Bulletin
SP-670J
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SERFILCO®

FILTRATION AND PURIFICATION SYSTEMS

Our mission is to assist you in reducing costs while improving your product quality:

- *Clarification, purification and continuous recirculation*
- *Simple, effective agitation*
- *Efficient, economical liquid / liquid separation*
- *Extension of solution life*
- *Elimination of rejects*

TITAN AND EXCEL AUTOMATIC FILTRATION SYSTEMS

PERMANENT MEDIA FILTRATION
eliminates media disposal and loss of solution

The TITAN is an automatic backwash filtration system employing permanent filter media as a replacement for conventional filtration where disposal of media could be an environmental concern. These systems use media of a specific size and density in a filter bed through which contaminated solution is fed at controlled limits of flow and pressure.

Solution being filtered us always saved, transfered to a holding tank for reuse. Computer control automatically maintains constant design flow without compacting particulate onto the media bed. Backwash cycle, programmed for optimum use of backwash fluid, responds automatically to a preset minimum flow rate of filter discharge.

TITAN systems are specifically designed for use with most aqueous process solutions including treated waste and final effluents, cleaners, plating and other process solutions. These systems accommodate flow rates up to 30,000 GPH for treated waste, 12,000 GPH for surface finishing solutions and 2,700 GPH for cleaners and aqueous solutions. Systems can process cleaning solutions at temperatures to 190^0 F and final waste treat.

Each TITAN system incorporates a filter chamber for use with permanent media, electrically actuated valves with electronic flow meter controller and pre-wired control panel with pre-programmed micro-processor.

The 'EXCEL' Filtration System is an automatic backwash filter which utilizes a floating permanent media and unique "up flow" design to achieve sub-micron particle retention with single pass filtration. The 'EXCEL' Filtration System is specifically designed for final particulate entrapment in critical applications that cannot be met with other filtration methods.

Pilot unit above is available for test

For more detailed information, request Bulletin F-455 for TITAN Systems and Bulletin F-450 for 'EXCEL' Systems.

METALLIC FILTRATION SYSTEMS

FOR FILTRATION OF PROCESS SOLUTIONS:

- ***HYDRAULIC, LUBRICATING AND QUENCH OILS***
- ***MACHINE TOOL COOLANTS OR CHEMICAL MILLING***
- ***FOOD OR OTHER LIQUID/SOLID SEPARATION***
- ***CLEANERS, RINSES***

The SERFILCO metallic filtration systems feature the most durable metal pumps in our product line. They are designed to provide years of trouble-free service in demanding applications. These systems are intended for use where metal is suitable for chemical and/or temperature limitations.

Systems are available in carbon steel and 304 or 316 stainless steel with either cartridge or bag filter chambers.

Pumps are cast iron or 316 stainless steel depending on the application and are available with single or double mechanical seal. Magnetic coupled and self priming pumps are also available.

Standard systems provide recirculation or batch treatment of food, chemical or process water.

For more detailed information, request Bulletin F-217 and/or F-211

SERFILCO filtration systems for oils and machine tool coolants offer high flow rates and dirt holding capacity in a compact design and a variety of configurations. Systems are offered in various styles such as stationary, portable, machine or wall mount and lightweight hand-carry units. These systems can also be combined with a liquid/liquid coalescer to remove water from oils or tramp oils from coolants, waste and wash down water

SERFILCO oil reconditioning stations salvage contaminated oils for re-use by removing sludge, water and other suspended particulate. These systems are easy to operate and extremely economical. Systems are packaged, which employ low flow and higher pressures to meet the needs of hydraulic, lubricating or gear lubricants.

For more detailed information, request Bulletin O-104

COALESCING SYSTEMS

LIQUID / LIQUID SEPARATION TO LESS THAN 10 PPM
Reclaim, Re-use, Recycle

Coalescing systems are used to provide liquid/liquid separation of non-emulsified solutions up to 150°F. The systems are compact, economical, and simple to operate. They remove oils from rinse waters, cleaning solutions, plating solutions or waste effluents. They also separate water or tramp oil from hydraulic fluids and machining coolants.

These highly effective systems pump, prefilter and separate non-emulsified fluids having a .09 or greater difference in specific gravity. Solution is pumped through the prefilter to the coalescing element where small droplets are held until they grow large enough to float to the top of the coalescing chamber. The light phase is discharged from the top of the coalescing chamber, the heavy phase is discharged from the bottom of the coalescing chamber. The unwanted phase (heavy or light) is periodically bled off via a manual flow control valve. Purified solution is directed back to the tank or reservoir for re-use. Recovered effluent contains less than 10 ppm of the discontinuous phase. Carbon purification can be added to polish the solution.

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 the coalescing element. If properly protected, the coalescing element has indefinite life. Selecting a system with greater prefilter capacity will reduce prefilter cartridge and coalescing element consumption. Coalescing of fluids with excessive particulate loading is best accomplished when the solution is first clarified with a separate filtration system.

For more detailed information, request Bulletin F-303.

CARBON AND ION EXCHANGE SYSTEMS

SYSTEMS, CHAMBERS OR MEDIA

Remove organic impurities simply, economically, efficiently
Recover precious metals, heavy metals, produce deionized water

GRANULAR CARBON purification is a simple, economical and efficient method of removing organic impurities from aqueous or other chemical solutions. Connect a purification system to your process and enjoy full or side-stream flow of your process solution through the carbon on a continuous or intermittent basis. Select a system with replaceable carbon cartridges or a chamber which has removable and refillable carbon canisters.

The choice of purification method depends on tank size, amount of carbon required, and other filtration equipment which may be available. Generally, carbon cartridges are used on tanks up to a few hundred gallons; bulk or canister type granular carbon for several thousand gallons.

A pre-filter or complete filtration system upstream of the carbon system is strongly recommended to protect the carbon from contamination by the efficient removal of solid impurities that could render the carbon inefficient.

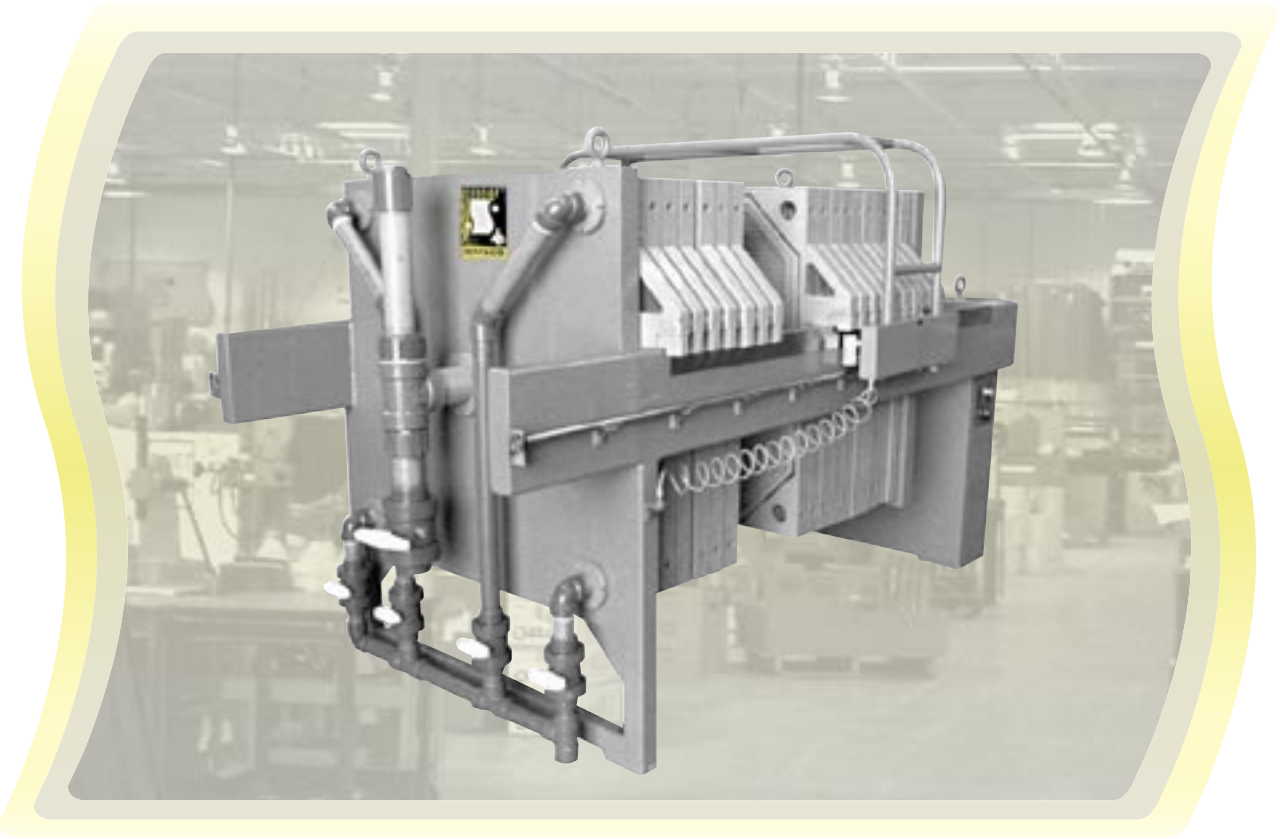
For more detailed information, request Bulletin R-103.

ION EXCHANGE resin systems provide high quality deionized water when filled with a strong base mixed bed resin. These systems provide high purity rinse water to prevent spotting. Product water is low in dissolved solids, CO_2 and silica, with a resistivity of 10 megohms or higher.

A variety of resins are available. Select the specific resin for your application.

For more detailed information, request Bulletins R-201 (systems & chambers) and R-208 (resins).

FILTER PRESS



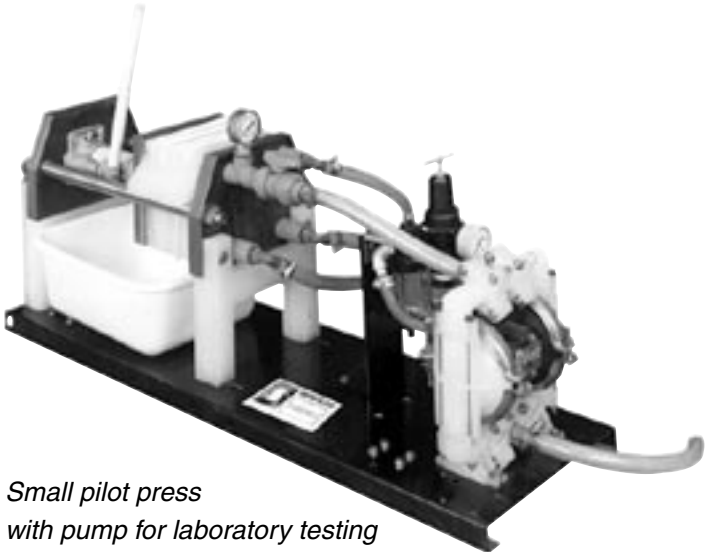
LIQUID/SOLID SEPARATION SLUDGE / DEWATERING OR FILTRATION

The filter press has been utilized for many years to separate liquids from solids. In many cases the liquid is saved, while in other cases, the solids are the desired product. The filter press is an efficient system which provides high pressure filtration and/or compaction and ease of operation.

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.

Presses feature structural steel frame, coated with tough chemical resistant epoxy paint. High density molded polypropylene filter plates are light weight and corrosion resistant. Special ploypropylene quick cake release filter cloths. Air actuated hydraulic system for parting and closing the filter plates. Automatic self-compensating hydraulic system. Conveniently located operator control console.



Small pilot press
with pump for laboratory testing

For more detailed information, request Bulletin F-705 for Filter Presses, or Bulletin F-710 for Lab Filter Presses

GRAVITY OR PRESSURE FILTRATION SYSTEMS

AUTOMATIC INDEXING OF FILTER MEDIA OR MULTIPLE BAG PROVIDES "HANDS FREE" GRAVITY FILTRATION

GRAVITY FILTRATION SYSTEMS with "unattended" indexing media allow uninterrupted flow for "hands free" filtration of grinding, cutting and machine tool coolants; industrial waste water; chemical or food process or cooling water; fume scrubbers and parts washer reservoirs; water wall spray booth and phosphating solutions, and treated plating waste. Models range in size from 1.5 to 113 square feet of filter area.

Automatic fabric filtration systems receive contaminated solution in a diffuser tray which directs flow across the full width of the system's filter bed. Particle separation starts immediately via gravity flow through the media to the clean reservoir tank below the conveyor frame. Filtered solution can then gravity drain or be returned to the process via a pump.

As the media gradually becomes laden with solids, the solution level will slowly rise until the adjustable float switch activates the conveyor drive motor. Consumed media is advanced to the tote box and fresh media is simultaneously indexed to the solution flow. The system is totally automatic and responds to wide variations in flow rate and solids concentration. The broad selection of media density permits the clarity desired without sacrificing system performance.

Gravity flow provides for gentle accumulation and settling of solids on the filter media without forcible compacting which could cause premature blinding of the media and its premature indexing. The deep pool of solution above the media assists the flow rate and maximizes solids loading on the media.

CARTRIDGE / BAG SYSTEMS provide high solids loading capabilities for applications requiring recirculating filtration of a process reservior. Applications include the removal of particles from glass and plastic in bottle washing operations and the removal of fiber, grit and metallic particles from water used in deburring and scrubbing equipment.

The first stage employs a primary filter tank containing 8 gravity flow filter bags. Stage two consists of a trap filter chamber to polish water to reuse or discharge.

For more detailed information, request Bulletin F-701 for 'DF' Systems, or F-601 for Cartridge/Bag Systems

NON METALLIC COMPACT DESIGN FOR SMALL PROCESS TANKS

The SERFILCO family of plastic filtration systems is ideal for use in manufacturing as well as for solids, liquid separation or purification. Systems have been engineered to achieve reliable filtration of small, laboratory and pilot plant runs to moderate volume processes production tanks. Models provide solids holding area to provide high performance, continuous particle removal for efficient, economical solution clarification.

The systems are constructed of a variety of engineering plastics including polypropylene, PVC, CPVC, or PVDF to provide non-metallic solution contact and ensure chemical and temperature compatibility with the liquids being filtered. The hooded base design offers exceptional strength, stability, and umbrella-like protection for each system's pump/motor assembly, which is available with a choice of single or double mechanical seal, direct drive or seal-less magnetically coupled pumps.

The functional design has resulted in systems that exhibit a reduced pressure drop while maintaining the compact footprint of earlier conventional designs. Filter cartridges of various lengths can be accommodated and cartridge maintenance is easy and quick.

For applications which also require the continuous of periodic removal of organic contaminants, optional carbon purification chambers employing a choice of carbon cartridges or carbon canisters are available.

For more detailed information request Bulletin F-203, F-204, F-205, F-212, F-213, F-214, F-215, F-216

GUARDIAN© FILTRATION SYSTEMS

NON-METALLIC COMPACT DESIGN FOR MEDIUM PROCESS TANKS

GUARDIAN Filtration Systems are designed to provide higher flow rate and solids holding capacity in a compact package. They offer outstanding flexibility resulting from the variety of filter chamber and pump combinations available. The filter chambers are capable of retaining higher solids loads through the use of various filter media. They provide the lowest pressure drop while allowing the highest possible flow rate from the choice of pumps available.

Each combination of pump and filter provides for different chemical compatibility requirements, such as PVC, CPVC, PVDF or polypropylene.

Guardian systems are available as cartridge filters, horizontal disc filters, or as bag filters to meet almost any application requirement.

Units feature magnetic-coupled centrifugal pumps for leak-proof operation or pumps with direct drive single or double water flushed mechanical seals, also including self-priming models.

Various combinations of piping are offered from the simplest pump-filter combination to those which include a slurry tank and valves for precoating, chemical additions and pump priming. Select a separate carbon canister chamber for removal of organic impurities.

Guardian Disc Filtration Systems are designed for use with precoat or fabric media for industrial solutions. The large surface area and positive I.D. and O.D. edge seals on all filter discs assure optimum performance and clarity. These systems can be used without precoat, precoated with filter aid, or with a blend of filter aid and activated powdered carbon.

For more detailed information, request Bulletin F-301 for cartridge systems, or Bulletin F-155 for disc systems.

MEGA-FLO© FILTRATION SYSTEMS

NON METALLIC COMPACT DESIGN FOR LARGER APPLICATIONS

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 construction for applications to 140° F or polypropylene construction for applications to 180° F.

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, or recirculation on a reservoir

FILTER AND OPTIONAL CARBON CHAMBER OR SLURRY TANK

For more detailed information, request Bulletin F-304

SENTRY© FILTRATION SYSTEMS

CUSTOM DESIGNED FILTER SYSTEMS

SENTRY Filtration Systems are ruggedly constructed and engineered to deliver economical performance and large solid capacity fine filtration for larger requirements. They include pump, motor and filter chamber sized to provide the flow and solids holding capacity to achieve the level of liquid clarity desired.

These systems are engineered to provide efficient removal of particulate or organic impurities. Chambers and pumps feature non-metallic or metallic solution contact.

Sentry systems are available with cartridge or horizontal disc filter media..

Systems can be selected with polypropylene magnetic-coupled pumps or with CPVC single or double-seal pumps.

Available options include a slurry tank with valves and separate carbon chambers for removal of organics.

SENTRY Filtration Systems provide high flow rates and large solids area.

For more detailed information, request Bulletin F-404

PRE-ENGINEERED ADMIRAL SYSTEMS OR SUB-ADMIRAL IN-TANK SYSTEM

SERFILCO'S Pre-engineered Admiral 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.

These systems are ideal for OEM applications where a compact drop-in design is required or for any general filtration application.

For more detailed information, request Bulletins F-511, F-510 and F-508

The SUB-ADMIRAL Filtration System is a concept ideally suited for pilot plant, laboratory and production tanks where high agitation with filtration for light solids loading applications is desirable.

The Sub-Admiral is a suction filter with the filter cartridges mounted on the suction or inlet side of the pump.

Additionally, these systems are supplied with an eductor to create additional circulation without requiring a larger pump or more horsepower. This permits the use of a small pump to circulate a large volume of liquid in a tank, thus avoiding stratification of liquids or settling of solids.

For more detailed information, request Bulletin F-506

CUSTOM FILTRATION SYSTEMS

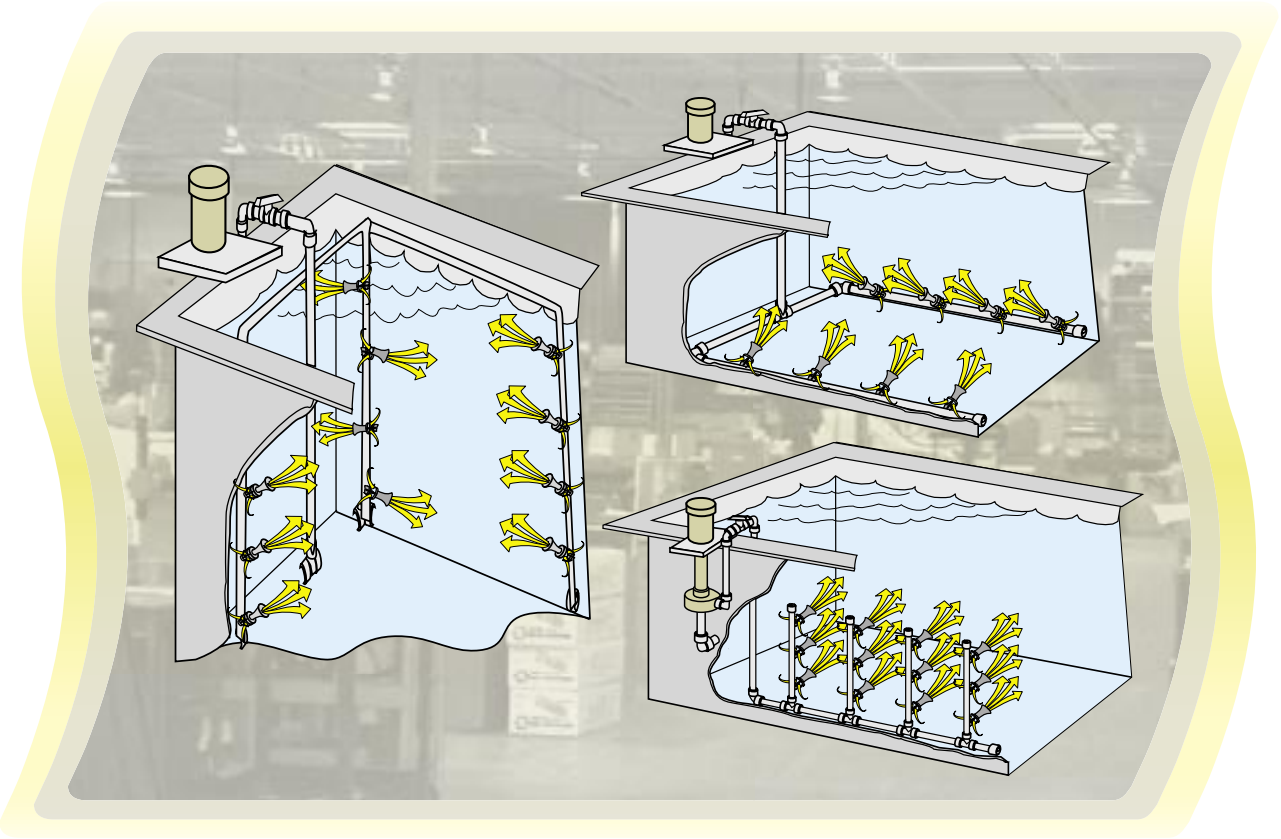
SELECT THE PUMP AND FILTER TO FIT YOUR APPLICATION

ADMIRAL Filtration Systems combine vertical pumps with filter chambers, either or both of which can be mounted in-tank or out-of-tank. Systems offer extreme flexibility through the wide range of vertical pumps that can be combined with an even greater choice of filter chambers. This arrangement provides an endless combination of flow rates and solids loading area. ADMIRAL system flexibility is further extended by the choice of media that can be used - cartridge, sleeve, bag, disc or carbon.

ADMIRAL filtration systems provide flow rates to 10,000 U.S. GPH. Available in metal or non-metallic solution contact, these systems feature seal-less pumps suitable for use on strong acids or alkalies. The vertical pumps used on ADMIRAL systems can be run dry without damage, so maintenance is low and downtime is minimal Gear type pumps are also available for applications when the size of abrasive particles would not affect their performance and cause unnecessary wear.

For more detailed information, request Bulletin F-501

SER-DUCTOR® AGITATION SYSTEMS



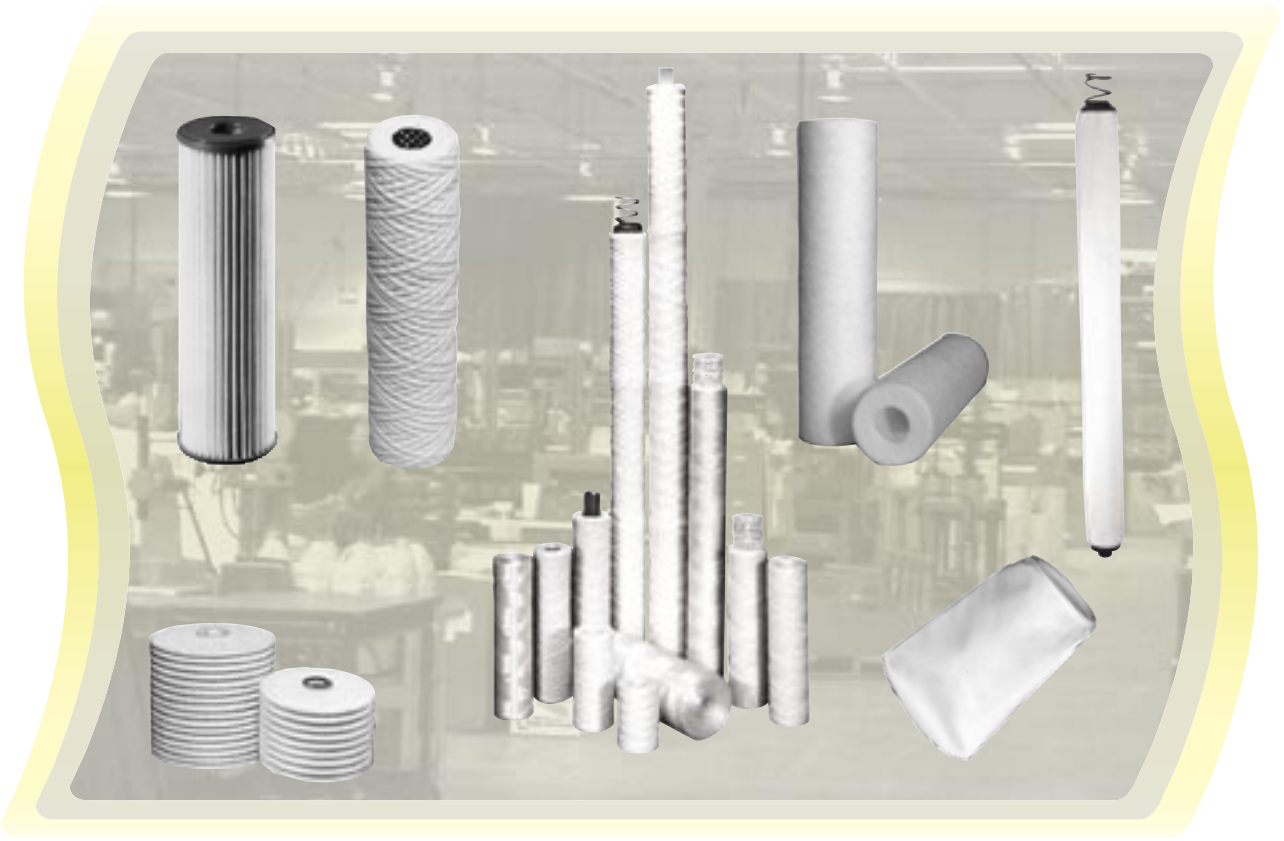
EDUCTOR-PUMP AGITATION TO IMPROVE YOUR PROCESS PERFORMANCE

SER-DUCTOR® Agitation Systems offer solution movement of food, beverage, pharmaceutical, photo or chemical processing and agitation of cleaning, rinsing, waste treatment and other solutions. They provide solution agitation with a centrifugal pump by drawing liquid from a tank and delivering it back into the tank through a sparger system, similar to that used for air agitation, with eductors strategically placed along the sparger pipe. These systems permit use of relatively small pumps, either vertical or horizontal, to recirculate large volumes of liquid in the tank, avoiding stratification of liquids and temperature. SER-DUCTOR® systems also prevent settling of solids on the tank bottom. Each eductor creates, without additional horsepower, agitation up to five times greater than the input volume of liquid.

PROVEN BENEFITS OF SER-DUCTOR® SYSTEMS IN PROCESS APPLICATIONS

- Achieve uniform temperature in heated or cooled tanks
- Reduces airborne emissions to undetectable limits
- Prevents settling of solids for easier filtration in suspension - eliminate manual removal
- SER-DUCTOR agitation improves dissolvability of solids in liquid
- SER-DUCTOR agitation impinges on parts for better cleaning
- SER-DUCTOR agitation creates a homogenous solution

For more detailed information, request Bulletin A-407.



MULTIPLE METHODS OF FILTRATION FOR MAXIMUM CLARIFICATION FLEXIBILITY

Take your choice of cartridges, sleeves, bags, discs

1. **Disposable Filter Cartridges** offer the highest flow rate and maximum solids retention. Their primary advantage is that they can be discarded without solution loss and with only minimum labor:
   a. **Depth-type cartridges** consist of a series of fibrous layers, each progressively denser and capable of stopping finer and finer particles as the liquid passes through from the outer diameter to the inner core. The total solids retention area is equal to more than 3½ square feet of surface area per 10" cartridge.
   b. **Pleated cartridges** provide extended surface area of 4 square feet per 10" length
   c. **Spun-type cartridges** are composed of 400 to 500 layers of melt-bonded, extruded polypropylene fiber. The unique fiber bonding provides structural strength without a center core.

2. **Cleanable Sleeves** are re-usable surface type synthetic fiber cloths which can be precoated with a filter aid and, as required, powdered carbon. Sleeves can be backwashed or rinsed for reuse. Cartridge chambers can be ordered with sleeve assemblies or converted from cartridge use.

3. **Filter Bags** are available in a range of porosities and are essentially a surface loading media which can be rinsed for reuse.

4. **Horizontal Discs** are surface loading, can be precoated with filter aid and, as required, powdered carbon. Disc filter media is discarded after use.

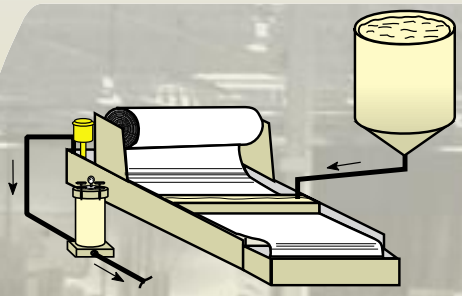
5. **Coalescing elements** for reverse flow to separate oil from water or water from oil

Some media is FDA approved

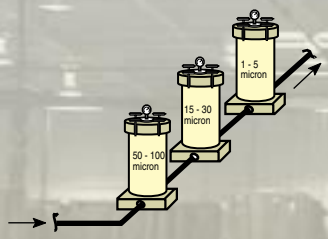
For more detailed information, request: Bulletins M-105 (Polyspun© cartridges), M-108 (cleanable sleeves), M-109 (depth-type cartridges), M-307 (pleated cartridges), C-301 (bags), C-302 & C-305 (discs).

FILTRATION AND PURIFICATION SYSTEMS

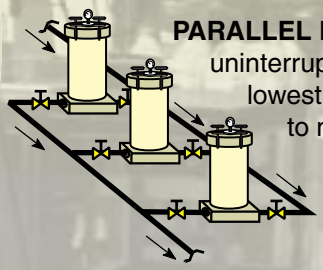
CUSTOMIZE FOR OPTIMUM RESULTS



GRAVITY PLUS FINAL TRAP PRESSURE FILTRATION for recirculation handles heavy sludge loads and results in exceptional clarity.

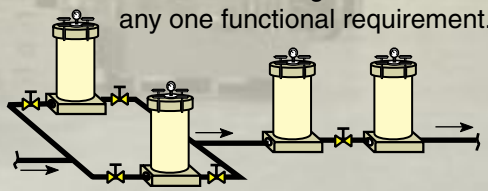


SERIES FLOW with step-down particle retention increases solids holding capacity, minimizes service required, achieves desired clarification.



PARALLEL FLOW uninterrupted flow with lowest pressure drop to meet any flow capacity.

COMBINATION OF PARALLEL AND SERIES to meet higher demands of any one functional requirement.



SEE COMPLETE CATALOG AT WWW.SERFILCO.COM,

REQUEST CATALOG ON CD OR PAPERBACK CATALOG

Serfilco recognizes the fact that not every liquid clarification requirement can be met with a pre-packaged filtration system. That is why we offer a range of pumps and filter chambers and a broad selection of filter media, such as bags, discs, depth and pleated cartridges, cleanable sleeves and carbon or resin purification to give you the flexibility you need to meet your clarification/purification requirements. By using different combinations of chambers and media, configured for recirculatory or in-line filtration, you can achieve the level of clarification / purification desired.

Your particular application may benefit from series flow with step down particle retention to maximize solids holding capacity or it may require parallel flow for increased capacity and uninterrupted flow.

Your application may benefit from a combination of equipment. Ser-Ductor agitation systems are often used in conjunction with filter systems in order to keep solids in suspension. Coalescing systems are used on a side tank for oil removal while an auxiliary filtration system keeps the process tank free of particulate.

Serfilco has the capability and expertise to recognize and solve your filtration and purification problems. So give us your application and let us design a system to meet your special needs.

CONTACT YOUR LOCAL REPRESENTATIVE

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