Johnson Screens

A brand of
Aqseptence Group

Contra-Shear® Next Generation

Applications

- Food & beverage
- Pulp & paper
- Water/wastewater treatment
- Water intake
- Sugar processing
- Process that requires precise dewatering and solid/liquid separation

Benefits

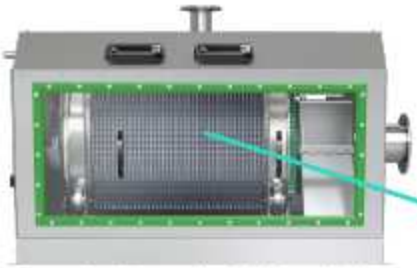
- Maximizes dewatering capabilities thanks to exclusive Contra-Shear technology
- Enhances hygiene in processes by reducing the risk of contamination with the innovative lube-free design
- Reduces downtime and the need of labor and consumables with an easy to maintain design
- Streamlines equipment needs with an engineered weir design that allows use of either smaller or fewer machines

Features

- Direct drive – no chain or lubrication required
- In situ trunnion replacement that eliminates the need for drum removal or lifting
- Clear view inspection hatches as a standard option
- Stainless steel hatches also still available
- Expanded range and sizes
- Maintenance free sealed for life stainless steel bearings

Maximize solids dewatering and process with new design and features

Following the tradition and a long track record, the Contra-Shear Next Generation offers improved features and innovations that will assist every user in realizing their journey towards environmental sustainability. They increase solids dewatering and capture rate, expand the range of viable applications, and increase the visibility of the screening process.



Clear view inspection hatches that allow better visibility of the process.

Trunnion replacement that does not require the drum removal.

Direct drive with no chains and oilers.

Its self-cleaning, internally fed rotary fine screen relies on the shear force effect created by rotation of the drum to enhance the separation of solids from the effluent. Screened effluent passes through the Vee-Wire® slots into a tank from where it is pumped for further processing. Solids in the dewatering zone amalgamate and are continuously rolled on account of the rotation of the screen drum, resulting in further reduction of liquid content.

The Contra-Shear Next Generation design significantly simplifies maintenance, and features an external rack and pinion drive mounted on the clean side of the screen, leaving no impurities on drive elements as well as good accessibility during maintenance. There are no chains, sprockets, oilers, or virtually any other wearing parts or lubrication required. An angled frame rail prevents settling of solids/liquids inside the machine by removing flat surfaces. Additionally, trommel support wheels have been redesigned to allow replacement in-situ without drum removal or lifting. Clear side view hatches have been added to view the process. Available in 304 & 316 stainless steel, the Contra-Shear Next Generation provides efficient solids separation, thickening and dewatering while screening the liquids for water reuse, clarification or discharge.

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23-IAS-0018-v1-13-Eng

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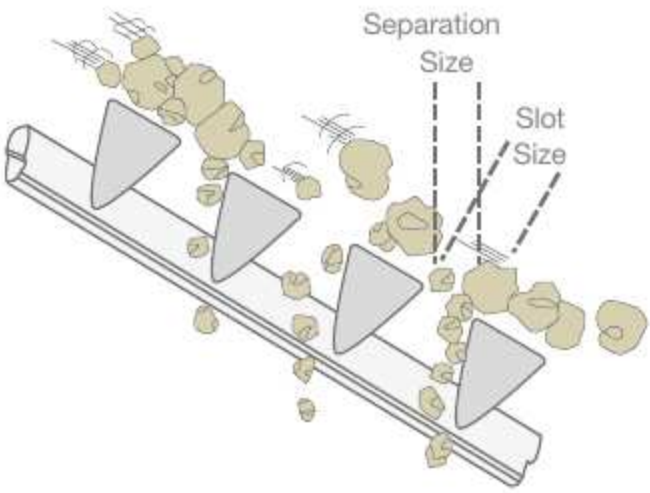
SIEVE BEND ASSEMBLY

Johnson Screens® Sieve Bend Assembly's are engineered to ensure that your operation achieves the best process and maintenance outcomes.



SEPARATION

It is often generalised that the size of the largest particle passing through the apertures of the sieve bend is approximately half the width of the openings. Tests and field studies have shown that separation produced at apertures below 0.5 mm are somewhat finer than half the aperture width, whereas with apertures wider than 0.5 mm, separations coarser than half the slot widths are produced.

What sets Aqseptence Group apart from other sieve bend manufacturers is that our team has the technical skills and practical experience to select the optimum Vee-Wire® and slot combination for the desired separation.

APPLICATIONS

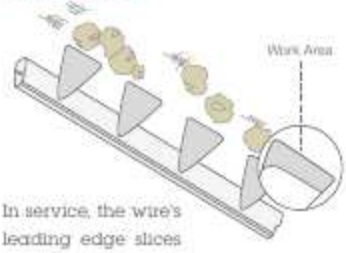
The applications for sieve bend assembly's are wide ranging. They are used where dewatering of products is required i.e. separation of liquids from solids. There are applications in poultry, vegetable wash water recovery, cheese production, dairy, along with many more.

EFFICIENCY

Due to the fact that separation occurs at approximately half of the aperture width the possibility of oversize particles reporting to underflow is extremely remote. This means a new sieve bend assembly operates at a very high efficiency, often as high as 95%.

While the efficiency level of a sieve bend assembly is high, the proportion of particles in the feed which are nearly the same size as the separation desired must be taken into consideration, as a high proportion of near size particles significantly reduces the efficiency of a sieve bend.

VEE-WIRE®



In service, the wire's leading edge slices away part of the flow.

Sharp Vee-Wire® (profile wire) positioned perpendicular to the slurry flow enables static sieves to provide excellent dewatering.

Each stainless steel Vee-Wire® slices away a part of the flow, contributing to the overall capacity.

ADVANTAGES OF JOHNSON SCREENS®

- Ground breaking resistance welding technology providing precise and consistent aperture and stronger welds.
- customised profile shaping available - in-house.
- Only high quality materials.
- Design and manufacture of complete sieve bend assemblies.
- On-site consultation visit by Aqseptence Group representative.

SPECIFICATIONS

Slot Size (mm)	Sieve Bend Assembly Models - Volumetric Capacity l/min								
	500			900			1200		
	63	93	118	63	93	118	63	93	118
0.50	1000	875	705	1800	1575	1270	2400	2100	1700
0.75	1250	1125	915	2250	2025	1645	2995	2695	2200
0.87	1500	1415	1045	2695	2545	1875	3595	3395	2500
1.00	1705	1415	1165	3075	2545	2100	4095	3395	2795
1.25	1830	1580	1375	3295	2845	2475	4395	3795	3295
1.50	2000	1705	1500	3595	3075	2695	4795	4095	3595
2.00	2250	1955	1705	4045	3520	3070	5395	4695	4095
2.50	2500	2160	1915	4495	3895	3445	5995	5195	4595

Slot Size (mm)	Sieve Bend Assembly Models - Volumetric Capacity l/min					
	1500			1800		
	63	93	118	63	93	118
0.50	2995	2620	2120	3595	3140	2545
0.75	3745	3370	2745	4495	4045	3295
0.87	4495	4245	3120	5395	5095	3745
1.00	5125	4245	3495	6145	5095	4195
1.25	5495	4745	4120	6595	5695	4945
1.50	5995	5120	4495	7195	6145	5395
2.00	6745	5870	5120	8095	7045	6145
2.50	7495	6495	5745	8995	7795	6895

The data contained in this document is for informational purposes only and values are typical. Please contact Aqseptence Group for confirmation.

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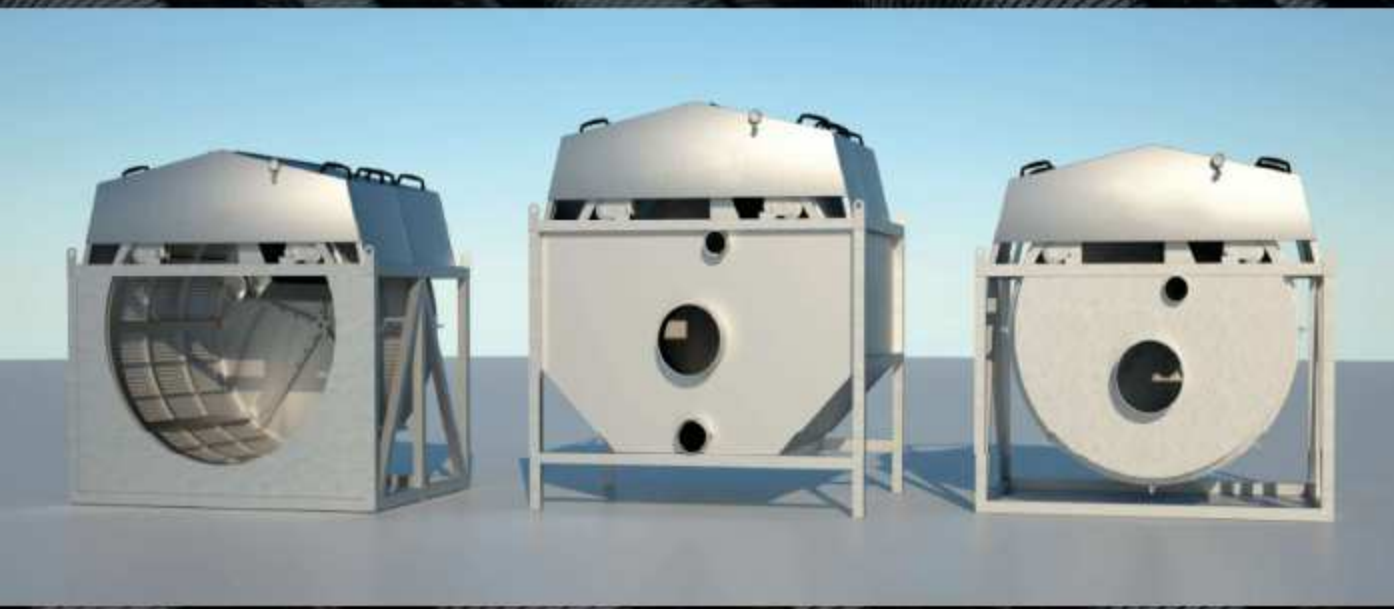
Johnson Screens



Microfilter Regainer MRT

Processing Solutions for Water Treatment

A brand of
Aqseptence Group

Rotary Micro Filter

For decades, liquid filtration systems of semi submerged rotating type drums have proven to be highly efficient and reliable in removing solids. Depending on the filter element, solids can be removed as small as 20 micron in size.

The Johnson Screens submerged rotating drum screen is designed filter large volumes of water with low contents of suspended solids, presenting a high hydraulic capacity to size ratio.

The filter element is a polyester mesh welded on cross-linked polypropylene panels, which are mounted on the rotary drum.

A high-pressure pump feeds the cleaning system using flat fan spray nozzles to clean solids from the mesh.

Benefits

Working at atmospheric pressure with a slow rotation speed, the smooth mechanical action allows solids to be deposited on the mesh screen, avoiding fragmentation and increasing retention when compared to pressurized systems.

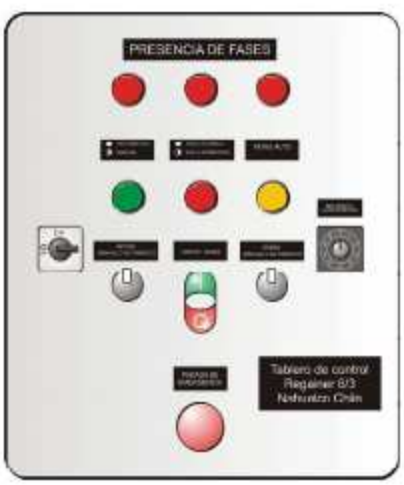
- Low-pressure loss, less than 0.4 mm
- The automatic mesh cleaning requires no external water supply, using the filtered water from the effluent
- Drum rotation and screen washing, is intermittent and more energy efficient
- Maintenance is simple and inexpensive

Regainer MRT

Applications

Water withdrawal from rivers or lakes for urban or industrial use. Widely used in hatcheries and has great potential for agribusiness, paper, cellulose, mining, thermoelectric and any activity that requires large volumes of water.

- Municipal Wastewater: Tertiary filtration.
- Water: Used by companies producing drinking water from fluvial, surface water in order to remove micro particles.
- Fish Farming: Most widespread use is in filtering the input and output water from aquaculture farming in both open and closed circuits.
- Effluent Treatment: In the horticultural industry, as part of the wastewater treatment and filtration and reuse of process water.
- Industrial Water: In industrial processes requiring recover microparticles that are suspended in a liquid, such as microalgae, filtering earth, fibers and others.
- Additional Applications: Water filtration public swimming pools, artificial lakes, ponds in zoos, aquariums large water-cooling towers, etc.



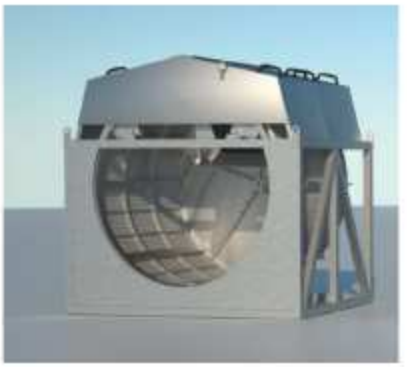
Operation

The control panel has two modes of operation: automatic and manual.

In the automatic mode, system operates when a predetermined water level is reached from a level sensor or from a timer.

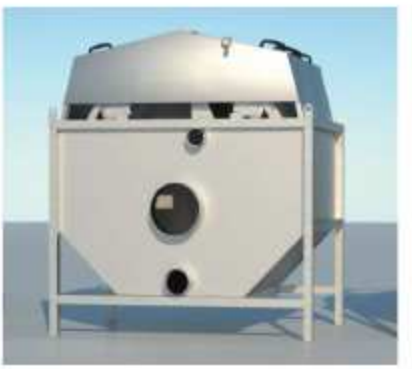
In manual mode, the end user activates the system.

Regainer MRT



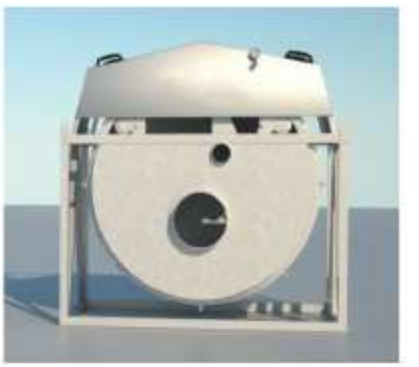
MRT-PC
Channel Equipment

Designed to be installed in a concrete channel. Water flows directly into the center of the drum, flows through the screen and is discharged into the downstream channel. This configuration is commonly is used in high-throughput, large installations, often with multiple systems in parallel. Our engineers will provide support for the in channel hydraulic design.



MRT-CE
Self-Contained Equipment

Application with an existing treatment system. The MRT-CE is a self-contained equipment with an inlet and outlet, that can be pipe routed as needed. The MRT-CE does not require construction of civil works for installation, since it has its own integrated stainless steel tank to the frame. The MRT-CE is suitable for small to medium installations, as well as for mobile plant.

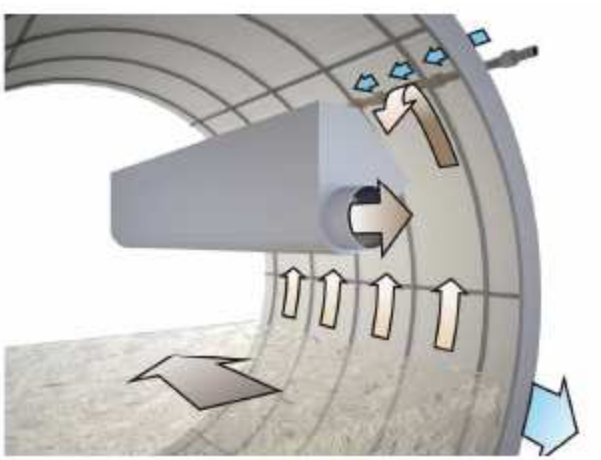


MRT-PE
Above Channel Equipment

This model is an optional system suitable for installing in an existing location. The water enters through a pipe and is discharged directly into a channel or a stream.

Principle of Operation

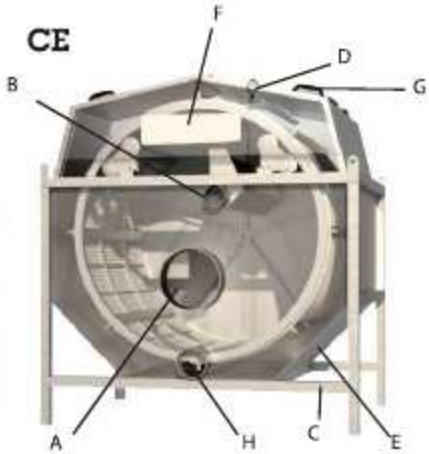
Liquid containing solids enters the rotary drum in the front of the system. Water passes through the micro-mesh filter, which filters out solids. As the mesh clogs with solids and sludge, the water level within the drum increases to the point that triggers the cleaning process. As the drum starts to rotate, nozzles scour the screen with effluent water, returning the screen to its original permeability. This allows the internal water level to drop and stop the cleaning process. Solids that are cleaned form the screen and collected in a trough and are transported from the system for further processing.



Regainer MRT Main Components

PC

CE

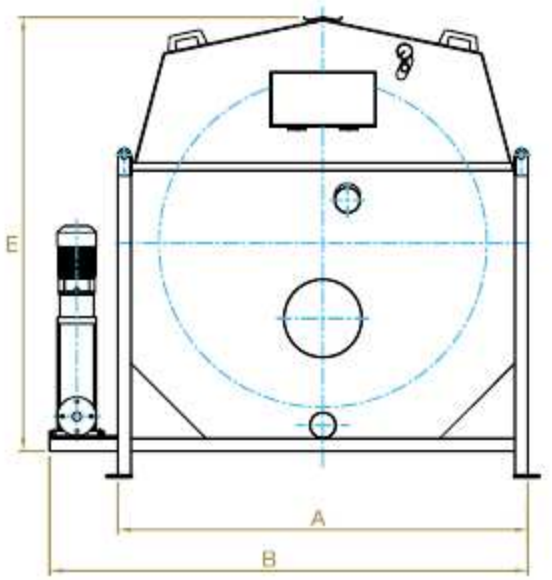


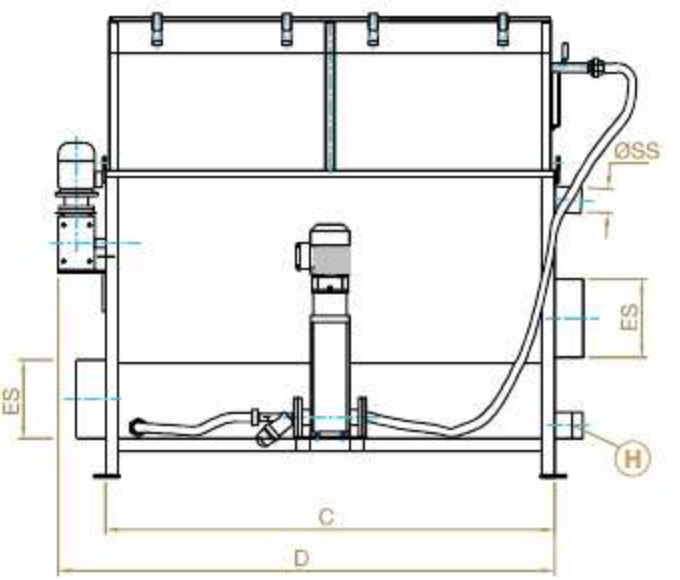
PE

A	Water inlet filter	E	Filtered water outlet
B	Washwater outlet	F	Inspection cover
C	Filtered water	G	Top cap
D	Wash water inlet	H	Water overflow

CE version incorporates an overflow (H) which allows the exit of the water if the internal water level exceeds the maximum level. The PC and PE version are designed to be installed into concrete channel.

Microfilter MRT CE Version



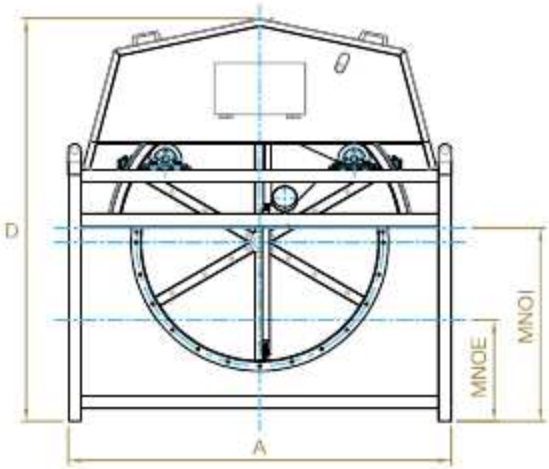


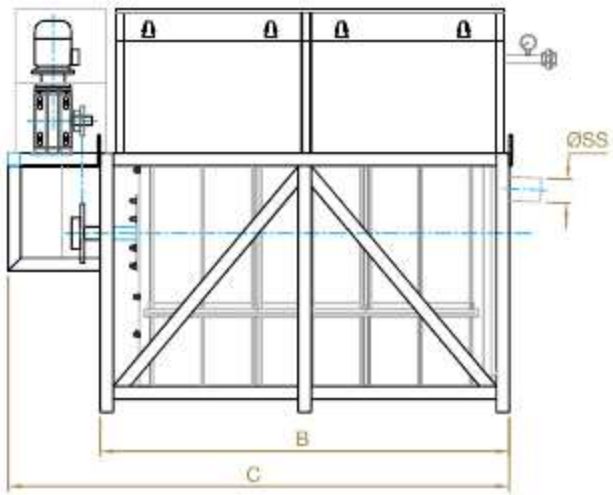
ØSS: Washwater outlet diameter
ØES: Main outlet and inlet diameter

The Micro Filter Regainer MRT CE version incorporates an overflow weir, allowing water to exit the drum through the overflow pipe (H) if the internal water level exceeds the operational maximum.

Applications	MRT VERSION CE										
	4/1	4/2	6/2	6/3	8/3	8/4	8/5	8/6	10/5	10/6	10/7
Qty of panels	4	8	12	18	24	32	40	48	50	60	70
Filter area (ft^2)	10	21	31	47	63	84	105	126	131	157	183
Motor (Hp)	0.34	0.34	0.5	0.5	0.74	0.74	0.74	0.74	1.47	1.47	1.47
Water Pump (Hp)	0.74	1.47	1.47	2.01	2.01	2.95	4.02	4.02	4.02	4.69	5.36
Spray Wash (gpm)	4	8	8	12	12	17	21	25	21	25	29
Dimensions (in.)											
A	43.3	43.3	62.2	62.2	76	76	76	76	94.5	94.5	94.5
B	53.1	53.1	72.8	72.8	86.6	86.6	86.6	86.6	104.3	104.3	104.3
C	31.5	48.4	50.4	67.3	70.9	88.6	105.5	122.4	114.2	131.1	146.9
E	40.6	57.5	59.8	76.8	84.6	102.4	119.3	136.2	129.9	146.9	163.8
D	47.2	47.2	70.9	70.9	82.7	82.7	82.7	82.7	94.5	94.5	94.5
ES	8	10	10	12	16	20	20	20	25	25	25
ØSS	4	4	4	4	4	4	6	6	6	6	6
Weight approx.(lbs.)	510	750	880	1230	1610	1910	2240	2600	3410	3960	4470

Microfilter MRT Version PC/PE





MNOI: Maximum internal water level
MNOE: Minimum water level
ØSS: Wash water output diameter

Microfilter Regainer MRT PC and PE are designed to be installed in concrete channel.

Applications	MRT VERSION PC/PE											
	6/2	6/3	8/3	8/4	8/5	8/6	10/5	10/6	10/7	10/9	10/10	10/12
Qty of panels	12	18	24	32	40	48	50	60	70	90	100	120
Filter area (ft^2)	31	47	63	84	105	126	131	157	183	236	262	315
Motor (Hp)	0.5	0.5	0.74	0.74	0.74	0.74	1.47	1.47	1.47	2.01	2.01	3.35
Water Pump (Hp)	1.47	2.01	2.01	2.95	4.02	4.02	4.02	4.69	5.36	6.7	7.37	8.71
Spray Wash (gpm)	8	12	12	17	21	25	21	25	29	37	42	50
Dimensions (in.)												
MNOI	29.3	29.3	37.8	37.8	37.8	37.8	51.2	51.2	51.2	51.2	51.2	51.2
MNOE	15.4	15.4	22	22	22	22	31.5	31.5	31.5	31.5	31.5	31.5
A	58.3	58.3	76	76	76	76	92.1	92.1	92.1	92.1	92.1	92.1
B	46.1	63	63.8	80.7	97.6	114.6	99.2	116.1	133.1	166.9	183.9	217.7
C	60.2	77.2	78	94.9	111.8	128.7	115	131.9	148.8	182.7	199.6	233.5
D	61.4	61.4	73.2	73.2	73.2	73.2	94.5	94.5	94.5	94.5	94.5	94.5
ØSS	4	4	4	4	6	6	6	6	6	6	6	6
Weight approx. (lbs.)	660	970	1250	1630	1980	2240	2970	3480	3980	4990	5500	6600

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22-IAS-0022-v1-4-Eng

Johnson Screens

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JOHNSON SCREENS® BTU IN-LINE PRESSURE SCREEN

Johnson Screens®, a brand of Aqseptence Group, is the leading global provider of screening solutions, filtration, dewatering and solid separation. We are the inventors of vee-shaped Vee-Wire® screens, which are used to create filtration media with great strength, long service life and a very high level of adaptability for high-efficiency filtration and liquid/solid separation. Our highly engineered and precisely fabricated products are supported by a skilled engineering team and our global field service, with a tradition of success and excellent customer service.

Our solutions support a wide range of industries, including Mining, Food and Beverage, Chemicals, Energy, Environmental, and Water Well.

Johnson Screens® In-line pressure filters have been designed and manufacture since 1956.

Our In-line filters selection of Fully Automatic & Manual Suction Filters are now part of Johnson Screens®' extensive range of industrial products.

Applications

Mining

- Tailings recycle
- Process water
- Mine water extraction
- Dust Suppression
- Water management

Food & Beverage

- Processing water
- Recycled water
- Wastewater

Pulp & Paper

- Wet end water
- Recycle Water
- Whitewater filtration

Marine

- Sea water intake
- Utility water
- Ballast water

Power Stations

- Process water
- Cooling tower water
- Recycled water

Pharmaceutical and Chemical

- Process water
- Recycled water
- Filtration water

Technical Features

- Effective flow rates 72m^3/hr to 1000m^3/hr (20l/sec to 280l/sec)
- Flange connections 80mm to 750mm
- Filter housings up to 1200mm diameter
- Design pressure 200kPa to 3,400kPa
- Filter range 50 micron to 3,500 micron
- Pressure differential of at least 200kPa is required for efficient backwashing
- Only 5% of flow is used in backwash cycle
- Normal backwash cycle is 30 seconds
- Fully automatic or manual options

Materials

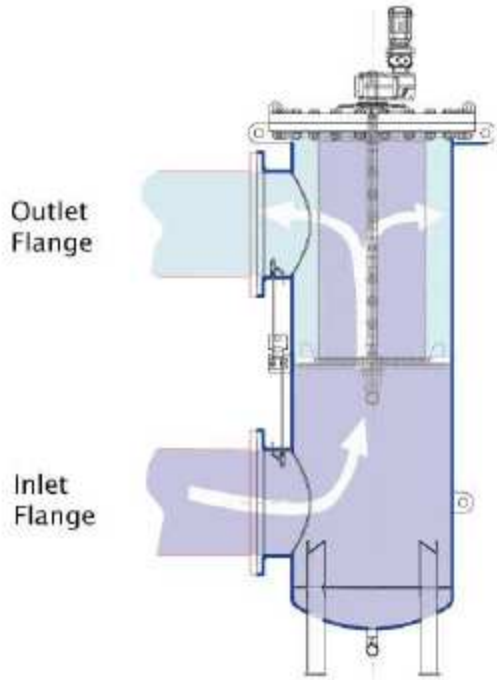
- 304 stainless steel
- 316 stainless steel
- Hastelloy
- SAF 2205
- SAF 2507

FILTERING PROCESS

The media being filtered enters the inlet connection, passing through the specially designed stainless steel cylinder vee wire (wedge wire) screen from the outside to the inside.

Solids and suspended particles larger than the screen aperture accumulate on the surface or may pass through the screen into the filter sump chamber. Build-up of the filter cale causes the development of head loss across the screen.

When the head loss builds to a pre-set limit, the differential pressure switch initiates a cleaning cycle. The backwash valve and backwash tubes are automatically opened to atmosphere, creating a pressure drop from the initially pressurised filter chamber. This results in a strong localised reverse flow along the length of the backwash tubes.



The motor rotates the reinforced Vee-wire (Wedgewire) screen and the backwash tubes removes the filter cake efficiently. The duration of the backwashing process can be adjusted depending on the application and level of working pressure.

One rotation of the filter screen exposes the entire surface to the backwashing process.

Backwash Tubes & Cleaning

The motor slowly rotates the screen past the backwash tubes, removing the filter cake by suction forces created by the backwash valve opening to atmosphere. Cleaning takes normally 30-40 seconds (depending upon the size the screen and application)

The sump drain valve can be manually operated at any stage during the operation of the filter to allow removal of the large particles that may have collected in the filter sump area. An optional electrically operated drain valve is also available upon request.

Pressure gauges positioned on the inlet and outlet ports of the filter provide an accurate indication of the pressure differential to any site engineer or maintenance personal.

Global Support

Johnson Screens has an extensive network of technical sales engineers to assist with your design and application, weather it is DFS, budget pricing or installation and commissioning we have the team to help you.

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