

Grinding out success

Sulzer's Channel Monster™ solves persistent blockage problems at one of Sweden's largest pumping stations. Reliability is a key characteristic in the wastewater industry where pumps are required to work round-the-clock, especially in pumping stations that transfer wastewater from residential and industrial areas to the treatment plant. However, for one municipality in Sweden, debris in the water was causing significant equipment downtime. Sulzer quickly fixed the issue with the installation of a channel grinder to protect the pumps and minimize unexpected downtime.



“The new grinder has made a huge improvement to the situation. Our technicians were being constantly called out to this pumping station and now it only requires routine checks. The savings in downtime and maintenance costs have been significant.”

Mikael Carlsson, Service Manager – Technical Service at Haninge Municipal

Teething troubles have been resolved at a new pumping station in one of the Sweden’s largest municipalities to ensure wastewater is once again flowing freely to the local treatment works. The high-capacity station was required when the construction of a new road blocked the original path of the one-meter diameter pipe that carried 550 m³ (2’420 gal/min) of effluent per hour under gravity from the urban and industrial center to a treatment site on the outskirts.

Preventing pump blockages

Shortly after commissioning the pumping station, however, it became clear that the wastewater stream was contaminated with high levels of rags, stones and other debris. That material was blocking the pumps, requiring almost daily intervention by service technicians who pulled a wide range of debris from the equipment, including an entire pillowcase.

Facing high maintenance costs, the utility urgently needed a solution and invited a Sulzer wastewater specialist to inspect the pumping station. After visiting the facility to see the problem first hand, the proposal was made for a high torque, low speed channel grinder to offer a more energy-efficient method of handling the debris in the wastewater stream.

Sulzer channel grinders are a common feature at treatment plants in Sweden, but this would be the first time that the technology had been used at a pumping station in the country.





Lateral thinking with a vertical grinder

The facility owners realized that the Sulzer option offered a cost-effective solution and they identified an inspection cover upstream of the pumping station that could be enlarged to accept a Sulzer CMD Channel Monster grinder. Using a rotating drum to capture solids and direct them to a powerful, dual-shafted, low speed, high-torque grinder, the Channel Monster is designed to shred the tough solids that typically cause sewage handling problems. The system requires only a single 4 kW (5.4 hp) motor to power through heavily contaminated wastewater flows of up to 1'590 m³ per hour (7'000 gal/min).

Sulzer supplied a 450 mm (17 inch) stack height grinder and mounting frame to fit the installation, together with an ATEX and IP68 rated motor to protect against the risk of explosive atmospheres or flooding in the chamber. Using an inflatable bladder to hold back the wastewater, the grinder was installed with only a three hour pause in the flow. Since the installation of the new unit in December 2020, the pumping station has performed as intended, with zero downtime logged due to blockages or pump problems.

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