



evoqua
WATER TECHNOLOGIES



VAF™ FILTRATION SYSTEMS

V-SERIES™ AUTOMATIC SCREEN FILTERS

VAF brand V-Series™ automatic self-cleaning screen filters can remove suspended solids from 1500 to 10 micron. The V-Series™ filter bodies are manufactured in 316L stainless steel, made in the USA, and are competitively priced. The stainless steel bodies also come with a 5-Year warranty* against body leaks of any kind. The patented Bi-directional Hydrodynamic Drive (BHD) 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.

Visit www.vafusa.com and click on the "Play Video" link to see a demonstration of the filter's operation.

*Contact VAF for a copy of the complete warranty.

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
- Clams, Mollusks - Invasive Species
- Frac Water
- Well Water
- River Water
- Paper Mill
- Stormwater/Rainwater
- Pump Seal Protection
- Spray Nozzle Protection
- Process Water

And Many More

BENEFITS

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

FEATURES

The patented BHD 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 m³/hr (30 to 10,000 gpm)
- Pre-assembled filtration systems to meet any flow demand
- Filtration 10 to 1500 micron



NSF®-61-372 Certification Available
(Models V-250 through V-2000H only)



GENERAL SPECIFICATIONS:

- Bi-directional Hydrodynamic 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



Horizontal Design for ease of installation

MATERIALS:

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

Options:

- Filter Body: 304 SS or 2205 Duplex for Seawater
- High Pressure: 24 bar (350 psi)
- High Temperature: 99° C (210° F)
- Pressure vessel ASME, Section VIII, Div 1



Vertical Design for minimal footprint

MODEL NUMBER	SCREEN AREA		NOMINAL FLOW										FLUSH LINE		FLUSH VOLUME 15 SECONDS	
	in ²	cm ²	25 micron		50 micron		100 micron		150 micron		200 micron		in	gal	liters	
V-250	224	1445	134	30	181	41	276	63	320	73	360	82	1.5 MNPT	8	30	
V-500	448	2890	269	61	363	82	551	125	640	148	720	164	1.5 MNPT	15	57	
V-1000	867	5594	520	118	702	159	1066	242	1220	277	1410	320	2 MNPT	15	57	
V-1500	1300	8387	780	177	1053	239	1599	363	1850	420	2120	482	2 MNPT	23	87	
V-2000H	1696	10942	1018	231	1374	312	2086	474	2420	553	2780	632	2 MNPT	33	125	
V3 VERT	1696	10942	1018	231	1374	312	2086	474	2420	553	2780	632	3 flange	33	125	
V-3500	3060	19742	1836	417	2479	563	3764	855	3990	906	5010	1139	3 flange	44	167	
V-8000	6784	43768	4072	924	5496	1248	8344	1896	9680	2212	11120	2528	3 flange (x4)	132	500	

NSF
Certification Available

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

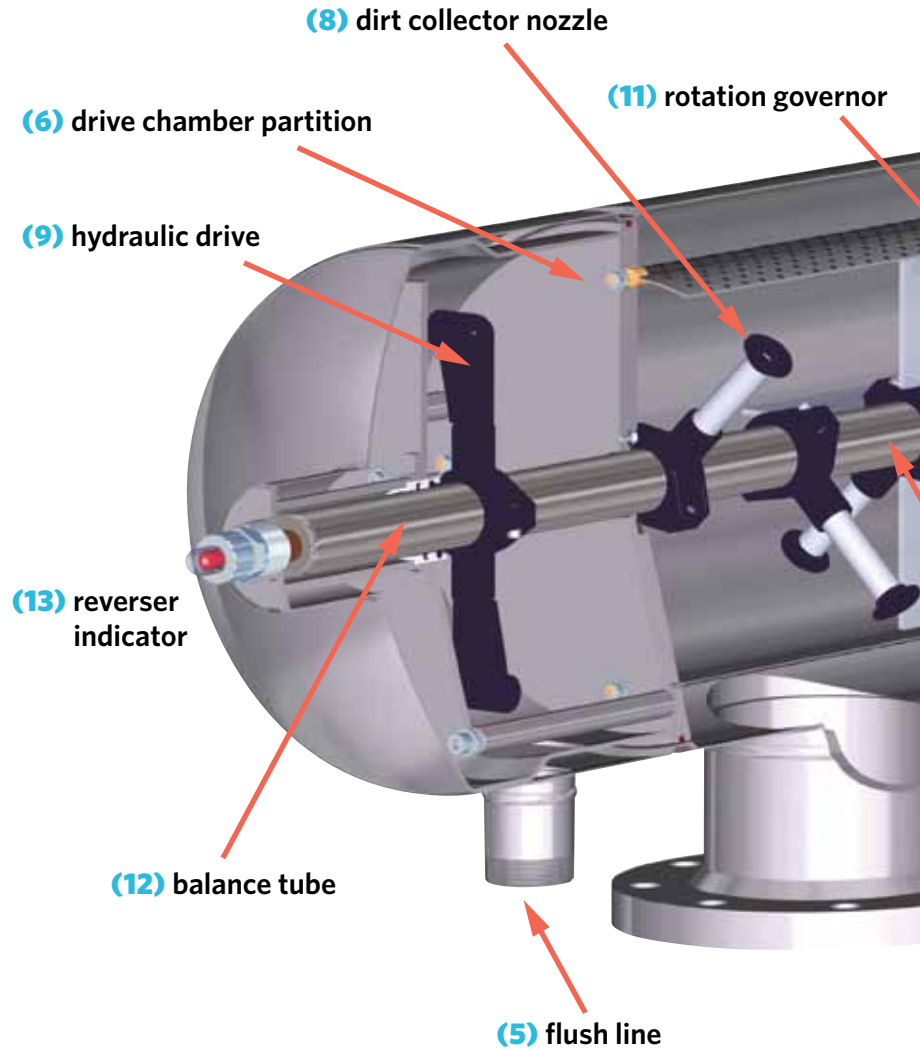


HOW IT WORKS

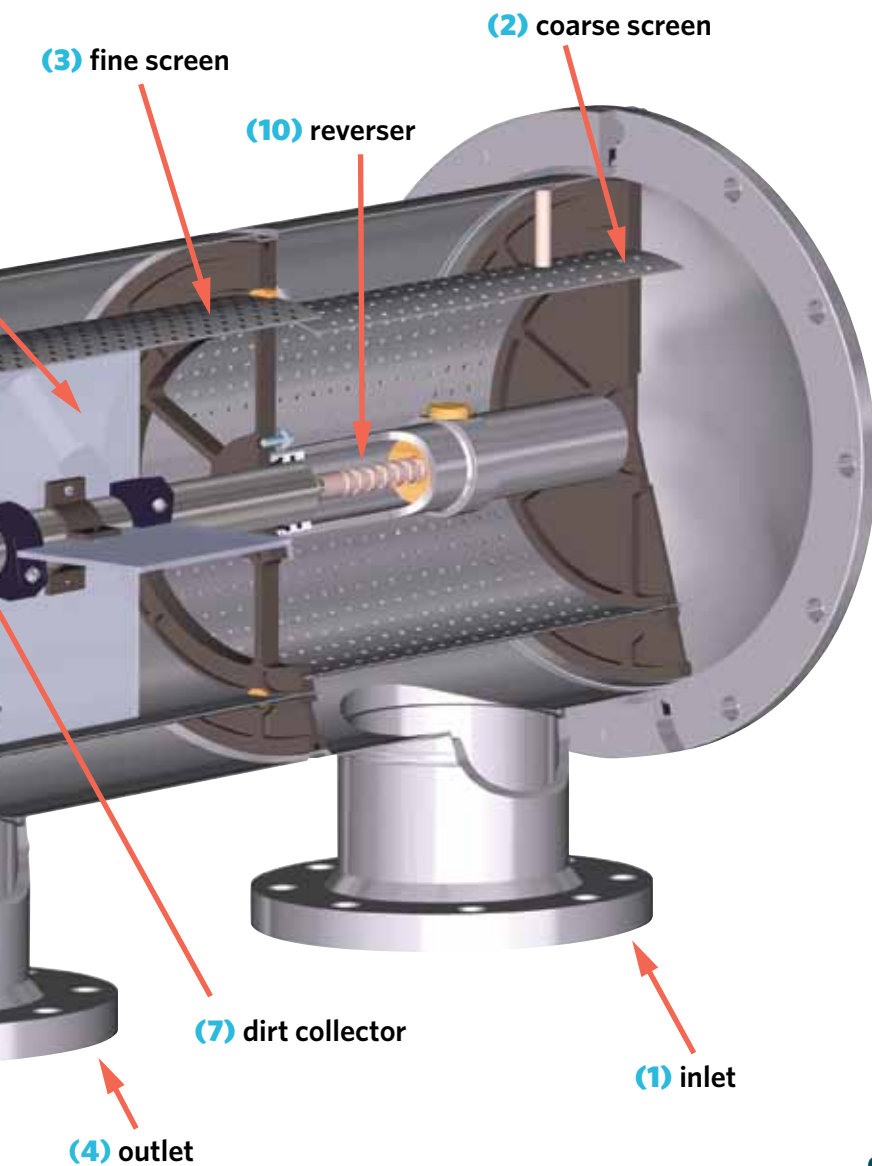
Dirty water enters the filter through the inlet (1) and then passes through the coarse screen (2) from the outside in. It flows from the inside of the coarse screen to the inside of the fine screen and then passes through the fine screen (3) from the inside out. Dirt is collected on the inside surface 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 line (5). This flush valve exhausts the drive chamber to atmosphere at "0" psi.

The flush line (5) is connected to the drive chamber which is separated from the filtration chamber by a drive chamber partition (6). However, the dirt collector (7) (a hollow pipe with dirt collector nozzles) extends through the partition (6), thus providing a "path" from the dirt collector nozzles (8) through the hydraulic drive (9), into the drive chamber and out the flush line (5) to atmosphere. The pressure around the dirt collector nozzle (8) is the pressure inside the filter and as water flows through the "nozzle orifice," it drops to "0" psi when it leaves the flush line (5). This creates an aggressive "suction" at the dirt collector nozzle (8) opening. The dirt collector nozzle (8) clearance at the fine screen (3) 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 (3).



DESIGN



The hydraulic drive (9) has opposite facing jets near its ends. Water jetting out of these openings (coming from the dirt collector nozzles) (8) creates a reaction force (like a pin wheel) which rotates the drive (9) and the dirt collector (7). As the dirt collector (7) rotates, each dirt collector nozzle (8) cleans a band on the fine screen (3).

As the dirt collector (7) rotates, the reverser (10) (works like the level winder on a fishing reel) causes the hydraulic drive (9) / dirt collector (7) / dirt collector nozzle (8) 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 (7) assembly. The balance tube (12) helps balance the transverse pressure on the assembly. A magnet located on the end of the balance tube repels the reverser indicator (13) which provides visual indication of the dirt collector (7) 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 www.vafusa.com to see the V-Series' simplicity in action.




WORLDWIDE




TO SEE MORE PROJECT

APPLICATIONS



SEAWATER FILTRATION
Offshore Platform North Sea
& South China Sea



WATER FILTRATION
Brewery-Tokyo



SEAWATER FILTRATION
Offshore Atlantic



PROCESS WATER
Leather Factory
Vietnam



COOLING TOWER
Chemical-Singapore



POND WATER FILTRATION
Irrigation-Dubai



COOLING TOWER
Medical-Melbourne



WELL/MUNICIPAL WATER
Landscape Irrigation
Saudi Arabia



WATER REINJECTION
Petroleum-Indonesia



COOLING WATER
Geothermal-New Zealand



ABOUT EVOQUA

Evoqua Water Technologies is the global leader in helping municipalities and industrial customers protect and improve the world's most fundamental natural resource: water. Evoqua has a more than 100-year heritage of innovation and industry firsts, market-leading expertise, and unmatched customer service, where it continues to transform water and wastewater. Its cost-effective and reliable treatment systems and services ensure uninterrupted quantity and quality of water, enable regulatory and environmental compliance, increase efficiency through water reuse, and prepare customers for next-generation demands.

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