

# MINI SPACE-SAVER<sup>®</sup> & SPACE-SAVER FILTRATION SYSTEMS MULTIPLE COLUMN CHAMBERS

OPERATION AND  
SERVICE GUIDE  
O-570D  
APRIL 1998

## **! SAFETY PRECAUTIONS BEFORE STARTING PUMP**

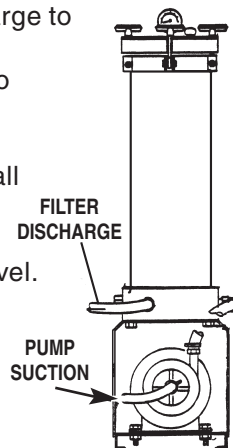
1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to a chemical resistance data chart for compatibility of materials to be used.
3. Note temperature and pressure limitations.
4. Personnel operating pump should always wear suitable protective clothing: face mask or goggles, apron and gloves.
5. All piping must be supported and aligned independently of the pump.
6. Always close valves to avoid hydraulic shock.
7. Ensure that all fittings and connections are properly tightened.

## **BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE**

1. Wear protective clothing as described in item 4 above.
2. Flush pump thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in item 2 of Safety Precautions above.

## **PRE-START-UP**

1. Review accompanying pump-motor operating instructions to assure proper start-up.
2. Secure filter chamber to base/hood assembly if not already done. Use fasteners provided. See Figure 1.
3. Install all hoses (disconnected for shipping) and tighten hose clamps. Siphon breakers in the suction line to the pump and filter discharge to the tank should be installed as a further precautionary measure to limit and minimize the amount of liquid lost by back siphoning. An effective siphon breaker is a small hole drilled in suction & discharge lines approximately 2" to 4" below normal solution level.
4. Install cartridge filter of your choice.
5. Check that filter chamber tee handles are secure and vent plug is closed.



**FIGURE 1**

## **START-UP**

1. Prime pump according to pump operating instructions and energize motor. Also refer to page 2.
2. Secure hoses so they do not move or fall out of tank.
3. Open air vent in cover to release air from chamber. Tighten vent plug when solution level rises to top of chamber.

**! CAUTION:** liquid may squirt out.

Refer to Bulletin F-204 and Parts Lists P-10 & P-750.

## **TO USE AS A CARTRIDGE FILTER**

1. SERFILCO depth cartridges have a dirt holding capacity equivalent to that of 3-1/2 sq. ft. of surface filter media of the same density. The cartridge traps the soil in the fibrous structure as the solution passes through it. Cartridges are available in a variety of porosities permitting use of coarse tubes that have greater dirt holding capacity or dense tubes to obtain optimum clarity.
2. Refer to product catalog or other miscellaneous filter media bulletins for general information and types of cartridges.

## **TO REPLACE SERFILCO CARTRIDGES**

**IMPORTANT:** Filter chambers having a shell and base of identical material will have the shell permanently sealed to the base. When shell and base are different materials, a flat gasket will provide the seal when the filter assembly is compressed by the four tee handles at cover. Be sure to vent and drain chamber before opening.

1. Stop pump and loosen four tee handles at cover and lift cover straight up.
2. Remove top used cartridge by lifting straight out. If several 10" cartridges are stacked, the lower cartridges may be removed by lifting the crosspost over which the cartridges are stacked. A ring at the bottom of the crosspost lifts all cartridges.
3. Replace with 10", 20" or 30" cartridges. Important: use gasket spacer between cartridges if stacked height is not sufficient for proper closure and cartridge seal, or if used cartridges have been cleaned and replaced.
4. Replace cover on shell, check engagement of cover groove, tighten tee handles.

## **TO USE WITH CARBON CARTRIDGES**

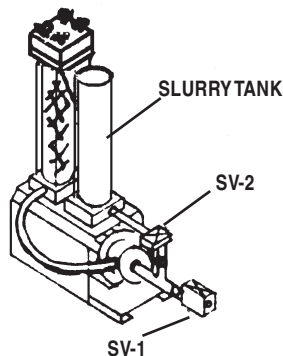
There are several types of activated carbon cartridges, and granular carbon filled canisters which may be used alone for purification or in conjunction with the filter assembly. Refer to Technical Bulletin TF-133. Activated carbon removes organics from plating solutions; taste, odor and color from potable water and purifies industrial waste effluents.

## **USE AS A PRECOAT FILTER USING DEPTH CARTRIDGES OR SLEEVE ASSEMBLIES**

Depth filter cartridges may be precoated with filter aid, which converts the system to a surface type filter having 1 to 3 micron average clarity. SERFILCO also has available sleeve assemblies which are designed only for pre-coating. The precoat may also be removed and fresh precoat "cake" applied.

## FILTER AID APPLICATION

1. Prior to applying a precoat, the filter **MUST** be recirculating a pail of process solution or water, or have a SERFILCO -SV slurry tank and valves.
2. Add 1 to 2 oz. of filter aid to the solution for each 10" of filter media length.
3. Recirculate to deposit the filter aid onto the filter media. Solution must return to **CRYSTAL CLARITY** to assure proper seal of media. If solution remains cloudy after approximately 5 minutes of recirculation, stop pump, disassemble filter and check for source of "by-pass": missing gasket, loose cartridges, etc.
- 4a. With filter system operating, transfer hoses and pail to plating tank, immerse pail and hoses, remove pail and continue to operate filter.
- 4b. With -SV feature: Place discharge hose in slurry tank, add solution to slurry tank, open SV-2, close SV-1, energize pump-motor and recirculate solution through the filter. Add filter aid, recirculate until solution is clear, slowly open SV-1 and close SV-2, place discharge hose in plating tank.



## POWDERED CARBON

1. **AFTER** precoating with filter aid, a slurry of 2-4 oz. of powdered carbon **AND** 1-2 oz. filter aid may be applied following the above procedure. **IMPORTANT:** The powdered carbon and filter aid should be pre-mixed dry, then added to the "slurry tank" and precoated over the base precoat of filter aid.
2. Filter cartridges and sleeves can be washed and precoated again for future service. For a thorough cleaning of the chamber, flush out with a hose.
3. When replacing washed cartridges that will be pre-coated, use spacer-washer between adjacent cartridges to assure a proper seal of cartridge ends.
4. Technical Bulletin TM-101 lists various brands and types of filter aid.

## FILTRATION TIPS

If synthetic fiber cartridge is used, flush with 5 gallons of warm (110° to 140°F) water for each 10" of cartridge length. This removes any sizing agent used in the manufacture of the cartridge. Soaking is not adequate.

## REPLACEMENT PARTS

Refer to Parts List P-4400 for filter chamber. Order necessary spare parts for filter chamber and pump-motor **PRIOR** to their need, thereby avoiding shut-down of the filter assembly or unnecessary expediting.

## REPLACEMENT CARTRIDGES

Have a quantity in stock, available for immediate use.

## IMPORTANT

When a precoated filter is shut-off, the "cake" can fall. It is suggested that the hoses be removed and placed in a pail so filter aid does not drift into tank. Upon start-up, add filter aid to pail and recirculate as described above.

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## PUMP PRIMING WITH -SV FEATURE

1. Place filter chamber discharge hose in slurry tank. Open valve SV-2 and close valve SV-1. Place suction hose in plating tank.
2. Pour solution into slurry tank until 3/4 full. Be sure vent plug in filter chamber cover is closed.
3. Energize motor. Solution is now recirculating between slurry tank and filter chamber.
4. **VERY SLOWLY**, partially open SV-1 to draw solution into suction hose. When solution is at SV-1, then freely open SV-1 and close SV-2. Quickly remove discharge hose from slurry tank and place in plating tank.
5. Loosen thumb screw in cover to vent air from filter chamber, then re-tighten.



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