

Cleaning of stormwater tanks HUBER Tipping Buckets



Economic and efficient flushing system
for any stormwater tank

- For optimal cleaning results
- Low-noise tipping
- Easy tipping
- For flushing lane lengths up to 100 m



►► The situation:

Central wastewater discharge systems can be either combined or separated sewer systems. In combined sewer systems the dry weather and combined water flow are discharged both in one channel, whereas separate sewer systems have two channels, one for the dry weather flow and one for stormwater.

Due to the limited storage capacity of drainage systems, additional storage facilities are installed at exposed positions, such as stormwater overflow, retention or clarification tanks, which retain the first flush of stormwater and discharge smaller amounts of water to the wastewater treatment plant. During intermediate storage of the wastewater in the tanks, the coarse material settles on the tank bottom.

It is therefore recommended to remove the consolidated layer of sediments after every impoundage event, either manually or by means of automatic removal systems. Manual cleaning incurs high costs in terms of time and money. Furthermore, the biological activity of such mainly organic sediments may lead to odour annoyance caused by biogas generation and to health risks caused by the increased germ load.

►► The solution:

Systems which generate a flush are especially suitable to clean stormwater tanks. An especially cost-effective solution to remove the settled material are HUBER tipping buckets as they neither have moveable parts submerged in wastewater nor do they require any special flushing medium.

►► The function:

Tipping buckets are arranged on the tank side opposite to the sump. They consist of a trough that takes up the medium and is supported outside the axis of rotation. During the filling process a torque is generated as the filling level in the trough increases, which effects automatic tipping of the bucket when the trough is completely filled. During the tipping action the flush water is diverted by a concrete radius at the tank bottom from the vertical into horizontal direction. When the tipping bucket is empty, it automatically returns into its home position and is available for the next flushing sequence.



Labour-intensive, manual tank cleaning



Tipping buckets with flushing medium supply



Tipping action in a covered structure

➤➤ The product:

To ensure efficient and cost-effective cleaning of stormwater tanks with tipping buckets, the tanks should preferably have a rectangular basal surface. Depending on discharge height, tank length and base slope, HUBER Tipping Buckets with specific flush water amounts from 200 to 2,000 l/m are installed. They allow for flushing lane lengths of up to 100 m. The bucket including all attaching parts is manufactured from stainless steel and acid-treated in a pickling bath. The bucket bearings are optimized bearings designed especially for the static and dynamic loads for a superior product life. The special bucket design effects a low-noise tipping operation so that additional sound insulation is unnecessary, and ensures that the flush water is optimally poured out so that the full kinetic energy of the flushing medium can be used for the cleaning process. The special design of the buffers ensures gentle introduction of the forces into the structure during tipping of the buckets. Permanent monitoring of the tipping buckets is possible by means of a motion detector. To meet any project-specific installation requirements, three different support constructions are available for installation of the tipping buckets in the structure.

➤➤ The applications:

HUBER Tipping Buckets are used for efficient and cost-effective cleaning of the following storage facilities:

- Stormwater overflow tanks
- Stormwater retention tanks
- Sewers with storage capacity and overflow
- Other storage facilities

➤➤ The user's benefits:

- High efficiency due to powerful, long flushes
- Low-noise tipping
- Optimised slide bearing for an easy tipping motion
- Very long flushing lane lengths
- Reliable and maintenance-free stainless steel design



Stormwater holding sewer with integrated chamber for installation of tipping buckets



Sediments in the stormwater tank after an impoundage event



Efficient removal of sediments with tipping buckets

►► Installation examples:

A selection of installation examples will convince you of the HUBER Tipping Buckets:



HUBER Tipping Bucket suspended on side walls in an open stormwater tank



HUBER Tipping Bucket supported on the tank rims



Stormwater holding sewer with integrated chamber for installation of tipping buckets



Tipping action in a covered structure

►► System sizes

System sizing and installation options depend on specific structural conditions.

- System size: 200 to 2,000 l/m
- Trough length: up to 8 m

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Subject to technical modification

Tipping Buckets SK