Previously T-650A

TF-103

TECHNICAL BULLETIN

HOW TO PICK
SERFILCO FILTRATION SYSTEMS

The size and the amount of dirt in the plating or other solution will determine the number of cartridges or surface area necessary, with one cartridge, or 2/3 sq. ft. of surface for each 50 gallons (200 liters) of solution used as a rule of thumb.

Determine the materials of construction compatible with the liquid to be in contact with the equipment. Use CPVC whenever possible because it is suitable for most chemical solutions even at temperatures approaching boiling. Polypropylene is also widely used but limited to 185°F (85°C). Acrylic is limited to 160°F (71°C) and lacks the overall chemical resistance, but allows visual inspection of the solution and filter media. Ethylene propylene "O" rings are standard on most equipment, with Viton offered on the higher temperature systems. Pump shafts are either CPVC sleeved for non-metallic solution contact, or supplied in titanium which has excellent chemical resistance to most plating solutions. If required, Hastelloy shafts are also available.

Determine whether carbon will be required and if so, what is the easiest method to use. Small tanks usually employ Serfilco 3-in-1 carbon or CARBO-FYNE cartridges in place of standard depth type filter tubes; ... carbon cartridges, refillable canisters or bulk carbon may be employed in separate chambers for series or bypass flow. Larger tanks may employ bulk carbon in easy refillable canisters in chambers downstream of the filter for series or bypass flow. Suitable cartridges are available for precoating or may be replaced with cleanable sleeves when the filter is used with filter aid and powdered carbon continuously.

Determine whether an intank or external unit will be most convenient to use with regard to mounting location and available space. Please keep in mind that although intank filters can be precoated, it may cause the platers some problems since this piece of equipment is not designed for this purpose. Therefore, if carbon treatment is required the customer would be limited on an intank unit to the use of carbon cartridges or carbon canisters.

WHEN USING OUT-OF-TANK PUMPS, RECOMMEND SEAL-LESS MAGNETIC COUPLED PUMPS ON THE SMALL TO MEDIUM SIZE TANKS. Larger tanks require a pump with a mechanical seal, an external type seal will give you the best performance at lowest replacement cost. Special ceramic seal is available for use with solutions which contain fluorides. Specify the double seal assembly with continuous water flush where abrasives are present and to prevent the solution from crystallizing in the pump seal. Also use the double seal on electroless solutions, and any time you want the double protection which they afford for complete containment of the solution being pumped. Special metals are not required due to the fact that they are not in contact with the liquid.

Review the list of optional equipment which is available with each system. Motor starters provide on-the-spot on/off overload protection; a slurry tank provides for chemical addition, easy pump priming and a convenient means for precoating; flow control valves maintain pump prime and control agitation; wheels for portabiliby make it easy to move the filter where you want it. A suction pipe with strainer and suction breaker is recommended to prevent solution loss during shutdown.

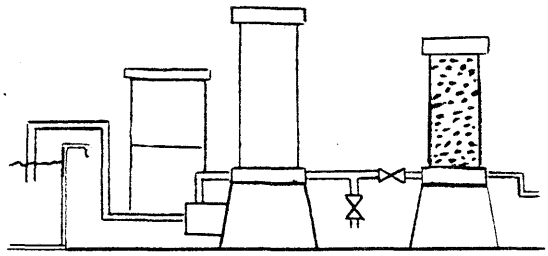
(OVER)

SUBJECT: CARBON PURIFICATION VS. SOLIDS REMOVAL

Platers have for years employed powdered carbon either precoated directly onto the surface of the filter, or added to the solution in a separate treatment tank when batch purification is employed.

The use of powdered carbon in the filter reduced the dirt holding capacity and restricted the flow so much so that it retarded the ability of the filter to remove the solids from the plating tank because of the reduced flow.

We have always known that granular carbon has greater adsorbency than powdered carbon. However, reaction time with granular carbon is much slower. Total surface available to pick up the contaminants is inside the granule, therefore it became obvious to us that the solution should be filtered first so that only clean solution would come in contact with the carbon. This made it possible to use coarser filter media which increased the dirt holding capacity in the filter. It also increased the flow rate through the filter so much so that it is now possible to use carbon chambers down stream of the filter handling only a portion of the total flow on a bypass basis. This arrangement now makes it possible for the plater to service either the filter or the carbon chamber independently, thus achieving the maximum benefit from both.



The plater now has a choice to purify his solution with carbon continuously or intermittently at will, and quite easily change his carbon for as often as necessary should an unusual contamination problem arise, otherwise we have found that 10 lbs. of Serfilco granular carbon will maintain clarity in a 2000 gallon (8000 liter) tank for about three weeks. Solution, however, should be checked and carbon replaced at more frequent intervals according to the needs of the parts being plated.

Separate purification with granular carbon is usually adequate to meet the purification problems of any solution as long as the proper frequency of carbon change is adhered to, thus virtually eliminating the need of having to batch treat with powdered carbon.

Any plater who has ever changed a filter with powdered carbon will agree that the use of granular carbon is the preferred method of purification. Serfilco carbon purification chambers are available for use with all makes and types of filtration systems, and could easily be installed with an adapter kit, per the above illustration, to the filter you are now using.