Flushing System

Vacuum Flushing System Type MF

Storm tanks or sewers require cleaning after operation during storms due to the sediment deposited on the tank or sewer floor once the storm has subsided. If the system is not cleaned the potential for blockages is increased and malodours will occur due to septicity. In order to clean storage tanks effectively, BIOGEST® has developed a vacuum technology that performs these tasks reliably and fully automatically.

The BIOGEST® Vacuum Flushing System Type MF takes over this cleaning task in a simple and effective way without coming into contact with wastewater.

- Effective flushing and cleaning of storm tanks -

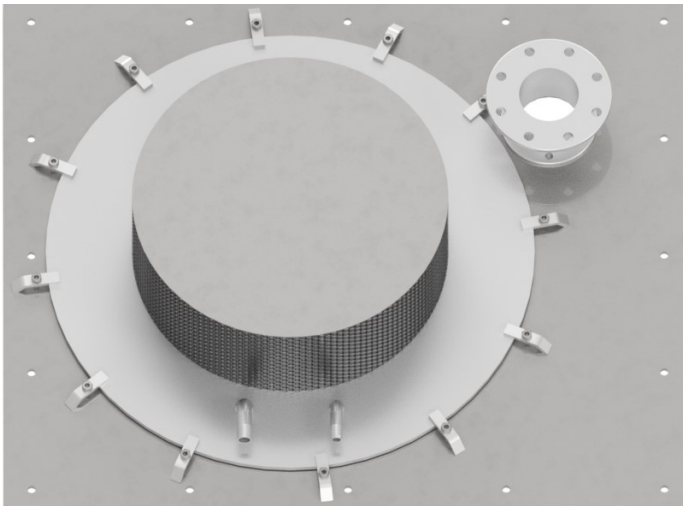
Flushing System

The operation

In a storm event the storage tank starts to fill as the network reaches full capacity. When the level in the storage system rises and the upper switch point is made, the vacuum pump starts automatically, evacuates the air in the flush chamber and closes the flushing valve.

This allows a filling of the flush chamber independent of the water level in a few minutes, only. After a predefined time the vacuum pump will be stopped. Once the storage tank is empty, the flushing sequence will be release automatically by a level control in the sump. The level is set in a way that the release contact will only switch once the flushing sump has been emptied and ready to take the full amount of flushing water.

In case of small sump volume, a large drain pipe must ensure that the flushing water is passed on sufficiently.



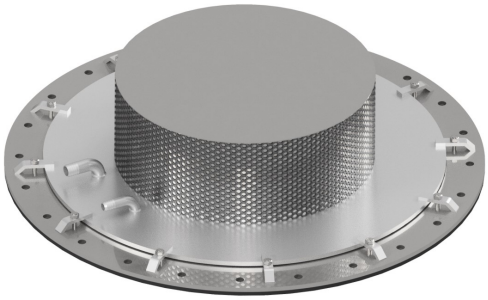
Once the storage system is empty, the diaphragm valve opens and the rapid influx of air fills the vacuum. This in turn forces the contents of the flush chamber into the storage system. The result is a large surging volume of water that efficiently cleans the floor of sludge and other sewage related debris.

If the storage system (storm basin) consists of two or more flushing lanes, the flushing will be released successively. Once the next rain event causes filling of the storage system, the described operating sequence of the flushing system is repeated.

Design parameters

When using the BIOGEST-Flushing-System Type MF only a slight gradient is required in the storage system. The slope of the tank or sewer should be between 0,5 and 2 %.

The maximum width that can be flushed with one flush chamber is unlimited, but it should not be larger than 10 metres for two marginal reasons.



In limiting the flushing lane width we can secure that the wave will be directed for the whole length of the lane and reduce any unwanted cross slope effects. This prevents areas of the sole from remaining uncleaned. In splitting the tank into several flushing lanes we can flush each lane separately and reduce the volume of the receiving sump

In tanks that are devided into two or more flushing lanes, each lane can then be flushed separately. Sequential flushing of the lanes is controlled through a stand-alone control panel or a controls section within the main MCC.

The advantages

- No submerged moving parts
- Full flushing action even after small spills (partial filling)
- Subsequent installation possible
- Circular tanks with central or lateral flushing chamber
- Flushing lane width up to 10 m and very long lanes
- High cleaning performance with up to 7 m water head
- Minimal Maintenance
- Low energy consumption
- Flushing with rainwater and sewage

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Stand: 02 / 2020