

# MSCR-PP MICRON

## SELF CLEANING FILTER SERIES 3D FILTERING TECHNOLOGY



### MAIN TECHNICAL CHARACTERISTICS

- Continuous flow rate during back wash
- Filtration from 1 to 120 micron SINTERED FIBRE 3D
- Maximum flow rate 15 m<sup>3</sup>/h with a single filter
- Minimum water for cleaning

### APPLICATION

- Prefiltration for water treatment plants
- Cooling towers
- Heat exchangers
- Irrigation
- Protection of spray nozzle
- Sea water filtration



### FILTERING MESH FLOW RATE TABLE (M<sup>3</sup>/H)

The flow rates indicated refer to a load loss of 0.2 Bar with clean, filtered water.

| Model                      | 20 µm 3D | 15 µm 3D | 10 µm 3D | 5 µm 3D | 1 µm 3D |
|----------------------------|----------|----------|----------|---------|---------|
|                            | AISI316  | AISI316  | AISI316  | AISI316 | AISI316 |
| MSCR PP MICRON 1" 1/2 - 7  | 10       | 9        | 7        | 5       | 2.5     |
| MSCR PP MICRON 1" 1/2 - 15 | 15       | 15       | 15       | 14      | 7       |



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### 3D TECHNOLOGY

The filtering element is made of AISI316 sintered fibre. This ensures high permeability with excellent filtering efficiency due to the fibre thickness (hence called 3D) and the diameter of the fibres.

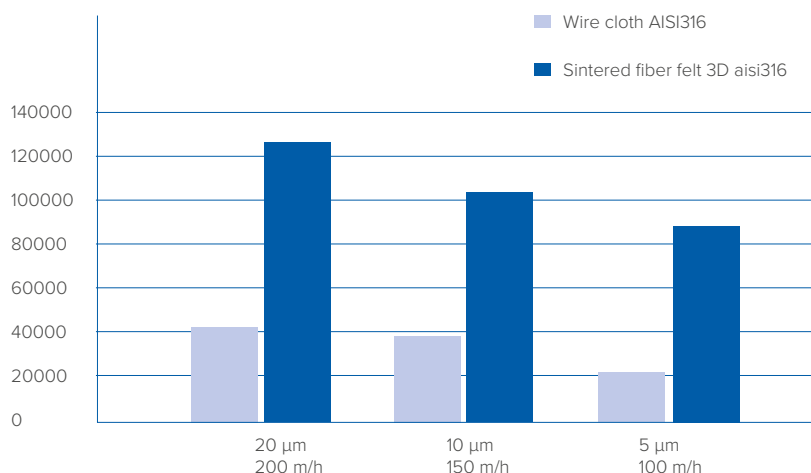
At low pressure differential, this type of construction allows retention of a much greater amount of TSS (Total Suspended Solids) compared with traditional single thread fabrics. Additionally, exposed to a Delta Differential, the fibres are far more stable compared to the single thread fabrics. The filtering fabrics used are tested in our laboratories to assess the performance of the main filtering process.

Based on these performance assessments, the most suitable fabrics for the requested use are selected. The table shows load capacity data based on various filtering fabrics at various velocities.

Data collected at  $\Delta P = 5$  P.S.I.  
DHC diagram for the data shown on the table.

| Type of fibre felt                                           | Dirt Holding Cap. mg/m <sup>2</sup> | Filtration speed m/h |
|--------------------------------------------------------------|-------------------------------------|----------------------|
| Wire cloth AISI316 - 20 $\mu$ m                              | 42,545                              | 200                  |
| <b>Sintered fibre felt 3D AISI316 - 20 <math>\mu</math>m</b> | <b>125,465</b>                      | <b>200</b>           |
| Wire cloth AISI316 - 10 $\mu$ m                              | 38,245                              | 150                  |
| <b>Sintered fibre felt 3D AISI316 - 10 <math>\mu</math>m</b> | <b>102,855</b>                      | <b>150</b>           |
| Wire cloth AISI316 - 5 $\mu$ m                               | 21,112                              | 100                  |
| <b>Sintered fibre felt 3D AISI316 - 5 <math>\mu</math>m</b>  | <b>88,623</b>                       | <b>100</b>           |

### DIRT HOLDING CAPACITY - DHC (MG/M2)



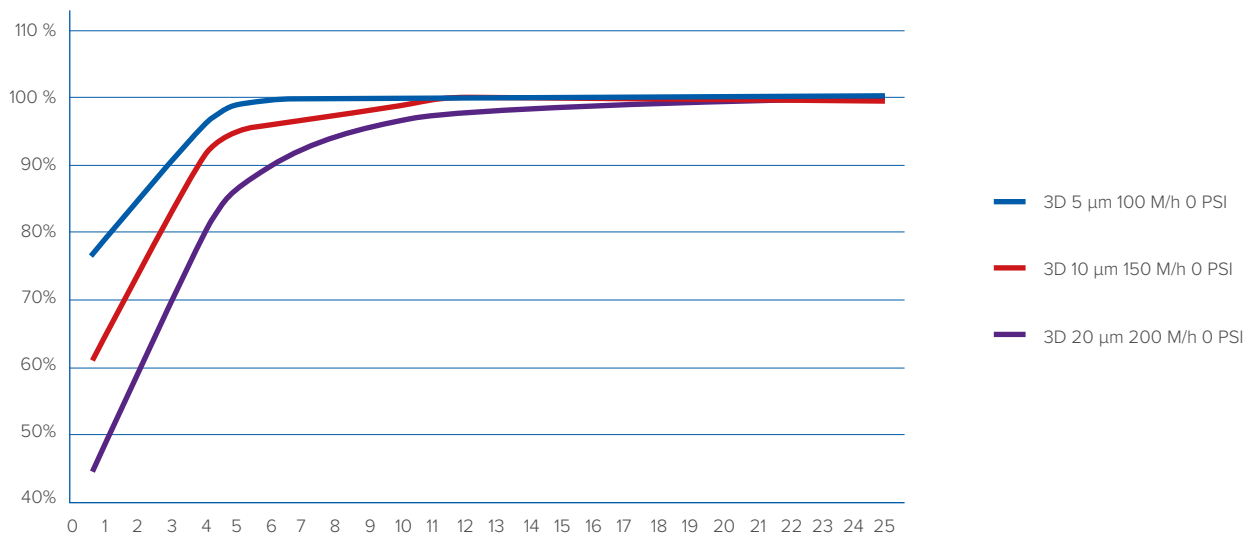
# MSCR-PP MICRON

## SELF CLEANING FILTER SERIES

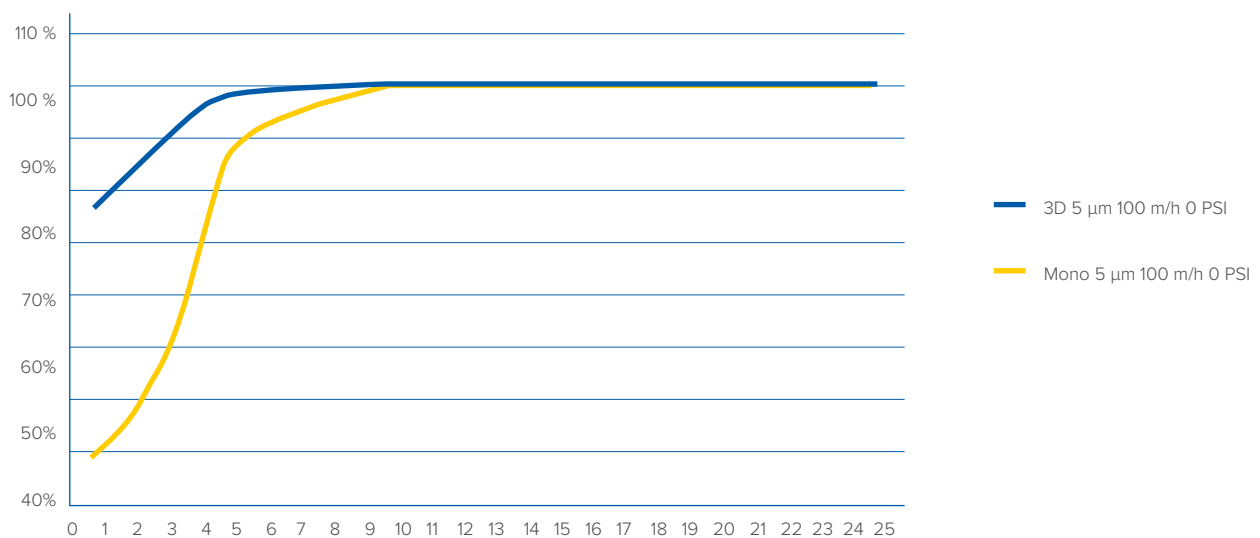
Diagram showing 3D fabrics filtering efficiency and various degrees of filtration at reference speed.

### FILTRATION EFFICIENCY

Efficiency comparison between **3D versus single thread fabrics** for various degrees of filtration.



Comparison between **3D fabric and monofilament fabric with 5 micron filtration rating**

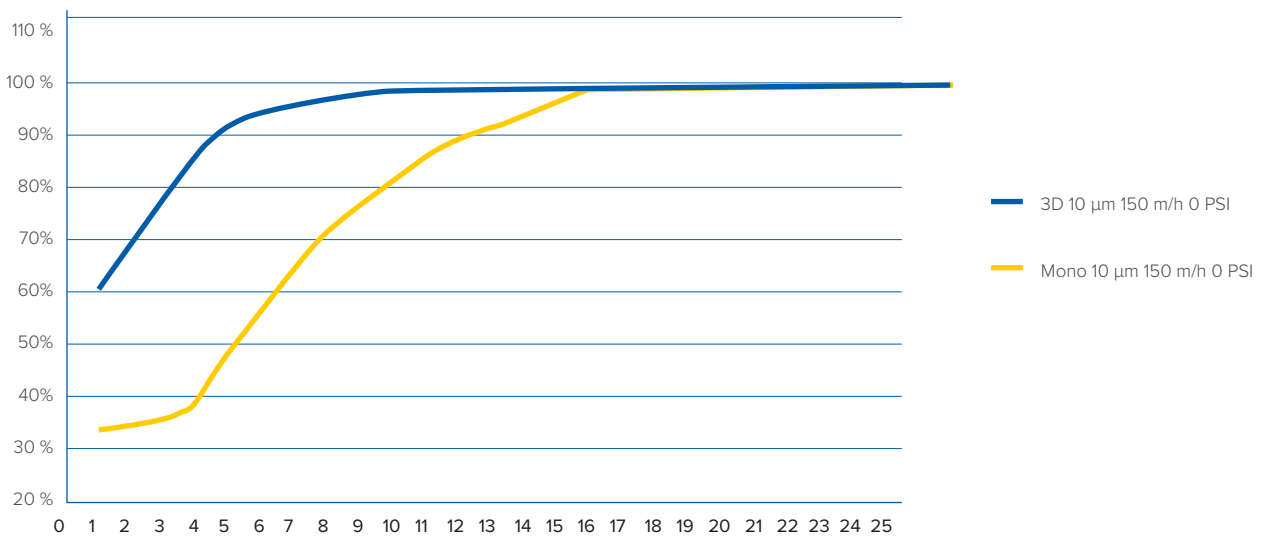


# MSCR-PP MICRON

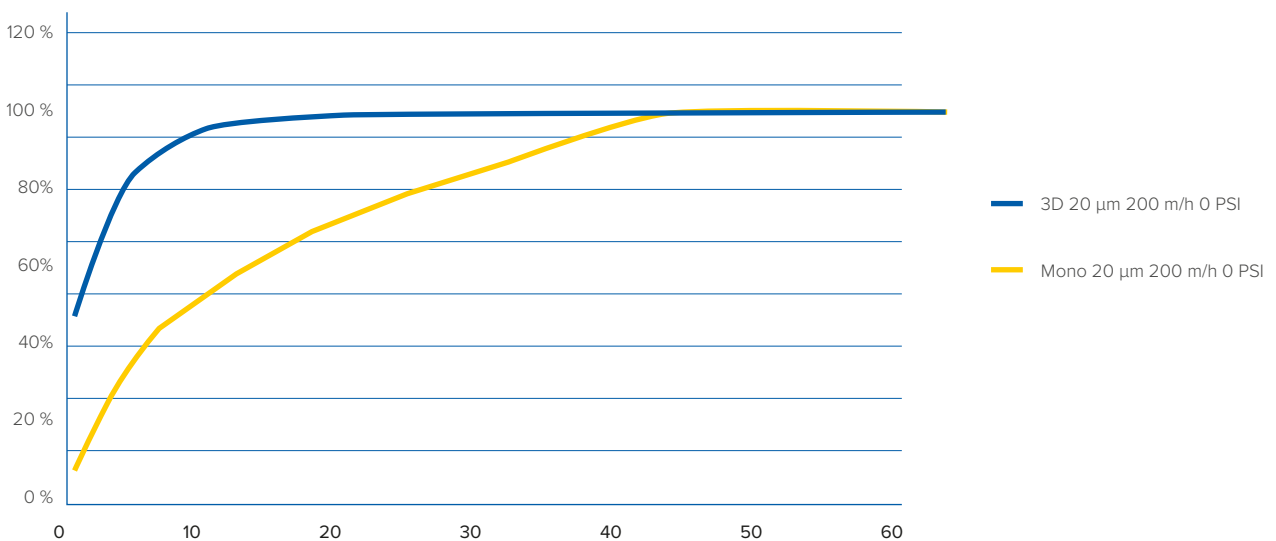
## SELF CLEANING FILTER SERIES

### FILTRATION EFFICIENCY

Comparison between **3D fabric** and **monofilament fabric** with **10 micron filtration rating**



Comparison between **3D fabric** and **monofilament fabric** with **20 micron filtration rating**



# MSCR-PP MICRON

## SELF CLEANING FILTER SERIES

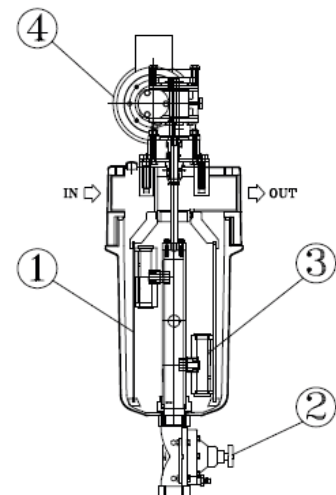
### OPERATION

#### Service

Water enters the filter through the IN inlet and goes through the filtering cylinder (1) from inside to the outside. This will retain all non-deformable suspended solids that are the same size or bigger than the filtration screen installed. Filtered water leaves through the outlet pipe (OUT).

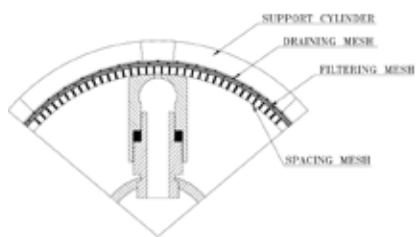
#### Cleaning cycle

The continuous settling of suspended solids inside the filtering cylinder (1) causes blockage which results in a pressure difference ( $\Delta P$ ). At a preset value of  $\Delta P$  (range  $0.3 \div 1$  Bar) an automatic cycle will start to clean the filter cylinder (1). This operation begins with a signal that opens the discharge valve (2) and creates communication between the suction nozzles (3), the electric motor (4) creates a rotating motion which enables the nozzles to inspect the filtering surface. The filtered solids are ejected through the discharge valve (2). The cleaning cycle lasts approximately 15 seconds.

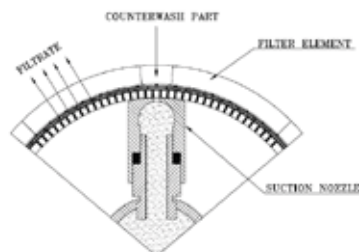


### FILTER ELEMENT AND CLEANING SYSTEM

#### Filtration phase



#### Washing phase



#### Filter interior



#### Controller

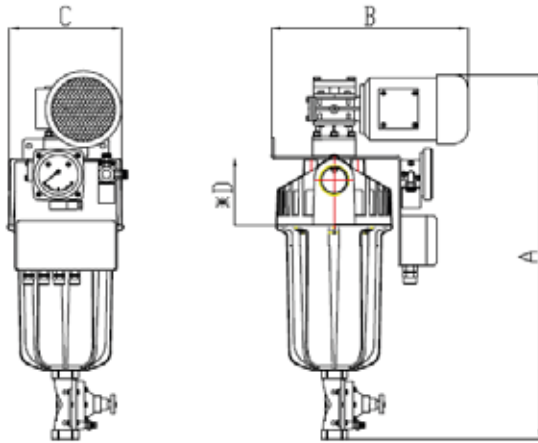
A controller operates the washing phase. The cleaning cycle is started by a differential pressure switch or by a time signal. The controller will give an „alarm“ signal in case of problems in the washing system. The washing phase can also be controlled manually. The solenoid controlling the valve is pneumatic as standard but can be changed to hydraulic if air is not present.



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## SELF CLEANING FILTER SERIES

### DIMENSIONS AND TECHNICAL DATA MSCR PP



| Model                                                                          | MSCR PP -1"1/2 - 7 | MSCR PP -1"1/2 - 15 |
|--------------------------------------------------------------------------------|--------------------|---------------------|
| Filtration area (cm <sup>2</sup> )                                             | 700                | 1450                |
| Flow rate max – m <sup>3</sup> /h (ΔP 0,2 Bar)                                 | 15                 | 15                  |
| Connection In/Out                                                              | 1" 1/2F            | 1" 1/2F             |
| Discharge                                                                      | 1" F               | 1" F                |
| 1 Bar washing flow rate with mesh 125 micron - m <sup>3</sup> /h               | 2                  | 5                   |
| Wash duration - Sec                                                            | 15                 | 15                  |
| Pressure min-max – Bar                                                         | 1-6                | 1-6                 |
| Temperature max - °C                                                           | 40                 | 40                  |
| Power supply - Volt                                                            | 220 50Hz           | 220 50Hz            |
| Power required - Watt                                                          | 90                 | 180                 |
| Construction certificates                                                      | CE                 | CE                  |
| Maximum size of inlet particles* - mm (filtration from 300 to 25 μm) – mm      | 0.2                | 0.2                 |
| Max total suspended solids at inlet mg/l (filtration from 300 to 80 μm) – mg/l | 20                 | 20                  |
| Max total suspended solids at inlet mg/l (filtration from 50 to 25 μm) – mg/l  | 10                 | 10                  |
| A (mm)                                                                         | 610                | 855                 |
| B (mm)                                                                         | 320                | 320                 |
| C (mm)                                                                         | 190                | 190                 |
| D* Cartridge extraction                                                        | 250                | 500                 |
| Weight Kg                                                                      | 7                  | 12                  |

These technical data are indicative and subject to changing without notice.

The max suspended solids at inlet is an important factor, because depending on their size distribution and their specific weight they can clog up the filter in a different way.



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## SELF CLEANING FILTER SERIES

### DESCRIPTION OF PARTS

| Part                             | Description                                                                 |
|----------------------------------|-----------------------------------------------------------------------------|
| Body                             | PP                                                                          |
| Cover                            | PP                                                                          |
| Connection threading             | Cylindrical GAS UNI338-66                                                   |
| Mesh support strainer            | PVC                                                                         |
| Filtering mesh                   | AISI 316 3D FROM 20,15,10,5,1 Micron                                        |
| Protection mesh                  | PP                                                                          |
| Suction nozzle                   | PE                                                                          |
| Nozzle support                   | PVC                                                                         |
| Nozzle pipe                      | PVC                                                                         |
| Internal seals                   | EPDM                                                                        |
| Reduction unit                   | Aluminium and carbon steel                                                  |
| Electric motor                   | Hot-painted aluminium                                                       |
| Solenoid valve                   | Three-way aluminium                                                         |
| Switchboard                      | ABS IP55 with front display                                                 |
| Differential pressure switch     | Aluminium with parts in contact with liquid made of AISI 316                |
| Discharge valve                  | PP diaphragm with flow rate regulation                                      |
| Pressure gauges                  | Stainless steel with 2" 1/2 dial, radial connection and 0-10 Bar indication |
| Accessories (Plugs and adapters) | PP – PVC – AISI316                                                          |

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## SELF CLEANING FILTER SERIES

### FILTER CODING TABLE

| 1. Shape / installation filter | Code |
|--------------------------------|------|
| L / vertical                   | MSCR |
| 2. Application                 | Code |
| Industrial                     | I    |
| 3. Body / cover material       | Code |
| Polypropylene                  | PP   |
| 4. Connection in/out           | Code |
| 1"1/2                          | 112  |
| 5. Filter element size         | Code |
| 7                              | 07   |
| 15                             | 15   |
| 6. Basket material             | Code |
| PVC-U                          | 1    |
| 7. Filtering fabric material   | Code |
| AISI316 3D                     | 1    |

| 8. Nozzle support material   | Code |
|------------------------------|------|
| Pneumatic                    | 1    |
| Hydraulic                    | 2    |
| 9. Nozzle pipe material      | Code |
| 20                           | 20   |
| 15                           | 15   |
| 10                           | 10   |
| 5                            | 05   |
| 1                            | 01   |
| 10. Pilot discharge valve    | Code |
| Control panel + diff. Switch | C    |
| Nessuna                      | 0    |
| Standard version             |      |

