIP WT. Lbs
Electric drive models	1405 B	S1(718)1/2 BTS6-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) 1/2 BTS3-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) 1/2 BTS6-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) 1B TS9-P-ST4-PS	540	15 - 10"	52.5 sq. ft.	1" x 1"	1	18 x 17 x 52	130
Air drive models	1437	S1(718)1/2B PPTF1/2-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

Electric drive models	1416 A	S1(718) 1/2S TS6-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) 1/2S TS3-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) 1/2S TS6-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) 1S TS9-PS	540	15 - 10"	52.5 sq. ft.	1" x 1"	1	30 x 13 x 47	130
Air drive models	1441	S1(718) 1/2S PPTF1/2-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

**OIL RECONDITIONING STATIONS**

O-104_G

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431**13****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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14

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.

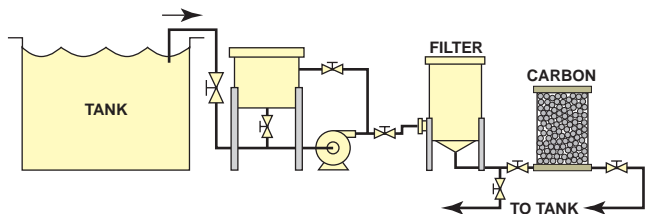
Carbon purification chambers offer a simple, low-cost, but effective method of removing organic impurities from plating baths and other chemical solutions.

- **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 SYSTEMS

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R-103_L

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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**

14



Labmaster



Space-Saver



Guardian

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.



ION EXCHANGE RESIN CHAMBERS and SYSTEMS

277

R-201_M

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14



GUARDIAN® "SPECIAL"



SPACE-SAVER®

LABMASTER®

- **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, CO₂ 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.

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431**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 ¹ (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 ²	100 - 480	.5	30	78-1637
PCL640RS-1 ²		.7	50	78-1638
PL1230RSIO-1½-G3A	200 - 480	1.8	90	78-1943P
PL1250RSIO-1½-G3A		3.0	100	78-1945P

¹ Flow rates may vary as indicated. The lower value is maximum capacity for the most efficient recovery from each gallon processed.

² 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 ³ (cu. ft.)		FLOW RATE ⁴ (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.

³ 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.

⁴ 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.**



COALESCING SYSTEMS

F-303_F

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

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.

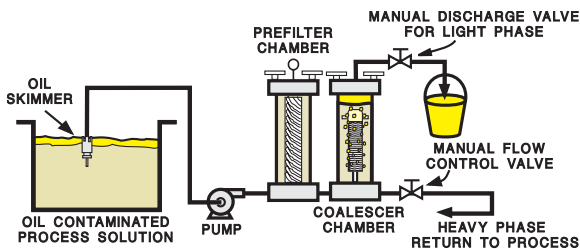
Standard coalescing systems include pump, * prefilter and coalescing chamber with manual light and heavy phase discharge valves. Prefilter media of 5 to 10 micron is required to protect coalescing element. Selecting a system with greater prefilter capacity will reduce prefilter cartridge and coalescing 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.*

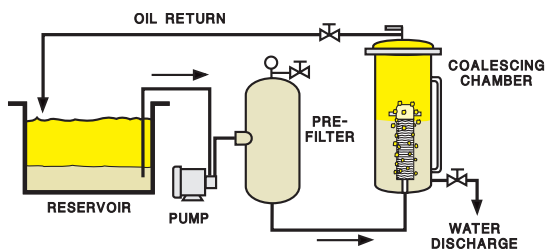
Plastic System

Steel System

OIL SEPARATION FROM AQUEOUS RESERVOIR



WATER SEPARATION FROM OIL RESERVOIR





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14

SKIM-DISC



CONTINUOUSLY REMOVES OILS, GREASE AND FLOATING CONTAMINANTS FROM WATER, COOLANTS, CLEANERS AND OTHER AQUEOUS SOLUTIONS

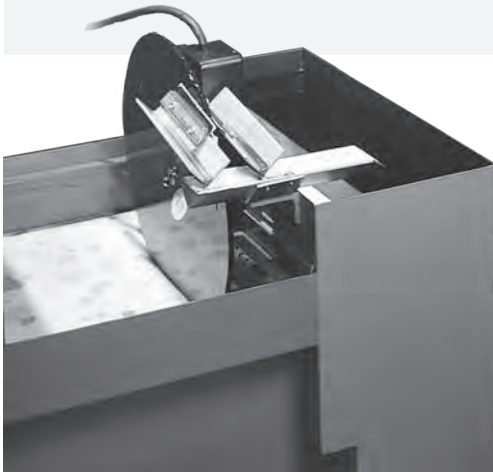
- Skim rate - 1.5 GPH
- Phenolic or stainless steel disc
For temperatures to 180°F
- Lightweight, easy to install, trouble free

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.

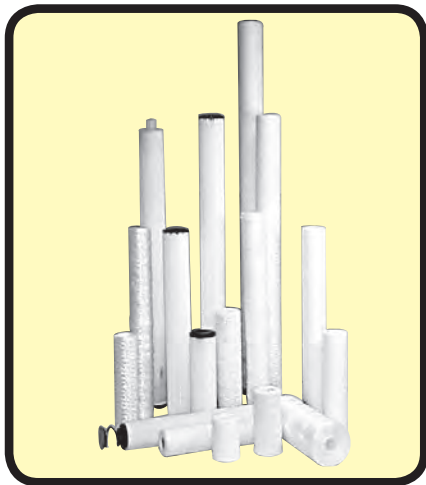


INSTALLATION

- 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.



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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.

15

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.



MAXI-DEPTH WOUND FILTER CARTRIDGES

M-109_N

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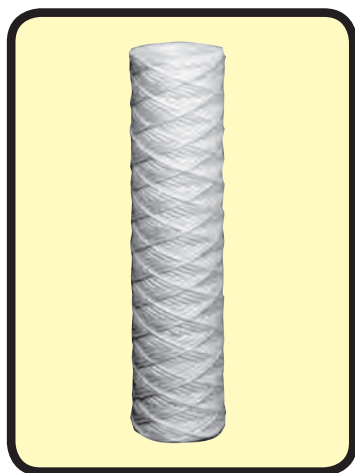
POLYPROPYLENE W/ POLYPROPYLENE CORE

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



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	5	40"	10
005U4U		4"	60
05U10U		10"	30
05U20U		20"	15
05U30U		30"	15
05U40U	10	40"	10
010U4U		4"	60
010U6U		6"	30
10U10U		10"	30
10U20U		20"	15
10U30U	15	30"	15
015U4U		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



VALUWOUND POLYPROPYLENE DEPTH CARTRIDGES

M-109_N

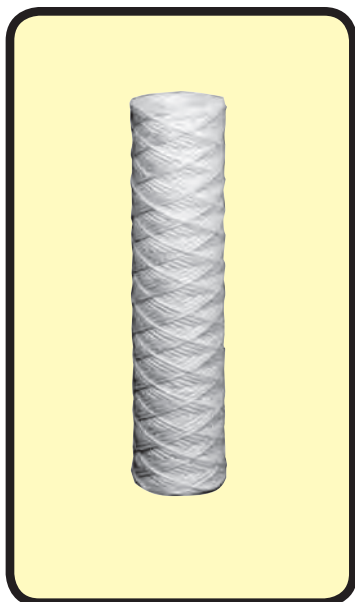
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WATER / ACIDS / BASES

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 $2\frac{3}{8}$ " O.D.
- Continuous molded cores in 10", 20", 30" or 40" lengths.
- Excellent temperature and chemical compatibility
- Economically priced



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 (800) 323 - 5431**FREE OF EXTRACTABLES, LUBRICANTS,
BINDERS, ANTI-STATIC AND SIZING AGENTS.****APPLICATIONS****Plating Solutions
Electronics
Coatings****Photographics
PC Board Mfg.
Chemicals****D.I. & Tap Water
Pharmaceuticals**

- **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**

15

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

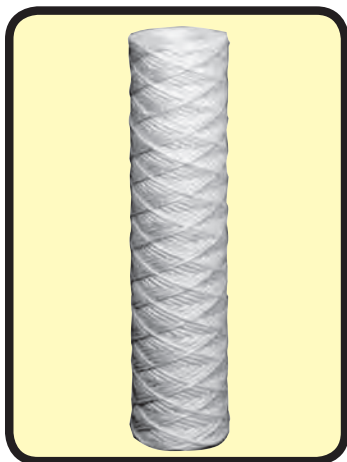


DEPTH WOUND FILTER CARTRIDGES cont'd

M-109_N

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

15



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.

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/cm²)



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/cm²). 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

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431**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. (.93m²) 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

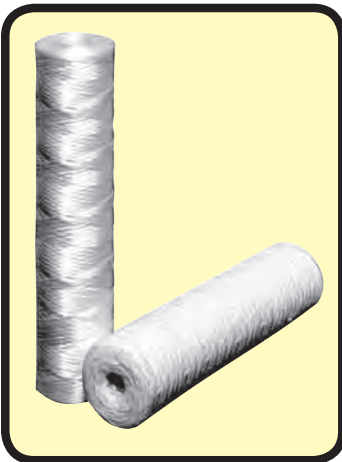
MODEL	MICRON RETENTION RATING	CARTON QTY *
0.5U9.8U4	.5	10
1U9.8U4	1	
5U9.8U4	5	
10U9.8U4	10	

* 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

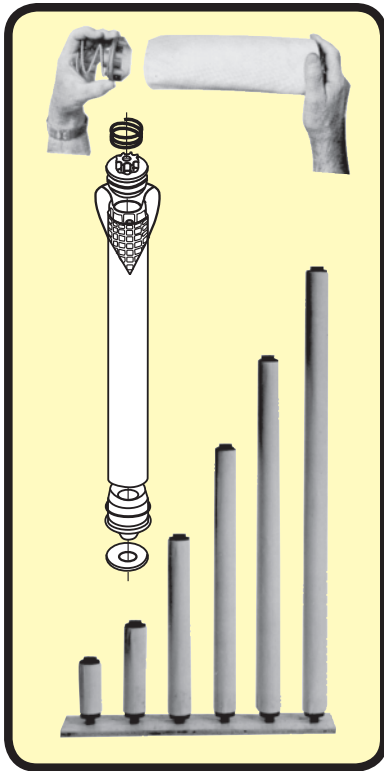
MODEL	MICRON RETENTION RATING	CARTON QTY *
1U18A4	1	5
3U18A4	3	
5U18A4	5	
10U18A4	10	
20U18A4	20	
30U18A4	30	

* Minimum order carton of 5.



RE-USABLE SLEEVE-TYPE FILTER CARTRIDGES

M-109_N

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

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

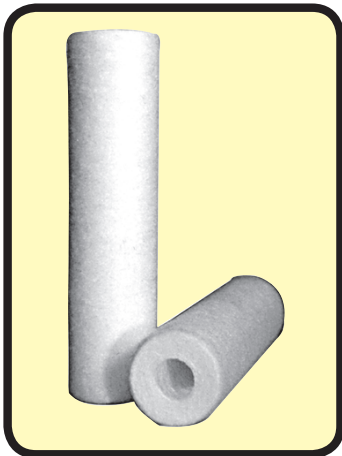
SLEEVE LENGTH X 2-1/2" DIA.	SURFACE AREA SQ. FT.	FOR CHAMBER STYLE		REPLACEMENT SLEEVE ONLY
		SINGLE COLUMN	MULTIPLE COLUMN	
		PRICE CODE NUMBER		
10"	0.6	99-0701	99-0704	88-0161 A
20"	1.2	99-0702	99-0705	88-0162 A
30"	1.8	99-0703	99-0706	88-0163 A
40"	2.4	99-0715	99-0707	88-0164 A
50"	3.0	—	99-0708	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.

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



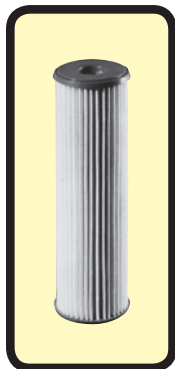
PLEATED FILTER CARTRIDGES

299

M-307_AD-2

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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./cm²) 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**

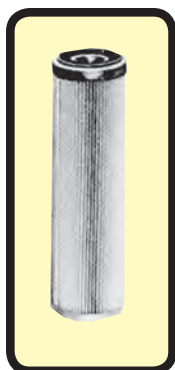
MODEL	LENGTH	AREA	
		FT ²	m ²
PL-P__x 9¾"	9¾"	4	.37
PL-P__x 19½"	19½"	8	.74
PL-P__x 29¼"	29¼"	12	1.1

* 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 ² D)		@ 1 PSID (.07 kg/cm ² D)	
		U.S GPM	LPM	U.S GPM	LPM
.45	2	3	11	6	23

Polypropylene Core

MODEL	MICRON	AREA		LENGTH
	NOM.	FT. ²	m ²	
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. ²	m ²	
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.

15



TRI-PLEATED FILTER CARTRIDGE

300

M-207_W

2900 MacArthur Blvd Northbrook, IL USA 60062 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

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/cm²D)
180°F @ 10 PSID (82°C @ .7 kg/cm²D)

Maximum recommended operating differential pressure:

60 PSID (4.2 kg/cm²D)

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			PER 10" CARTRIDGE			
		NOM.	ABS.	FT.²	m²	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

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

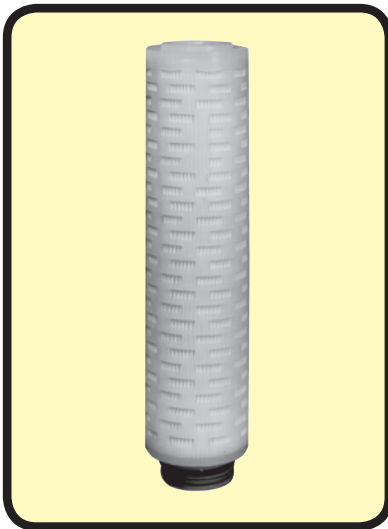
Polypropylene with polysulfone membrane

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

15

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

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

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

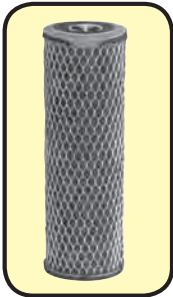
on a polypropylene core. Maximum operating temperature 200°F (93°C). Flow rate 2½ U.S. GPM (9.5 LPM) per each 10" length.

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**

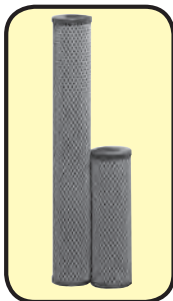
M-305_AB

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

304

M-310_L

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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



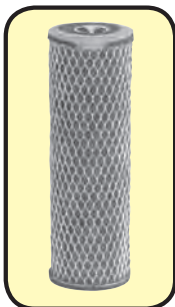
CARBO-FYNE W

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



15

**CARBON CARTRIDGES WATER**

M-310_L

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **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

SPRING
LOADED**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

12 x 30 MESH STANDARD	LBS	PCN
	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 (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:

- Precise thickness control to $\pm .005"$.
- A more uniform porous structure and permeability.
- 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.² per 10" length
Maximum pressure: 50 Δ 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 Δ 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 Δ 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:

- Extended filter area for each 10" length.
- Rigid construction and uniform porosity.
- 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.², 20" cart. = 3.6 ft.², 30" cart. = 5.5 ft.²
Maximum pressure: 50 Δ 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 Δ 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.

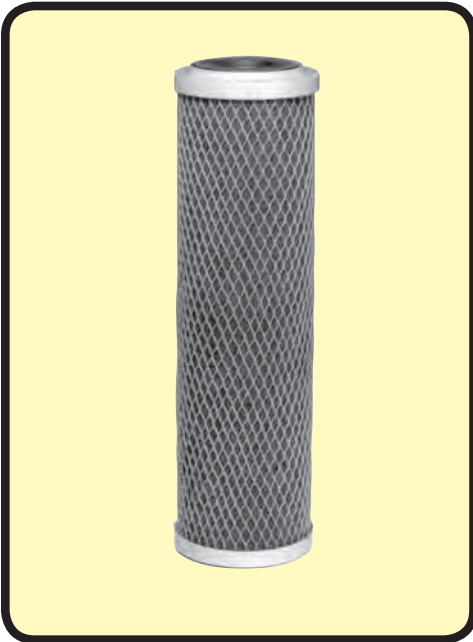


LEAD REMOVAL CARTRIDGES

307

M-308_D

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (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.

15

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



FILTER CARTRIDGES INDUSTRIAL

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

FOR ALL TYPES OF OIL FILTERING — FUEL, LUBE, HYDRAULIC, CUTTING OILS, QUENCH, TRANSFORMER, DIELECTRIC & COALESCING



PL718



PL310

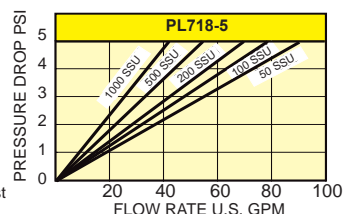
TYPE 'PL' PLEATED PAPER

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



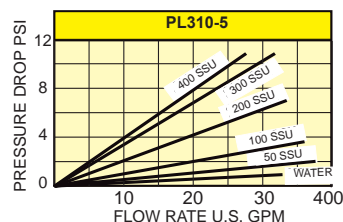
SERFILCO
PLEATED PAPER
CARTRIDGES

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.

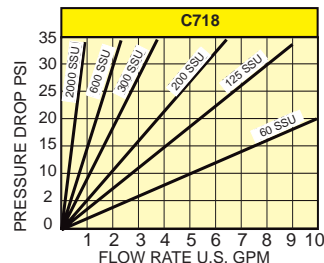
MODEL (MATERIAL)	MICRON
C718 (Cotton/stl. core)	10

2-1/8" I.D. x 6-3/4" O.D. x 18" lg.

4 & up shipped full carton quantity (4/ctn.)

Quantity 1-8 F.O.B. Northbrook, Illinois

12 & up F.O.B. East Coast



**FILTER CARTRIDGES CLAY (FULLER'S EARTH)**

M-206_W

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.

**F718
COTTON BAG****F718C
METAL CANISTER****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.
- **Attapulgit 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.

COTTON BAG**F718** (2-1/8" I.D. x 7" x 19-1/4" lg.)

Bag type to replace:

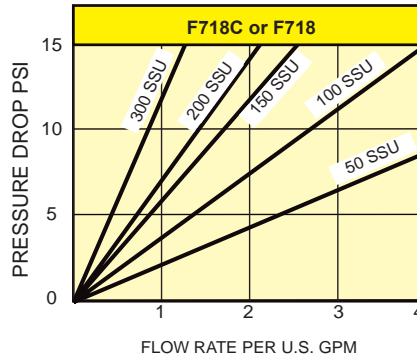
CFD 6825, Fram C727, Keene LEB 718,
Velcon CO-719B**F718-4** (2-1/4" I.D. x 6-3/4" x 18-1/4" lg.)

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.



CHEMICAL RESISTANCE GUIDE FILTER MEDIA

TM-110_A

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

	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 ²	65U	65 ²	65U	—	—	70 ²	70U	65 ²	65U
Sulfuric acid, 0-10%	100 ²	100U,S	OK	S	145 ²	145U,S	140 ²	140U,S	—	—	145 ²	145U,S	OK ³	135U,S	100 ²	100U,S
Sulfuric acid, 10-75%	NR ⁷	NR	OK	S	65 ⁷	65U	NR ¹¹	NR	NR	NR	65 ⁷	65U	135 ⁷	135U	NR ¹¹	NR
Sulfuric acid (conc.)	NR ¹²	NR	100	S	NR ¹²	NR	NR ¹²	NR	NR	NR	NR ¹²	NR	65 ¹¹	65U,S,A	NR ¹²	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 ³	65U,S,A	65 ³	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 ³	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 (xylol)	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.



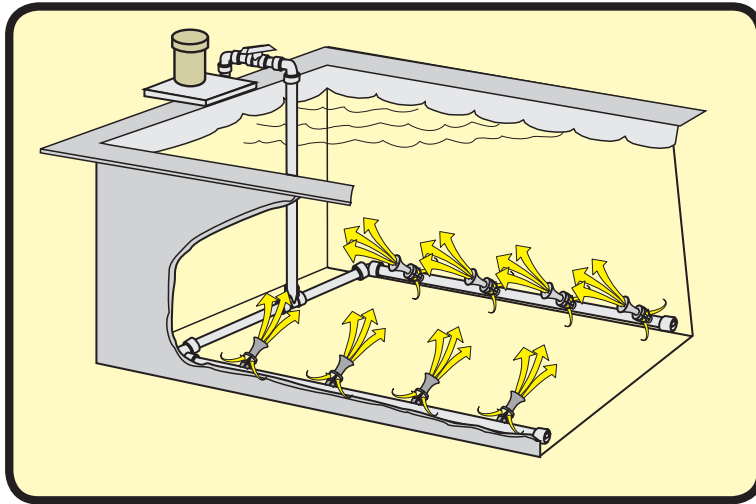
SER-DUCTOR® PUMPED AGITATION

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**



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

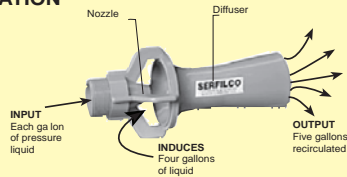




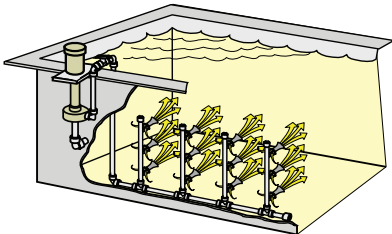
2900 MacArthur Blvd. Northbrook, IL USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

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.

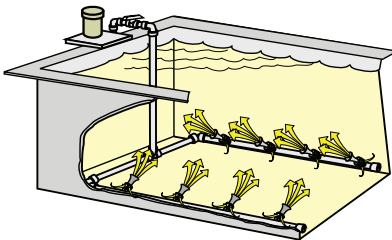


TYPICAL APPLICATIONS



FOR PRINTED CIRCUIT BOARDS AND RACK PLATING

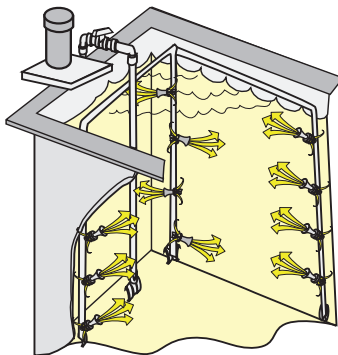
SER-DUCTOR agitation in printed circuit board manufacturing and rack plating applications enhances plating solution flow across the board surface. Carefully engineered clusters of eductor nozzles sweep away cathode films swiftly allowing faster plating at lower voltages with much higher current densities. 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.)



SER-DUCTOR® AGITATION SYSTEMS ORDERING INFORMATION

A-407_L

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

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

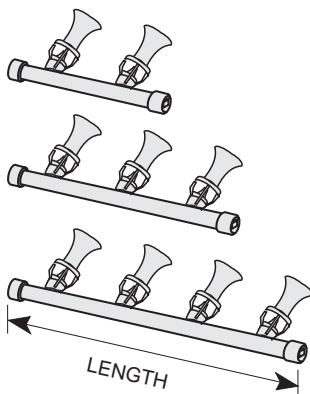
SER DUCTOR COUPLING/NOZZLE ASSEMBLY

CONNS		DIMENSIONS	
MNPT		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	PCN
3/4"	33-7003	33-6098	—
1"	33-7004	33-6022	—
1-1/4"	33-7005	33-6099	33-6024
1-1/2"	—	33-7000	33-6025
2"	—	33-7001	33-6026

PRE-ENGINEERED SYSTEM



PIPE SIZE	EDUCTORS		LENGTH		PP/CPVC		PVDF/PVDF	
	MNPT	No.	Size	Inches Meters	Model	PCN	Model	PCN
1"		2	3/8"	24 .6	S-E1	33-6006	S-E1K	33-6006 K
		3		36 .9	S-E2	33-6007	S-E2K	33-6007 K
		4		48 1.2	S-E3	33-6008	S-E3K	33-6008 K
1-1/4"		2	3/8"	24 .6	S-E4	33-6009	—	—
		3		36 .9	S-E5	33-6010		
		4		48 1.2	S-E6	33-6011		
1-1/4"		2	3/4"	24 .6	S-E7	33-6012	—	—
		3		36 .9	S-E8	33-6013		
		4		48 1.2	S-E9	33-6014		
1-1/2"		2	3/8"	24 .6	S-E16	33-6081	S-E16K	33-6081 K
		3		36 .9	S-E17	33-6082	S-E17K	33-6082 K
		4		48 1.2	S-E18	33-6083	S-E18K	33-6083 K
1-1/2"		2	3/4"	24 .6	S-E10	33-6015	S-E10K	33-6015 K
		3		36 .9	S-E11	33-6016	S-E11K	33-6016 K
		4		48 1.2	S-E12	33-6017	S-E12K	33-6017 K
2"		2	3/8"	24 .6	S-E19	33-6084	S-E19K	33-6084 K
		3		36 .9	S-E20	33-6085	S-E20K	33-6085 K
		4		48 1.2	S-E21	33-6086	S-E21K	33-6086 K
2"		2	3/4"	24 .6	S-E13	33-6018	S-E13K	33-6018 K
		3		36 .9	S-E14	33-6019	S-E14K	33-6019 K
		4		48 1.2	S-E15	33-6020	S-E15K	33-6020 K

All SER-DUCTOR systems can be connected to achieve extended length assemblies.

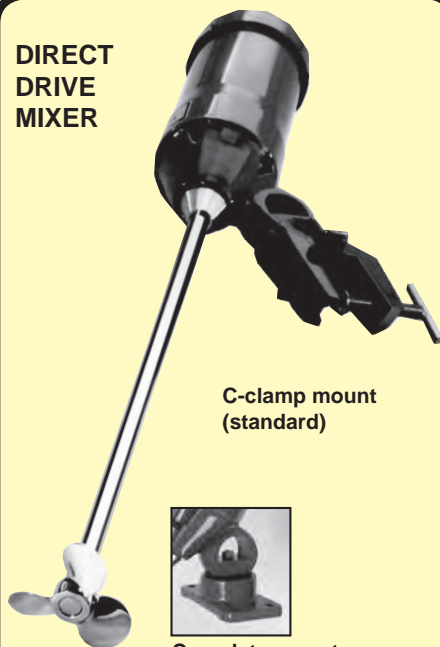


PROCESS MIXERS

A-403_J

2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (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

16

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.

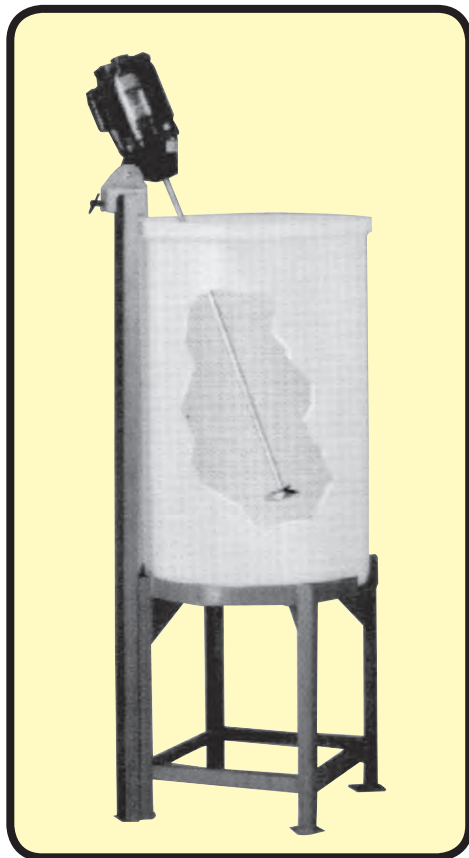


Do not use on flammables or in a combustible atmosphere.
Consult Sales Dept. for mixers designed for this purpose.



MIXING STATIONS

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



- **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

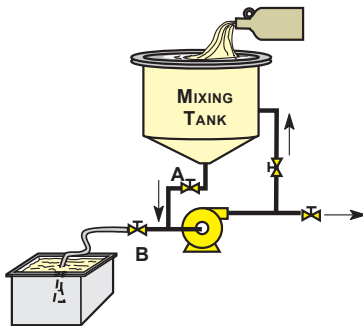
2900 MacArthur Blvd. Northbrook, IL. USA 60062 WWW.SERFILCO.COM (800) 323 - 5431

***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

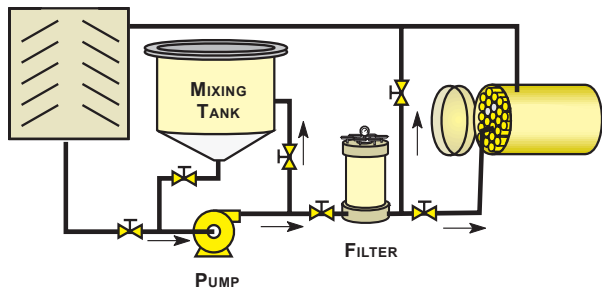


PUMP PRIMING

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	<p>MIXING TANK with piping, valves and base assembly.</p> <p>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.)</p> <p>Shipping weight – approximately 100 lbs. (45 kg)</p> <p>Order -SV system to match pump suction connection:</p> <ul style="list-style-type: none">with 1" NPT suction and discharge valveswith 1½" NPT suction and discharge valveswith 2" NPT suction and 1½" NPT discharge valves	<p>48-0972</p> <p>48-0962A</p> <p>48-0973</p>
-P	<p>PORTABLE with two fixed wheels, two swivel casters and pull handle.</p> <p>Note: If double seal is required, be sure to use self-contained water recirculating pump kit for flushing. (See separate bulletin.)</p>	<p>O-2042</p>
HOSE	<p>HOSE Select necessary length of hose and clamps for suction and discharge.</p>	<p>See separate bulletin</p>

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 (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

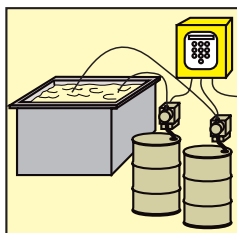
Programmable output limit timers prevent run-away chemical addition. Digital Interlock Input may be used from a flow switch or level input to prevent chemical addition based on a stagnant sample, or control of an empty batch tank.

Simple, Integrated Data Collection

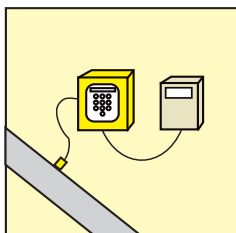
Download stored data from the controller to a USB stick with the press of a button. Use the data to simply and easily validate system performance, document compliance, and reduce liability. The data and event logs show pH/ORP and temperature values, as well as accumulated chemical feed and relay activation 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.



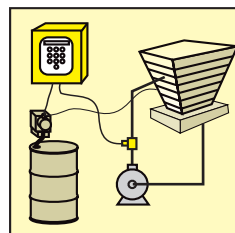
PROCESS CONTROL



WASTE STREAM
MONITORING



WASTE NEUTRALIZATION/
RECYCLING



COOLING
TOWER



ANALOG pH and ORP CONTROLLERS, RECORDERS and MONITORS

328

A-302_F

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

For use in the addition of acids and alkalies 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 chromating 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

FEATURE	MODEL 440 pH	MODEL 443 ORP	MODEL 436-pH	MODEL 436-ORP
Accuracy	Meter ± 0.2 pH	Meter ± 15 mv	Meter ± 0.1 pH	Meter ± 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 ± 0.2 pH	0 - 1000 mV
Setpoint stability	± 0.05 pH per month	± 5 mV per month	± 0.05 pH per month	± 5 mV per month
Input current	2 picoamperes maximum			
Temperature compensation	0° C to 100° C in 2° C divisions			
pH electrode connector	Teflon® 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.	

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



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

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.

TO ORDER, use Price Code Number			
MODEL	POWER PRICE	CODE NO. SHIPPING	WEIGHT
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.

TO ORDER	
MODEL	PRICE CODE NO.
434	56-0176
111	56-0177



MODEL 111 pH MONITOR

FEATURE	MODEL 400	MODEL 434	MODEL 111
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

ITEM AND DESCRIPTION APPLICABLE TO	MODEL NOS.	PRICE CODE NO.
DUAL CONTROL OPTION - 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
ADJUSTABLE CYCLE TIMER - 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
BNC to BNC EXTENSION CABLE (to 100 ft. maximum)	400, 432, 436, 440, 443	Base 56-0207 + 56-0207A per ft.
pH / ORP CHART PAPER (inkless 30 day) - 50 divisions, 63 foot roll	400, 432, 437	56-0211
ELECTRODE FILLING SOLUTION		56-0304A



CONDUCTIVITY CONTROLLER / MONITOR

332

A-305_R

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

CONDUCTIVITY CONTROLLER

Ideal for plating rinse water

MODEL CC-97 (wall mounted)

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 -

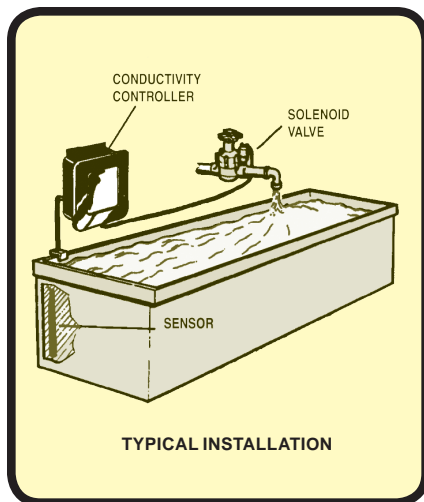
The CC-97 controller is a fully automatic system which will greatly reduce the amount of water used in continuous flow rinse tanks. At the same time, it automatically maintains water quality, ensuring effective rinsing in water up to 180°F (82°C).

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.



MODEL CC-97 WALL MOUNTED SYSTEM



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.



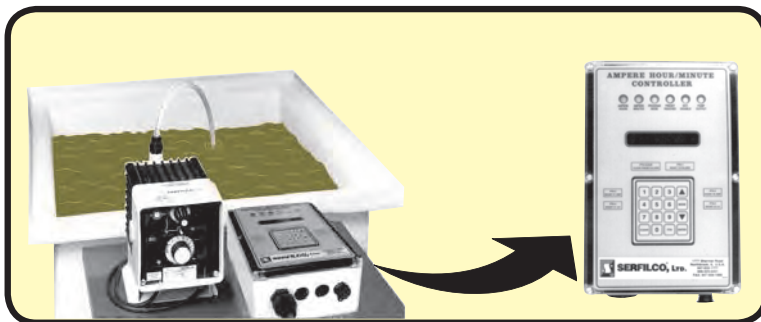
ELECTROPLATING BRIGHTENER CONTROLLERS & TOTALIZERS

335

A-104_U

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

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.



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

INDICATORS, CONTROLLERS AND SENSORS USED FOR:

FILTRATION SYSTEMS

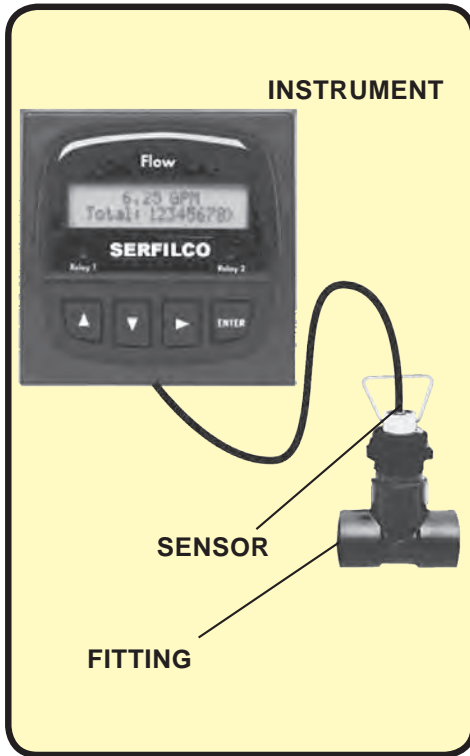
WASTE WATER MONITORING

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
± 1% full scale, ± 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

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

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.

MODEL	PRICE CODE NO.
509	56-0576

- **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**

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: $\pm 2\%$ of full scale
Repeatability: $\pm 1\%$ 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 $\pm 0.5\%$ 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



FLOW INSTRUMENTATION Specifications (Cont'd)

A-306_K

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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).

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

*For PVDF body and Hastelloy® C shaft, change **P** to **N** in Model Number and add **N** to Price Code Number.

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

**1/2" NPT**

PIPE SIZE	MATERIAL*	MODEL	PRICE CODE NO.
1/2" - 4"	Polypropylene body and titanium shaft	515-PO	56-0428

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SENSOR INSTALLATION FITTINGS*for Model 515 flow sensors***SADDLE**

'S' in Model Number

**TEE**

'T' in Model No.

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 PV8S020	56-0445 56-0446	--	--
2 - 1/2"	0-300	15	PV8T025 PV8S025	56-0447 56-0448	--	--
3"	0-500	23	PV8T030 PV8S030	56-0449 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

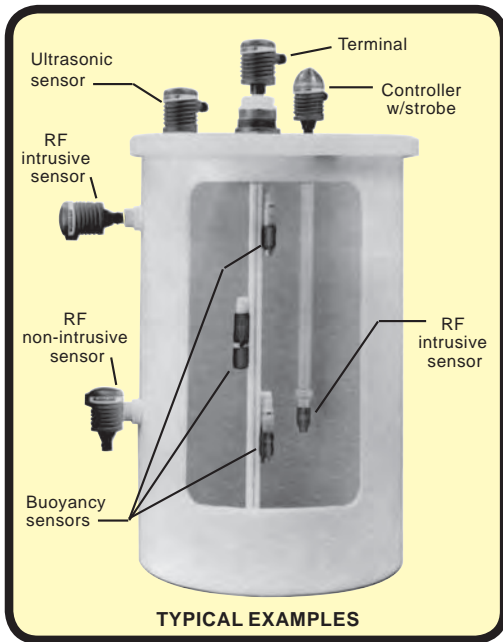
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FIRST ALL- PLASTIC LEVEL CONTROL SYSTEM DESIGNED FOR PLASTIC AND FIBERGLASS TANKS

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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HI-LO LIQUID LEVEL CONTROLS FOR PUMPS

343

A-101_M

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 controller 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 mounting 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 . . .

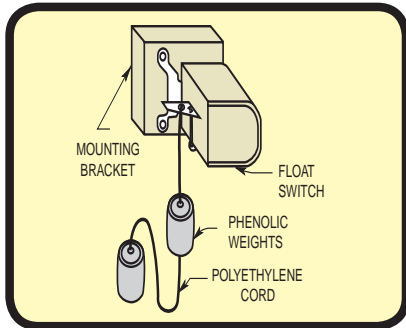
TOTAL LENGTH (INCHES)*	PRICE CODE NUMBERS		
	MODEL 7	MODEL 7R	MODEL 9R
36	66-1163 A	66-1164 A	66-1165 A
48	66-1163 B	66-1164 B	66-1165 B
60	66-1163 C	66-1164 C	66-1165 C
72	66-1163 D	66-1164 D	66-1165 D
84	66-1163 E	66-1164 E	66-1165 E
96	66-1163 F	66-1164 F	66-1165 F
108	66-1163 G	66-1164 G	66-1165 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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**HI-LO LIQUID LEVEL CONTROLS FOR PUMPS (cont'd)**

A-101_M

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

PRICE CODE NUMBER

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

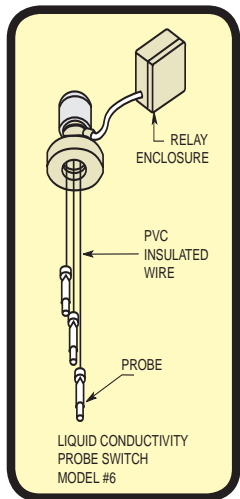
**CAUTION:** Probes and housing are not explosion-proof.**TO ORDER - SPECIFY:** (1) AC line voltage to relay (2) Length of longest probe (3) pH of solution**AGITATION SHIELD****PRICE CODE NUMBER**

66-0245 B

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			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

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A-313

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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	
Dimensions	1.77" W x 3.54" H x 4.53" D (45 mm x 90 mm x 115 mm)
Weight	5.25 oz. (0.15 kg)
Supply voltage	1 x 100-240 ($\pm 10\%$) 3 x 100-600 ($\pm 10\%$) 3 x 600-690 ($\pm 10\%$)
Frequency	50 or 60 Hz
Current input	Current transformers only; CTM 010, 025 or 050 (Max. 50 A motor)
Start-up delay	1 - 64 s
Response delay	0.05 - 64 s
Relay output	5 A 240 VAC Resistive, 1.5 A 240 VAC Pilot duty / AC 12
Fuse	Maximum 10 A
Terminal wire size	Use 75°C copper (CU) wire only. 0.2 - 4.0 mm ² single core (AWG12) 0.2 - 2.5 mm ² flexible core (AWG14), stripped length 8 mm (0.32")
Terminal tightening torque	5 - 7 in.-lbs. (0.56 - 0.79 Nm)
Repeatability	$\pm 2.5\%$ FS, 24 H, @ +77 °F (+25 °C)
Temperature tolerance	<0.1% / °C
External RESET on term. 5	24 - 48 VDC or 24 - 240 VAC, 50 / 60 Hz
Operating temperature	4°F — 122°F (-20°C — +50°C)
Storage temperature	22°F — 176°F (-30°C — +80°C)
Protection class	IP 20
Approved by	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.



DRI-STOP PUMP PROTECTOR

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A-105_X

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

DRI-STOP 2R and 2RE (Flow activated)



DRI-STOP 2R
w/PCB shown for factory
mounting into motor starter
(ordered separately)

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.	1Ø/50-60 Hz	
DRI-STOP 2R Factory installed	DSWF-1/4	PVDF (Kynar®), polypropylene, 316SS, polysulfone, Viton	180°	82°	1/4" FNPT	3" x 2-3/4" x 2 5/8" deep	6 GPH (23 LPH)	100 PSI (690 kPa)	24V 115V	24V	99-1116R*
DRI-STOP 2RE Field installed	DSWFE-1/4									115V	99-1152R*
										24V	99-1116RE *
										115V	99-1152RE *

* PCB (3" x 2-3/4" x 1 5/8") is mounted in motor starter (ordered separately).

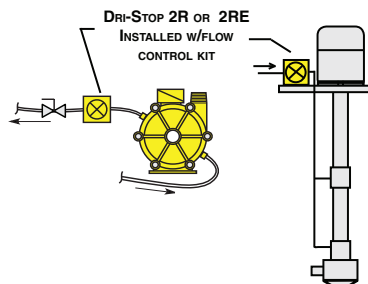
** PCB is enclosed in DRI-STOP case. Motor starter ordered or provided separately, and field wired to DRI-STOP. Includes mounting bracket for 56, 140 & 180 "C" face motor frames.

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.
DO NOT USE WITH DEIONIZED WATER.

DESCRIPTION	PRICE CODE NO.
Includes petcock, pressure gauge and fittings	99-1387



**DRI-STOP Pump Protector (cont'd)**

A-105_X

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **WWW.SERFILCO.COM** (800) 323 - 5431**DRI-STOP 3C and 3K
(Pressure activated)***With body and diaphragm protection suitable for*

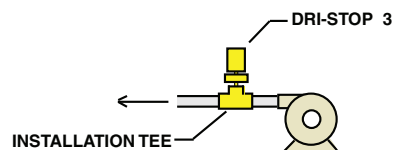
Pressure activated models must be used with a magnetic push button starter. This allows the operator to temporarily and manually "hold-in" the circuit until the pump

**DRI-STOP 3****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.			
DRI-STOP 3C	DSCP-1/2	CPVC, Viton	200°	93°	1/2" NPT	7" x 3" DIA	Fixed 4	80	24-115-230V	99-0377A
DRI-STOP 3K	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



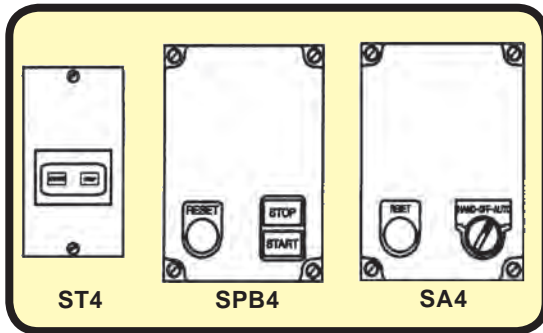
* To order PVDF, add -K to Price Code No.



MAGNETIC MOTOR STARTERS

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A-103_L

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 -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 float switch 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	3/50-60	66-2163B	—	—
200 - 230	1.5	3/50-60	66-2165A	66-2164CB	66-2164AB
380 - 460	3	3/50-60	66-2165B	66-2164DB	66-2164BB
200 - 230	3	3/50-60	66-2166A	66-1160CB	66-1160AB
380 - 460	5	3/50-60	66-2166B	66-1160DB	66-1160BB
575 - 600	7.5	3/50-60	66-2166C	66-2167CB	66-2167AB
200 - 230	5	3/50-60	—	66-1112CB	66-1112AB
380 - 460	7.5	3/50-60	—	66-2168CB	66-2168AB
575 - 600	10	3/50-60	—	66-2168DB	66-2168BB
380 - 460	10	3/50-60	—	66-1112DB	66-1112BB
575 - 600	15	3/50-60	—	66-2169CB	66-2169AB
200 - 230	7.5	3/50-60	—	66-2170BB	66-2170AB
380 - 460	15	3/50-60	—	66-1113EB	66-1113BB
200 - 230	10	3/50-60	—	66-1113DB	66-1113AB
380 - 460	20	3/50-60	—	66-1114EB	66-1114BB
230	15	3/50-60	—	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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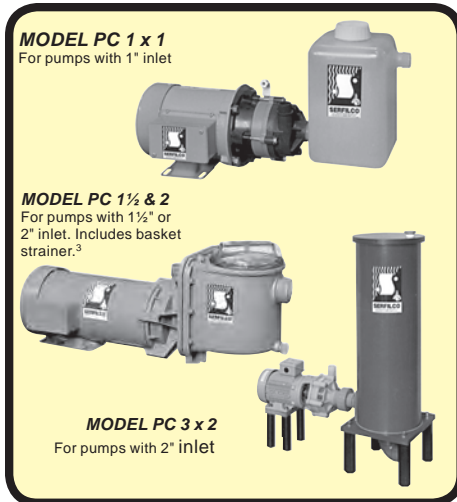


PUMP PRIMING CHAMBERS

349

A-107_F

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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 ¹	MATERIAL	FLOW	VOLUME	SUCTION LIFT ²	CONNECTIONS	DIMENSIONS	PRICE CODE NUMBER
		GPM (LPM)	in. ³ (cm ³)	FEET (m)	IN x OUT, FILL	INCHES (mm)	
PC 1 x 1*†	Polyethylene w/ Viton® 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® & PP†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®, CPVC & PP†w/ Viton gasket						99-1159 R
PC 2 x 2 *	CPVC, Noryl & PP†w/ EPDM gasket	100 (379)		2 (.6)	2"MNPT x 2" FNPT w/5" threaded cap		99-1159 3
PC 2 x 2 RCV *	Ryton®, CPVC & PP†w/ Viton gasket						99-1159 R2
PC 3 x 2	PVC w/EPDM gasket	180 (681)	3456 (.05 m³)	3 (.91)	3 FNPT x 2 MNPT w/ 1½" NPT plug	14 Dia. X 36 H (355 D. x 914 H)	99-0308

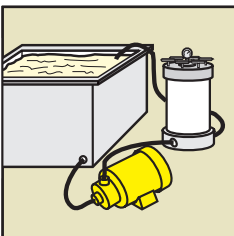
¹ To order Viton gasket, add suffix **V** to Model and Price Code Number.

² Based on water (1.0 SG) at 68° F (20° C). Suction lift is approximate and determined by air volume in suction piping.

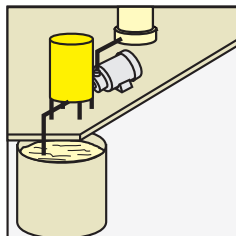
³ Max operating temp. 150°

* Not for use with 2" suction pumps.

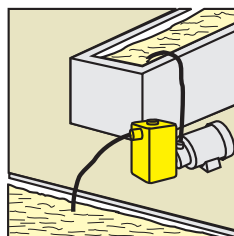
† Removable polypropylene basket strainer.



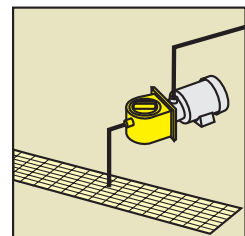
SELF-PRIMING
FILTRATION SYSTEM



LIFTING FROM BELOW
PUMP LEVEL



LIFTING OVER SIDE
OF TANK

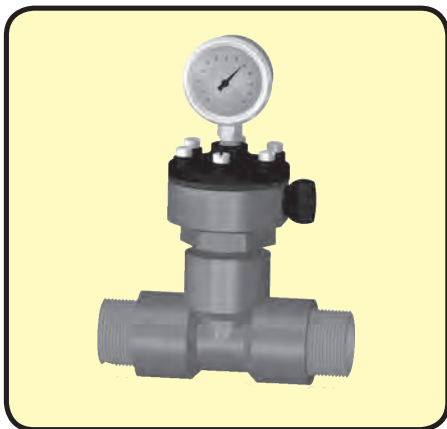


EMERGENCY STANDBY
and SUMP PUMPING



IN LINE GAUGE GUARD ASSEMBLY

A-314_A

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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.

IN LINE GAUGE GUARD ASSEMBLY

SIZE	TYPE ¹	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 VALVE²

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	—	—

¹. Threaded Gauge Guard is MNPT X MNPT

². Double union ball valve with female threaded or socket connections



HEATERS and HEAT EXCHANGER COILS

351

A-102_N

2900 MacArthur Blvd. Northbrook, IL. USA 60062 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***

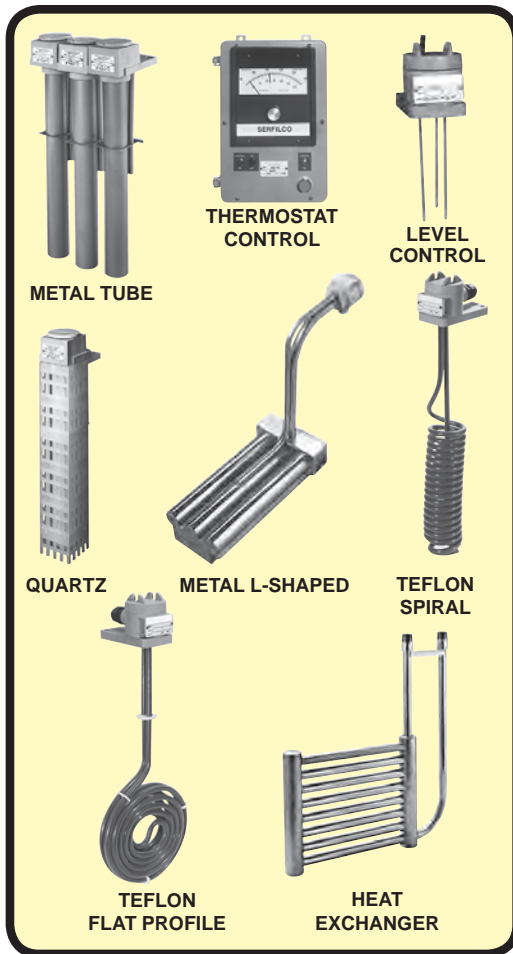


LISTED



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.

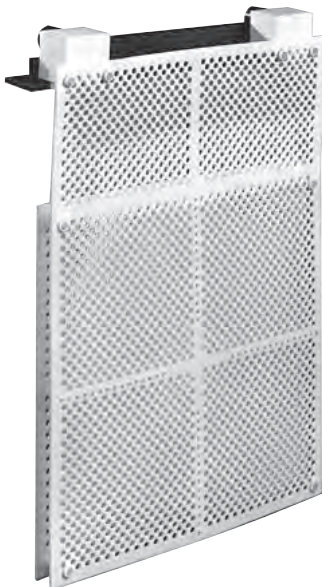
PROTECTOR II AND PROTECTOR III SERIES (Optional - Consult Sales Dept.)

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.

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

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.² OF EXCHANGE AREA TO 46.5 FT.²**
- **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 (800) 323 - 5431



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

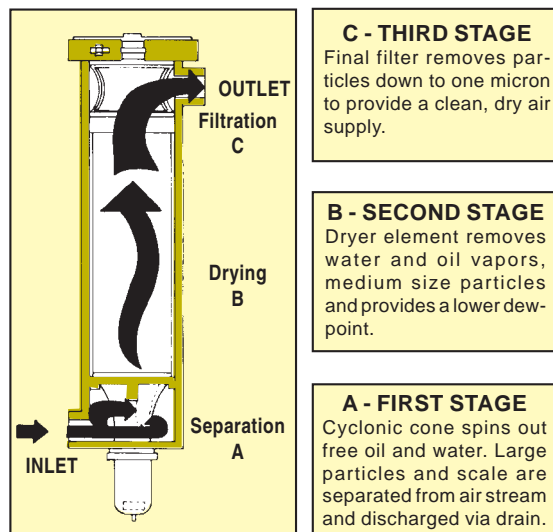
WHAT CAUSES A PNEUMATIC DEVICE TO FAIL?

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





SERIES 'G' STEAM / GAS FILTERS

367

K-103

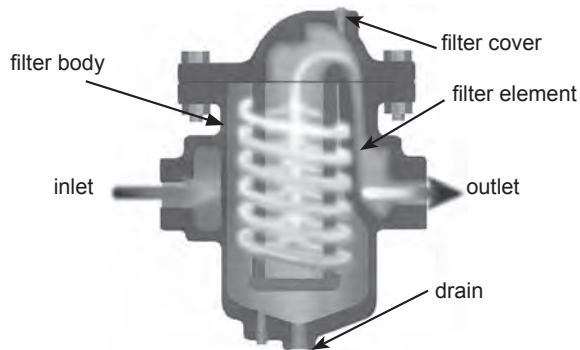
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IMPROVE PLANT PRODUCTION MINIMIZE MAINTENANCE COSTS

Sizes 1/2" to 6" with
steam flow rates up
to 28,000 lb/hr. or gas
flow rates to 6,900
SCFM



- 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



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

20

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

Since
1961

FINISHING STARTS WITH SERFILCO QUALITY PRODUCTS-GUARANTEED !

WE NEVER HAVE TO CHANGE THE MEDIA, ITS TOTALLY AUTOMATIC!

AIR AGITATION REPLACED BY SER-DUCTORS® ... HUGE COST SAVINGS

EXTEND CLEANER LIFE ... WHILE REDUCING OPERATING COSTS!

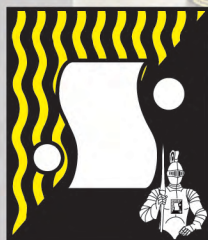
FILTER YOUR PRODUCT QUALITY PROBLEMS AWAY

ARE YOU STILL USING POWDERED CARBON ?

YOU CAN'T CO-DEPOSIT WHAT ISN'T THERE

CLEAN CLEANERS CLEAN CLEANER

OF COURSE, WE FILTER OUR RINSES



SERFILCO®

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Northbrook, IL. 60062-2005
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www.serfilco.com

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(847) 509-2900
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sales@serfilco.com