

# MAHLE

Industry

## Cartridge Filters The NP Trapper Series

Particulate Removal, Depth Filter Elements  
Chemically Compatible with a Wide Range of Fluids and Gases

### 1. Introduction

The NP Trapper series, named for its superior dirt trapping ability, is made using a unique winding process which provides the NP Trapper with a uniform density profile throughout the cartridge. This process gives greater control of porosity from one cartridge to the next. Density is controlled radially and concentrically. The spaces between the fibers become progressively smaller and more numerous approaching the discharge surface. Due to the density profile, the contaminant is trapped not only on the cartridge surface, but throughout its depth. This creates a filter cartridge with greater dirt holding capacity and more reliable filtration.

The NP Trapper cartridge is made from long fibers of Polyester which resist excessive migration. These cartridges are available in several micron ratings ranging from 2 to 125 microns, plus they will withstand differential pressures up to 75 psi. These cartridge elements are Double Open End (DOE) type as shown.

The fibers and resin used in the Trapper are chemically compatible with a wide range of fluids and gases. Typical filtration applications for the NP Trapper include:

#### Applications

- Fresh Water
- Salt Water
- Ethylene Glycol
- Natural Gas
- Air
- Hydraulic Fluid
- Hydrocarbons
- Paint
- Coolants
- Solvents
- Lubricating Oil
- Kerosene
- Plus a Variety of Other Liquids and Gases



## 2. Construction Features for NP Trapper Cartridges

### Operation

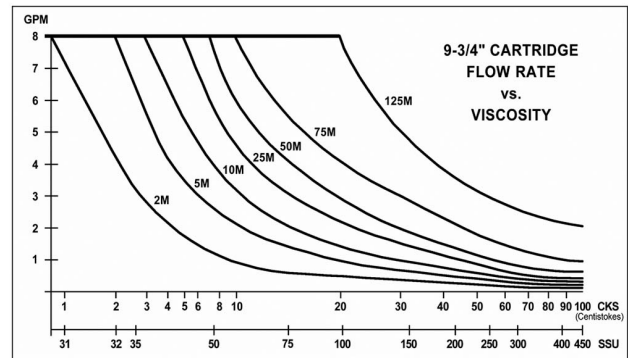
The NP Trapper cartridge elements will operate at temperatures up to 250 °F (120 °C). They are available in 2 to 125 micron ratings, plus they will withstand differential pressures up to 75 psi. Cartridge replacement is suggested at a 30-35 psi differential pressure rating. Operation above 35 psi differential pressure rate may be at a greatly reduced flow rate and with a significant drop in filtration efficiency.

### Material

The NP Trapper is made from long fibers of Polyester which resist excessive migration. No support core is needed to hold the filter material in place as in other style cartridges. The long fibers are impregnated with a phenolic resin, which provides a rigid cartridge that resists channeling and fiber migration.

## 3. Flow Rating

This graph represents the typical flow rate per 9-3/4" length cartridge, at various fluid viscosities and micron ratings. These values are based on an initial clean pressure drop of 2 psi. A Trapper 3NP triple length cartridge has 3 times the flow rate per cartridge as shown by the graph. The Trapper 4NP quadruple length cartridge has 4 times the flow rate per cartridge with a maximum flow of 24 GPM which is limited by the 1" I.D. restriction. These flow rates should give acceptable cartridge life when the turbidity is below 15 parts per million. If high dirt loads are expected, lower cartridge flow rates should be used for sizing purposes. Multiply the number of cartridges in a housing times the flow rate from the graph, for the particular fluid, to determine the housing capacity.



Centistoke = Centipoise / Specific gravity

## 4. Additional Cartridge Data

Cartridge Micron Rating	Cartridge Length			Size Opening in inches	Flow Rate (gpm) with Water*		
	9-3/4 inches	29-1/4 inches	40 inches		9-3/4 inches	29-1/4 inches	40 inches
2	1NP2	3NP2	4NP2	.000079	4	12	16
5	1NP5	3NP5	4NP5	.000197	5	15	20
10	1NP10	3NP10	4NP10	.000394	6	18	24
25	1NP25	3NP25	4NP25	.00099	7	21	24
50	1NP50	3NP50	4NP50	.0020	8	24	24
75	1NP75	3NP75	4NP75	.0029	8	24	24
125	1NP125	3NP125	4NP125	.0049	8	24	24

\*Water at 2 psi clean pressure drop

All cartridges are 2-1/2" OD x 1" ID. Single length (1NP) cartridges are 9-3/4" long. Triple length (3NP) cartridges are 29-1/4" long. Quadruple length (4NP) cartridges are 40" long. Adding "-OP" to the model number indicates 222 o-ring style end seal with the opposite end closed.

To identify or specify a certain micron size for a particular cartridge, note the numbers that follow the 1NP or 3NP. That number (or numbers) denotes the micron rating. Adding "-OP" to the model number indicates a 222 end adapter. Blank indicates the standard double open end (DOE) configuration.

### Ordering Examples:

**Example:** 1NP75 Trapper cartridge identifies it as a single length, 9-3/4 inch long, double open end, polyester cartridge element, with a micron rating of 75.

**Example:** 3NP10 Trapper cartridge is a triple length, 29-1/4 inch long, DOE, polyester cartridge with a 10 micron rating.

**Example:** 4NP125 Trapper cartridge is a quadruple length, 40 inch long, DOE cartridge with a 125 micron rating.

**Example:** 4NP125-OP is a 40 inch long, 125 micron filter with one end closed and the other has a 222 o-ring adapter. Cartridges with the "-OP" designation are special order cartridges.

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