

Hydro-Jet[®] Screen

CSO & Collection System Screen

Award winning non-powered *self-cleansing technology*

APPLICATIONS

- Retrofits of existing facilities
- New CSO facilities
- Satellite treatment sites
- Floatables control for CSOs and collection systems

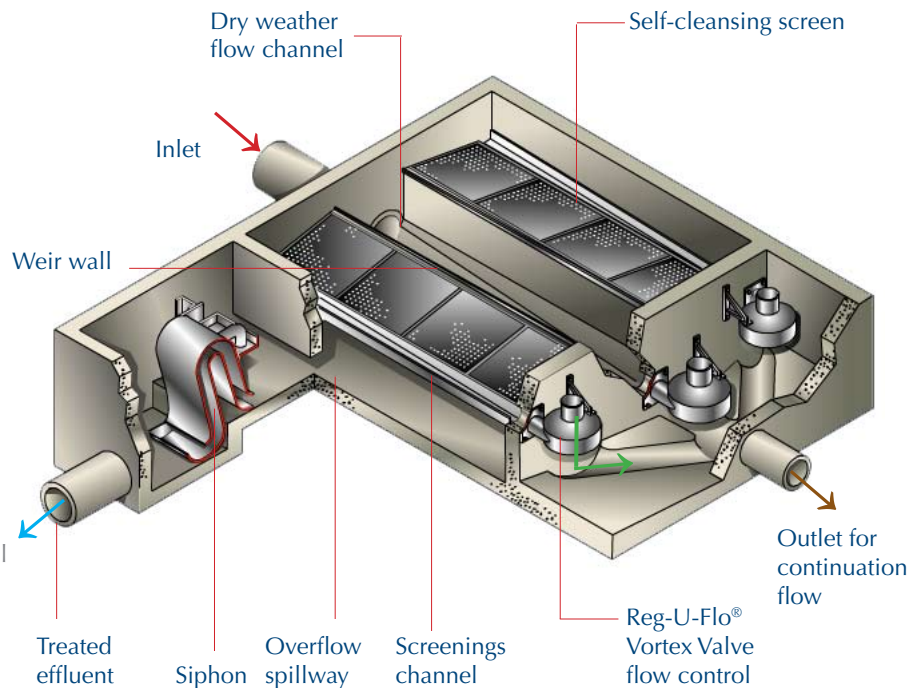
ADVANTAGES

- No moving parts or power requirement
- Self-activating
- Self-cleansing
- Low headloss
- High throughput of 3.5 MGD per screen panel
- Small footprint
- Low capital and life cycle costs
- Upgradable to tighter screen specifications



The **Hydro-Jet Screen** differs from conventional screening systems because the flow is passed across the surface of the screen rather than perpendicular to the screen.

The **Hydro-Jet Screen** is a self-activating, self-cleansing, CSO screening system with no moving parts and no power requirements. A compact device with high hydraulic throughput, the **Hydro-Jet Screen** is perfectly suited for small to medium size CSO sites.



HOW IT WORKS

Dry weather flow passes through the **Hydro-Jet Screen** chamber (red arrow) via the dry weather channel and continues to a downstream treatment plant (brown arrow).

During wet weather events, the flow increases as runoff drains into the combined sewer system. The water level in the dry weather flow channel rises as the **Reg-U-Flo[®] Vortex Valve** limits the flow passed through the continuation flow outlet.

Water in the dry weather flow channel rises until it spills over the weir wall and flows down through the angled self-cleansing screen.

As the water level under the screen rises to the crest of the siphon, a pocket of air trapped between the water surface and the screen creates a backwash mechanism. Debris is lifted off the screen and carried down the screenings channel, which is returned to the continuation flow (green arrow).

The siphon breaks, discharging the screened effluent (blue arrow) to the receiving water body while drawing the water level in the overflow spillway down.

Maintenance

The **Hydro-Jet Screen** design incorporates a hydraulically operated siphon that regulates the self-cleansing dynamic backwashing system.

The **Hydro-Jet Screen** should be visually inspected after the first two spill events and twice a year thereafter.

After a spill event the screen should be 60% clear of debris. If excessive debris is observed, downstream surcharge condition is likely. The screen should be hosed down and steps should be taken to reduce the top water level in the downstream sewer network.



Continuous backwashing action cleans debris from screens.

Hydro-Jet Screen Design

The **Hydro-Jet Screen** is typically designed for a loading rate of 300 gpm/ft² (200 l/s/m²). Other parameters include:

- Design inflow rate
- Design pass on flow to treatment
- Design spill flow
- Design maximum top water level in main chamber
- Maximum acceptable top water level in screenings return chamber
- Maximum acceptable top water level in siphon discharge chamber

Flow Control

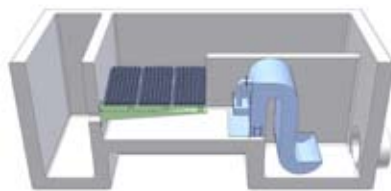
The screenings return **Reg-U-Flo Vortex Valve** flow control is an integral part of the **Hydro-Jet Screen** system. It is essential to restrict the amount of flow that is returned to the collection system.

A 6-inch outlet diameter is the minimum recommended size unit for use on foul and combined sewer systems. The average flow rate through the screenings return **Reg-U-Flo Vortex Valve** is on the order of 119 gpm per 6-inch valve.

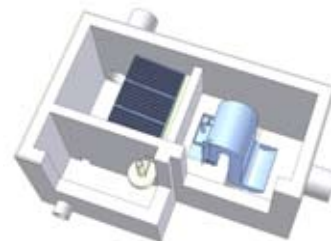
In some instances there may be scope to increase the size of the screenings return **Reg-U-Flo Vortex Valve** depending on the continuation flow rate into the downstream sewer.

Configurations

The **Hydro-Jet Screen** is available in two basic configurations. Refer to the **Hydro-Jet Screen** design chart for guidelines.



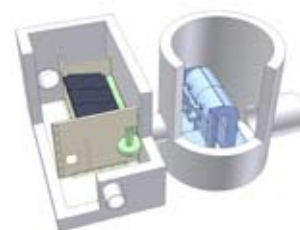
Rectangular configuration for small sites.



L-Shaped configuration for larger sites.

Hydro-Jet Screen Design Chart

Model	Number of Screening Panels	Treatment Flow Rate (MGD)	(l/s)
Regular	1 - 3	0 - 10.25	0 - 450
L-Shaped	> 3	>10 - 25	> 450



Modified configuration for space constrained sites

For more information please call our office toll free at 800-848-2706 or inquire at www.hydro-international.biz.



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