

CSO/STORMWATER MANAGEMENT



[®] HYDROVEX [®] SFT Sediment Flusher

Flushing Settled Debris in Retention Basins



JOHN MEUNIER

HYDROVEX® SFT SEDIMENT FLUSHER

Cleaning settled debris and sediments from retention and equalization basins can be costly and labor intensive; endeavor is therefore desirable.

The HYDROVEX® SFT Sediment Flusher economically cleans retention tanks free of debris by generating a relatively large “flash flood” of water.

FEATURES

- Produces a powerful, high celerity, high amplitude wave;
- Cleans flush-ways up to 67 m (210') in length and 9 m (30') in width;
- Can be installed in parallel in large retention basins;
- Corrosion resistant, all stainless steel construction;
- Maintenance free.

OPERATING PRINCIPLES



The **HYDROVEX® SFT** Sediment Flusher consists of a stainless steel tank with a circular cross section and a straight projecting beak. The flusher rests on sealed ball bearings at its extremities so that it can rotate eccentrically around its axis.

When the **HYDROVEX® SFT** Sediment Flusher is filled with water, it becomes unstable and tips, spilling its full content instantaneously. This sudden and massive rush of water produces a powerful wave front, which shears and resuspends settled debris and carries them to a sump at the end of the flush way.

The flusher design ensures that once it has emptied its content, it will return to its original position without any mechanical assistance.

CHARACTERISTICS



Design requirements

The term “retention basin” is a general term that can also apply to holding tanks, storage chambers, equalization basin, etc...

Effective cleaning with the **HYDROVEX® SFT** Sediment Flusher requires the careful design and construction of retention basins.

- The retention basin should be rectangular;
- Flush-ways should not exceed 9 m (30') in width;
- There is a direct relationship between **HYDROVEX® SFT** Sediment Flusher size, flush-way length, head drop and slope. The length of the flush-way influences flusher design, its slope and the head drop between the **HYDROVEX® SFT** Sediment Flusher and the floor of the retention tank.
- Large (wide) retention basins should be divided into multiple flush-ways separated by small retaining walls;
- Empirical tests have demonstrated that the ideal flush-way slope should be greater than 1% and less than 5%. A slope of less than 1% will encourage pooling, while a slope greater than 5% increases the risk of slipping for maintenance personnel;
- To minimize maintenance, the **HYDROVEX® SFT** Sediment Flusher should be installed above the highest expected water level. However, increasing the flusher height above 6m (20') does not significantly improve performance;
- An outflow sump is required to prevent the flushing wave from rebounding off the facing wall, back onto the basin floor. The sump capacity should be at least 1.5 times the **HYDROVEX® SFT** Sediment Flusher volume;
- Flush water for the **HYDROVEX® SFT** Sediment Flusher can be drawn from the city water supply, the retention basin or any nearby source. Filling of the flusher may be controlled manually or by means of an automatic controller.

INSTALLATION

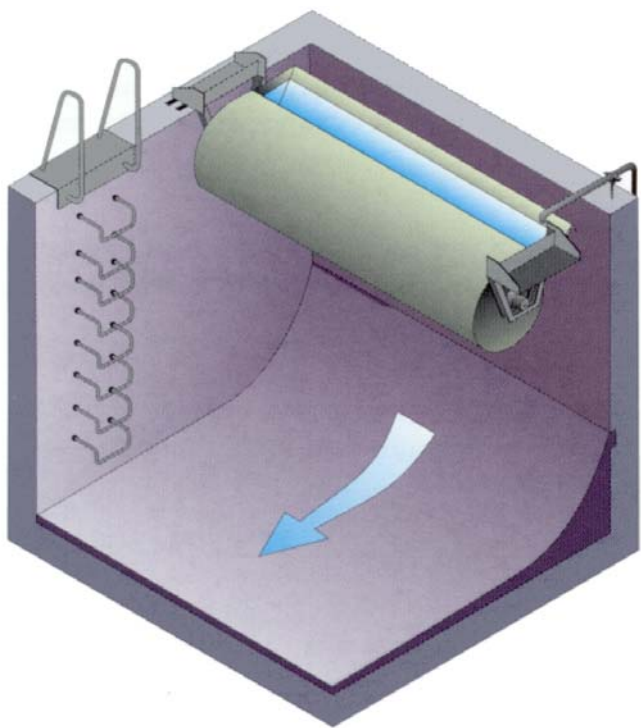
Selecting HYDROVEX® SFT Sediment Flushers

Every retention basin flushing application is unique and requires a detailed analysis to determine the most economical and efficient flushing arrangement. To accomplish this, **John Meunier Inc.** has developed a computer program, and has 25 standard sizes of **HYDROVEX®** flushers to choose from. Flushers are designed with capacities of 300 to 2,400 liters/meter of length (3.2 to 25.8 ft³/ft of length).

Proper **HYDROVEX®** SFT Sediment Flusher design should allow cleaning of the flush-way with a single flush under average loading conditions.

Installing HYDROVEX® SFT Sediment Flushers

Flushers are simple to install. Exact alignment and spacing between mounting supports are essential to the smooth and repeatable operation of the flushers. Four different types of supports may be provided: sidewall, back wall, hanging and ceiling supports.



Hydrovex® SFT Sediment Flusher

Maintenance

Generally, the only maintenance required is regular visual inspection. When not in operation, the **HYDROVEX®** SFT Sediment Flusher should be empty. Occasional test flushes should be performed to verify that the unit is functioning properly.

Guarantee

HYDROVEX® SFT Sediment Flushers are guaranteed against manufacturing and design defects for a period of 5 years.

John Meunier Inc.

ISO 9001 : 2000

Head Office

4105 Sartelon

Saint-Laurent (Quebec) Canada H4S 2B3

Tel.: 514-334-7230 www.johnmeunier.com

Fax: 514-334-5070 cs@johnmeunier.com

Ontario Office

2000 Argentia Road, Plaza 4, Unit 430

Mississauga (Ontario) Canada L5N 1W1

Tel.: 905-286-4846 www.johnmeunier.com

Fax: 905-286-0488 ontario@johnmeunier.com

USA Office

2209 Menlo Avenue

Glenside, PA USA 19038

Tel.: 412-417-6614 www.johnmeunier.com

Fax: 215-885-4741 astele@johnmeunier.com