Aqseptence Group

Water and Wastewater Treatment

North American Market

Passavant®

Noggerath®

Johnson Screens®

Contra-Shear®

Reliable Performance. Sustainable Results.

About Aqseptence Group

Aqseptence Group is a leading global supplier of specialized products, equipment and system solutions for filtration and separation in the water technology market that are used for various applications.

Uniting some of the most renowned brands in the water technology market — Passavant, Diemme Filtration, Roediger, Noggerath, Johnson Screens, Geiger and Airvac - Aqseptence Group brands has serviced industrial and municipal customers for more than 100 years.

Aqseptence Group's North America headquarters, located in New Brighton, Minnesota, employs approximately 275 people in sales, engineering, support, service and manufacturing.

Global headquarters in Aarbergen, Germany, Aqseptence Group employs approximately 1,600 people worldwide. Aqseptence Group offers a comprehensive range of services for the entire value chain — from engineering all the way to startup and maintenance.

Aqseptence Group name combines the terms "Aqua" and "Separation", referring to the company's core business — separation (and filtration) and water technology. At the same time the name demonstrates an expertise in the water treatment and filtration industries.

This attribute is an integral part of Aqseptence Group and vast brand history — describing best what has been driving our brands for decades.

Experience and expertise

- Comprehensive high-quality product, solutions and service portfolio
- Experience and know-how of more than 100 years
- Capability to deliver complex technological solutions
- Global presence – local knowledge
- Proven quality and reliability standards
- High degree of customized solutions
- Strong, internationally renowned, long-established product brands

Water Process Technologies

Passavant®

Noggerath®

Johnson Screens®

Contra-Shear®

Passavant, Noggerath Johnson Screens,and Contrashear are all well-known brands in the field of water and wastewater treatment, providing a broad range of product and solution portfolio for municipal and industrial screening applications.

Through these brands, Aqseptence Group is able to provide screen designs based on specific application requirements for coarse and fine screening, septage and sludge screening, combined systems, MBR's pre-screening and more.

Other Water and Wastewater Technologies
Passavant, Noggerath Johnson Screens,and Contrashear aren't just known for screens and screening handling technology. These brands also offer their high-quality and superior technology to other parts of the water and wastewater process in both municipal and industrial applications.

The following products are available in the North American market and supported by local sales, engineering and after sales support.

Noggerath® Spiral Sieve Screen (NSI)

The Noggerath® Spiral Sieve Screen (NSI) is designed to be installed in municipal and industrial wastewater treatment plants. NSI screens provide the ability for small facilities to screen, wash, dewater and compact solids out of a waste water stream — whether it be municipal or industrial waste, improving the performance and reliability of downstream treatment processes.

How it works

The NSI combines a screen panel, spiral conveyor and press unit. During operation, untreated wastewater flows into the screen basket where solids larger than the opening size are captured. A continuous layer of solids is formed on the surface of the screen basket resulting in a blinding effect, resulting in reduced open surface area and causing the upstream water level to increase. A level measuring device monitors the respective level of the liquid and at a preset level the drive of the spiral screen is automatically activated to convey the solids up through the screenings wash zone and to the compaction zone prior to being discharged. Brushes fixed to the periphery at the lower section of the spiral clean the screen basket surface resulting in the water level to drop, and the spiral screen drive to automatically shut-off.

Product Variants and Design Sizes

- Capacity: up to 57MGD
- Channel, tank or wetwell installations
- Channel Width: 8 in. – 28 in.
- Channel depth: 30 in. – 78 in.
- Discharge height: customizable based on channel depth
- Opening type: perforations or Vee-Wire
- Opening sizes:
  - 1/8 in. – 1/4 in. (perforation)
  - 0.01" - 1/8" (Vee-Wire)
- Installation angle: 35 – 45° and 90°

Noggerath® Inclined Rotary Drum Screen (RSI)

The Noggerath® Rotary Drum Screen (RSI) is a machine with a revolutionary drive concept. Contrary to conventional technology drives, the drum screen, via its discharge conveyor, drives the drum directly.

How it works
The solids in the wastewater blind the inner surface of the drum basket installed at 35°. The resulting headloss is detected by a differential level control sensor and the drum begins to rotate. The captured solids are removed from the drum by a combination of gravity and spray bar, and are deposited into a conveyor trough located in the center of the drum. The conveyor transports the solids upwards through the washing, dewatering and compaction zones before being discharged into a dumpster or bagging device.

In addition to the channel version for installation in open channels (gravity flow feed) the NTS can also be supplied as a tank version (pump infeed). Depending on the specific application, the screen surface can be perforated, Vee-Wire or mesh (in stainless steel or plastic). In the case of small perforations or respectively mesh covering, the drum screen consists of several drum basket segments which are individually fitted onto the drum and are, therefore, easy to dismantle or replace – e.g. for repair and maintenance.

Product Variants and Design Sizes
- Capacity: up to 57MGD
- Channel width: 36 in. – 120 in.
- Opening Sizes:
  - 1/8 in. – 1/4 in. (perforation)
  - 0.01 in. - 1/8 in. (Vee-Wire)
  - 200 – 1,000 µm (mesh)
- Discharged screenings: up to 35% d.s

Noggerath® Complete Headworks Unit (TOP)

The Noggerath® Complete Headworks Unit (TOP) replace conventional headworks structures in wastewater treatment plants.

The TOP range of complete headwork systems, integrates screening and grit separation' with the option of fat, oil and grease (FOG) removal, all within a single package. The TOP is available with a wide range of screenings process, aerated or non-aerated designs.

How it works
Pumped or gravity feed wastewater enters in the screen section where gross solids are removed from the effluent, washed, compacted and dewatered prior to be discharged into a container. Then screened effluent discharges to a sand trap where grit and sand settlement is included. The grit is conveyed to a grit classifier and can be further washed prior to disposal into a container. The TOP can be combined with a wide range of screens, such as spiral sieves, rotary drum screens and multi-rake bar screens.

Screenings and grit washing systems can also be integrated in a fully encapsulated design.

Noggerath® Band Screen Centre-Flo™ (CF)

The Noggerath® Center-Flo Band Screen is a fully customizable screen suitable for coarse and fine screening of fresh water, sea water and municipal and industrial wastewater. With best in class hydraulic efficiency, integral by-pass, stainless steel enclosure and the ability to utilize slotted, perforated or our new patented honeycomb screen element, the Center-Flo can be designed specifically to A projects design.

How it works

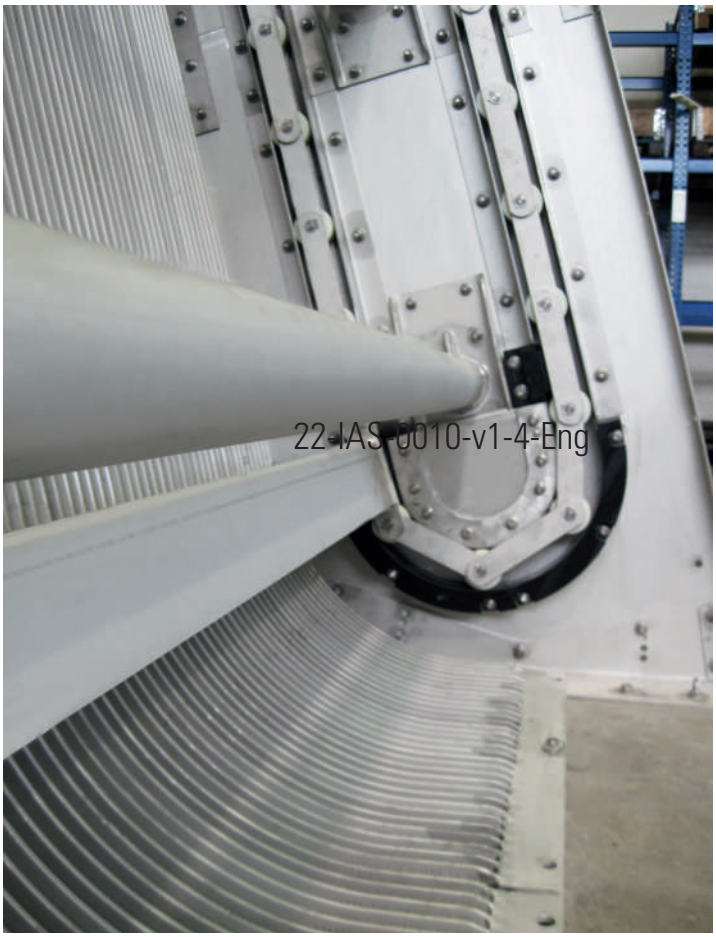
Diverter plates direct incoming flow into the submerged section of the screen, where it undergoes a 90° change in direction to flow through the screen panels. Solids are retained while the screened water passes through for further treatment downstream. Center-Flo band screens are typically controlled via upstream water level or differential level, allowing the band screen to remain stationary in order to build up a mat of screened solids - improving the overall capture rate.

With proven screening capture rates in excess of 85% when using 5 mm openings or less, the Center-Flo band screen is ideal for pre-screening in front of delicate MBR systems. In addition the patented honeycomb panel provides the industry's best hydraulic performance with over 90% open surface area representing from 20 to 40% more hydraulic capacity compared with standard perforated panels.

Product Options

- Screen openings from 1—10 mm (depending on opening type)
- Channel Depth: up to 32 ft.
- Flow rates: up to 68 MGD

Passavant® Multi Rake Bar Screen (KUR)



The Passavant® Multi Rake Bar Screen (KUR) is an update on a proven design. The innovative production processes creates a quality product which is characterized by its economic efficiency and cleaning performance. This is achieved by the utilization of flow-optimized screen bar profiles, which are tailored to hydraulic requirements, together with variably adaptable cleaning elements which can be adjusted, both in type and number, to suit the respective transport task and the requirements of the cleaning cycle.

How it works

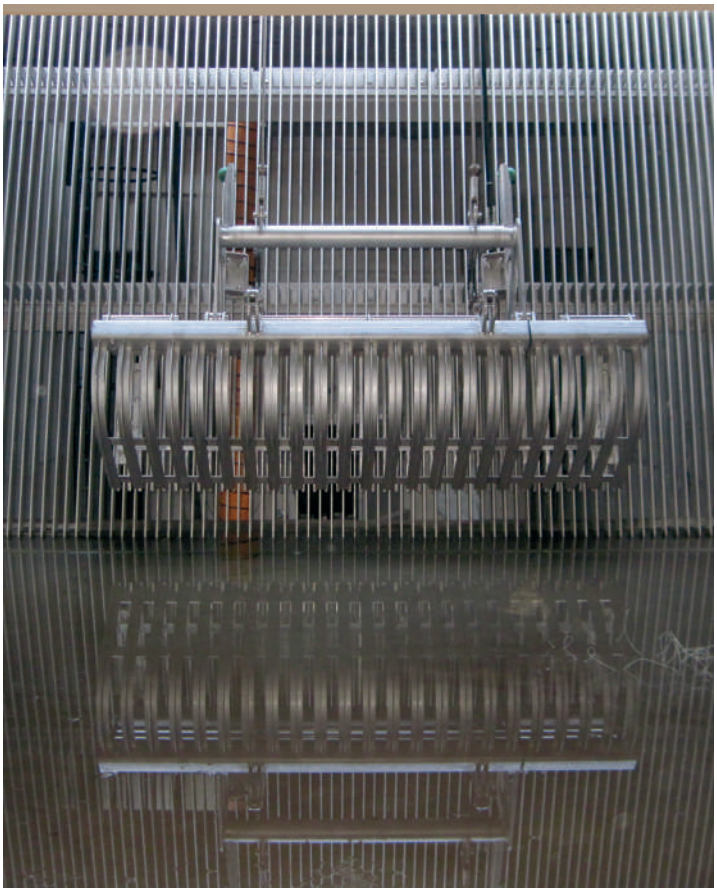
The cleaning cycle starts as soon as the drive is activated, in order to reduce the difference in water levels caused by screenings accumulating in the bar rack. During the ascending cycle, screenings are removed by the cleaning elements which enter into the screen bars. The screenings are then collected and conveyed to the discharge point from where they are pushed, by means of an automatic stripping device, down a discharge chute to the screenings collection tank and conveyor belt. The screen cleaning cycle is repeated until the difference in water levels has been completely removed.

Product Variants and Design Sizes

- Channel width: 24 in. – 234 in.
- Channel depth: up to 65 ft.
- Discharge height: customizable
- Bar spacing :With cleaning combs: 6 – 60 mm
  With brush/scraper: 2 – 5 mm
- Installation angle: 75° - 90°

Passavant® Cable Operated Bar Screen (COB)

The Passavant® Cable Operated Bar Screen (COB) is used as a coarse or fine screen for the mechanical pre-treatment of wastewater. The COB design and PLC control system makes it suitable for heavy screening removal and is able to efficiently remove bulky screenings repeatedly in any position, sand deposited in front of the screen, and screenings trapped between the screen bars which may be impeding the downward flow.



How it works

As screenings build-up on the bar rack, the drive is activated and cleaning of the COB starts in order to adjust a difference in water levels. The grab cleaner is lowered to the screen bars in an open position. When it reaches the channel bottom, it swings into the screen bars. During the cleaning cycle the screenings are collected, transported to the discharge position and then pushed by the scraper device into the container, conveyor belt, etc. The screen cleaning cycle is repeated until the difference in water levels has been adjusted. The grab cleaner then returns to the parking position above operation floor.

Product Variants and Design Sizes

- Channel width: 1.0 – 6.0 m
- Bar spacing: 10 – 150 mm
- Inclination of bar screen: 75° / 82.5° / 90°

Noggerath® Screening Wash Press (NWP)

The Noggerath® screenings wash press offers a simple and reliable solution for washing, dewatering and compacting screenings from any screen. The versatility and flexible manner of the NW makes it ideal to be retrofitted into existing plants.

How it works

The material, which is introduced via the infeed section, is taken up by the conveying screw and moves in the direction of the wash and compacting section. The slotted, or perforated, bottom of the conveyor section enables a static dewatering of the material. In the washing section, fecals are broken up and washed out. In the compacting section, the material is compacted, dewatered further and forced through the friction pipe.

Product Features

- High drainage capacity due to:
  - Vee shaped bars in drainage trough
  - Slots run the length of the Wash Press
- Reduced blockage risk of the drainage section due to direct contact between screw and slotted bottom
- Wear resistant drainage trough bottom
- No "shear forces" as there are no wear rails

Noggerath® Shaftless Spiral Conveyor (SC)

The Noggerath® Spiral Conveyor (SC) is used as a transport device in municipal wastewater treatment plants and industrial applications. The Aqseptence Group has vast experience in the production, design and operation of spirals and spiral conveying systems, for both horizontal and vertical conveyance.

Options

- Support construction (respectively suspension)
- Infeed hopper
- Gate valves for vertical discharge
- Hinged lid
- Swivel discharge chute
- Direct feed from one conveyor into another
- "Live-bottom" systems
- Multiple infeeds and/or discharges
- Bi-directional conveyance
- Heating/insulation

Noggerath® Externally Fed Rotary Drum Screen (RSH-E)

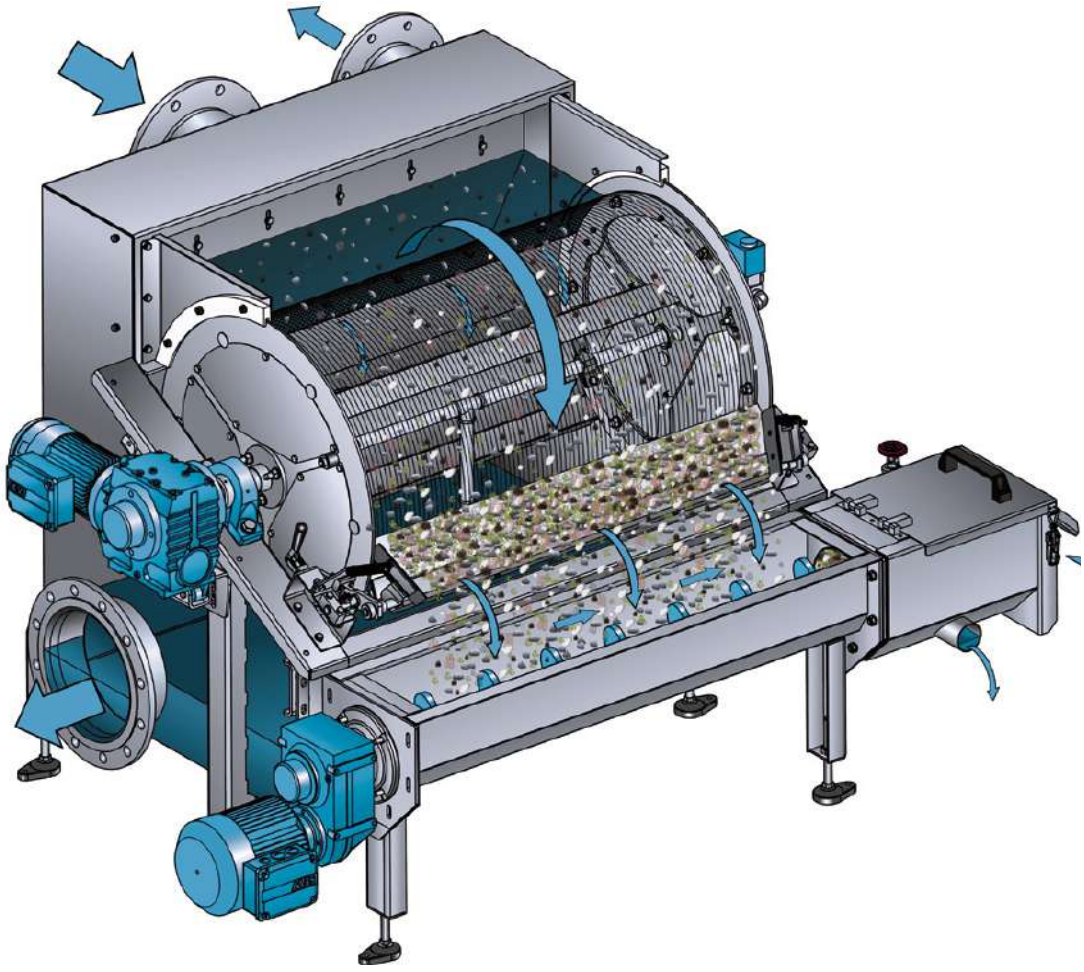
The Noggerath® Rotary Drum Screen (RSH-E) is a continuously operating screening system, with an automatic cleaning device, which separates floating, greasy and sticky solids. The RSH-E is driven by a side-mounted geared motor and an internal water spraying system is integrated into the screening drum (motor shaft designed as a hollow shaft).

How it works

Process water, or wastewater, enters the RSH-E from the rear, via the headbox, onto the Vee-Wire screen drum, where the solids content is separated. The separated solids are then transported from the Vee-Wire screen drum to the solids scraper blade by a continuous gentle rotation and dropped into a solids container, a press or a conveyor.

Product Features

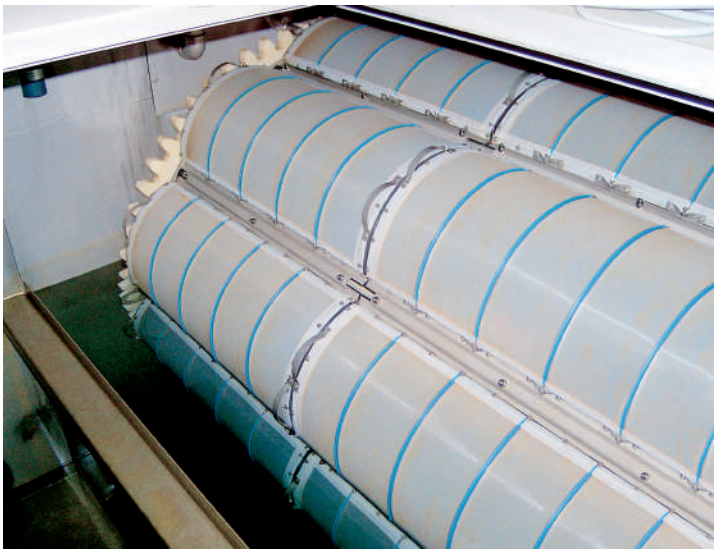
- Vee-Wire openings 0.25—2.5mm
- Throughput up to 4400 gpm
- Integral spray bar
- Completed enclosed
- Bronze solids scraper
- 304 or 316 stainless steel enclosure
- Integrated emergency overflow
- Stainless Steel bearings



Noggerath® Internally Fed Micro Drum Screen (RSH-MG)

Aqseptence Group offers a versatile micro screening drum system which has proven itself as both effective and economical in a wide range of applications. The heart of the RSH-MG is a rotary drum consisting of multiple sieve baskets. Each sieve basket is individually covered with polyester mesh. The system can be installed either in a concrete chamber or in a steel tank. With the Micro-Giant Plus design, Aqseptence Group is focused on the growing demand for water and wastewater treatment and also the increasing application of membrane technology.

The Internally Fed Micro Drum Screen System offers an effective and very economical alternative to conventional sieving and screening systems in municipal wastewater applications.



How it works
The raw water passes through the screen drum cage from the inside to the outside, leaving solid particles on the inner surface of the screen. The resulting blinding effect causes the upstream water level to increase Once a preset differential with the downstream water level is reached the drum begins to rotate.

During the rotating movement, the screen mesh is backwashed with a spraying device from the outside inwards. This spraying device is located in the upper apex of the screen drum. The cleaning of the screen improves the filtration performance and reduces the water level differential, thus stopping the drums rotation.

Noggerath®Grit Washer (GW)

The Grit Washer is designed to wash out the organic matter from pre-dewatered grit trap settings or from sewer sand. The organic materials are mechanically dissolved by means of an integrated agitator, or are swirled up and washed out by an in-feed of washing water in an up current flow process. The washed material is flushed out with rinsing water through the outlet connections and returned to the wastewater treatment plant for further processing. The washed grit is discharged from the washing tank by means of a spiral conveyor, which operates in an interval mode.

Product Features

- Systems for feeding with pre-dewatered material or with liquid/solid mix
- Organic removal rates up to 97%
- Cost saving of up 90% depending on disposal methods
- Reduction in volume of material for disposal due to organic removal
- Increase of organic nutrient supply in the wastewater treatment plant
- Improved gas production in anaerobic sludge digestion

Max Throughputs

- 31 cu.ft/hr at a max infeed of 253 gpm for combined settling and washing vessel
- 35 cu.ft/hr at a max infeed of 950 gpm for separated settling and washing vessels

Contra-Shear® Milliscreen

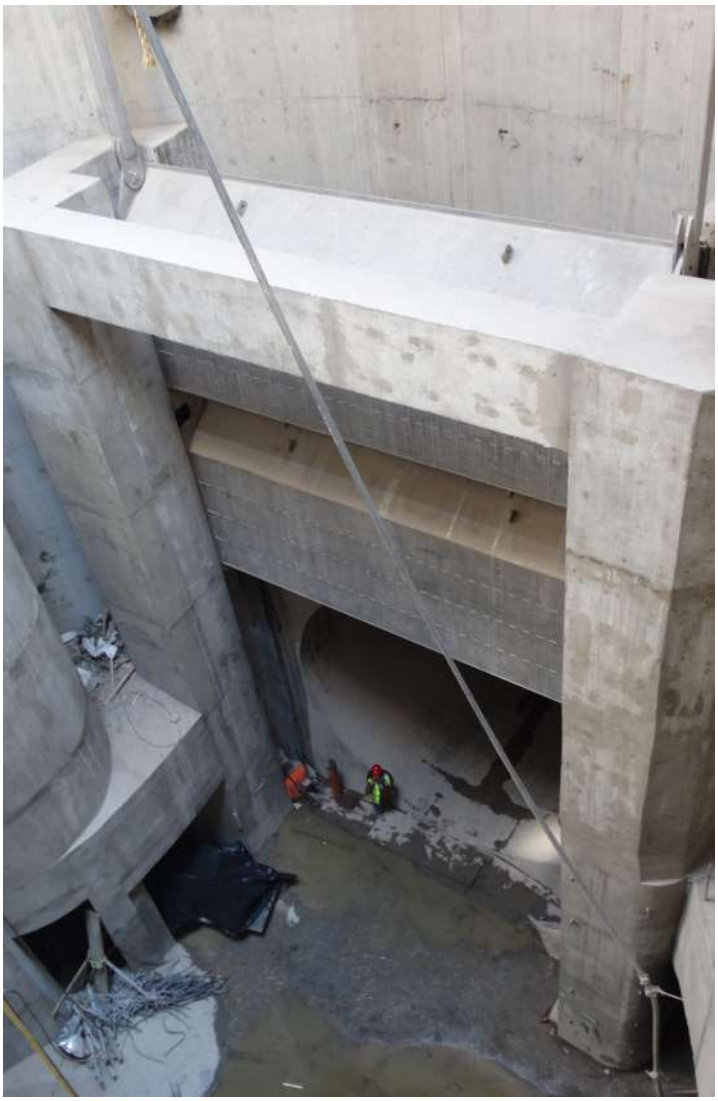
For more than 40 years, the rugged and dependable Contrashear® has provided the ability to separate fine solids from many wastewater types.

The Contra-Shear Milliscreen operates by rotating a screen cylinder against the direction of flow of the incoming liquid. This resistance is achieved through a single weir positioned opposite the movement direction and enhances the shear effect — increasing the separation efficiency. Typical capture rates are around 95% of materials matching the slot size and larger, with even finer materials being captured at rates as high as 50%.

Product Features

- Flows up to 23 MGD
- Drum sizes: 24in to 79in diameter and 24 in to 158 in lengths available
- Continuous slot, Vee-Wire screen
- 304 or 316 stainless steel construction
- Unique long-life trunnions
- Positive drive through chain and sprocket
- Automatic chain oiler
- Scientifically designed infeed tank for smooth flow entry and maximum solids recovery
- Single and dual spray systems
- Anti-friction bearings with relieved grease lubrication

Passavant® Shut-off Devices

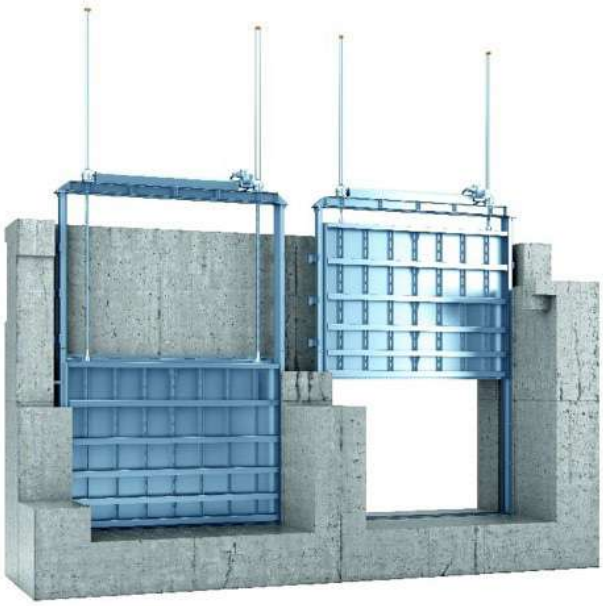


For over 100 years, Passavant® has been designing and building shut-off gates for water and wastewater streams. Stringent quality standards, provide reliable and safe operation for gates of all sizes. Constructed from high strength carbon steel, or varying grades of stainless steel (304, 316 and Duplex), allows for an optimal design for the application.

Stop Plates (sealed on three sides) - For grouting in concrete or for doweling into or in front of the channel. Complies with DIN 18202 & 19569-4, leakage class 2. Suitable for both flow directions. Seal profile double lip or music note shaped profile. Designed to meet static requirements. With crane hooks or lifting beams to lift up/insert the gate. Frame welded from special profiles for grouting or doweling

Sluice Gates (sealed on three sides) - With straight/round/triangular/trapezoid sill. For grouting in concrete or for doweling into or in front of the channel. Complies with DIN 18202 & DIN 19569-4, leakage class 3. Suitable for both flow directions. Designed to meet static requirements. Frame with yoke made of welded stainless steel profiles with double lip seal attached to the side. Flat seal mounted flush in straight sill. Drive on yoke with one or two spindles. All types of actuating possible. Also can be used as a Weir Sluice Gate. Spindles are rolled not cut.

Penstocks (sealed on four sides) - With straight or rounded sill. For grouting in concrete or for doweling in front of the channel. Complies with DIN 18202 & 19569-4, leakage class 4/5. Suitable for both flow directions. Steel welded design in compliance static specifications. Edged profile frame with fixation clamps all around (in the version used with dowels). With replaceable profile seal on all sides (standard double lip). Pressing of seals via sliding strips. Moss rubber sealing between frame and structure. Spindle drive for various below ground and above ground level drives. All types of actuating possible.



Passavant Swing Check Valves (sealed on four sides)
Swing Check Valves for grouting in concrete, doweling or with flange connection. For mounting to the end of a pipe or channel. Sealing on four sides. Design in compliance with DIN 19569-4, leakage class 2. Suitable for both flow directions. Designed to meet static requirements. With elastic seal. Versions with single cap, hollow float cap and with lever/counterweight. Versions for gravity pipelines or as an option with impact dampening for pump pressure lines.

Passavant® Surface Aerator - Mammoth Rotor®

The Mammoth Rotor® provides reliable and efficient oxygen transfer, with effective horizontal mixing and activated sludge circulation, for the optimal activity of microorganisms and extraction of pollutants in biological wastewater treatment systems.

- Robust operation and long service life
- Consistent oxygen input throughout the entire service life
- Maintenance can be done above the waterline
- No negative influence on oxygen input through wastewater content -α-factor is 1

How it works

With the Mammoth Rotor, oxygen transfer occurs by means of intensive mixing and turbulence of the phase boundary between the air and the wastewater/activated sludge, directly at the rotor. This ensures sedimentation-free operation in tanks with a depth of up to 11 ft. In deeper tanks, up to 26 ft., the mixing process is supported by additional agitators which allow an intermittent mode of operation, in addition to the continuous mode. The oxygen enrichment efficiency and the cost effectiveness of the system, are further enhanced by the optional installation of guide baffles mounted transversely to the outflow of the aeration rotors.

Design Features

The heart of the Mammoth Rotor is the rotor itself; a central shaft with clamped star blades made of fiberglass reinforced plastic. The offset arrangement of the blades ensure quiet, shock-free operation. The straight bevel gear drive and end bearing allow for a low-maintenance operation. The gear unit – just as the end bearing – are made by Passavant for this demanding application.

Johnson Screens® Triton® Underdrains Gravity Sand Filter

The Triton® Underdrain is designed for the collection and backwash distribution of water and air, all while directly retaining filtering media. With its large open surface area, the lowest headloss, and world-renowned Vee-Wire screen technology, Johnson Screens' Triton Underdrains offer a unique design suitable for any filter media.

With simple installation, and low headloss, Triton Underdrains are less expensive to install, operate and maintain. The uniform bubble pattern of the Triton underdrain system allows for vigorous air/water backwashing without media upsets. Improved backwashing results in longer filter runs, less backwash water used and a cleaner, and a more efficient filter bed.

The combination of Triton's Vee-Wire having a 6% open area and 108% basin floor coverage with a scalloped shape, allows for the lowest headloss across the underdrain, which translates to lower power costs for backwash pumps. The Vee-Wire design offers an essentially plug-free media support surface, allowing for an expanded selection of media, compared with alternative underdrain designs, allowing for greater operational flexibility.

Product Variants

- PVC, 304/316 Stainless Steel Construction
- Standard slot width: 0.005 in
- Filtration rates: 2-10gpm/sq.ft.

Johnson Screens® 120° Sieve Bend Screen

Johnson Screens' 120° Sieve Bend Screen are used in static sieves for either dewatering or classification.

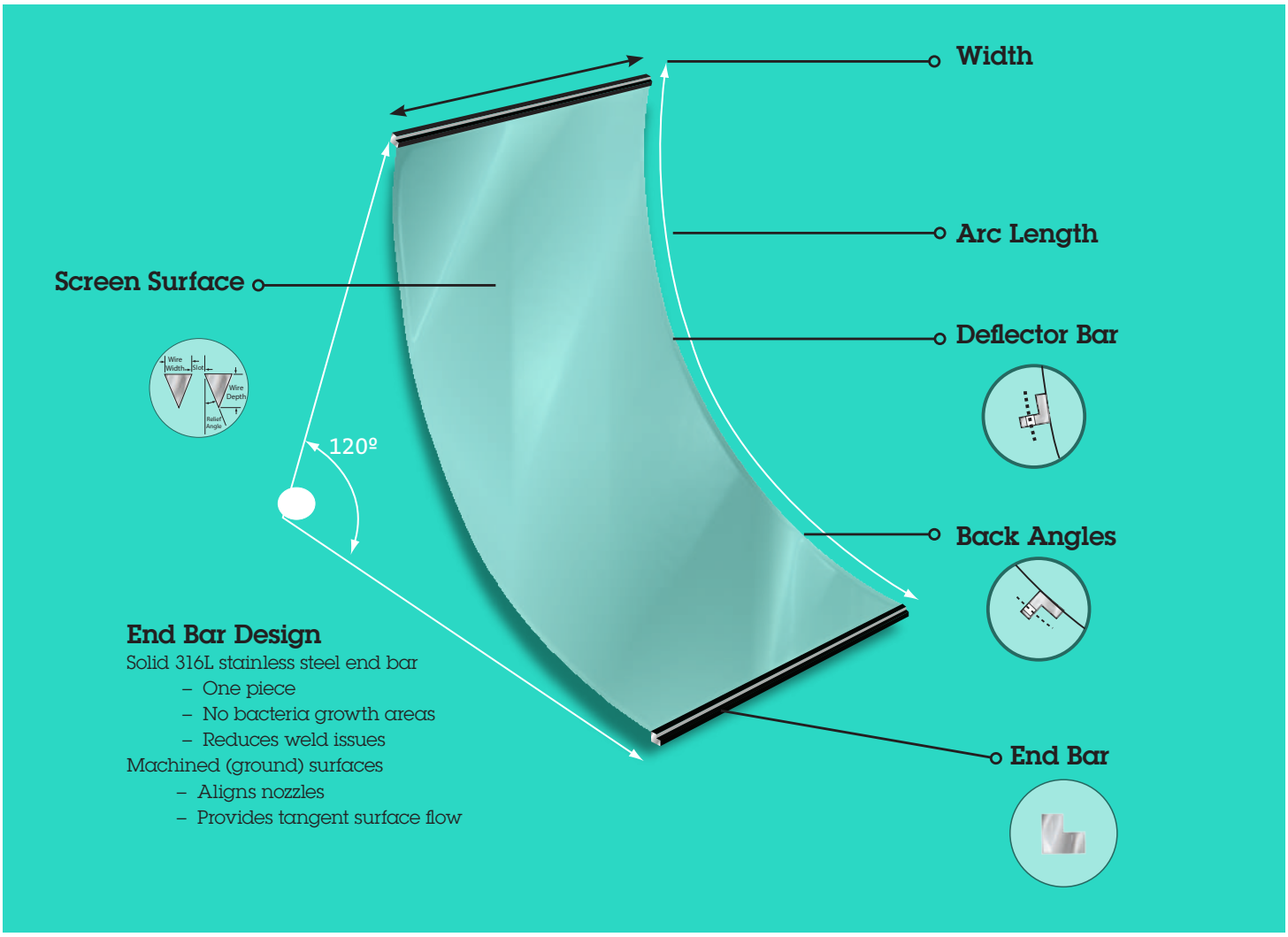
As the slurry flows over the inclined screen surface, the perpendicular layout of the wires to the flow, allows for solids to be retained while liquid passes through the screen.

Made from Vee-Wire screens, the 120° Sieve Bend Screen can provide up to 50 percent more open area with a narrower wire profile.

With a number of manual-handling restrictions, Johnson Screens has developed an innovative split-sieve design. This design offers a simple, economical benefit by reducing the physical size and the weight of the screen.

Design Features

- Reduced equipment and installation costs
- Low maintenance costs
- Better flow rate and finer fiber removal
- Wide range of applications
- Longer screen life
- Slot sizes range from 25 µm to 0.394 in. (10 mm)
- Made with 300 series stainless steel



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Johnson Screens

Industrial Screens

A brand of
Aqseptence Group

Johnson Screens Industrial Products

Innovative Design

Johnson Screens' stainless steel Vee-Wire® filter elements for liquid/solid and gas/solid separation that is known for great strength, a long service life and a high level of adaptability.

Vee-Wire screens are made by welding our patented V-shaped wire onto various sizes and shapes of support rods. This process creates a slot that enlarges inwardly, creating a large open area and clog-resistant surface. Our continuous welding method meets the most demanding standards for ruggedness, durability, resistance to abrasion, consistency and slot openings.

Custom Designed and Engineered

Each project is engineered to ensure it meets required specifications. We provide guidance and support from project conception to completion.

Lower Maintenance

The rugged construction and high quality of the materials produce a product that lasts longer and requires less maintenance.

Less Costly

Superior operating efficiency, reduced maintenance needs and extended service life, combine to lower costs to plant operators.

Many Construction Options

Screens can be used for:

- Direct screening
- Filter media support (sand bed, activated carbon, resins, catalysts)

Screens are available in slot opening from 25 µm up to 0.984 in. The most common materials used are the 300 series stainless steel, but many exotic alloys are available to meet specific applications.

Screens are available in a variety of shapes, including:

- Cylinders
- Flat or curved panels
- Cones
- Any form specific to a given application

The flexibility of the process allows the manufacture of custom-made screens for all applications types, such as new plant, expansions or upgrades.

A Highly Technical Product

The design and manufacturing characteristics of Vee-Wire surfaces, provide the following advantages:

- Non-clogging surface
- Large open area
- Low pressure drop
- Hydraulic efficiency
- High flow rates
- Mechanical strength
- Abrasion resistant
- Easy cleaning

Quality

Johnson Screens has been delivering reliable screens to various industries for more than a century, and though technology has changed, our commitment to quality products and services has not.

As an ISO certified company, each product is subject to a procedure of self-inspection by each operator throughout the manufacturing process. A final inspection guarantees delivery of a product that fully meets the user's specifications.

Johnson Screens can provide the following documents upon request:

- Quality plan
- Manufacturing plan
- Production schedule
- Process qualification record (PQR)
- Welding procedure specification (WPS)
- Welder performance qualification (WQR)
- In-house inspection reports
- Chemical and/or mechanical analysis certificates

Industry Areas

The strength, precision and design flexibility that characterize Johnson Screens brand of products, make them the choice in a broad range of industries.

Industries

- Water and wastewater
- Pulp and paper
- Chemical
- Petrochemical
- Water supply
- Mineral and aggregate processing
- Plastics extrusion
- Machine coolant filtration
- Architectural

Processes involving any aspect of liquid/fluid/solid separation, Johnson Screens has products and experience to help achieve maximum efficiency and effectiveness.

Applications

- Separating
- Filtering
- Media retention
- Sizing
- Dewatering
- Classifying
- Straining
- Drying
- Water intake
- Fish diversion
- Collection

Field Service

Johnson Screens offers a complete field service team of specialized and experienced members that are available for various projects including:

- Full installation
- On-site repairs
- Technical assistance or expertise
- Work supervision
- Inspection

Johnson Screens' experienced welder/fabricators team are available for onsite installation, repairs and screen replacement, and can be available within 24 hours for emergency situations or scheduled as needed.

The ability to evaluate the condition of screens and make recommendations as to the best course of action, our field service team will be there to allow the screens to operate at maximum capacity.

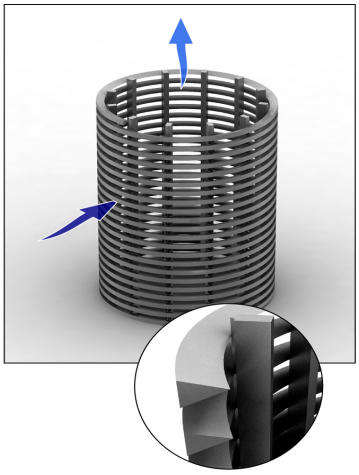
Whether cleaning, making minor or major repairs, or completely replacing screens, our technicians are equipped with all the tools, equipment and experience needed to provide the best field service available.

Johnson Screens' experienced technicians are also available for supervision of installations and on-site repairs.

Cylindrical Screens for Outside to Inside Filtration Flow

Standard

External circumferential wire and axial internal support rods.

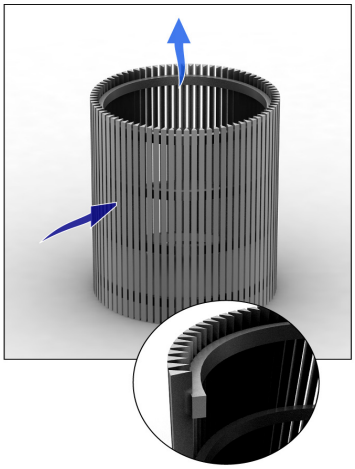


Benefit
- Economical
- Suitable for most applications
- Precision openings

Product
- Filter cartridges
- Candle filters
- Header laterals
- Rotating drum screens
- Nozzles
- Resin traps

External Axial Wire (Re-Rolled)

External axial wire with internal circumferential support rods.

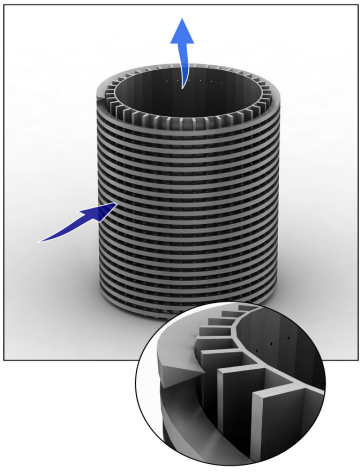


Benefit
- Facilitates cleaning with an external axial-movement scraper

Product
- Automatic filters

Channel Rod Construction

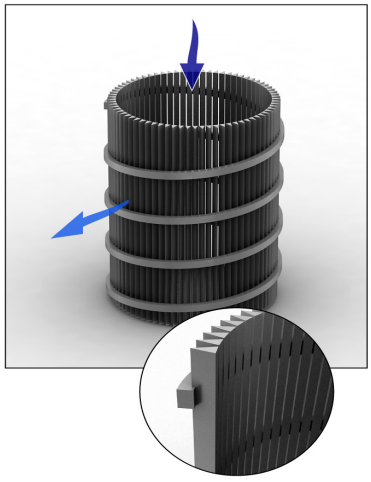
Perforated U-section channels replace the internal support rods. When the filter is used as a collector, flow is outside-in. When it is used as a distributor, flow is inside-out.



Benefit
- Optimized collection and distribution
- Replaces perforated inner tube

Application
- Potable water treatment
- Ion exchange
- Oil refining processes

Cylindrical Screen for Inside to Outside Filtration Flow



Internal Axial Wire (Wire-Based)

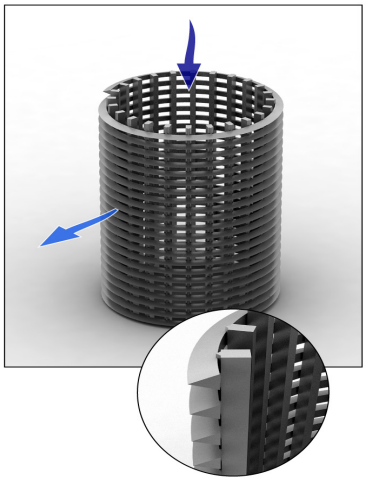
Internal axial wire with external circumferential support rods.

Benefit

- Smooth internal screen surface
- Facilitates cleaning with an internal axial-movement scraper
- The flow moves across the wire edges for effective dewatering

Product

- Trommel screens with internal feed
- Systems with an internal rotor or screw
- Dewatering systems
- Baskets
- Automatic filters



Inverted

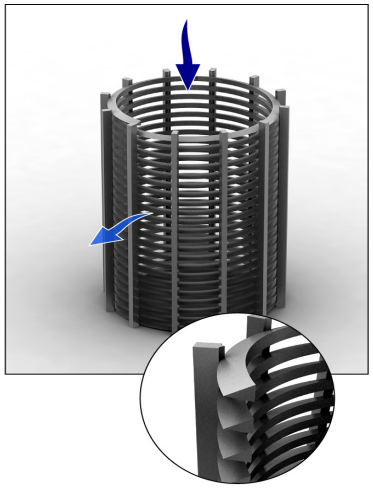
External circumferential inverted wire and axial internal support rods.

Benefit

- Economical

Application

- Inside-out flow



Internal Circumferential Wire (Re-Rolled)

Internal axial wire with external circumferential support rods.

Benefit

- Smooth internal screen surface
- Facilitates cleaning with an internal axial-movement scraper
- The flow moves across the wire edges for effective dewatering

Product

- Trommel screens with internal feed
- Systems with an internal rotor or screw
- Dewatering systems
- Baskets
- Automatic filters

Industrial Screening Products

Flat Screens

Johnson Screens offers a variety of flat screens for the malting and brewing industries. Vee-Wire screens are ideal for:

- Lauder tubs
- Germination
- Kilning
- Ultra filtration
- Steeping
- Malt extraction

Used in the kilning, germination and drying phases of the malting process, Johnson Screens' malting bed screens are the ideal choice for malting floors and other screening needs in the malting process.

These screen panels can be designed to minimize "dead spots" in the malting floor over supports or other structures, to further improve the overall process. In between malting batches, the screens are very easy to clean, reducing contamination of the process

Candle Filters

Candle filters are filter elements with the following qualities:

- Small diameter usually less than 1.97 in. (50 mm)
- Substantial length usually greater than 39.37 in. (1,000 mm)
- Very fine openings: 25 to 150 microns, according to the application
- Direct filtration
- Medium support (diatoms in filters)

The filtration capacity can be easily modified by varying the number of candle filters to obtain the required filter area.

Cleaning
A stronger flow in the backward direction, known as backwash, cleans the candle filters effectively.

Maintenance
Because the filter elements are particularly rigid and rugged, they can be disassembled without risk of damage to the filter surface.

Support Grids

The support grid system is available in an a variety of framing options and designs — as a one-piece construction or in multiple sections for onsite assembly and ease of retrofitting through existing manways.

Because of their strength, durability and flow characteristics, the support grids are widely used in hydrotreaters, desulfurizers, molecular sieves, gas sweeteners, ion exchangers and other absorption systems.

Features

- Slot size can be designed for direct media retention
- Grids can be supplied with support beams, rope packing, bolting and all necessary accessories

Benefits

- Self-supporting structure
- Exceptional resistance to collapsing or buckling, even in operations where screens must withstand extremely high loads
- More effective open area than grids using wire mesh or grating
- Smooth surface of the screens reduces abrasion of media

Cartridges and Outlet Baskets

A large range of industries use cartridges. Rugged, precise and easy to clean, these filter elements are suitable for all industrial processes.

They can be used for:

- Conventional filtration, outside-in
- Reverse filtration, inside-out

The use of extremely fine wire maximizes the open area. This process is even more effective for slots smaller than 100 microns.

The following types of fittings can be welded to allow incorporation of cartridges into any process:

- Collars
- Flanges
- BSP or NPT threaded end fittings
- Machined rings for fittings with O-rings or flat baskets
- Other fittings

Screen Lateral Systems

These assemblies consist of a series of screen laterals connected to either a central header pipe or a hub. They are designed for effective media retention in a wide range of applications, including ion exchangers, clay and sand filtration applications and carbon towers.

Features

- Lateral spacing, length, diameter and slot opening sizes are based on individual system need: slot size 0.002 in. (0.05 mm) and up in 0.0004 in. (0.01 mm) increments and diameter from 0.79 in. (20 mm) and up
- Assemblies are typically made with type 304SS, 316LSS or other exotic alloys are also available
- Connections of the laterals can be threaded fittings, couplings or flanges
- Optional internal drilled distributor pipe for a optimal backwash distribution cycle

Benefits

- The design allows a uniform collection or distribution flow of a gas or liquid through treatment media without dead zones
- The system can accommodate a wide variety of vessel sizes and shapes with side, center, top or bottom inlet piping
- The assemblies can be designed to accommodate flow in any direction

Laterals

There two types of Johnson Screens' laterals - without drilled pipe or with distributor pipe. Both types are very effective collectors, however, for most effective backwash distribution, the screen design should include an internal distributor pipe. These distributor pipes are sized by Johnson Screens' design engineers so that backwash is evenly distributed throughout the system.

Nozzles

Nozzles are used in liquid/solid or gas/solid separation. Their design and quantity will vary depending on application and customer-flow requirements. Nozzles allow a more effective use of the treatment media.

Common applications include:

- Collectors and distributors installed uniformly across a plate or a header lateral arrangement
- Demineralizers, water softeners and in pressure and gravity sand filters

Features

- Standard diameter: 1.96 in. (50 mm)
- Typical slot opening ranging from 0.007 in. to 0.019 in. (0.2 mm to 0.5 mm)
- Threaded end fittings or "L" bolts
- Primarily made of stainless steel; however, special spherical nozzles made from ABS or Kynar® are also available

Fractal Collectors and Distributors

Fractal collectors and distributors can be used in applications such as ion exchanges, resin beds and any chromatic process.

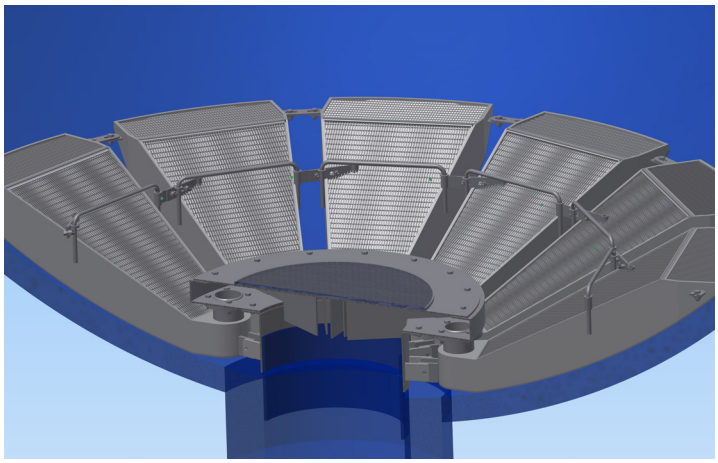
Features

- Lateral exit flow variation as little as 3 percent for the entire assembly
- Various options for sizes, shapes and flow capacities
- Distributors are typically made with type 304SS or 316LSS. Other alloys are also available

Benefits

- Equal contact time with media
- Equal resonance time in the system
- Effective plug flow
- High distribution efficiency

Shaped Support Grid (SSG)



Johnson Screens' Shaped Support Grid (SSG) is designed to be installed into the bottom head of vessels, allowing for better liquid and gas flow, bed utilization, distribution and an overall more efficient process.

With traditional flat surface grids designs, the entire volume of the head is a dead area, with no reaction or drying adsorption occurring. The SSG lies directly on the bottom head surface, allowing for the entire volume to be filled with media. Increased bed volume allows for the conversion of existing vessels to achieve higher process capacity.

Resin Traps/Inline Strainer

A resin trap is a safety device used on the overflow lines of ion exchange units, high-purity water systems and activated carbon and media filters.

In many systems, a valve failure can allow media to escape from the treatment vessel. Not only is the loss of expensive media significant, but damage can easily occur to downstream pumping equipment.

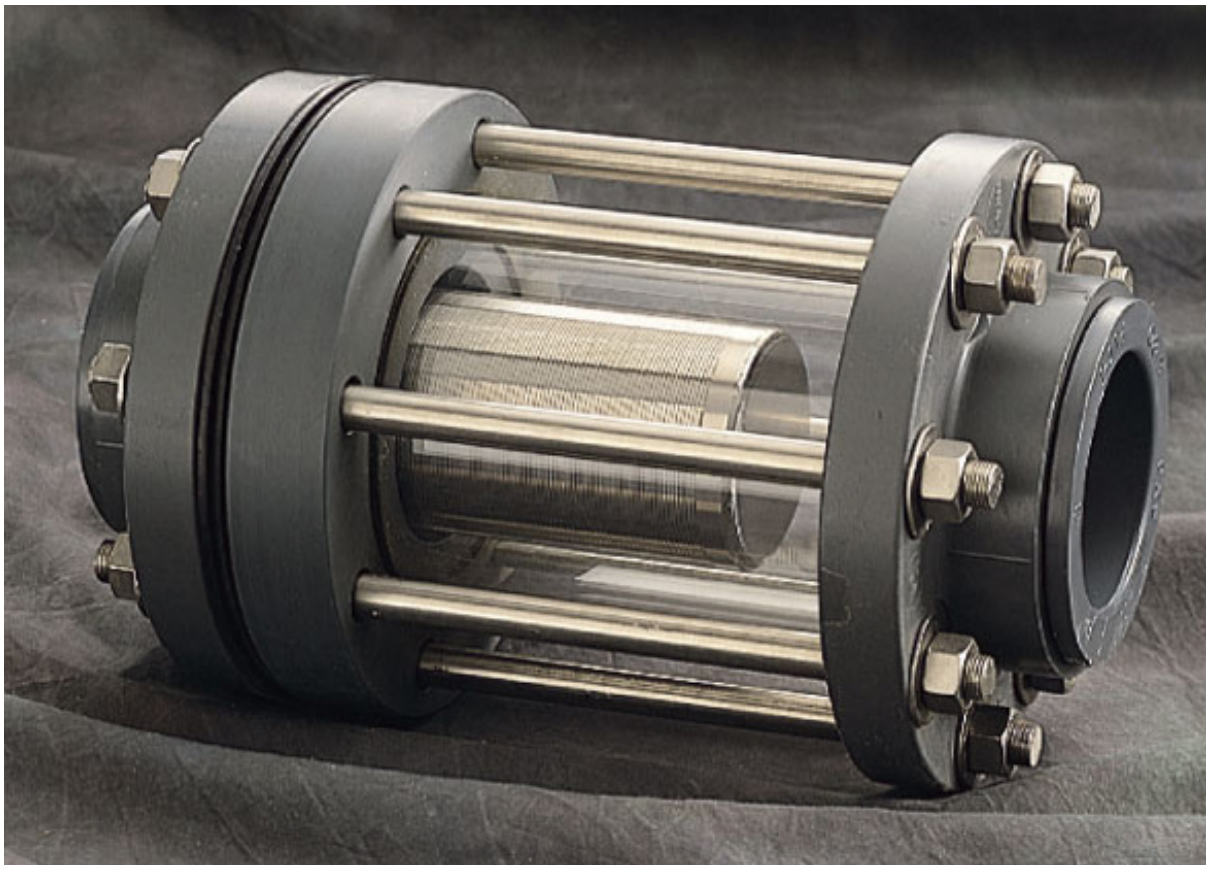
Resin traps, placed inline, provide positive protection. The traps can be designed to capture media particles of any size

Features

- Continuous slot design, allowing traps to capture media particles of any size, providing sufficient open area to let process flow move smoothly
- Stainless steel construction (other alloys can be used, depending on pressure and temperature)
- Various options for sizes, shapes and connections, depending on process flow characteristics
- Designed for full system pressure

Benefits

- Prevents expensive resin/media loss into piping distribution system
- Protects downstream pumping equipment
- Visibility of minor resin/media losses in prevention of major equipment failure



Gravity Screens

Johnson Screens' gravity screen is used for coarse separations ahead of additional processing systems.

Gravity screens uses a Vee-Wire dewatering screen to retain the solids while allowing effluent to run through the system. The slurry is gravity fed to the head box and then flows to the screen. The solids retained from the screen are gathered for disposal or reuse.

The easy-to-install gravity screen features low operating and maintenance costs and can be designed according to client specifications.

Cylindrical Baskets

Cylindrical baskets can be designed for a flow from out to in (standard construction) or from in to out (re-rolled construction). These screens are adapted for self-cleaning filters or screw press filters and can be cleaned with static scrapers.

Features

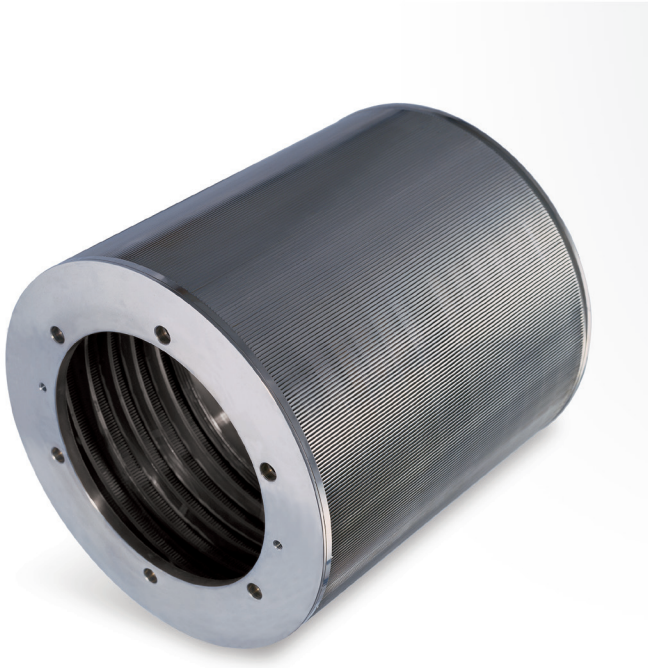
- Dimensions adaptable to any specific needs
- Large range of constructions (wires, rods)
- All slot sizes from 25µm
- Flanges and reinforcement rings available depending on the application

Benefits

- Self cleaning surface
- High open area
- Strong construction

Pressure Screens

Pressure screens are mainly used for the stock preparation in the pulp and paper industry. They can be used for any application involving fiber or fine grain filtration.



Features

- Specific, contoured wire shape
- Diameters from 7.87 in. to 59 in. (200 mm to 1,500 mm)
- Increased screening efficiency
- Special surface chroming process allows for less frequent cylinder replacement

Benefits

- The continuous slot gives a greater performance with a higher open area

Screw Press Screens

For dewatering using a screw press, we can provide a screen designed to meet your exact specifications. Johnson Screens' high-strength design can withstand the rugged operation, while providing an accurate slot width and maximizing open area to maximize dewatering. For use in numerous industrial designs. Abrasion resistant options are available.

Features

- Accurate slot width
- Custom designed to fit any application

Benefits

- High strength design
- High open area

Centrifuge Baskets

Starch Processing

Johnson Screens' starch basket is designed to fit into any existing or new centrifuge application.
Vee-Wire Centrifuge Baskets improve starch refining by providing accurate and customized slot sizes that are specific to your needs.

Features

- Increased fiber dewatering compared to nickel screens
- Extended wear life
- Designed and manufactured to each centrifuge design
- Variable slot openings from 20 µm and up
- Fine Vee-Wire construction prevents clogging
- Capable of withstanding high backwash pressures

Sugar Processing

Johnson Screens' patented fine Vee-Wire continuous centrifuge basket has increased mechanical strength, a precise slot opening and a larger percentage of open area, increasing the amount of sugar crystal recovery.

The self-supporting structure of the basket is designed and engineered to withstand the high stresses and load conditions of the sugar industry.

Features

- Variable slot openings from 20 µm and up
- Long lasting, fewer change-outs
- High resistance to abrasion
- Fast and easy installation
- Low maintenance, easy to clean
- Replaces electroformed and laser screens

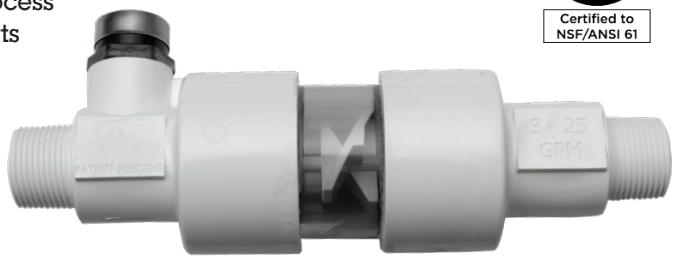
PVC Inline Mixer

Johnson Screens' NSF 61 approved inline mixer utilizes a unique internal design, which uses ordinary line pressure to create high levels of turbulence, enhancing the mixing of fluid additives with the product stream. With no moving parts, the inline mixer is virtually maintenance free and installs quickly and easily with no special tools or additional components. These inline mixers are used in a wide variety of processes, such as chemical blending, pH control, water treatment and chlorine mixing.

Standard features of the inline mixer include:

- PVC construction aids in chemical compatibility
- Clear PVC sight tube allows easy viewing of the mixing process
- Standard 1 in. male NPT threads on the inlet and outlet ports
- Standard ½ in. female NPT threads on the injection port
- Improved mixing performance
- Reduced energy consumption
- Larger wrench flats
- Reduced backpressure during operation
- Handles higher flow rates up to 30 GPM

Certified to NSF/ANSI 61

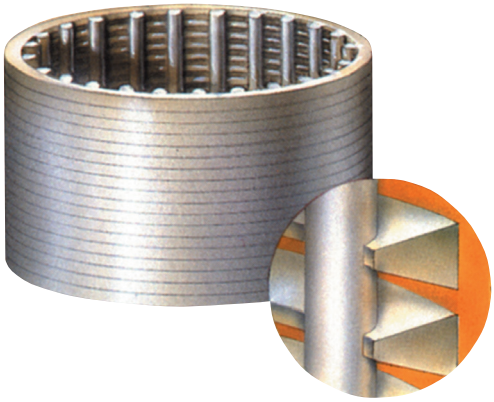


PVC Vee-Wire

Commonly used in shallow wells, PVC Vee-Wire screens present higher open area screen available in PVC. PVC Vee-Wire screens resist corrosion from aggressive waters and are ideal for many environmental applications. PVC

1. Clear ID's are minimum inside diameters
2. Tensile values are based on support rod area, other values are based on flush-thread test values
3. Collapse strengths are calculated values - no safety factor included
4. Hang weights are the maximum combined weight of riser and screen to be hung from the top screen joint
5. All strength properties are based on 73˚ F
6. Alternate construction for environmental applications

*Alternate construction for environmental applications



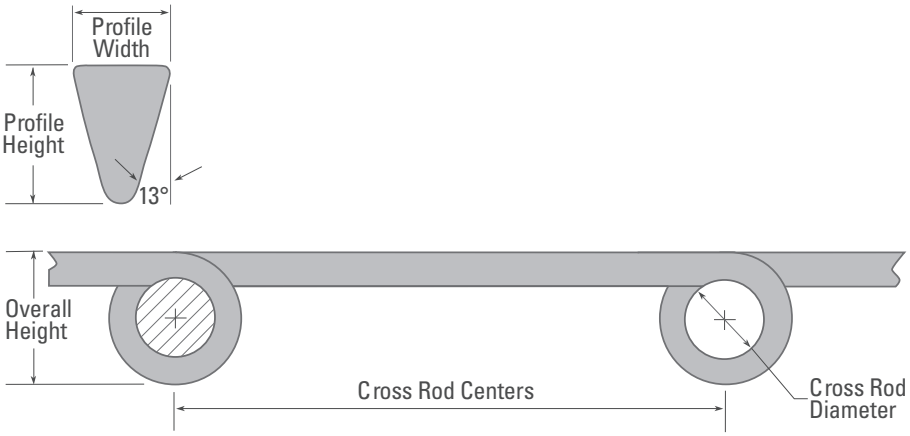
All Johnson Screens Flush Threaded PVC pipe and screen products are manufactured from plastic of Type 1, Grade 1, PVC compound with a cell classification of 12454-B per ASTM D1784. Pipe materials are NSF approved .

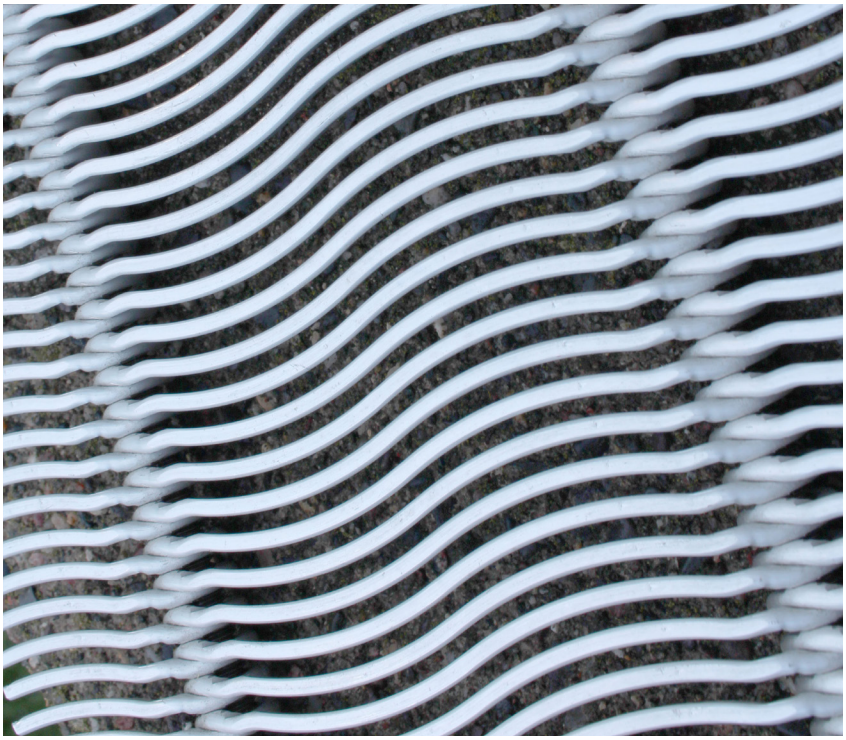
Loop Profile Wire Screens

Loop Profile wire screens find uses in a wide variety of applications. Loop construction eliminates a welding requirement to join the rod and wire, and greatly increases the strength and durability of the screen.

Johnson Screens' proprietary loop wire manufacturing process allows for a great degree of flexibility in producing various profile shapes, openings and support member configurations. Standard specifications for Loop Profile wire screens are illustrated.. Additional specifications are available by contacting your Wedge Wire sales engineers.

Flexible manufacturing gives Wedge Wire the capability to manufacture screens utilizing virtually any metal, from basic carbon steels to high tech alloys.

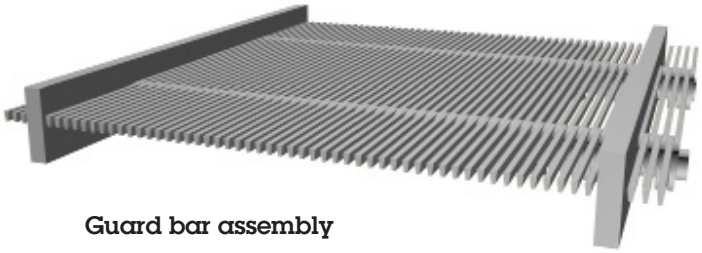




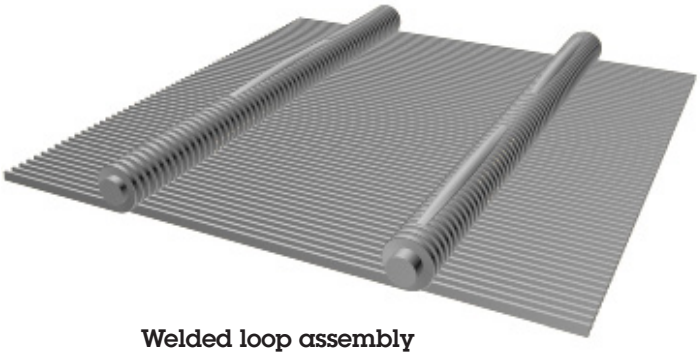
Looped Wire Assembly and Framing Options

Comprehensive fabrication capabilities allow Johnson Screens to supply a wide range of customized framing and assembly options designed to meet individual customer needs.

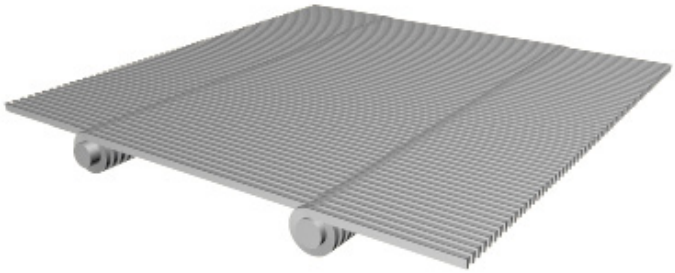
Johnson Screens' technical department and engineering staff are available to help create the total profile wire system which is best suited to solve your specific application requirements.



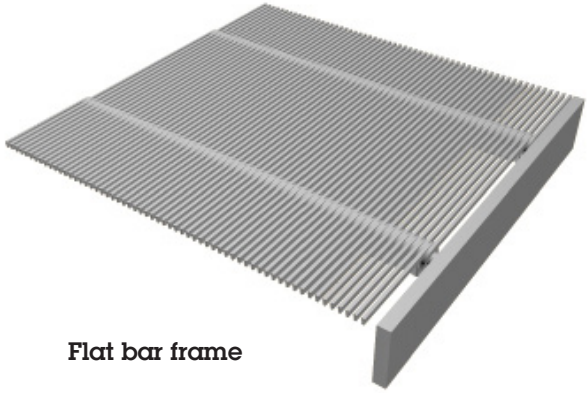
Guard bar assembly



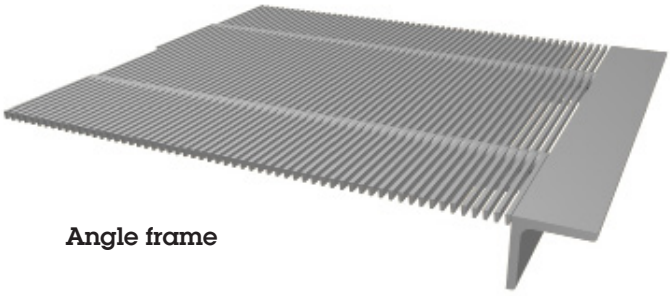
Welded loop assembly



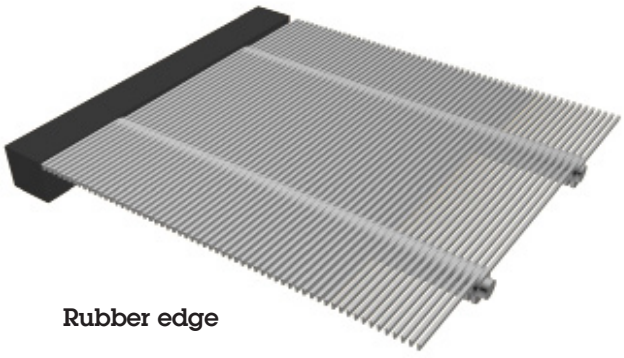
Mat section with no bushing



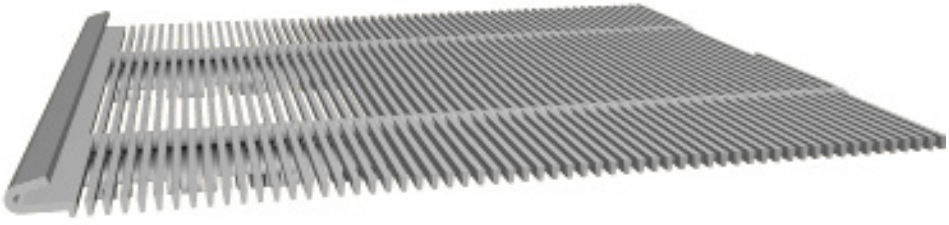
Flat bar frame



Angle frame



Rubber edge



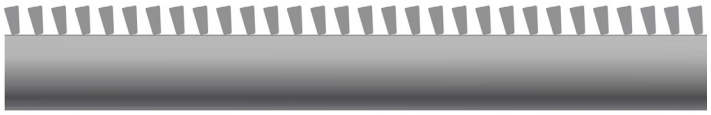
Hook Strip

Diamond Top

The “diamond” configuration of this profile wire surface acts to guide liquids toward openings and substantially increases screening efficiency. This action also agitates particles which helps in the prevention of material adhesion.

Blips

In severe screening applications, spacing blips can be placed in the profile wire between standard cross support rod loops. The spacing blips insure accurate and uniform slot openings during operation.



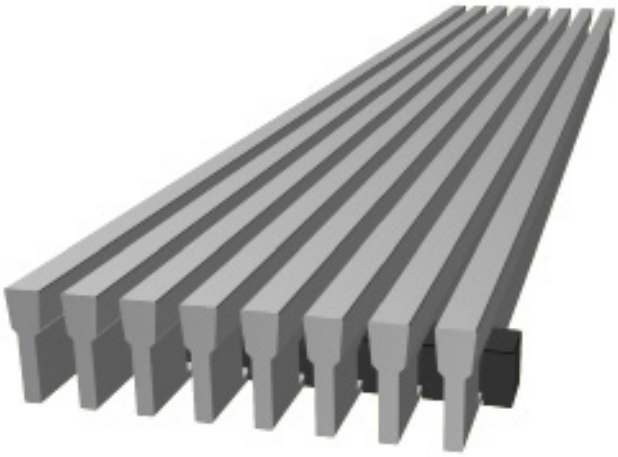
Tilt

The “tilting” of the profile wire angle, typically 5° to 10°, enhances the dewatering and separation of material on cross flow screening applications

Free-Flow

Free-Flow screens are made with a ribbon lock-bar process. This process incorporates cross-bars which are inserted into slotted longitudinal profile bars, rotated 90° and locked into place. The cross bars are then automatically welded on the underside only.

Free-Flow screens are typically used in high wear applications requiring a clear, free slotted screen surface. Free-Flow is available in openings of .010” and larger with total stainless steel construction.



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