

# CSO/STORMWATER MANAGEMENT



## Low Profile Overflow Screen Model OS-LP

*Removal of floatables from CSO's and SSO's*



**JOHN MEUNIER**

## LOW PROFILE OVERFLOW SCREEN MODEL OS-LP

*The Low Profile Overflow Screen is specifically designed to remove floatables from CSO and sanitary SSO sewer overflows requiring maximum hydraulic capacity.*

### FEATURES

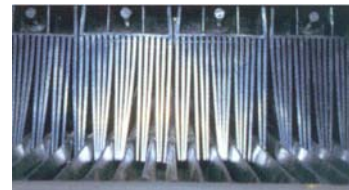
- Designed to US EPA standards;
- Fine screen, bar spacing can go as fine as  $\frac{1}{4}$ " (6mm);
- Optimized hydraulic design;
- No upstream headloss;
- Maximum hydraulic footprint ratio;
- Modular, self-adjusting, resistant polymer, combs mounted on a rotary rake arm;
- Nylon covered bars for corrosion protection;
- Interchangeable, modular bar sections;
- Downstream, self-cleaning collection trough;
- Anti-corrosion construction;
- Minimal power consumption;
- Retrofitted on existing weir structures;
- Easy maintenance.

### ADVANCED FEATURES

- Spacing between bars of an existing installation can be easily modified with the modular sectional design without affecting the overall concrete structure;
- Strong, compact, all stainless steel structure supports the screening mechanism;
- Simple and heavy duty rotary arm which rakes the screen;
- Self-adjustable combs provide thorough cleaning between the bar spaces;
- Self-cleaning trough that collects and carries away screenings downstream of the screen;
- Specially designed hydrodynamic profiled weir increases the effectiveness of the screening area and increases the flow capacity of the weir structure, while reducing the upstream water level.



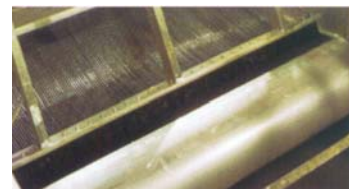
*Spacing between bars  $\frac{1}{4}$ " (6.35 mm) and greater*



*Self-adjusting combs*



*Self-cleaning trough for automatic screening*



*Hydrodynamic profiled weir*

## OPERATING PRINCIPLES

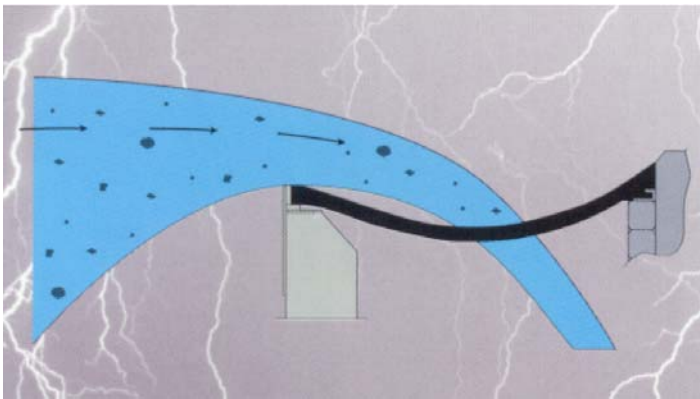
As water reaches the top of the weir, a level detector activates the cleaning mechanism. During overflows, the hydrodynamic, profiled weir directs water to the screen.

Retained materials are carried by the rake and surface flow to a downstream self-cleaning trough, which can either discharge them downstream of the outfall chamber or store them in a detention tank for later disposal.

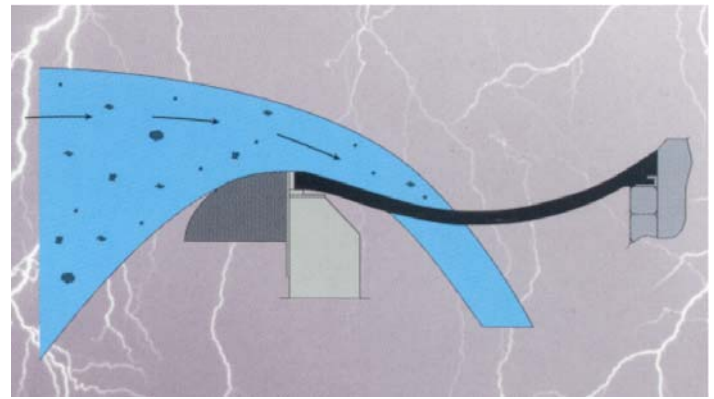
A diversion pipe can feed the self-cleaning trough from the upstream outfall chamber or by a pump. Should the maximum water level exceed the screen capacity, the bar screen configuration will allow the excess flow to pass over it to the chamber overflow structure without having to depend on any other emergency measures.

The rake mechanism is operated periodically during normal flow conditions to ensure mechanical readiness during overflow events.

The **Low Profile OS-LP Overflow Screen** is designed for the conditions dictated by the dimensions of the outfall chamber and the elevation of the overflow weir. **John Meunier Inc.** has developed computer software to design and calculate the appropriate screen for each application.



*Conventional weir flow configuration*



*Profiled weir flow configuration*

## HYDRAULIC CHARACTERISTICS

The hydrodynamic profiled weir reduces the hydraulic jump and directs the outfall flow much closer to the downstream weir wall, increasing the screening surface and allowing greater flows with reduced upstream water levels.

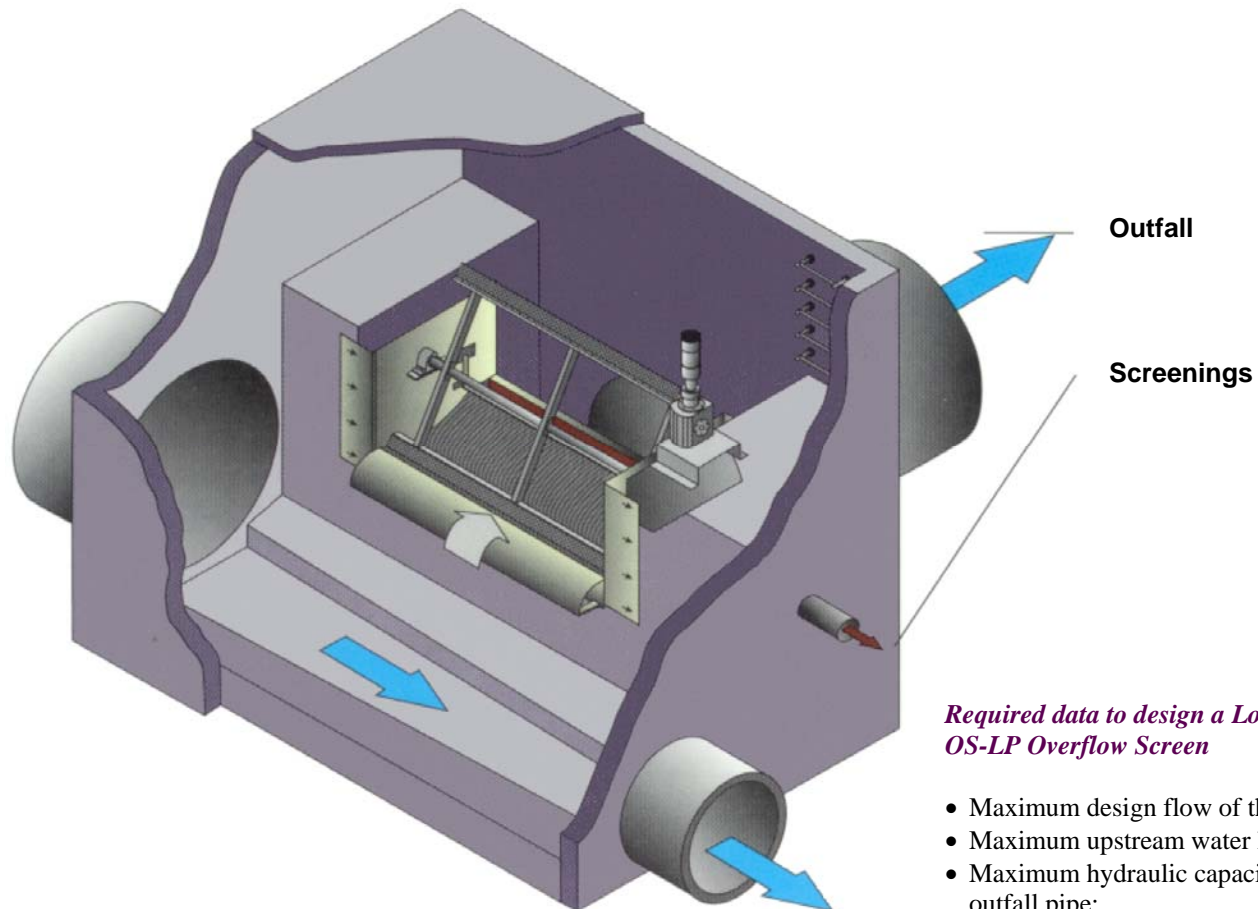
The profiled weir increases the hydraulic weir capacity by 50% to 85%.

The hydraulic kinetic energy generated by the improved profile tends to push the screenings along the bars, instead of through the bars. This radically increases the removal efficiency of the OS-LP bar screen.

## INSTALLATION

The **Low Profile OS-LP Overflow Screen** can be installed on most straight-edged, weir structures. To prevent downstream submergence, the downstream pipe capacity should be higher than the upstream pipe capacity. The operating floor of the **Low Profile OS-LP Overflow Screen** must be sufficiently elevated to prevent flooding of the screen drive motor. Easy access, in front and back of the screen structure, must be provided for maintenance.

The **Low Profile OS-LP Overflow Screen** has been standardized and can be provided with a rake arm radius of 18''(457 mm), 24''(610 mm) and 36'' (914mm).



### *Required data to design a Low Profile OS-LP Overflow Screen*

- Maximum design flow of the OS-LP;
- Maximum upstream water level;
- Maximum hydraulic capacity of the outfall pipe;
- Elevation of overflow weir;
- Required bar spacing for design.

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ISO 9001 : 2000

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