

Hydro MicroScreen™

Rotating Belt Screen for Municipal Applications



Provides primary clarification with reduced energy costs in just 10% of the footprint.

A low-energy, small-footprint rotating belt screen that delivers exceptional solids removal from wastewater, maintaining efficiency at peak design flow rates.

Enables municipal plants to increase efficiency and save money by decreasing energy and chemical use, minimising maintenance costs, reducing power requirements for energy intensive downstream processes, reducing solids handling and disposal costs or recovering materials to be converted into energy.

Only Hydro MicroScreen™ reduces energy requirements by up to 80% and footprint by up to 90% compared to conventional primary clarifiers.

Applications

- Primary treatment.
- Advanced primary treatment for membrane processes.
- Septage screening following preliminary treatment.

Performance

- Typically removes 60-70% TSS, 30-40% BOD and 30-40% FOG.
- Total phosphorus reduction of up to 10%.
- Discharged solids directly off the screen are 2-4% Total Solids, similar to conventional primary clarifiers.
- When equipped with dewatering section and compression zone, and without the use of chemicals the Hydro MicroScreen™ will produce 30-50% Total Solids.



Benefits

Reduce Footprint

Up to 90% smaller than conventional primary clarification systems.

Reduce loading and wear on downstream processes

Tailored capture of TSS, BOD, FOG and other particulates.

Reduce energy costs

Cut the energy and footprint required for biological treatment.

Reduce solids handling

Reduces sludge volume, transport and disposal costs.

Model	Max Hydraulic Capacity* - l/s	Dimensions LxWxH m**	kW	Power Use kWh/Day (Estimated)***
MS-28	42 l/s	2.3 x 2.4 x 1.7	2.6	43
MS-52	93 l/s	2.3 x 3.1 x 1.7	3.7	63
MS-80	132 l/s	2.3 x 3.8 x 1.7	5.2	88

* Capacity (based on a 315µm screen and average municipal TSS) will vary based on screen opening and incoming solids loads.

** Including dewatering section and compression zone.

*** Estimated energy consumption based on 24-hour continuous operation at 70% duty cycle.

Capacity

- Handles flows up to 132 l/s in a single unit.
- Strength and durability to screen, convey, and dewater as much as 22 tonnes per day of dewatered solids.

Features

- No carry over or backwash of solids into effluent chamber.
- Shallow screen angle provides more submerged screen area and better solids conveyance.
- Easy access and minimal downtime for maintenance.

How it Works

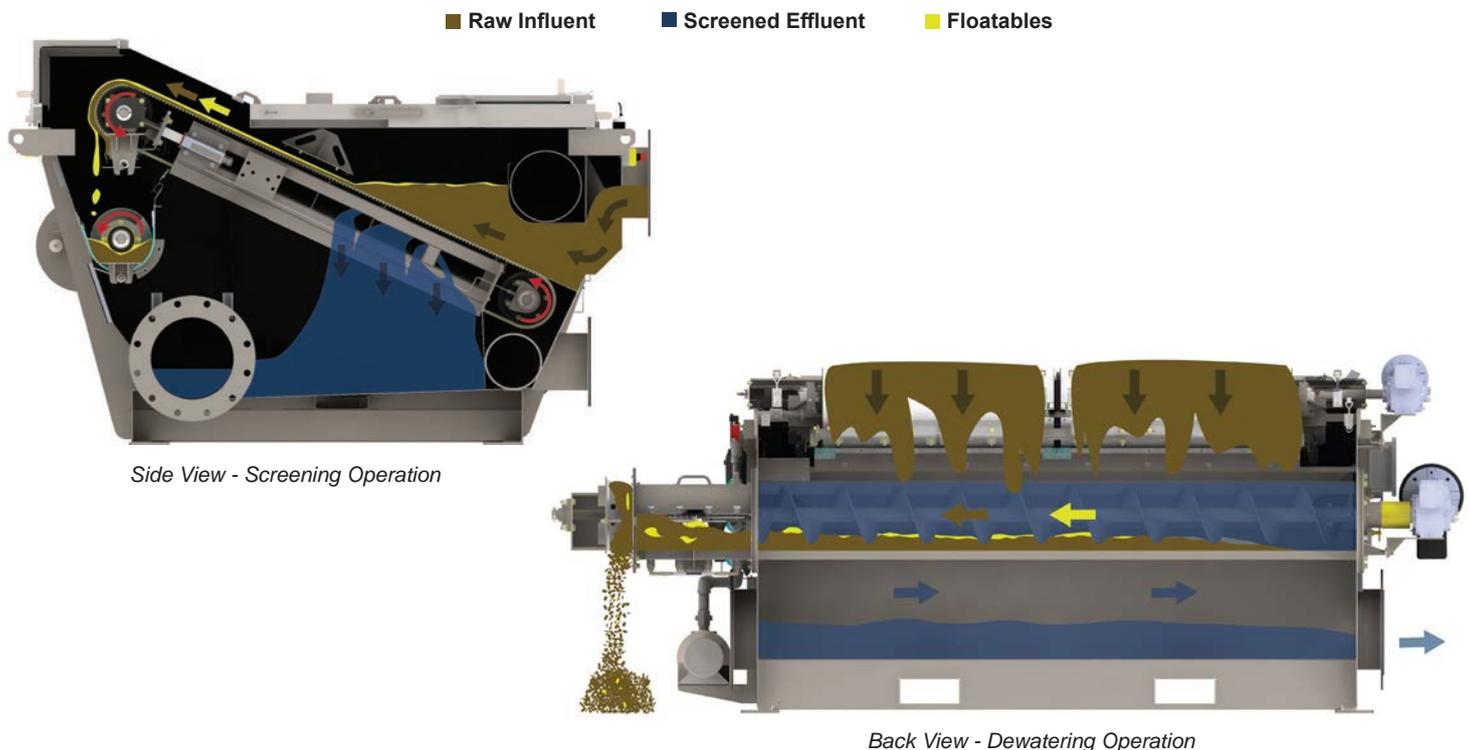
The Hydro MicroScreen™ utilises a patented continuous rotating screen to separate solids from influent wastewater. After coarse screening and grit removal, flow enters the Hydro MicroScreen™ where the energy dissipation plate and flow diverter evenly distribute influent over the entire screen width. Solids settle and accumulate on the screen creating a mat which causes the water level in the influent chamber to rise. An ultrasonic level sensor in the influent chamber automatically controls screen rotation and speed.

As the mat builds, liquid level in the influent chamber rises - signalling the screen conveyor to rotate the screen which exposes clean screen area to the incoming flow. Rotation of the screen simultaneously conveys the captured solids upward out of the influent chamber toward the upper roller where they fall by gravity from the screen into a screw auger. The screen is then cleaned by a series of low volume, high pressure spray nozzles and a secondary scraper blade.

Discharged solids directly off screen are typically 2-4% TS, similar to conventional primary sludge, and can be used for digestion or other thermal conversion process. Adding a compression zone and dewatering section to the screw auger can produce up to 50% TS without the use of chemicals.

Customisation Options

- Screen sizes available from 100 to 1,000 micron (μm) to suit the application.
- Removal rates and solids dryness can be customised to meet application and site requirements.
- Effluent and overflow connections and wash water system assembly can be located on either side of the unit to accommodate most site requirement.



Learn more

To learn more about how Hydro MicroScreen™ can help you to make better water management decisions, visit hydro-int.com, search **Hydro MicroScreen** online or contact us:

Patent: www.hydro-int.com/patents

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