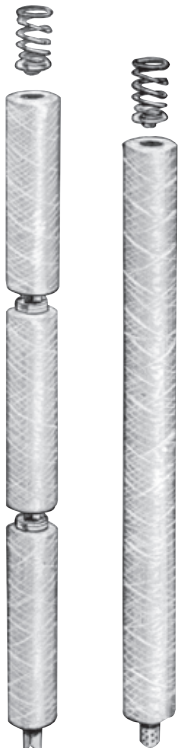
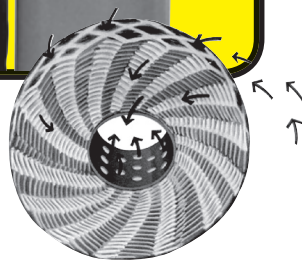


# SERFILCO®

## 'MAXI-DEPTH' WOUND FILTER CARTRIDGES

BULLETIN  
M-103D  
AUG. 1997



(Left) Three standard 10" SERFILCO Maxi-Depth filter cartridges joined to make a 30" cartridge.

(Right) Integrally wound 30" SERFILCO filter cartridge in place of multiples of 10" cartridges greatly reduces the number of parts required for handling multi-deck filters.

- **Selective particle retention — actually divides the dirt by particle size to achieve complete depth loading**
- **High flow rate with relatively low pressure drop \***
- **Increased solids capacity — means lower operating cost**
- **Simple replacement reduces labor cost**

SERFILCO Maxi-Depth Cartridges of many different porosities are precision wound, disposable 2½" diameter filter cartridges available in standard 6", 10", 20", 30" and integrally wound 40" lengths. The larger sized cartridges are used extensively as single units, although the 10" sized cartridges are easily joined with guides and spacers to form multiple lengths for larger filtering operations.

SERFILCO 20", 30" and 40" filter cartridges are long, unified tubes with the same surface-to-core capacity, but they are wound on a single core for prevention of bypass at joints. They greatly simplify setting up multi-deck filters because of fewer parts and less handling. Filters can be changed in one fifth the time — save labor, minimize errors, reduce stocks of tubes and parts.

### APPLICATION:

Used in SERFILCO and other brand filter chambers employing wound depth, pleated paper, wire-cloth or porous ceramic filter cartridges — for filtration of tap or deionized water; chemicals including those used in photography; paint; plating, pickling and other processing solutions; petroleum products such as hydraulic lubricating fluids, turbine oil and solvents. In fact, SERFILCO filter cartridges are suitable for virtually all liquids and gases.

### SUPERIOR FEATURES:

SERFILCO Maxi-Depth Cartridges offer a new dimension in filtration. Wound to the highest specifications, they insure proper particle selections, increased solids holding capacity, less handling, lowest operating cost.

Individual filter surfaces are laid one over the other to increase looseness from the inside out, providing uniform progression of density from the outside in. This effectively retains larger particles on the inner surface. Thus, true depth filter media operates at peak solids-holding-capacity by distribution of the different particle sizes. Solids-holding-capacity is increased to the equivalent of many square feet of surface media.

Cartridge filter chambers can be turned on or off without change in filter efficiency.

\* Request Bulletins M-109 for cartridge selection and prices and M-100 for cartridge flow rate and pressure drop or both aqueous and non-aqueous liquids.

# Items to consider when planning an efficient filtration installation

SERFILCO Maxi-Depth Cartridges provide a simple, dependable, low cost solution to most problems of liquid clean-up and clarification. To achieve maximum benefit from this versatile filtering method, the filter cartridges and filter chambers must be carefully selected. Filtration efficiency is influenced by the viscosity of the fluid, the flow rate, the nature of the contaminant, the amount of contaminant and the initial pressure drop. From data available on cartridges and vessels, flow rates and pressure drops can be accurately predicted. Where contaminant loads are appreciable, the effect of flow rate on cartridge life should be considered.

Filtration costs are usually determined by four major elements. They are:

- Equipment cost
- Labor cost to change elements
- Replacement element costs
- Cost of production downtime

All of these costs are determined by the size of the filter chosen. In general, expenditures to oversize the filtration equipment will reduce the other costs. Cartridge flow rates in the optimum range can result in more than doubling the amount of fluid filtered by each element before it is spent. Labor to change elements, element costs and downtime costs are reduced in the same ratio.

## PARTICLE REMOVAL RATINGS

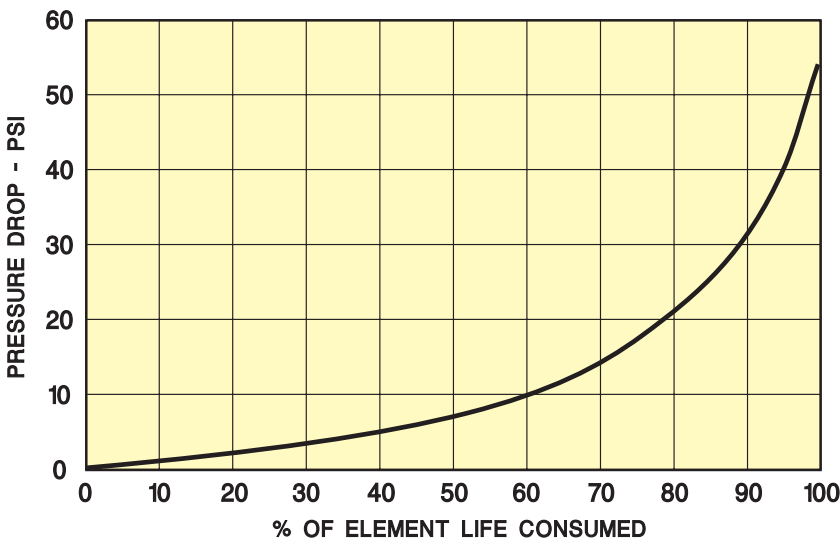
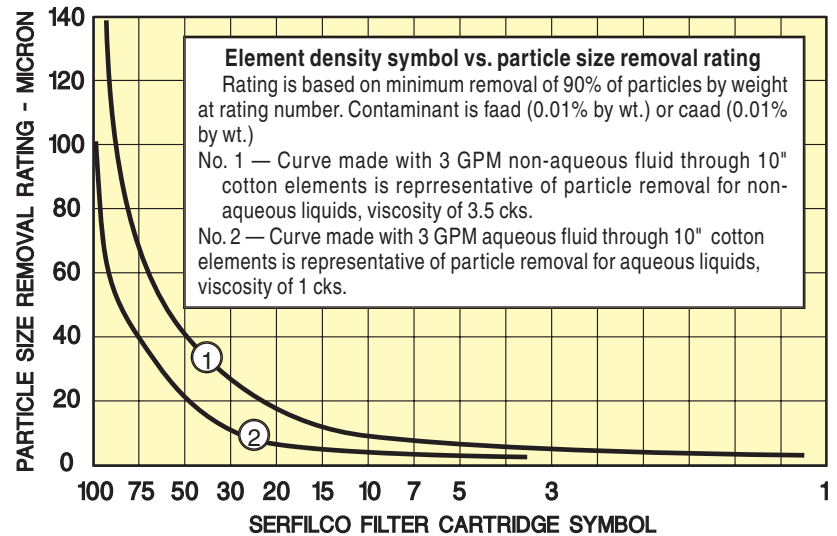
Particle removal ratings of the various wind patterns shown on the curve have been determined under laboratory conditions. Under some operating conditions, slight variation from these ratings may be experienced. The major variables affecting filtration efficiency are:

**Viscosity** — Very viscous fluids tend to hold particles in suspension, carrying some larger

particles through, reducing efficiency.

**Flow rate** — High flow rates may reduce efficiency, low rates increase it.

**Pressure drop** — Very high pressure drop may



## CHARACTERISTIC ELEMENT LIFE CURVE

This is a typical curve showing element life as related to pressure drop. In actual service, a narrower spread of pressure drop is usually encountered, such as an initial pressure drop of two or three pounds and a final drop of thirty pounds. As can be seen from the curve, it can be very advantageous to size a filter for a low initial pressure drop. For example, if a filter is sized for an initial drop of as little as five pounds, 40% of the potential life of the elements used in it will be lost.

