VACUUM FLUSHING TYPE MF

BIOGEST® | Flushing systems



Effective flushing and cleaning of storm tanks

Storm tanks and 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 increases and malodours occur due to septicity. 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.

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 the flush chamber to fill, independent of the water level, in a few minutes only. After a predefined time the vacuum pump stops. Once the storage tank is empty, the flushing sequence is released automatically by a level control in the sump. The level is set so that the release contact only switches once the flushing sump has been emptied and is ready to take the full amount of flushing water. In the case of a 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 consists of two or more flushing lanes, the flushing is released successively. Once the next rain event causes filling of the storage system, the operating sequence is repeated.

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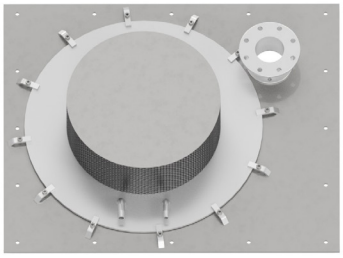
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Advantages

- 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

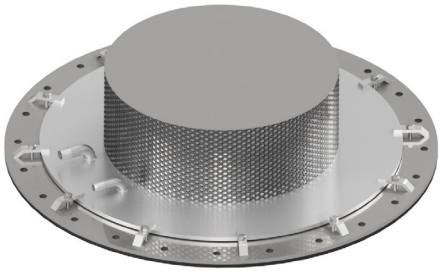


Design parameters

Only a slight gradient is required in the storage system. The maximum width that can be flushed with one flush chamber is unlimited, but it should not be larger than 10 metres, for two reasons. Limiting the flushing lane width directs the wave along the whole length of the lane and reduces unwanted cross-slope effects, which prevents areas of the floor from remaining uncleaned. Splitting the tank into several flushing lanes allows each lane to be flushed separately and reduces the volume of the receiving sump.

In tanks divided into two or more flushing lanes, sequential flushing is controlled through a stand-alone control panel or a controls section within the main MCC.

Slope of tank or sewer	0.5 to 2 %
Lane width per flush chamber	Up to 10 m
Water head	Up to 7 m
Operation	Fully automatic, vacuum







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