

## AGF Filters

## All Polymeric Media Filters



### features:

- Constructed with special synthetic materials
- Corrosion-proof and high chemical resistance
- Superior underdrain system designed with 55 diffuser nozzles
- Two user-friendly elliptical access ports for easy inspection and media loading/unloading
- Light weight for easy installation, no crane required
- Detachable legs facilitate compact storage and economical shipping
- Maximum operating pressure - 6 bar/85 psi

# AGF Media Technology

## AGF Filter Principle

Pressurized Media filters operate by trapping the suspended particles in unfiltered water as it flows through a bed of media in a pressurized tank.

The recommended filter media are crushed basalt, crushed silica, quartz sand, AFM/Pep Active, and other catalytic media. The varying sizes of the media cause the water to flow through a maze of passages on its way through the media bed, from the inlet to the outlet of the filter.

Due to the large volume and contact area between the water and the media particles, various physical forces go into effect and act to retain the contaminating particles.

The efficiency of large particle retention is high as long as the media is kept clean. The catalytic media type applies additional chemical-physical attraction forces between the media and particles, especially those of organic nature, giving more efficient organic material removal. In addition, the round shaped particles degrade more quickly, and their cleaning requires less water in comparison with other media types.

## Filtration Process

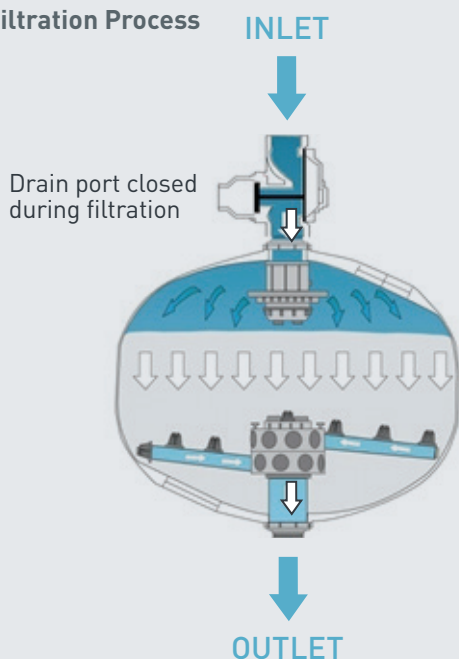
During the filtration process, water enters the media filter system through the inlet manifold. It is cleaned by flowing through the media and is then discharged through the outlet manifold. During filtration, the valve inlet and outlet ports are open, while backwash drain ports are closed. Water flows from the top, over the distributor plate, then down through the media layer to the outlet, through the diffuser nozzles located in the bottom part of the filter.

## Backwash Process

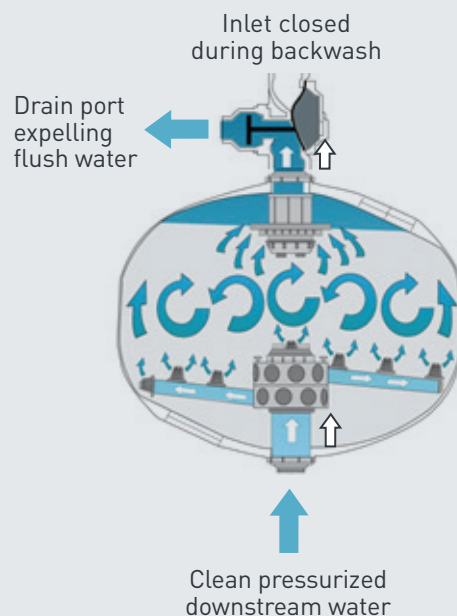
During the backwash process, the inlet valve port closes and the backwash drain port opens, allowing reverse water flow through the filter. Downstream, clean filtered, pressurized water (from the other filters or a filtered water storage tank) flows into the bottom of the filter, lifting and fluidizing the media and releasing the accumulated dirt and debris, which is then flushed out through the backwash drain port and into the backwash manifold.

The backwash restriction valve needs to be adjusted properly so that debris will be flushed out of the filter while the media, being of a higher density than the debris, will remain fluidized in the filter tank.

### Filtration Process



### Backwash Process



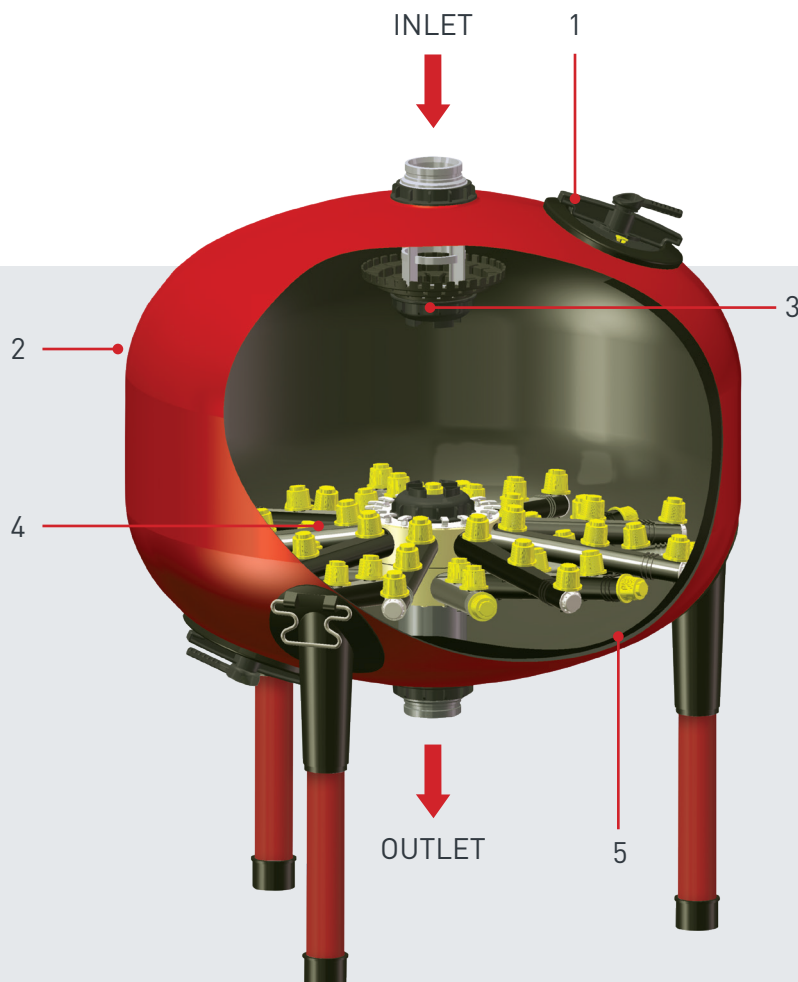
**1** Two large access ports, one at the top of the tank for inspection and loading of the media, the other at the bottom of the tank for emptying and maintenance. The hydro dynamic sealing system incorporates leak-free ports sealed with a submarine-type elliptical cover secured by water pressure.

**2** The filter's outer layer is constructed from a synthetic composite material with a high strength to weight ratio.

**3** The distributor plate is designed to evenly distribute unfiltered water across the media bed to maintain a flat surface, even under high flow conditions.

**4** A superior underdrain design incorporating 55 diffuser nozzles assures hydraulic balance during filtration and provides uniform lifting of the sand bed for efficiency in backwashing.

**5** Black polyethylene inner layer provides high chemical resistance and light barrier together with high ESCR (Environmental Stress Cracking Resistance).



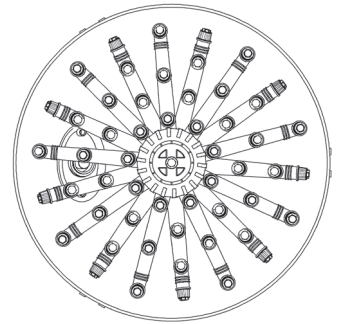
## Media Filtration

Media Type	Quartz			AFM		Gravel	
Grade	0	1	2	0	1	1	2
Size	0.5-0.8 mm (0.019-0.031")	0.8-1.2 mm (0.031-0.047")	1.2-2.0 mm (0.047-0.078")	0.25-0.5 mm (0.0098-0.019")	0.5-1.1 mm (0.019-0.043")	0.8-1.2 mm (0.031-0.047")	1.2-2.0 mm (0.047-0.078")

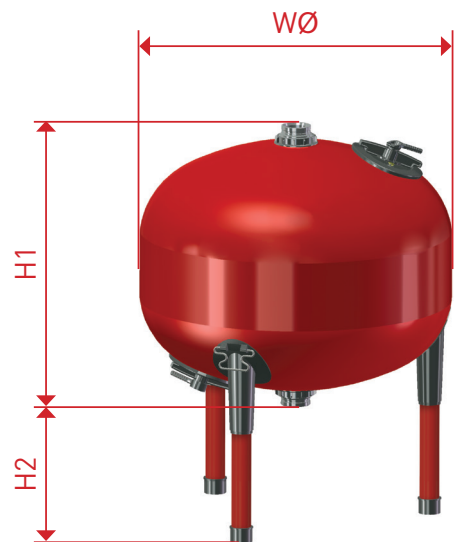
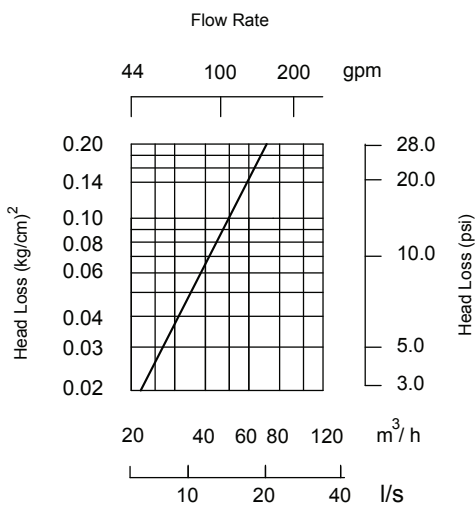
## Silica Sand Data

Media Type	Mesh Range	Mean Effective Size Gravel
Crushed Silica 12	80-130 mesh	1.1-1.2 mm (0.043-0.047")
Crushed Silica 16	155-200 mesh	0.6-0.7 mm (0.023-0.275")
Crushed Silica 20	170-230 mesh	0.45-0.5 mm (0.017-0.019")

## Diffuser Nozzles Superior Design



## AGF Filter 48" Head Loss



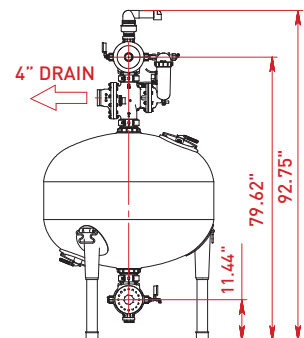
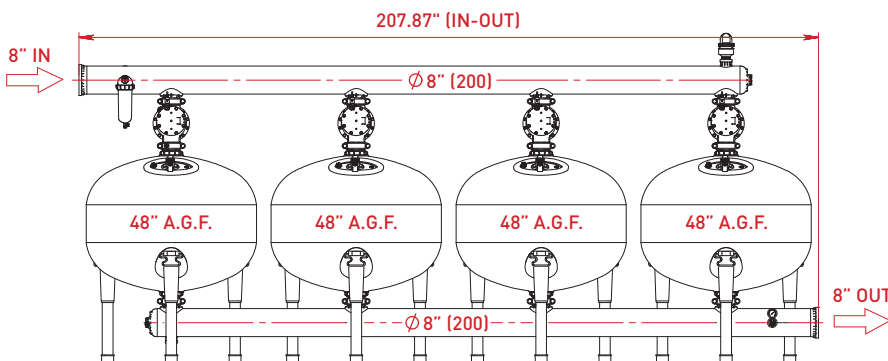
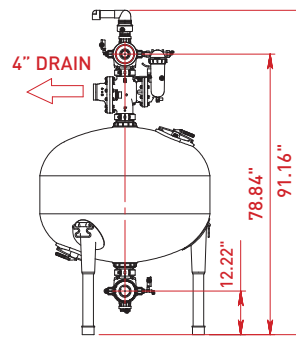
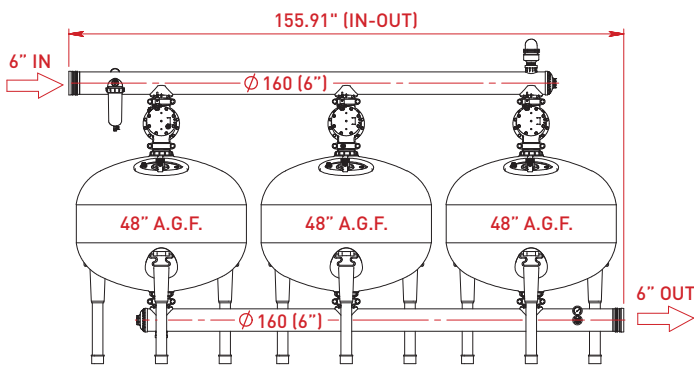
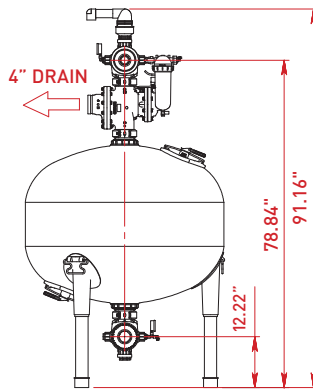
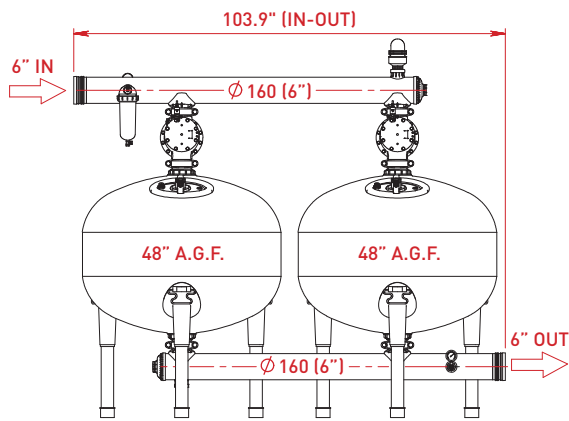
## Technical Data

Maximum pressure	6 bar (87 psi)
Minimum pressure during filtration mode	1.4 bar (20 psi)
Minimum pressure on the downstream side during flush mode	2.06 bar (30 psi)
Flow rate range* (single filter)	15-70 m³/h (66-308 gpm)
Diameter inlet/outlet	102 mm (4" grooved)
Filter tank diameter - WØ	1,220 mm (48")
Distance between end connections - H1	44" (1,110 mm)
Weight (empty)	120 kg (265 lb)
Outlet height - H2	443 mm (17")

\*Depending on type of media used.

# AGF Battery

No. of Filters	2	3	4	5	6
Distance between filters connections	1,320 mm [52"]				
Distance between inlet manifold and Filter #1	660 mm [26"]				
Backwash pipe diameter	110 mm [4"]				
Backwash valve outlet	4" grooved x 4" grooved				
Backwash center height	1,660 mm [65"]				
Inlet center height	2,003 mm [78.84"]	2,023 mm [79.62"]	2,023 mm [79.62"]	Depends on configuration	
Outlet manifold center height	310 mm [12.22"]	291 mm [11.44"]	291 mm [11.44"]	Depends on configuration	
Length	2,640 mm [103.9"]	3,960 mm [155.9"]	5,280 mm [207.8"]	Depends on configuration	



Dim: mm (inches)

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