ARKAL SCREEN LINE

H - SERIES

HYDRAULICALLY OPERATED
SELF CLEANING SCREEN FILTER

ARKAL
FILTRATION SYSTEMS

Operation Information for Model H

Filtration

Water enters the filter through the “Inlet” 1 and passes through the coarse screen 2 that functions as a “first stop” for rough particles. Water then reaches the fine screen 3, which further purifies the flow by separating smaller particles from the water. As more water flows through, impurities build up on the fine screen. As impurities on the screen accumulate, a pressure imbalance is built up between the internal section of the fine screen 3 and its external section.

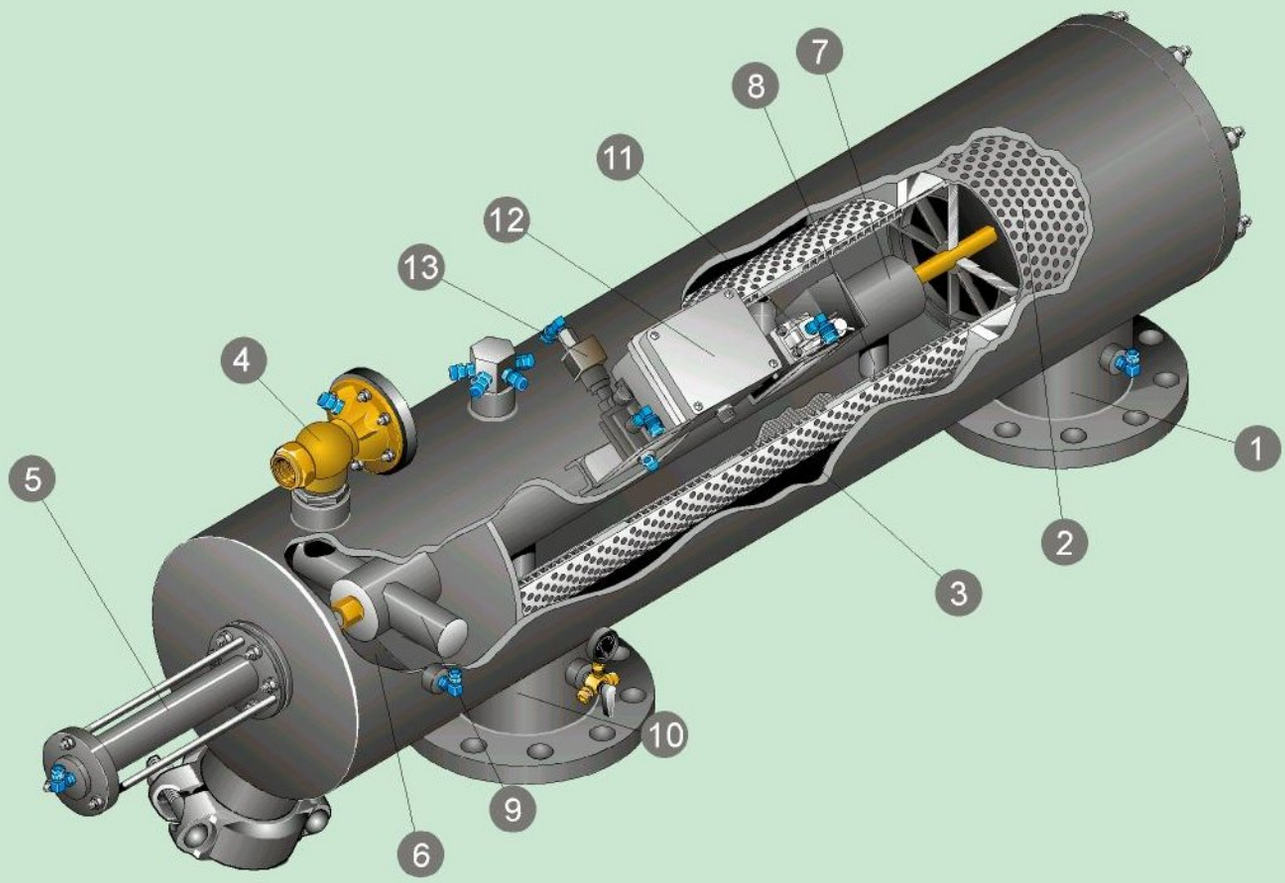
Cleaning Process

When the difference in pressure (ΔP) reaches the preset value on the differential pressure indicator, a series of events is triggered while the water continues to flow to the system units.The flushing valve 4 opens, pressure is released from the hydraulic piston 5 and water flows outside.Pressure in the hydraulic motor chamber 6 and the dirt collector 7 is significantly lowered, and the dirt collector nozzles 8 begin a suction process. The water flows through the hydraulic motor 9 which rotates the dirt collector 7 around its axis.The pressure released from the piston and the high pressure inside the filter cause linear movement of the dirt collector. The combination of the linear movement and rotation efficiently cleans the entire internal screen 3 surface.

The flushing cycle takes 10 seconds. The flushing valve 4 closes at the end of the cycle and the increased water pressure returns the hydraulic piston 5 to its initial position. The filter is now ready for the next cycle, with clean and filtered water flowing through the “Outlet” 10.

General Description of the Electronic Control System

The electrical system controls the cleaning process through the differential pressure indicator 11 that closes a circuit and triggers the electronic control unit 12 controlling the opening and the closing of the flushing valves 4 via the solenoid valve 13 The flushing cycle, which takes a total of 10 seconds, resumes its operation whenever the difference in pressure reaches the preset pressure value set on the differential pressure indicator. If the difference in pressure remains unchanged after one cycle, another cycle will start after a delay of 25 seconds.



Technical Data

Standard Features

- Minimum operating pressure: 2 bar (29 psi)
- Maximum operating pressure: 10 bar (145 psi)
- Clean filter pressure loss: 0.1 bar (1.45 psi)
- Maximum water temperature: 65°C (149°F)
- Filtration range: 50-3000 micron
- Control voltage: 12V DC, 24V AC
- Flush water consumption (at minimum working pressure): 80 liters(21 gallons)
- Filter housing materials: carbon steel coated with baked on epoxy

General Technical Data

Model Number	Conn. Size ØD (Inch)	Screen Area (cm^2)	*Maximum Flow Rate (m^3/h)	**Flushing Flow Rate (m^3/h)	ØD1 (Inch)	ØD2 (Inch)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H (mm)	Weight (Kg)
AK HL*3	3	3220	50	30	10	4	450	1135	1410	1750	580	85
AK HL*4	4	5780	80	30	10	4	900	1530	1800	2500	580	110
AK HL*6	6	5780	150	30	12	4	900	1600	1870	2570	640	135
AK HX*6	6	8410	160	30	10	4	900	1990	2260	3360	590	130
AK H*8	8	5780	160	30	12	4	900	1790	2060	2760	640	145
AK HL*8	8	8410	300	30	12	4	900	2190	2460	3560	640	170
AK H*10	10	8090	350	60	16	4	1100	1980	2250	3040	720	280
AK HL*10	10	8410	400	30	14	4	900	2190	2460	3560	670	200
AK HX*10	10	11710	450	90	16	4	1100	2720	2990	5200	720	340
AK H*12	12	11710	600	90	16	4	1100	2720	2990	5200	720	350
AK H*14	14	12990	900	90	18	4	1270	2720	2990	5200	770	420
AK H*16	16	12990	1100	90	18	4	1270	2720	2990	5200	770	470
AK HX*16	16	17020	1500	90	24	4	1270	2720	2990	5200	920	650

H = Hydraulic *P = Parallel **X** = Extra long filter with extra large filtration area

L = Long filter with large filtration area *I = In line

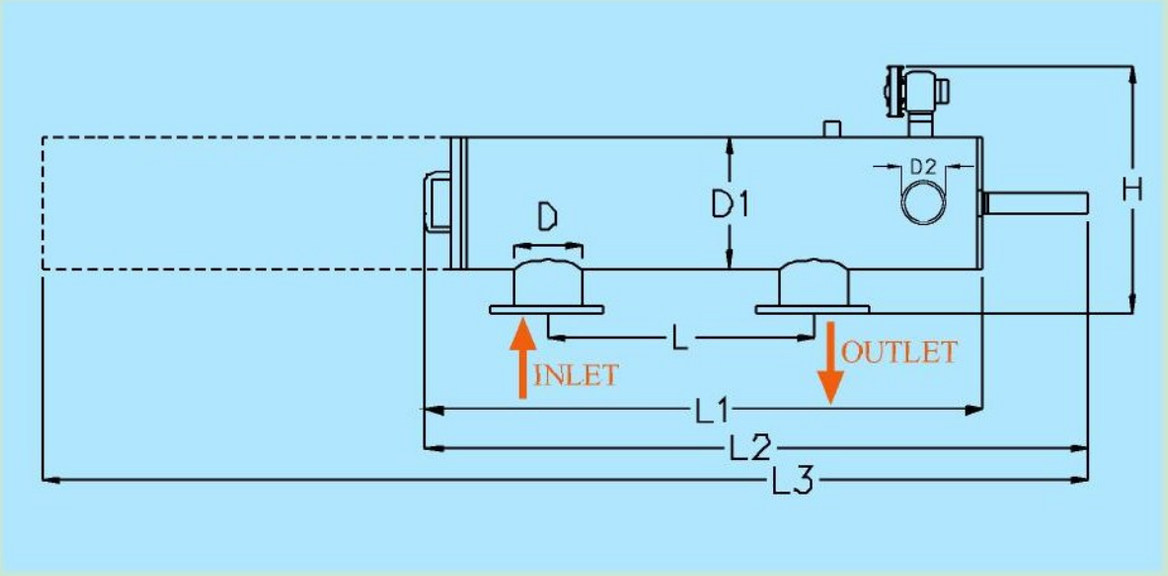
* Flow rate data is for high quality water at filtration grade of 120 micron.

** Flushing flow rate data is for minimum operational pressure (2 bar / 29 psi).

Filtration Grade Conversion Table

Micron	50	80	100	120	150	200	400	800	1500	3000
Mesh	300	200	150	120	100	80	40	20	10	5

Flow rate is dependent on water quality and filtration grade



Special Options and Features

- High Pressure Rating bar: 16, 25, 40
- High Pressure Rating psi: 232, 362, 580
- High Temperature Range: Withstands temperatures up to 95° C (203° F)
- Anti Frost: Special control system for cold climate conditions
- Stainless Steel Grades: 304 or 316
- Available Controls: Electronic, timer, air-actuated, computerized and custom designed
- Special Coating: Prevents deterioration from exposure to salt/sea water

Sectors Served

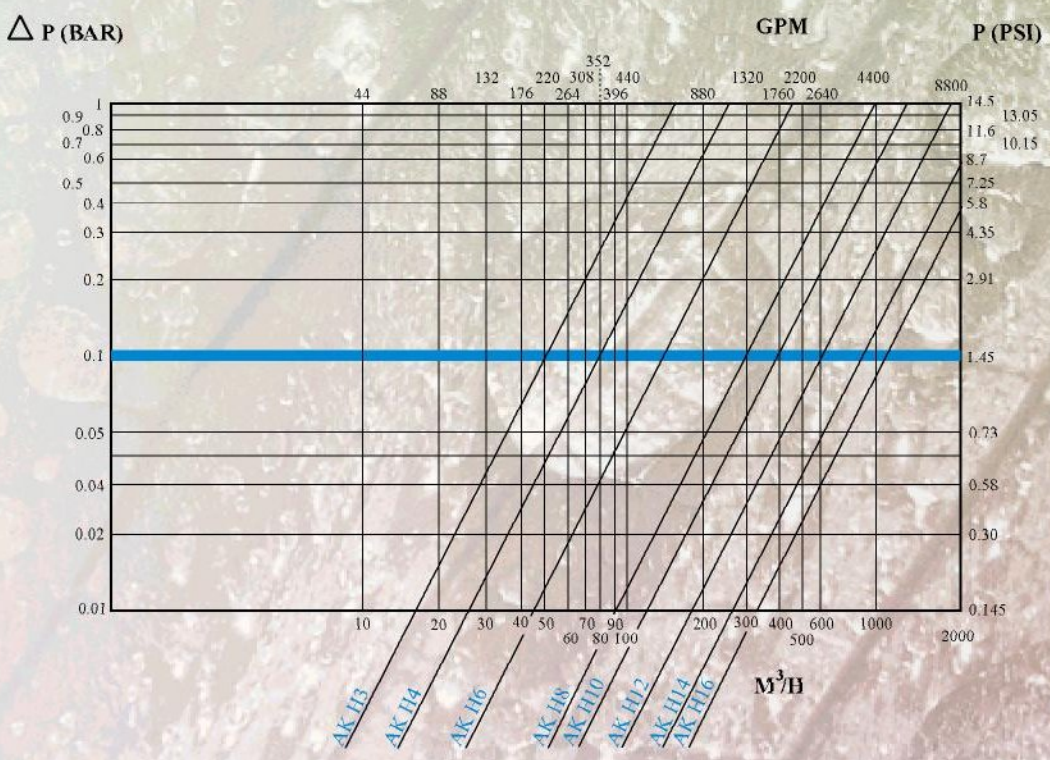
The **Arkal H Series Self-Cleaning Screen Filter** is used in a wide range of applications in the Agricultural, Industrial, Municipal, Commercial and Domestic sectors.
The main industries include: steel mills, petroleum, plastics, chemicals, electronics, textile, paper mills, food, beverage and power stations.

Typical Applications

- Cooling towers
- Heat exchange protection
- Ion exchange protection
- Industrial wastewater recycling
- Effluent polishing
- Water supply
- Filtration for micro irrigation

The **Arkal H Series Self-Cleaning Screen Filter** is used in agriculture as main and secondary filtration for sprinklers, drip irrigation, mini and micro sprinkler systems, as well as for center pivots and water distribution applications.

Pressure Loss At 120 Micron



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