



**Johnson  
Screens**

# Sugar Processing Screens and Equipment

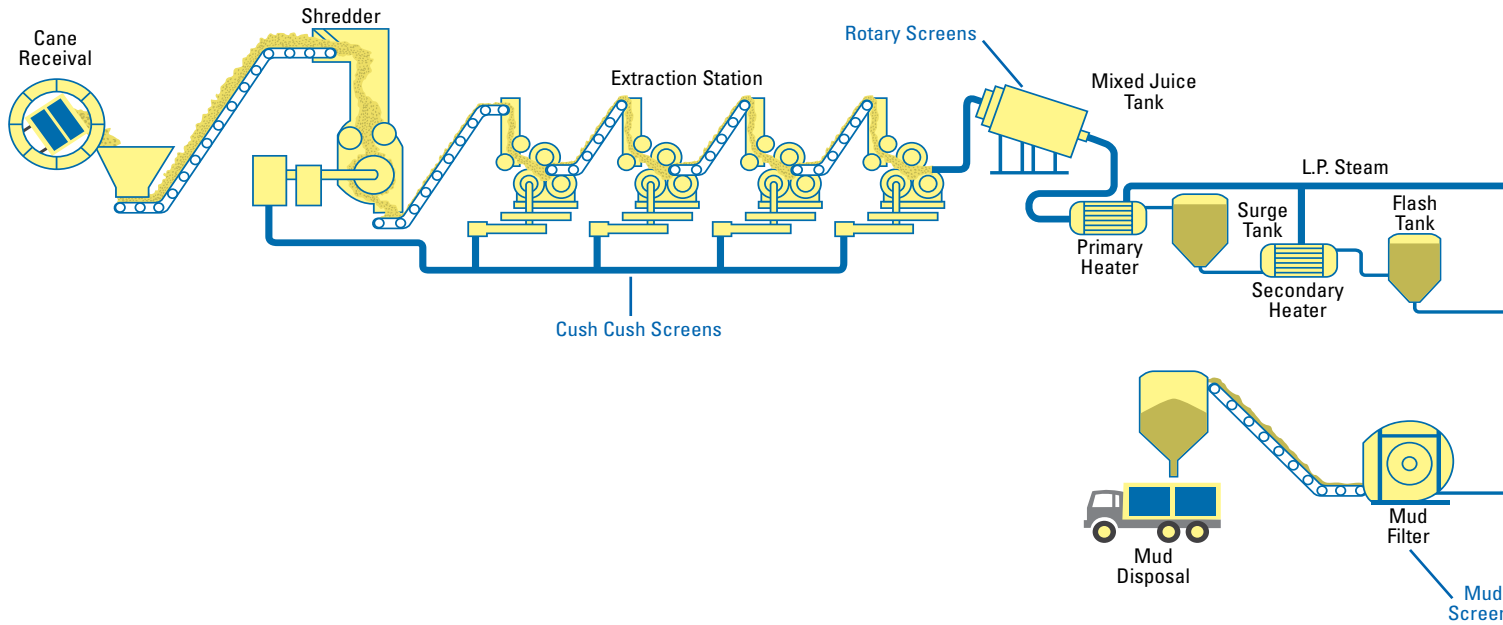
Processing Solutions for Every Step of the Sugar Industry



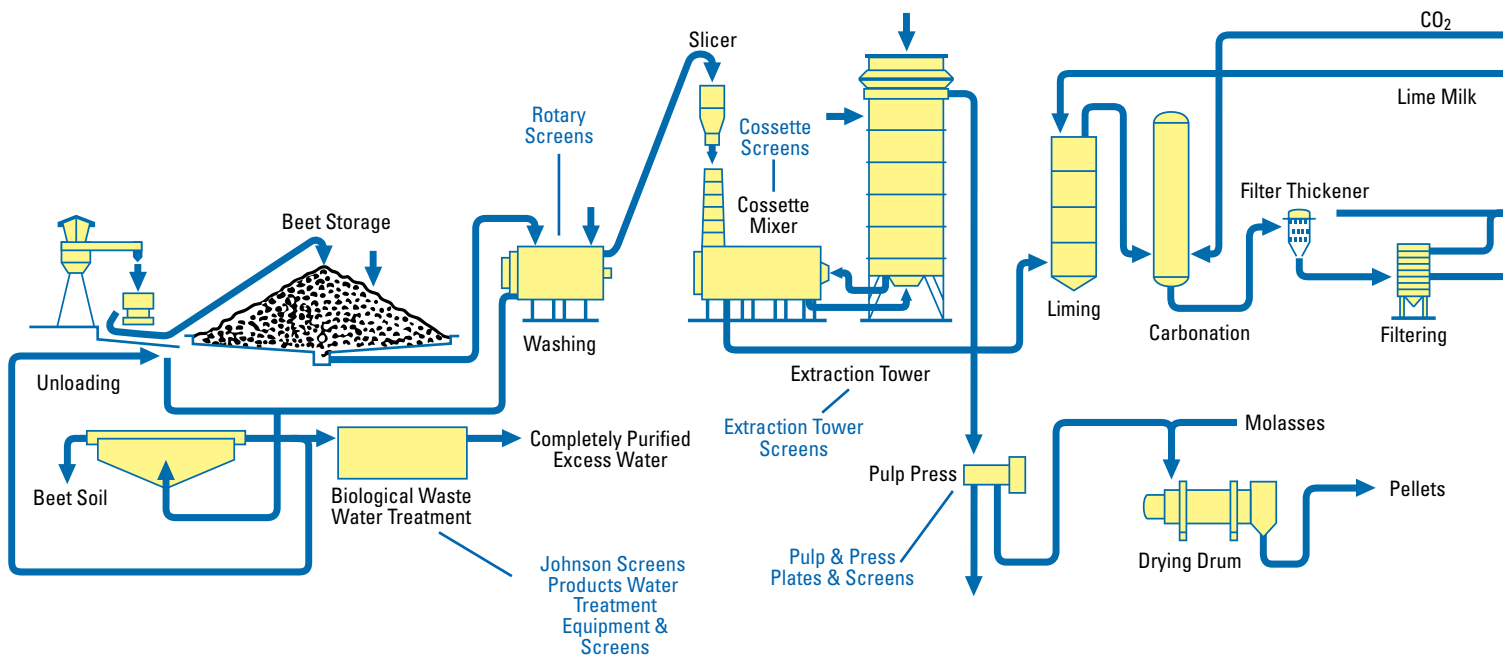
A brand of Aqseptence Group

# Providing Filtration, Separation & Purification for Both Sugar Cane and Sugar Beet

## Sugar Cane Processing

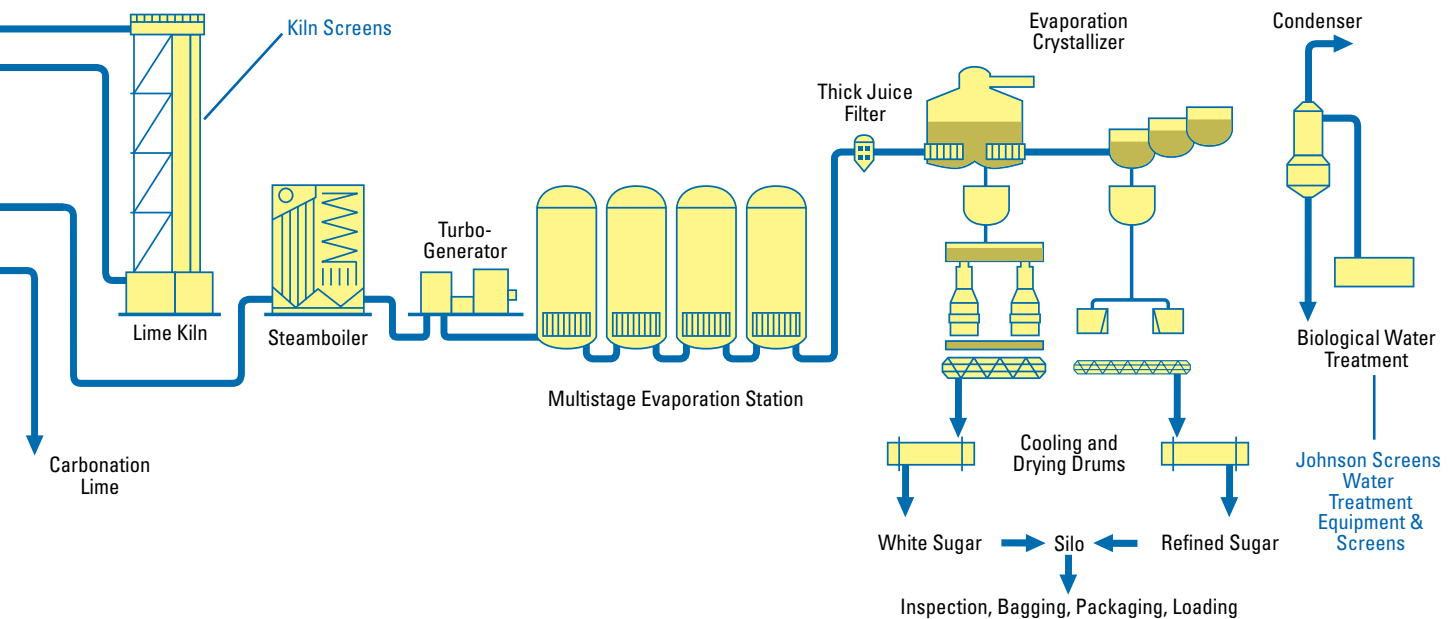
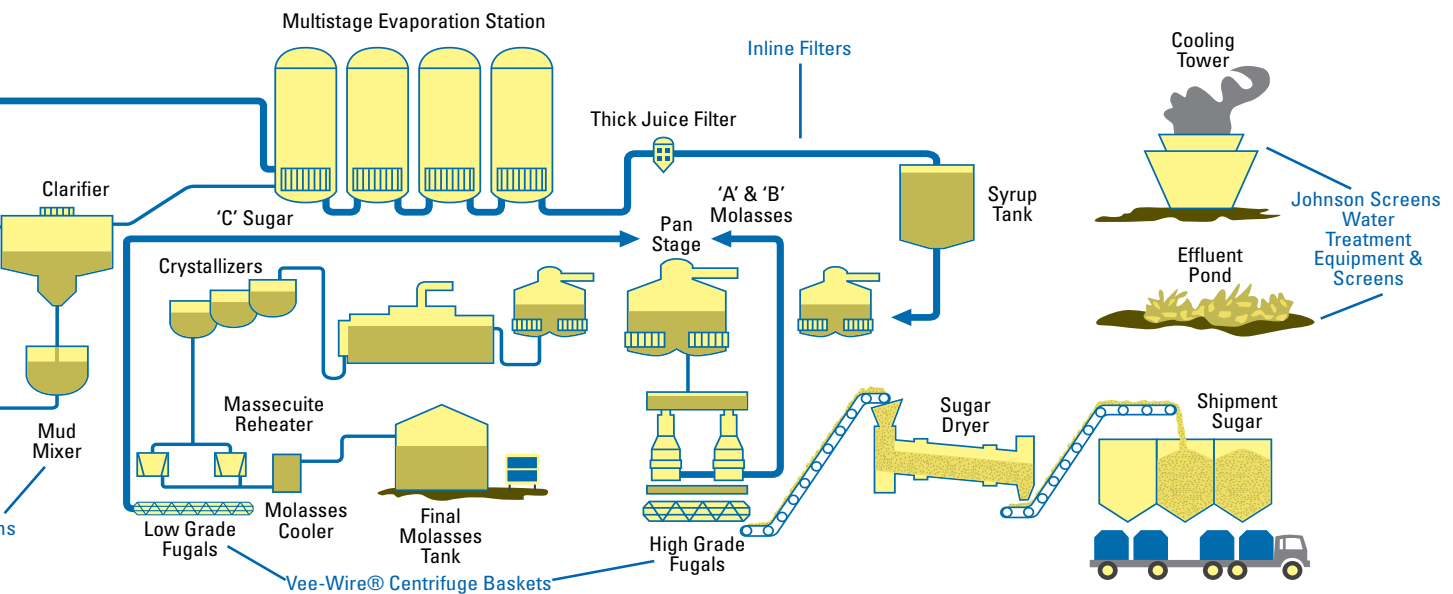


## Sugar Beet Processing



# and Water Treatment Solutions

## Beet Processing





# Process Screens

## Rotary Screens

Rotary screens allow for large flows to be pumped over the Vee-Wire® screen inside, which separates the liquids and solids as the system rotates.

The slurry is pumped into the rotary screen, and as the liquid and smaller solids pass through the slots in the Vee-Wire screen, the larger solids travel down the discharge end.

The Vee-Wire screens are designed to fit the specifications of the system and are ideal for replacing worn-out screens in existing applications.



## Paddle Screens

Used for fine-fiber removal, Johnson Screens' paddle screens are designed to fit in any Original Equipment Manufacturer's (OEM) equipment design.



## Screw Presses and Screw Press Baskets

Johnson Screens modular drainer screw press offers a single-drive solution for conveying, washing, dewatering and pressing of solids for the removal of free water.

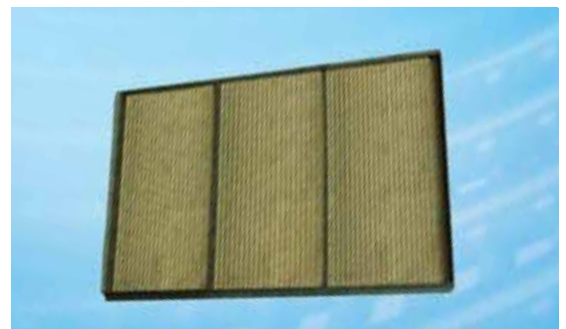
Johnson Screens also manufactures screw press baskets that are custom designed to fit into any make and model of screw press.

The extensive range of baskets includes: high-strength, drilled hole and Vee-Wire slotted designs, which provide increased open area, enhanced fiber retention and improved effluent clarity.



## Cush Cush Screens

In the sugar industry, cush cush screens are widely used for the separation of sugar juice from cane fiber. Cush cush screens are custom made to suit specific requirements, for flow rate and materials being separated.



# Screens for Cossette Mixers and Extraction Towers



## Screens for Cossette Mixers and Extraction Towers

Johnson Screens provides dewatering screens for cossette mixers and extraction towers in the sugar beet process.

As the sugar beet travels through the cossette mixers and extraction towers, the juice is screened through looped or welded Vee-Wire screens.

### Benefits

- High open area lends resistance to clogging
- Strong resistance against abrasion
- Customized slot sizes
- Fine wires available for fine sand removal



## Sieve Bends and Boxes

A sieve bend has greater screening capacity than a flat screen due to forces exerted as material flows against the curved surface. A curved profile Vee-Wire screen is mounted in a frame with the screen openings perpendicular to the flow.

In a typical feed situation, the leading edge of the Vee-Wire removes the water and fine particles through the screen, up to the cut point size, as the oversized particles move across the top of the screen.

Separation size is considerably smaller than screen openings, usually about one-half the opening size.

Sieve bend screens are ideal for sizing and dewatering applications in liquid/solid separation processes.

## Pulp Press Plates and Screens

Bilfinger Water Technologies offers complete pulp press fitted with either drilled plates or Vee-Wire screens. We are also able to provide replacement plates and screens to fit existing equipment.

## Mud Screens

Mud screens are used to screen away the mud and dirt from the beets after washing. These externally-fed screens allow the liquid and solids to flow continuously into the unit where hydrostatic pressure is exerted over a portion of the rotating drum Vee-Wire screen. As the liquid drains through the slot openings, the solids rotate with the drum and are removed into a hopper.





# Continuous Centrifuge Baskets

Johnson Screens patented fine Vee-Wire continuous centrifuge basket, provides a high 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 continuous centrifuge basket is engineered to withstand the high stresses, impact by foreign objects and extreme load conditions.

## Longer Lasting

Johnson Screens' continuous centrifuge basket utilizes Vee-Wire screening technology and is manufactured to the highest industry standards. Extremely durable and having a high resistance to abrasion, corrosion and damage from impact by foreign objects, means a longer screen life, fewer screens, less downtime and lower maintenance costs.

## Retains More Sugar

The screen slots of the continuous centrifuge basket produce less crystal degradation. As a result, the Johnson Screens centrifuge basket helps you produce more sugar per ton than other electroformed and laser screens.

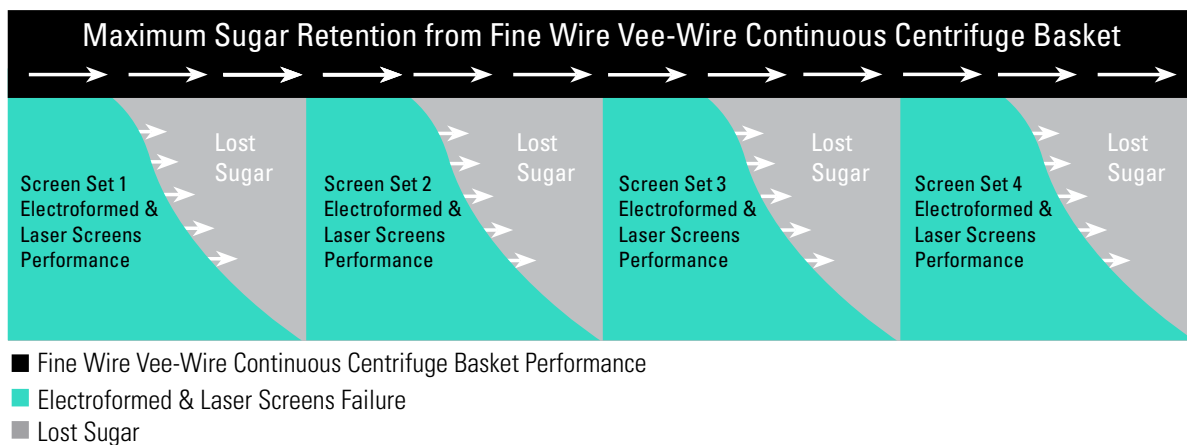
## Easier to Install

Johnson Screens' continuous centrifuge basket is supplied in one piece, there are no fittings of multiple segments. Installation is made simple with less chance of damage to the screen and no chance of immediate loss on start up. Simple and reliable installation means fewer screen failures

## Resists Blinding Better

The continuous slot screen design is far more resistant to blinding than etched screens. The slot size can be varied by as little as 25 µm to meet any sizing requirement.

### Fine Wire Vee-Wire Continuous Centrifuge Basket Performance vs. Electroformed and Laser Screens Performance



The graph above shows the efficiency of fine wire Vee-Wire continuous centrifuge baskets compared to electroformed and laser screens. Testing has shown that the Vee-Wire product lasts 4-6 times longer than electroformed and laser screens.

# Vessel Internals and Equipment

## Ion Exchange/ Screen Lateral Systems

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.

### Features include:

- Uniform collection or distribution flow
- Designed to accommodate flow in any direction
- Slot sizes from 0.002 in. (0.05 mm) and up
- Diameters from 0.787 in. (20 mm) and up
- Typically made from 300 series stainless steel
- Connections of the laterals can be threaded fittings, couplings or flanges



## Nozzles

Johnson Screens' nozzles enables a more effective use of the treatment media.

### Features include:

- Economical and non-plugging design
- High open area
- Increased strength and corrosion resistance
- Available in stainless steel, ABS and Kynar®
- Standard diameter of 1.97 in. (50 mm); standard slot opening of 0.18 mm (0.007 in.) for stainless steel
- Standard slot opening of 0.008 in. (0.2 mm) for ABS and Kynar nozzles
- Threaded end fittings or hold down bolts

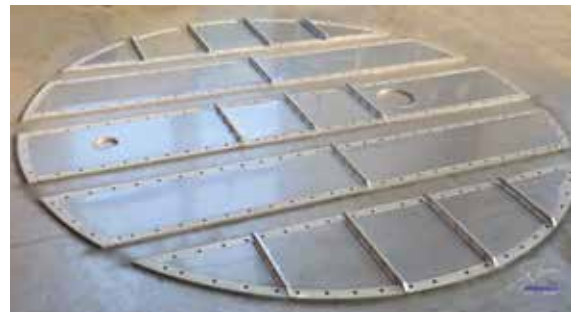


## Support Grids

Support grid systems are available with an assortment of framing options and designs, as one-piece construction or in multiple sections, for on-site assembly.

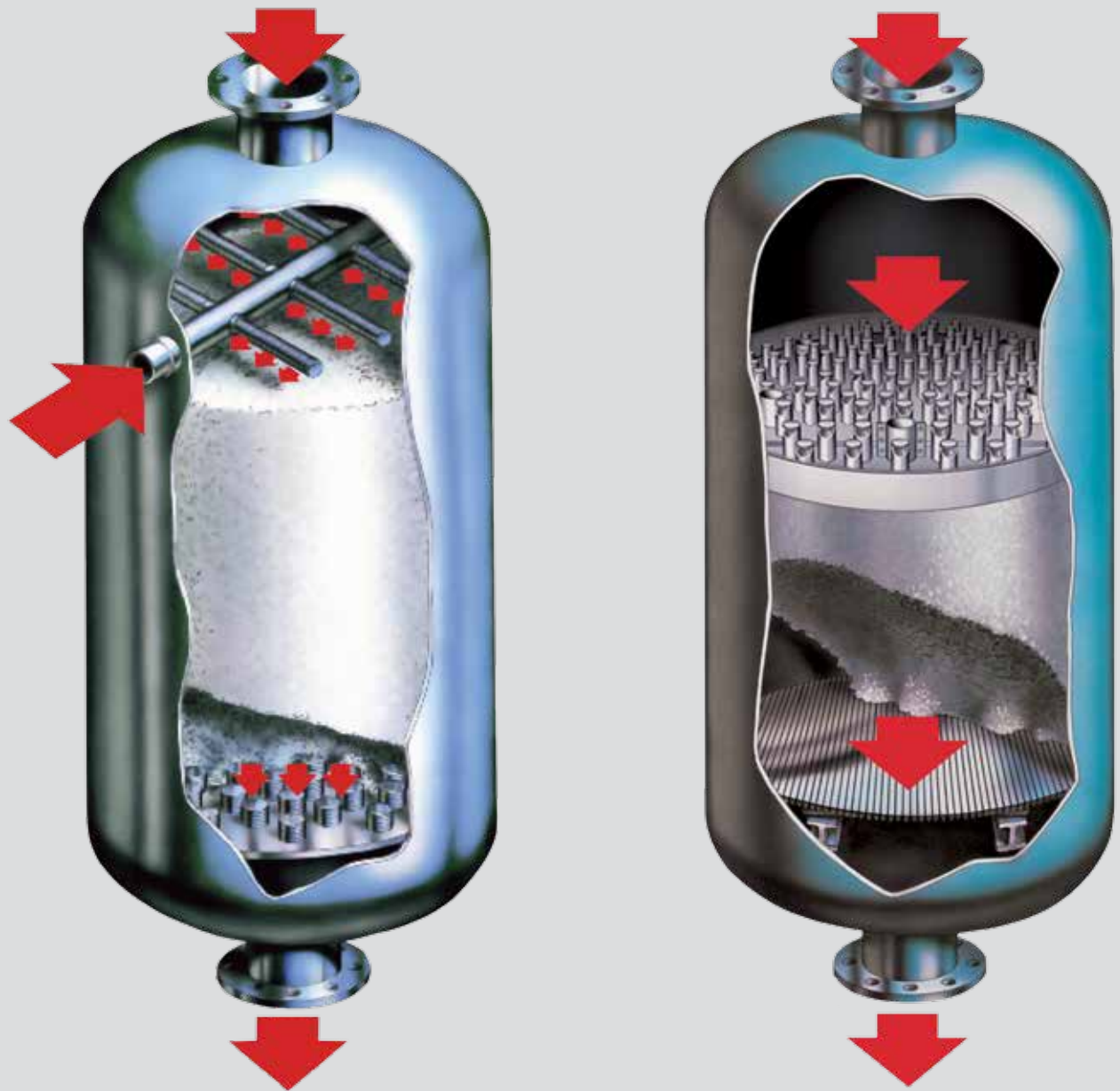
### Features include:

- Self-supporting structure
- Engineered to meet design load requirements
- Larger open area, compared to wire mesh and perforated plate
- Smooth surface, reducing abrasion of media
- Variable slot size depending on media retention needs
- Grids can be supplied with support beams, rope packing, bolting and all necessary accessories
- Hold down bolts





# Ion Exchange/Syrup Conversion Screen Lateral Systems



# Water Treatment and Processing

## Passive Intake Screens



Johnson Screens' passive intake screens are designed to protect the natural surroundings and aquatic life near the intake.

Available with a Hydroburst® cleaning system, passive intake screens are designed to reduce slot entrance velocity to 0.5 ft/s (0.135 m/s). This lower velocity helps to prevent debris clogging.

### **Intake system offers many benefits, including:**

- Low cost
- Limited maintenance
- Environmentally friendly
- Easy cleaning
- No disposal of debris

## Triton® Underdrain System



Triton® underdrains utilize Vee-Wire technology, creating a low profile underdrain system with direct media retention, while maintaining a high open area with non-plugging characteristics.

Available in stainless steel and PVC, Triton underdrains are easily adapted to existing systems, increasing the efficiency of older systems.



## Other Water Equipment and Solutions

Johnson Screens offers a full range of equipment for multiple water process applications that require the separation, removal and treatment of the solids from the liquid flows.

Please visit [www.aqseptence.com](http://www.aqseptence.com) to learn more about our brands, capabilities and to discuss any projects you may have.



# Exceptional Products, Ex

## 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

Flexibility and expertise allow us to propose this extended scope of services under tailor-made contract conditions in order to better serve our clients' requirements.

Our experienced welder/fabricators team is 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.

Our experienced technicians are also available for supervision of installations and on-site repairs.



# Exceptional Service

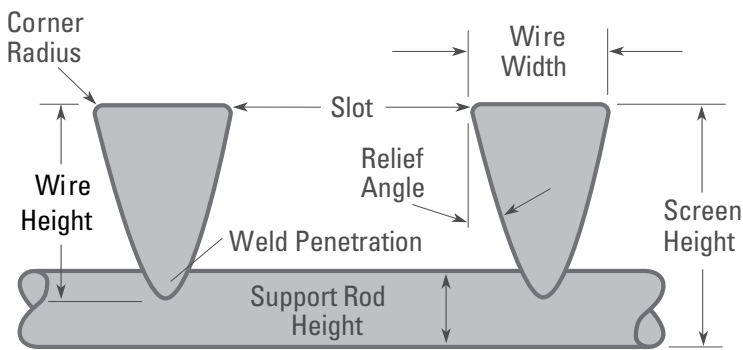
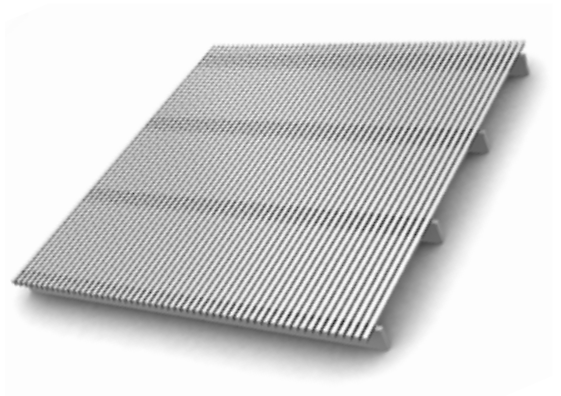


# Technical Data

## Standard Welding Construction

Johnson Screens' standard welded construction uses resistance-welding in a continuous elliptical motion to join the wire and rods. The resistance welds run the continuous length of wire to the rods as it circulates.

Screens can be made in various formations, including cylindrical, flat or curved. Any variation of wire and rod sizes, as well as slot openings, can be chosen to develop the exact screen of your choice. Screens are available in slot openings from 25 µm up to 0.98 in. (25 mm). Most common materials used are 300 series stainless steel, but many exotic alloys are available.

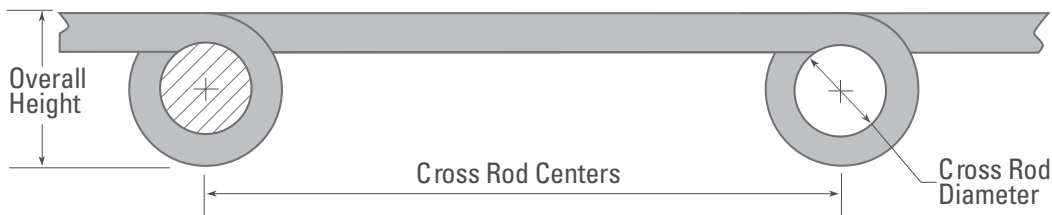
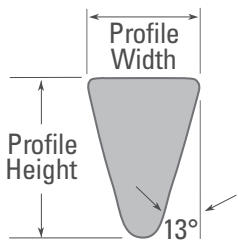


## Looped Wire Construction

Looped wire profile screens are used in a variety of applications. Loop construction eliminates a welding requirement to join the rod and wire, as well as greatly increasing the durability of the screen in many applications.

Our loop wire manufacturing process allows for a great degree of flexibility in producing various profile shapes, openings and support-member configurations.

Flexible manufacturing gives us the capability to manufacture screens using 304SS and 316LSS, as well as other alloys.



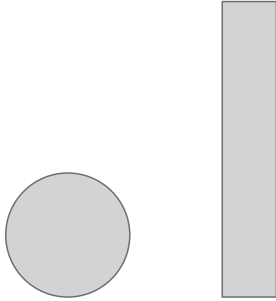


# Wire and Rod Information

A wide range of wire and rod shapes makes it possible to achieve the optimum balance of strength, open area, abrasion resistance and dewatering/separation efficiency.

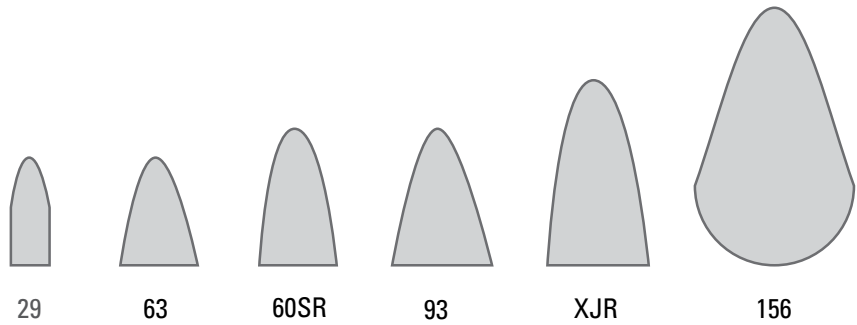
## Round and Strip Support Rods

Round rods are available in diameters ranging from 0.125 in. (3.175 mm) to 0.500 in. (12.7 mm). Strip rods are available in widths from 0.070 in. (1.778 mm) to 0.188 in. (4.775 mm) and heights ranging from 0.375 in. (9.525 mm) to 2.0 in. (50.8 mm).



## Common Shaped Support Rods

Round rods are available in diameters ranging from 0.125 in. (3.175 mm) to 0.500 in. (12.7 mm). Strip rods are available in widths from 0.070 in. (1.778 mm) to 0.188 in. (4.775 mm) and heights ranging from 0.375 in. (9.525 mm) to 2.0 in. (50.8 mm).



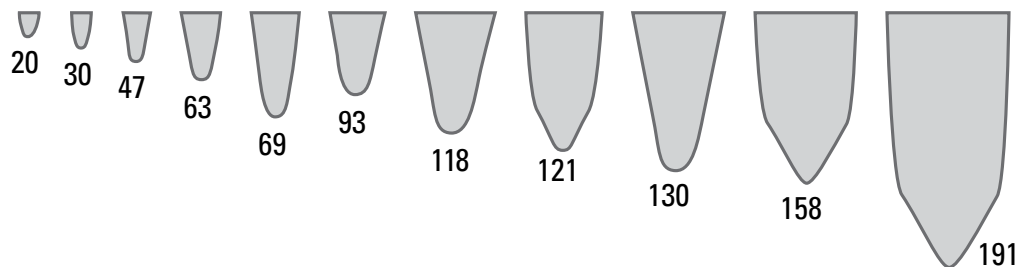
## Open Area Calculations

To calculate the open area of a certain screen, use the simple formula provided:

$$\text{Open area (\%)} = \frac{\text{Slot size X 100}}{\text{Slot size + Wire width}}$$

## Vee-Wire Profiles

Vee-Wire Profile wires range in widths from 0.020 in. (0.508 mm) to 0.195 in. (4.953 mm) and heights ranging from 0.040 in. (1.016 mm) to 0.363 in. (9.220 mm). Other wire shapes: Tri-Wire, Iso-Wire, Iso-Grizzly Wire, Grizzly-Wire are available.



**Aqseptence Group, Inc.**

General Industrial Business Unit

Australia - Asia Pacific

Phone +61 7 3867 5555

Fax +61 7 3867 5566

asiapacific.water@aqseptence.com

Europe

Phone +33 5 49021600

Fax +33 5 49021616

europe.water@aqseptence.com

India

Phone +91 2764 281007 / 281220 / 281221

Fax +91 2764 281028

india.water@aqseptence.com

Japan

Phone +81 45 661 3575

Fax +81 45 661 1921

japan.water@aqseptence.com

North & South America

Phone +1 651 636 3900

Fax +1 651 638 3171

usa.water@aqseptence.com

**[www.aqseptence.com](http://www.aqseptence.com)**