

Tank Mixing Bolton

Application market	Wastewater
Market segment	Sludge Treatment
Pumped medium	Sludge
Pump product	Bearing Frame
Country	United Kingdom



Challenge

Hidrostral's HidroMix Sludge Tank Mixing System is built upon the Hidrostral Screw Centrifugal Pump, renowned for its rag and sludge handling capabilities, and replaces the traditional method of mixing sludge storage tanks and anaerobic sludge digesters. Unlike other mixing systems, the Hidrostral concept does not require structural steelwork within the tank thus reducing health and safety risks when maintenance tasks are undertaken. The system is mounted at ground level and fixed to the outside of the tank. Large diameter nozzles are installed externally through the tank walls. The systems have simple pipe work designs with short pipe runs, resulting in minimal friction losses and the maximum energy imparted to the fluid.

Solution

Hidrostral Ltd supplied a tank mixing solutions for Bolton Waste Water Treatments Works as part of wider upgrades to the site. The Two Mixer Option is ideal for large, deep tanks as it allows a 50% reduction in power consumption when the tank is $\frac{1}{2}$ full or less. In this case the bottom nozzle is configured to prevent settlement of solids on the tank floor. The top nozzle is configured to maximise the jet length for optimum mixing. On this installation, Hidrostral supplied eight identical pumps to mix the contents of the four 10.5m tall tanks. Each pump was driven by a high efficiency 22 kW TEFC motor, eligible for the available Enhanced Capital Allowance, offering further savings to United Utilities. The pumps also had the advantage of being supported by the wider dry well bearing frame pump supply and maintain framework agreement, ensuring optimum whole life cost or Totex (total expenditure).

Benefits

Every Hidrostral mixing installation is a bespoke design that takes into account the sludge characteristics and the geometry of the tank, to ensure that the pump and nozzle locations are optimised, suction points are positioned to draw sludge from the lowest possible depth and discharge points are positioned to promote the most effective circulation.

Quantity of units sold	8
Pump type	E200-SLU2R + EDM1X-M180
Motor data	22 kW / 4 pole / 50 Hz / 400 V
Material combination	Cast iron pump body with nodular iron impeller and Hidrohard wear parts
Duty point	Not available
In operation since	2008