

Tsurumi at the centre of €1.7 billion tunnel project in Sweden

Global pump manufacturer Tsurumi has supplied six of its LH series high head dewatering pumps to the Söderström tunnel project in Sweden. The pumps are positioned 28 m underwater in drilled holes just 200 mm wide and are a vital part of the ambitious project.

The 300 m long submerged section of the Söderström tunnel is being built using immersed tunnel sections. These are supported on four grouped piles that have been drilled into the bedrock. This means the tunnel is resting on an underwater bridge.

The submerged tunnel consists of three 100 m long prefabricated sections. The sections contain two tubes that will each carry a 12 m wide railway track and a 5 m wide access tunnel for service and rescue.

Deep channels have been excavated on both sides of the Söderström bay. In these channels the contractor is using the 'cut and cover' construction method to connect the underwater and under bedrock tunnel sections. At a depth of 20m these excavated channels, which have retaining walls held in place by 1.5 m wide piles, are the deepest ever used in northern Europe.

The six LH23.0W pumps from Tsurumi are being used for dewatering during the complicated installation of submerged tunnel sections at the project. The pumps were selected for their reliability and powerful capabilities, and also their compact design, as Oliver Schmeieder, foreman at main contractor JV Söderström Tunnel HB, explains:

"We needed pumps that can operate effectively with high volumes of water at high heads," he said. "We tried other brands but they were not powerful enough and they were not up to the demanding work load. The Tsurumi pumps have been working very well in this challenging application. We are happy to report the project is moving ahead on schedule."

Tsurumi's LH series of pumps are high head, three phase dewatering pumps capable of withstanding deep water pressure. The range offers heads of up to 177 m and capacities of up to 6,500 l/min. LH pumps feature an impeller made of high chromium iron casting and a cylindrical drive channel whose flow-through design maintains motor cooling for improved reliability.

The pumps were supplied directly from Tsurumi Europe, which opened a Swedish subsidiary in partnership with its local distributor Tsurumi-Intec Pump AB in 2011. The company has since established several partnerships with rental and construction companies to supply its products across the country.

In addition to their powerful capabilities, the Tsurumi pumps were praised for their build quality. The strength of the external casing in particular was highlighted by Mr Schmeieder:

"The team experienced problems when lifting the other manufacturer's pumps out of the water. The handles were too weak and would often break," he said. "Tsurumi's knowledge of tunnel building has created pumps that exceed requirements. They are highly robust and have much stronger eyelets to attach hoisting gear, which is an important detail in our work."

Established more than 90 years ago, Tsurumi has a wealth of experience in tunnel construction. Its pumps have been used in many projects in Europe, including several already completed by Züblin & Pihl in Europe.

Although the project was first proposed 20 years ago, work began in May 2008 and should complete by the end of 2012. The project is being managed by JV Söderström tunnel HB, a joint venture between contractors Züblin Scandinavia AB and E. Pihl & Son A.S. The tunnel will be an important connection between two central islands in Stockholm. It will significantly improve rail transport, increasing frequency from the current 10 trains per day to 24 trains every hour.



Tsurumi has a 250 strong product range of pumping solutions, which are used in wastewater, construction and general contracting applications. Its pumps are known for their quality, durability and simple maintenance.

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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.

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