evoqua
WATER TECHNOLOGIES

VAF™ FILTRATION SYSTEMS

V-SERIES™ INDUSTRIAL AUTOMATIC SCREEN FILTERS

VAF™ brand V-Series™ automatic self-cleaning screen filters can remove suspended solids from 1500 to 10 micron rating. The V-Series™ filter bodies are manufactured in 316L stainless steel, made in the USA, and are competitively priced. The patented† bi-directional drive design does not require electric motors, limit switches, gearboxes, or hydraulic pistons, thereby eliminating external shafts and seals. The cleaning cycle takes less than 15 seconds and does not interrupt the filtration process.

BENEFITS

- 70% fewer moving parts (no electric motors, gearboxes, limit switches or pistons)
- Simpler controls
- Flush waste is less than 1% of system flow
- Greater cleaning efficiencies
- Lower maintenance requirements

FEATURES

The patented† design improves screen cleaning efficiencies resulting in:

- 100% screen cleaning with controlled suction nozzle rotation
- Priced competitively against all carbon steel body filters
- Individual flow rates from 7 to 2,274 m^3/hr (30 to 10,000 gpm)
- Pre-assembled filtration systems to meet any flow demand
- Filtration 10 to 1500 micron rating
- Made in the USA

MARKETS

- Industrial
- Municipal
- Oil and Gas
- Mining
- Irrigation

APPLICATIONS

- Pre-Filtration to: RO/UF Membrane, UV, Arsenic Removal, Bags/Cartridges
- Cooling Tower: Side Stream Systems, Basin Recirculation Systems
- Seawater, Frac Water, Well Water, River Water, Stormwater/Rainwater, Process Water
- Pump Seal Protection, Spray Nozzle Protection
- Paper Mill
- Clams, Mollusks—Invasive Species
- And Many More

GENERAL SPECIFICATIONS

- Bi-directional Drive
- Max Pressure: 10 bar (150 psi)
- Min Pressure: 2 bar (30 psi)
- Max Temp: 80° C (176° F)
- Flush Cycle: 12 to 15 seconds
- Flow Range per Filter: 7 to 2,274 m3/hr
- (30 to 10,000 gpm)
- Flange Sizes: 3" to 40"
- Screen Options: 10 to 1500 micron on all models
- Manifold multiple units to increase flow ranges

MATERIALS

- Filter Body: 316L standard
- Screens: 316L SS Weave-wire
- Seals: Nitrile, Viton®, Silicone, EPDM

OPTIONS

- Filter Body: 2205 Duplex for Seawater
- High Pressure: 24 bar (350 psi)
- High Temperature: 99° C (210° F)
- Pressure vessel ASME, Section VIII, Div 1

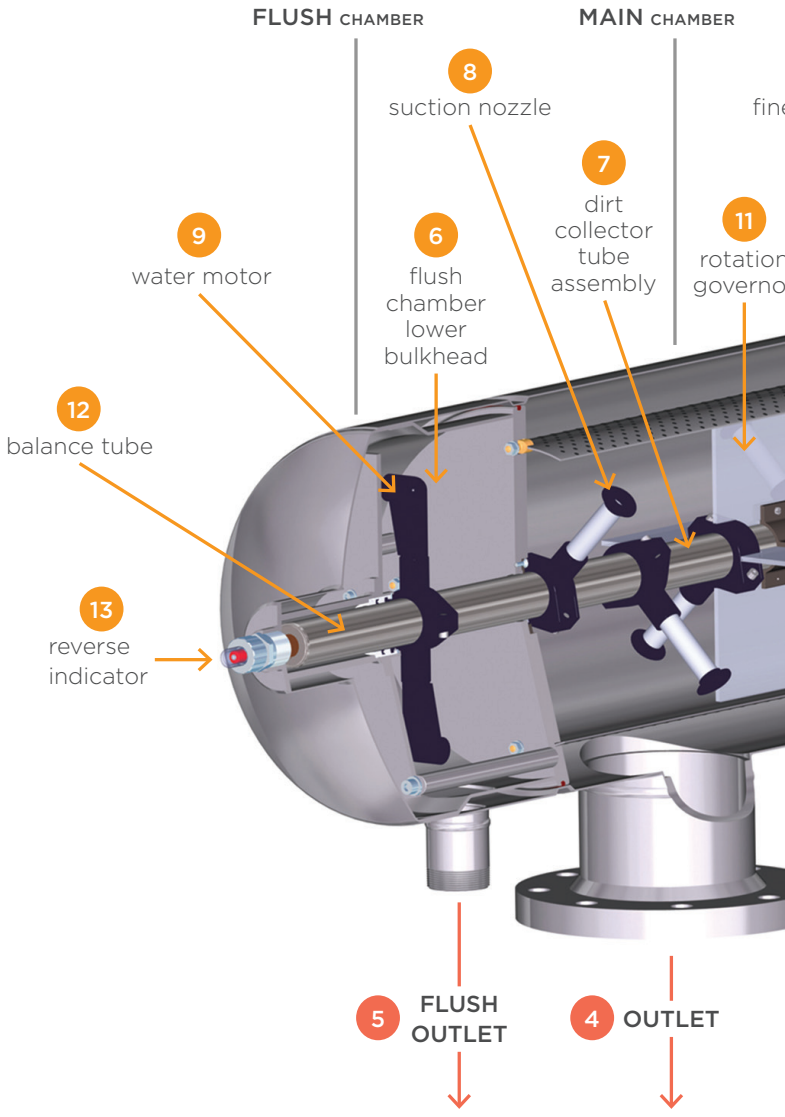
Model	Screen Area		Nominal Flow										Flush Line	Flush Volume 15 Seconds	
			25 micron		50 micron		100 micron		120 micron		200 micron				
	cm²	in²	m³/hr	gpm	m³/hr	gpm	m³/hr	gpm	m³/hr	gpm	m³/hr	gpm	in	L	gal
V-250	1445	224	30	134	41	181	63	276	73	320	82	360	1.5 NPT	30	8
V-500	2890	448	61	269	82	363	125	551	148	640	164	720	1.5 NPT	57	15
V-1000	5594	867	118	520	159	702	242	1066	277	1220	320	1410	2 NPT	57	15
V-1500	8387	1300	177	780	239	1053	363	1599	420	1850	482	2120	2 NPT	87	23
V-2000H	10942	1696	231	1018	312	1374	474	2086	553	2420	632	2780	2NPT	125	33
V-3 VERT	10942	1696	231	1018	312	1374	474	2086	553	2420	632	2780	3 flange	125	33
V-3500	19742	3060	417	1836	563	2479	855	3764	906	3990	1139	5010	3 flange	167	44

Other micron, larger flows, DIN flanges, BSP threads and customizing available upon request.

Horizontal design for ease of installation

Vertical design for minimal footprint

NSF® Certified Filters
All models are available with NSF®-61-372 certification.



HOW IT WORKS

Dirty water enters the filter through the inlet (1) and then passes through the coarse screen (2) from the outside in. It flows from the inside of the coarse screen to the inside of the fine screen and then passes through the fine screen (3) from the inside out. Dirt is collected on the inside surface of the fine screen. The clean filtered water then exits through the filter outlet (4).

As the dirt or cake builds up on the inside surface of the fine screen, the pressure drop across the screen increases. When the pressure drop (the DP or differential pressure) reaches a preset level 0.5 bar (7 psi), the filter controller starts a flush cycle by opening a flush valve on the flush outlet (5). This flush valve exhausts the flush chamber to atmosphere at “0” psi.

The flush outlet is connected to the flush chamber which is separated from the filtration chamber by a lower bulkhead. However, the dirt collector (7) (a hollow pipe with suction nozzles) extends through the partition (6), thus providing a “path” from the suction nozzles (8) through the water motor (9), into the flush chamber and out the flush outlet to atmosphere. The pressure around the suction nozzle is the pressure inside the filter and as water flows through the “nozzle orifice,” it drops to “0” psi when it leaves the flush outlet. This creates an aggressive “suction” at the suction nozzle opening. The suction nozzle clearance at the fine screen is very small so the extreme low pressure at the nozzle opening creates a vacuum causing backflow to pull the dirt from the fine screen.

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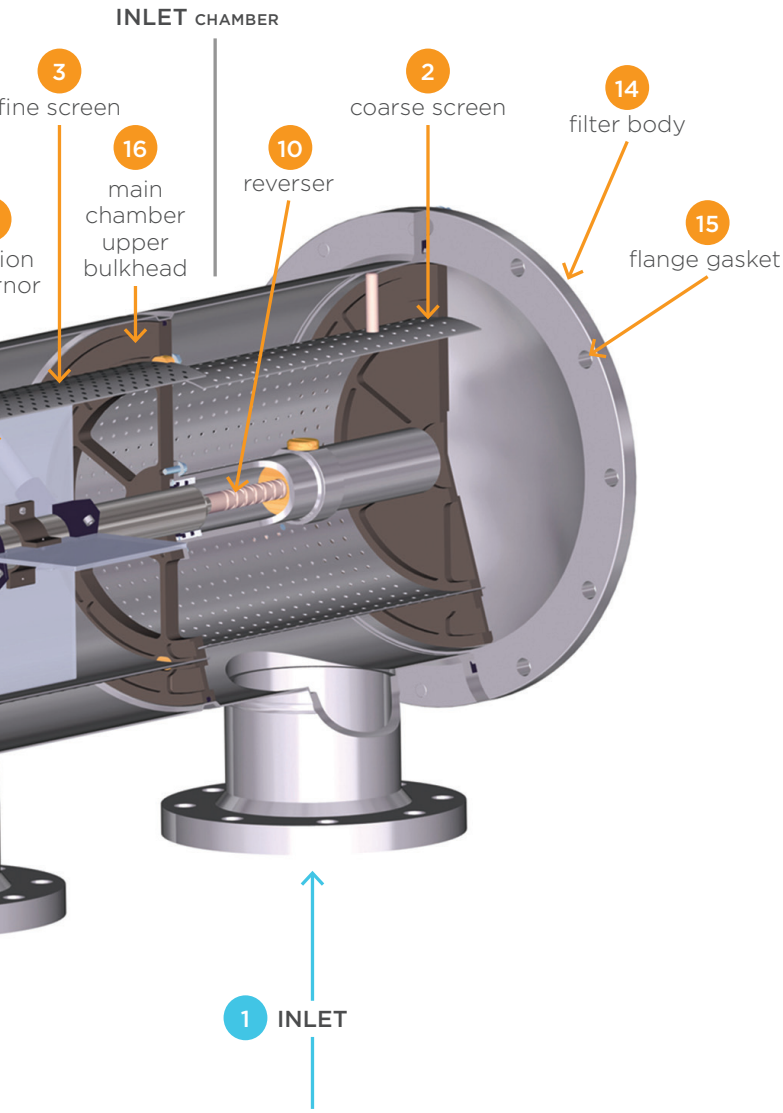
†Patented in some countries.



The water motor has opposite facing jets near its ends. Water jetting out of these openings (coming from the suction nozzles) creates a reaction force (like a pin wheel) which rotates the motor and the dirt collector. As the dirt collector rotates, each suction nozzle cleans a band on the fine screen.

As the dirt collector rotates, the reverser (10) (works like the level winder on a fishing reel) causes the water motor / dirt collector /suction nozzle assembly to move back and forth on a controlled path. This ensures proper overlap for 100% cleaning of the screen's inner surface. The rotation governor (11) helps control the rotation speed of the dirt collector assembly. The balance tube (12) helps balance the transverse pressure on the dirt collector. A magnet located on the end of the balance tube repels the reverser indicator (13) which provides visual indication of the dirt collector assembly movement. This indicates that the entire cleaning system is operating properly during the rinse cycle.

After a preset time, the flush valve closes and the flushing cycle is complete. Very little water is used for each flush; the filter continues to supply water to the system during the flush cycle.

Go to vafusa.com to see the V-Series™ filter's simplicity in action.

WORLDWIDE A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APPLICATIONS

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