



HYDROVEX[®] RDS Rotary Drum Sieve

CSO, SSO, Stormwater Management

WATER TECHNOLOGIES

HYDROVEX® RDS - Rotary Drum Sieve

Application

Unsightly pollution of receiving waters during a sewer overflow event is a frequent problem. These items, including toilet paper, sanitary napkins, disposable syringes, diapers, wipes and plastic bags to name a few, often float in the effluent and cannot be effectively removed by sedimentation or trapped by baffles.

To address this problem, a barrier must be placed between the sewer and the receiving water to capture debris. Static screens and trash racks are often used; however these solutions have major drawbacks. Static screens block easily, as they cannot be cleaned under load and become useless, while trash racks

with small bar spacing and forced mechanical cleaning require very long overflow weirs to reduce superficial loads.

The HYDROVEX® RDS Rotary Drum Sieve has been designed to efficiently retain floatables during sewer overflows. Due to the very large filtering surface, the required footprint is greatly reducing compared to tradition solutions, resulting in smaller chambers and reduced civil costs.



Figure 1: HYDROVEX® RDS Typical Installation

Operation

The HYDROVEX® RDS Rotary Drum Sieve, consisting mainly of a rotating sieve and a cleaning brush, is installed on the upstream side of the overflow weir. During dry weather conditions, the unit is at rest and above the water level. As the water level rises, the drum is submerged and the effluent enters the sieve from the outside in (transverse flow). When the water level reaches

the overflow weir, the drum sieve and brush begin to rotate. As the sieve rotates, the brush cleans the surface and returns the debris back into the main channel.

The sieve and the brush operate using independent hydraulic motors driven by a hydraulic power unit. The hydraulic power unit must be installed in a dry, unclassified zone along with the HYDROVEX® RDS control panel.

To further improve the hydraulic characteristics of the site, a HYDROVEX® BW Bending Weir can be used along with the screen to decrease upstream water levels (Figure 2).



Figure 2: Hydraulic optimization using the HYDROVEX® BW Bending Weir with the HYDROVEX® RDS

Features and Benefits

- Reliable retention of floatables and solids
- High hydraulic capacity resulting in reduced footprint
- Positive, mechanical cleaning using a rotating brush above the water level
- Hydraulic power unit supplies drum and brush motors
- No solids handling requirements
- Fine particle retention by controlled growth of filter matting
- Robust stainless steel design
- Low maintenance requirements

Selection

The HYDROVEX® RDS is available in five models, each with varying diameter. The surface load and maximum hydraulic capacity for each model is indicated in the table below:

Model	Surface Load* L/s/m ² [MGD/ft ²]	Max. Capacity L/s/m [MGD/ft]	Max. Length m [ft]
RDS-750	381 [0.808]	295 [2.05]	3 [9.8]
RDS-1000	440 [0.933]	455 [3.17]	4 [13.1]
RDS-1250	492 [1.043]	635 [4.42]	5 [16.4]
RDS-1500	539 [1.143]	835 [5.81]	5 [16.4]
RDS-2000	622 [1.319]	1285 [8.94]	5 [16.4]

*Surface load assumes ½ blinding and maximum load per unit of submerged sieve area

The HYDROVEX® RDS is also available in alternate configurations (axial flow, double sided overflow, internal trough).

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