

5200 m of pipes overhauled

Tsurumi has developed a new pump solution for overhauling sewers and pipe systems that allows the pipes to continue operating whilst work is being carried out.

The newly developed KRSU 822 is a high-performance sewer shaft pump for professional use that has been added to the delivery program from this Düsseldorf-based supplier. The slim submersible pump is already being used successfully in Eisenhüttenstadt.

The drinking water and sewage association (TAZV) Oderaue in the industrial park next to the Oder-Spree canal operates an industrial sewage treatment plant. The biggest user of this system is a paper factory, which only produces brown paper from old paper. The TAZV Oderaue operates a sewer line that is 5200 meters long and runs into the neighbouring River Oder. The operator pumps around 3.3 million cubic metres of sewage through the GFK pipes every year. The sewage has a temperature of around 30 degrees when it enters the river. One particular problem is that lime enters the process water circuit from the old paper in the paper factory: the precipitations of calcium carbonate not only pollute parts of the industrial plant, but are also found in the sewage load.

After seven years, the underground pipeline had reached its hydraulic limit due to incrustations, and needed to be cleaned. Standard procedures, such as high-pressure flushing, milling machines and renewal robots, did not produce the required results, which is why a bursting procedure was selected.

The work was carried out on sections to avoid operational standstills. Two shafts were used for over-pumping on each section of 200 m. The KRSU was placed in the head shaft: it bridged the section of pipeline that was being cleaned by means of two DN100 pipes so that this area could be cleaned without obstruction. The project is scheduled to take 18 months.

Tsurumi has designed the KRSU to be streamlined so that it can bridge pipe sections. With its maximum diameter of 546 mm, it fits into most access shafts that are typically 625 mm wide in public areas. The manufacturer has positioned the discharge branch in the centre of this aggregate that is 'only' 1486 mm high with a dry weight of 417 kg; this low centre of gravity guarantees an upright, secure stance. Under a full load of 22 kW, the KRSU pumps 5700 l/min. Its maximum discharge head is 26.5 m. In Eisenhüttenstadt there is an upstream frequency converter installed to ensure a soft start without pressure surges; this slow start is also more gentle on the material. A special impeller with high blades allows clogging-free pumping with a free passage of 56 mm.

Thanks to its design, the durable casing made of GG20 grey iron and special components, such as a centrifugal oil distributor (Tsurumi development), the pump cannot run dry. This means that it can be operated safely when partially submerged or in snore mode, i.e. when little water is pumped. For more information, please see Tsurumi.de in the Internet.

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Tsurumi is one of the world's most experienced pump manufacturers. From its modern facility in Kyoto, Tsurumi produces more submersible pumps globally per year than any other pump manufacturer. There are currently over 1800 different pump models in the Tsurumi range, including semi-vortex, vortex, non-clog, cutter, contractor & dewatering, sewage & wastewater, aerators & blowers, decanting units and scum skimmers. Tsurumi operates on a worldwide basis with an extensive dealer network in Europe, North and South America, Asia, Australia and parts of Africa.

www.tsurumi.eu



Slim power plant: The KRSU is Tsurumi's newest and strongest sewer shaft pump (Photo: Tsurumi)



Plenty of space in the shaft for the dry run-protected KRSU that runs on 3-phases with 400V via a direct start and fits into most German access shafts (Photo: Tsurumi)



Looking at the centred DN200 pressure nozzle (Photo: Tsurumi)



Company logo (Photo: Tsurumi)



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