

Aqua Guard[®] UltraClean[™]

Self-Cleaning Moving Media Channel Screen

The Aqua Guard[®] UltraClean[™] represents the next generation of in-channel fine screening, outperforming the original design in side-by-side capture rate tests by over 50%. This superior performance comes from a series of patent-pending improvements in the “head” of the Aqua Guard UltraClean screen, each drawn from nearly 40 years of experience with the classic Aqua Guard[®] platform. Designed with the operator in mind, the Aqua Guard UltraClean also offers easier access to key areas of the screen such as the brush, which has been reengineered to reduce routine maintenance by up to 75% over the original version. The Aqua Guard[®] UltraClean[™] technology is available both on new screens, and as a new “head” retrofit for existing Aqua Guard[®] element screens.



Features

- UltraClean design
- Low power consumption (1.0 HP or less)
- Self-cleaning with independent brush drive (0.5 HP)
- Dual spray bars assist cleaning brush
- No submerged bearings
- All moving parts can be accessed and serviced above water level
- Coarse and fine screening in one unit
- Flows to 100 MGD in a single unit
- Delivered fully assembled
- No attachment to sides or bottom of channel

Benefits

- Improved solids capture
- Less screen and downstream plant maintenance
- Quick-release side brush removal
- UltraClean brush with independent brush drive
- Low operation costs and ease of maintenance
- High capacity
- Ease of installation

Principle of Operation

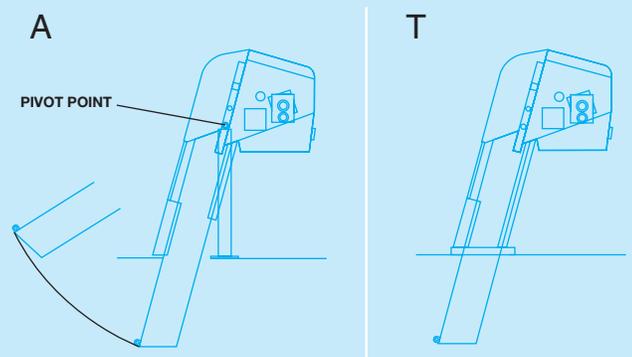
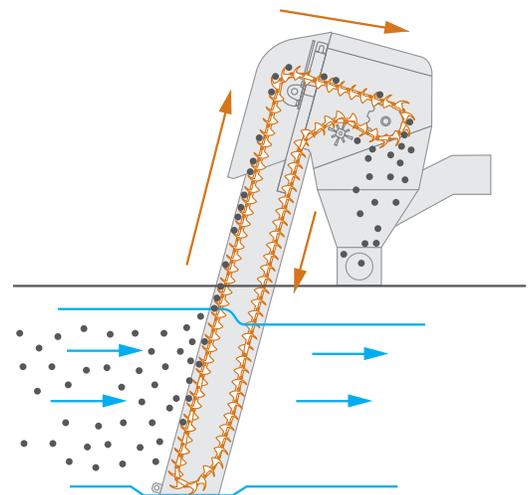
The Aqua Guard UltraClean screen, a self-cleaning in-channel screening device, utilizes a unique filter element system designed to automatically remove solids larger than element spacing. Aqua Guard screen filter elements form an underwater grid that ensures better capture rates when compared to rake bar screens that utilize only vertical bars for screening. A specific configuration of filter elements is mounted on a series of parallel shafts to form an endless moving belt that collects, conveys and discharges solids for further processing or disposal. Solids contained in a wastewater flow are captured on the filter elements and carried upward on the belt assembly to discharge at the rear of the unit. Two-stage screening is achieved, which results in improved capture rates. Coarse filtration occurs on the forward screen face and fine filtration on the recessed face. As the rake tip of one row of filter elements passes between the shank arm of the lower row, the elements automatically clean themselves. The unit is equipped with water sprays and a rotating brush that provides additional removal of solids.

Design Parameters

Standard screen widths are 1.0' to 9.0' depending on the model with flow rates up to 100 MGD with a single unit. Two frame styles are available depending on space and channel depth requirements. Type A is a pivoting design and Type T is a stationary design. The Aqua Guard UltraClean screen can be installed at angles 60°, 75° and 85° depending on the frame and model selected. For maximum efficiency of operation, greater flow rate and higher solids removal, the recommended angle of inclination is 75°. The screen conveys solids up and out of the channel at a speed of 7ft/min. The maximum amount of debris, typically measured in cubic yards per hour, that can be removed from the stream is a function of model and angle. Movement of the screen can be continuous or intermittent; however, intermittent operation is recommended. This allows a mat of solids to build up on the filter-rake elements, which increases the solids capture rate.

Added Capacity Using Aqua Guard® UltraClean™

Design Parameters	Model MN (Standard)	Model S (Heavy Duty)
Minimum Channel Width (in.)	12	24
Maximum Screen Width (in.)	66	108
Maximum Design Headloss (in.)	10	24
Element Spacing (mm)	3-15	3-30



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