



**Johnson
Screens**

Sugar Processing Screens and Equipment

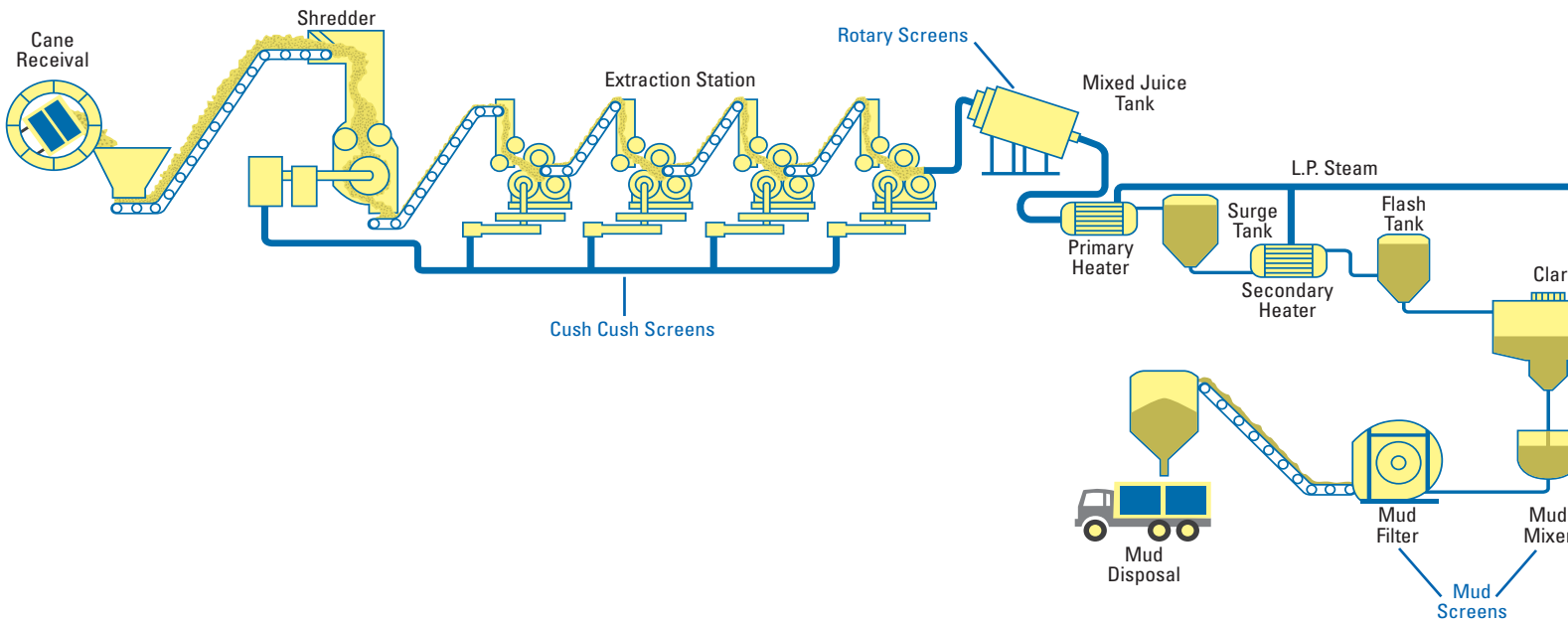
Processing Solutions for Every Step of the Sugar Industry



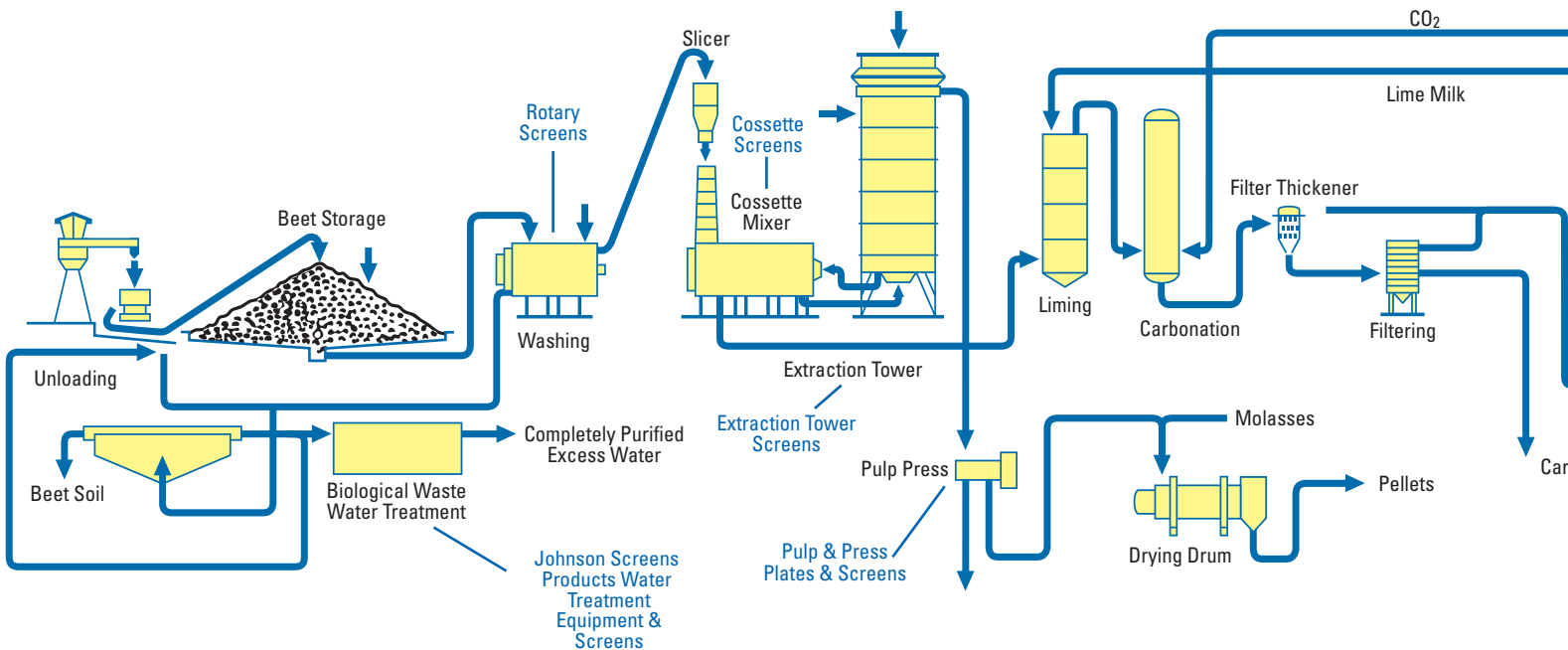
A brand of
Aqseptence Group

Providing Filtration, Separation Solutions for Both Sugar Cane

Sugar Cane Processing

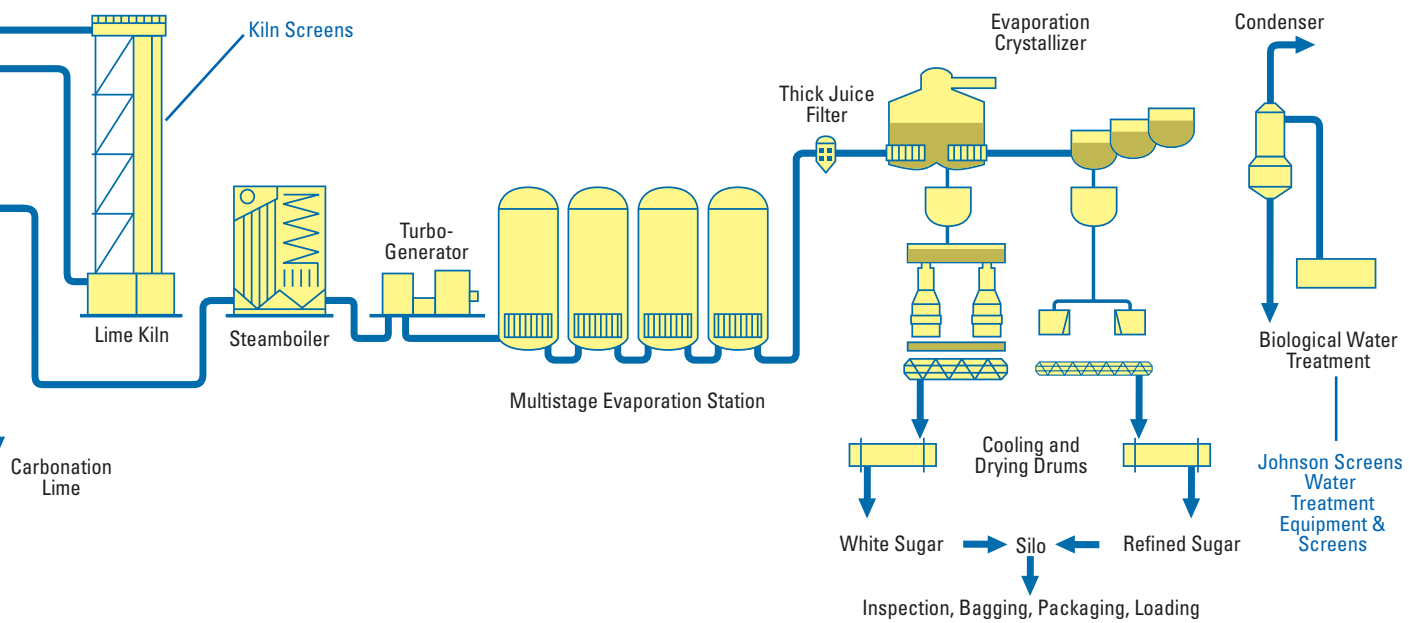
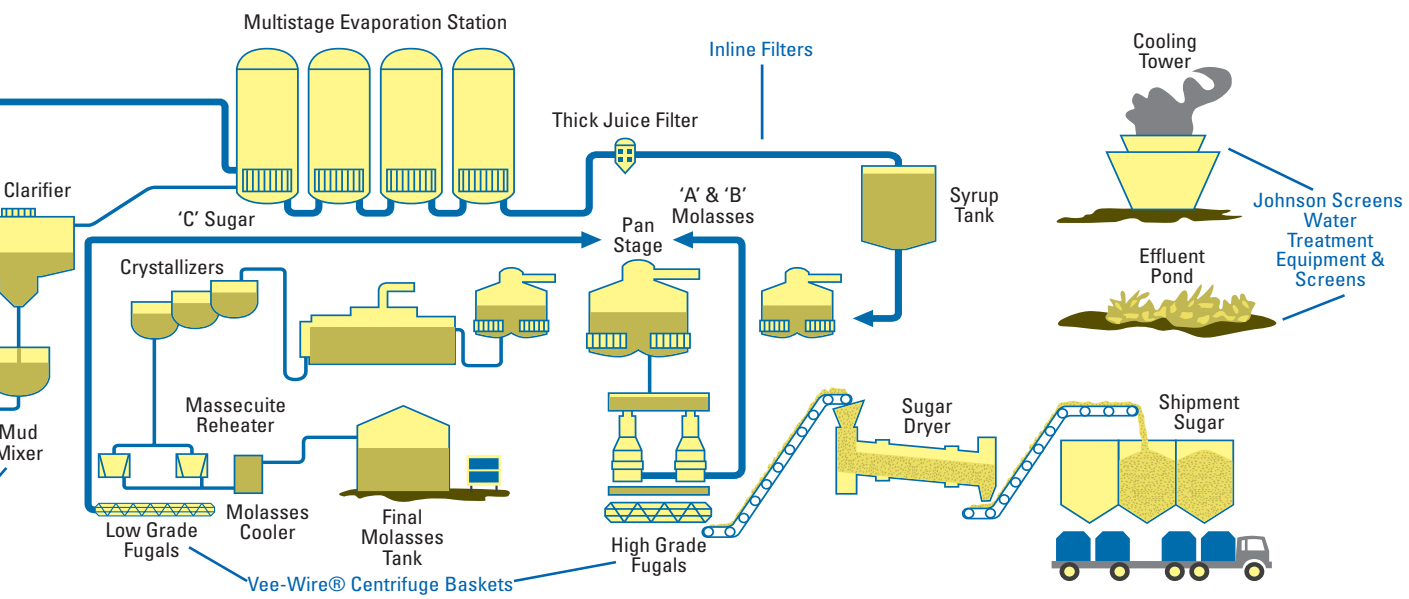


Sugar Beet Processing



on and Water Treatment

and Sugar 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.

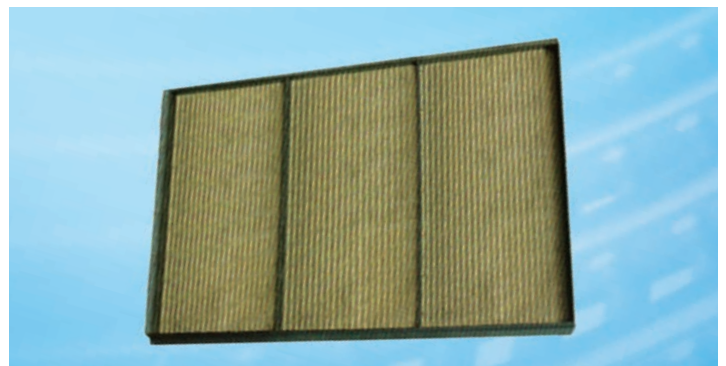
Johnson Screens also manufactures screw press baskets that are custom designed to fit into any make and model of screw press.

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

Johnson Screens 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.

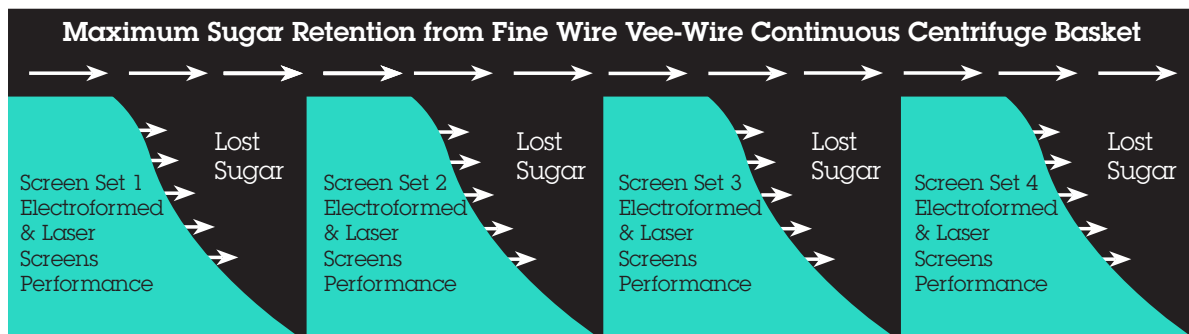
Easier to Install

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



- Fine Wire Vee-Wire Continuous Centrifuge Basket Performance
- Electroformed & Laser Screens Failure
- Lost Sugar

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

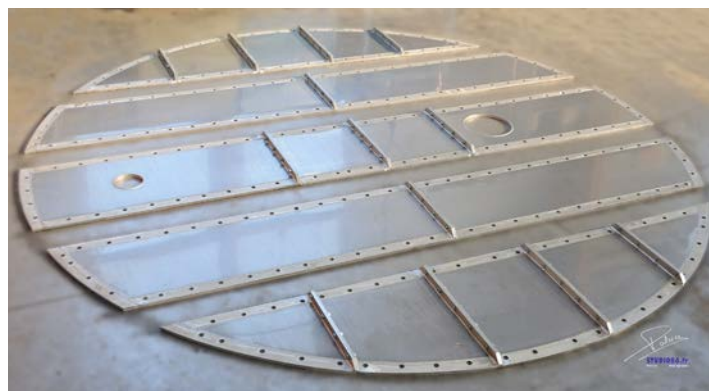


Support Grids

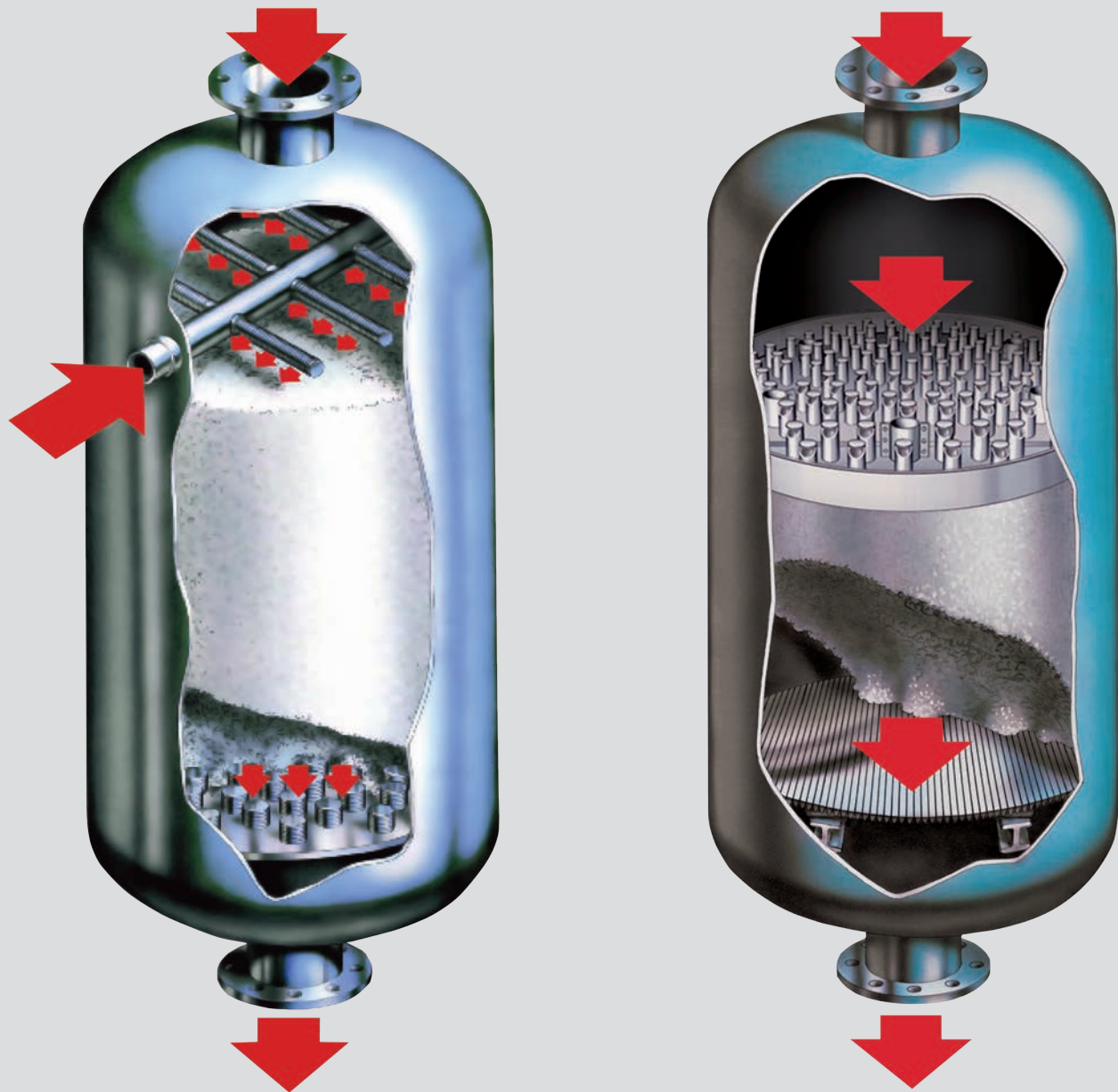
Support grid systems are available with an assortment of framing options and designs, as one-piece construction or in multiple sections, for on-site assembly.

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 Intake and Treatment Systems

Passive Intake Screens



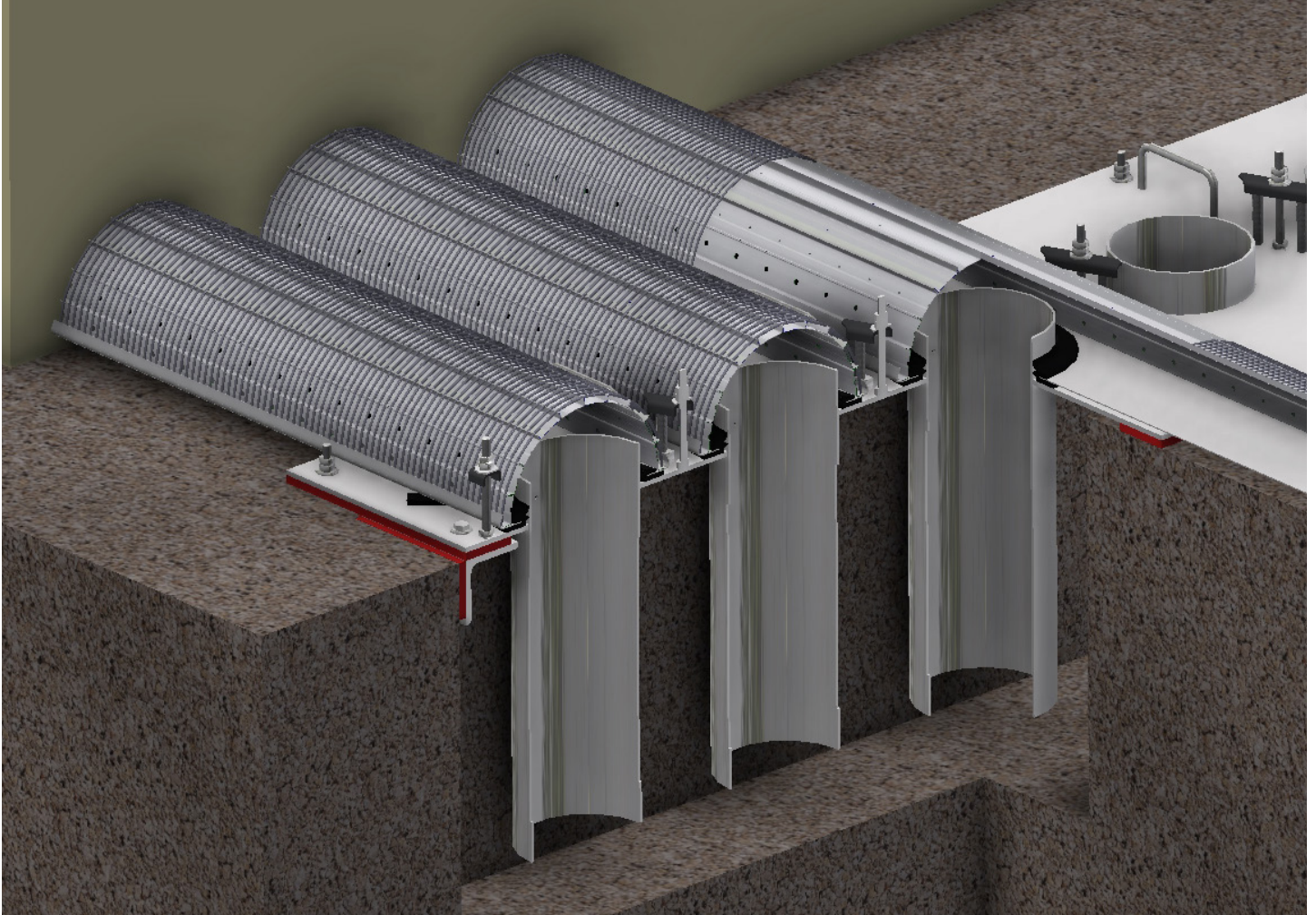
Johnson Screens' passive intake screens are designed to protect the natural surroundings and aquatic life near the intake.

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 to learn more about our brands, capabilities and to discuss any projects.

Exceptional Products, Exceptional Service



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.

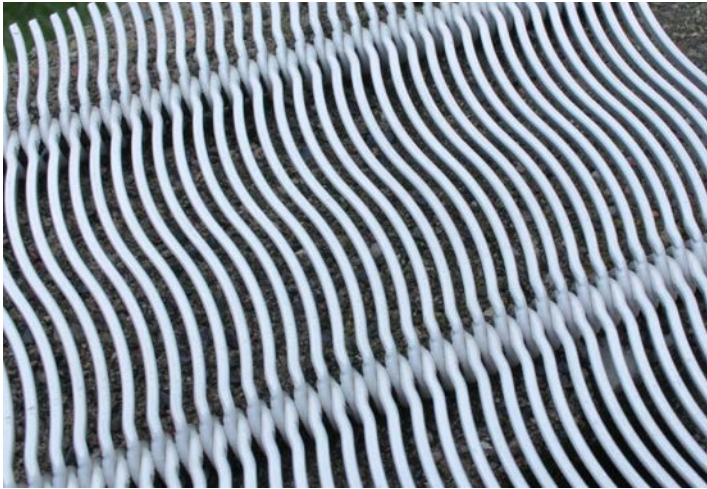
Our experienced welder/fabricators team is available for onsite installation, repairs and screen replacement, and can be available within 24 hours for emergency situations or scheduled as needed.

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.

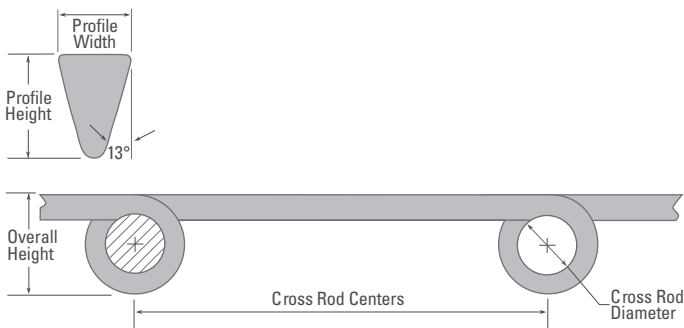
Loop Profile Wire Screens



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.



Specifications for Profile "D"

Wire Number	Standard Openings (in.)	Cross Rod Diameter (in.)	Cross Rod Centers (in.)	Profile*	
				Width (in.)	Height (in.)
70	.003 - .040	0.25	2	0.06	0.085
100	.005 - .060	0.3125, 0.375	2.75	0.086	0.125
132	.010 - .080	0.3125, 0.375, 0.5	2.75	0.109	0.156
156	.020 - .100	0.375, 0.5	2.75	0.135	0.188
187	.030 - .120	0.375, 0.5	2.75	0.172	0.219
217	.040 - .160	0.375, 0.5	2.75, 4	0.188	0.266
250	.060 - .200	0.5	2.75, 4	0.219	0.281

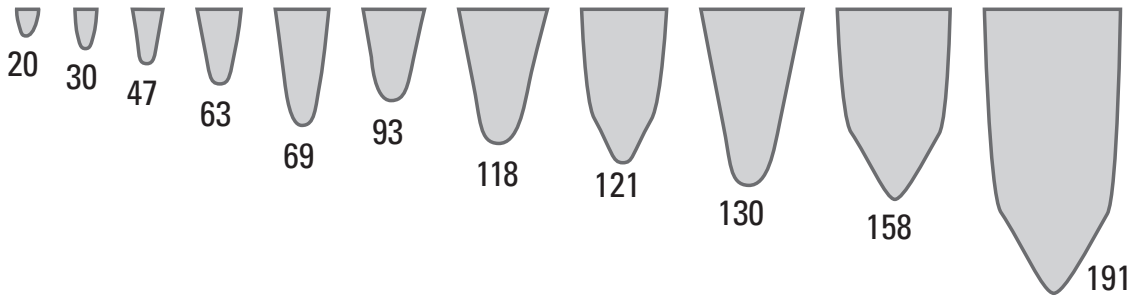
Specifications for Profile "WT"

Wire Number	Standard Openings (in.)	Cross Rod Diameter (in.)	Cross Rod Centers (in.)	Profile*	
				Width (in.)	Height
156	.020 - .100	0.375, 0.5	2.75	0.125	0.188
187	.030 - .120	0.375, 0.5	2.75	0.156	0.219
217	.040 - .160	0.375, 0.5	2.75, 4	0.188	0.25
250	.060 - .200	0.5	2.75, 4	0.219	0.131

*Dimensions are based upon a specified opening.
Larger openings can be obtained for each respective wire size by the use of spacers between each wire.

Wire and Rod Information

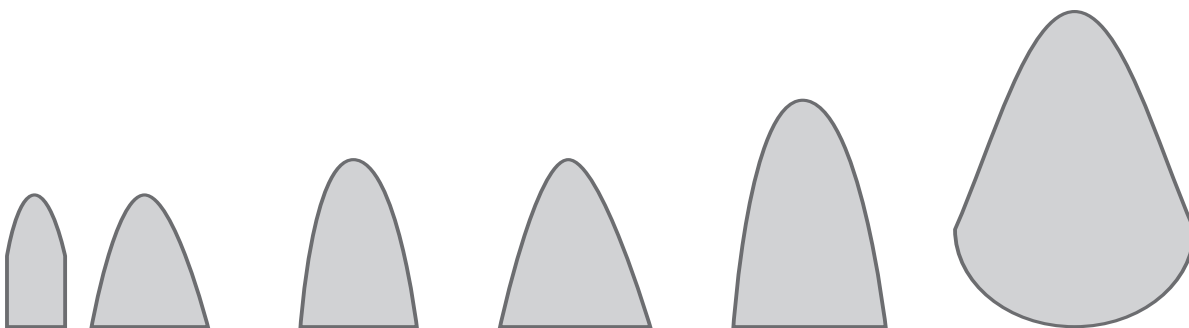
Vee-Wire® Profiles - Most Commonly Used



$$\text{Open Area (\%)} = \frac{\text{Slot Size} \times 100}{\text{Slot Size} + \text{Wire Width}}$$

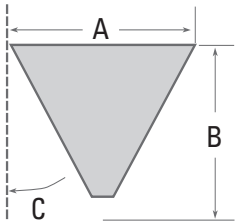
Name	Width		Height		Section Area		Relief Angle
	in.	mm	in.	mm	in ²	mm ²	
20	0.020	0.508	0.040	1.016	0.0005	0.323	11°
30	0.030	0.762	0.050	1.270	0.001	0.645	13°
47	0.047	1.194	0.088	2.235	0.003	1.935	10°
63	0.060	1.524	0.100	2.540	0.004	2.581	13°
69	0.071	1.803	0.177	4.496	0.010	6.452	7°
93	0.089	2.261	0.138	3.505	0.009	5.806	13°
118	0.116	2.946	0.185	4.699	0.015	9.677	13°
130	0.130	3.302	0.250	6.350	0.023	14.839	8°
191	0.195	4.953	0.363	9.220	0.055	35.484	5°

Shaped Support Rods



Name	Width		Height		Section Area		Section Modulus (in. ³ x 10 ⁻³)
	in.	mm	in.	mm	in.	mm	
29	0.029	0.737	0.102	2.591	0.003	0.076	0.037
63	0.060	1.524	0.100	2.540	0.004	2.581	0.050
93	0.089	2.261	0.138	3.505	0.009	5.806	0.150
XJR	0.089	2.261	0.189	4.801	0.013	0.330	0.298
60SR	0.060	1.524	0.120	3.048	0.006	0.152	0.077
156	0.151	3.835	0.217	5.512	0.022	0.559	0.600

Tri-Wire Profiles



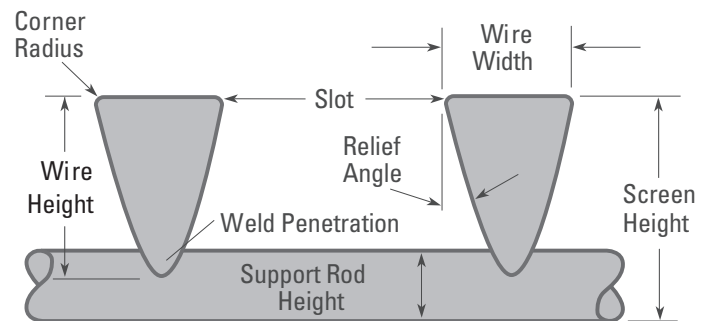
A = Width
B = Height
C = Relief Angle

Wire Number	Width		Height		Relief Angle
	in.	mm	in.	mm	
93 TRI	0.093	2.388	0.070	1.956	30°
125 TRI	0.125	3.175	0.094	2.769	30°
188 TRI	0.188	4.775	0.141	4.369	30°
250 TRI	0.25	6.35	0.188	5.563	30°
500 TRI	0.50	12.7	0.469	11.913	30°

Examples of Screen Open Area

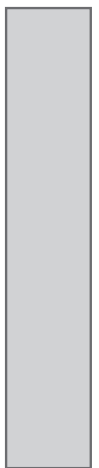
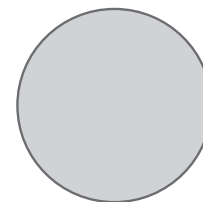
Wire No.	Percent of Open Area						Slot Opening Size (in.)
	20	30	40	50	60	70	
30	0.008	0.013	0.020	0.030	0.045	0.070	
47	0.012	0.020	0.031	0.047	0.071	0.110	
63	0.015	0.026	0.041	0.060	0.090	0.140	
69	0.018	0.030	0.047	0.071	0.107	0.166	
93	0.022	0.038	0.059	0.089	0.134	0.208	
118	0.029	0.050	0.077	0.116	0.174	0.271	
130	0.033	0.056	0.087	0.130	0.195	0.303	
158	0.040	0.068	0.105	0.158	0.237	0.369	
191	0.049	0.084	0.130	0.195	0.293	0.455	
250 TRI	0.063	0.107	0.167	0.250	0.375	0.583	
500 TRI	0.125	0.214	0.333	0.500	0.750	1.167	

Standard Welded Construction



Round and Strip Rods

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



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