SULZER

CASE STUDY

Sulzer helps to dewater “Stuttgart 21”, the largest deep construction project in Europe

Stuttgart 21 is a railway and urban development project in Stuttgart, Germany. It is a part of the new and upgraded Stuttgart–Augsburg railway and the main transport line for Europe (Paris–Vienna–Bratislava–Budapest) in the Trans-European Transport Networks. Its core is the Stuttgart central station that will be renewed from a terminal into a through-station and moved completely underground. The project includes 57 km of new railways with 34 km of tunnels and 25 km of high-speed lines.

City center of Stuttgart with hills and vineyards

“The rail project will bring significant improvements as the entire region, including the airport and trade fair center, will be linked to the international rail network.”

Dr. Udo Andriof and Wolfgang Dietrich, Stuttgart-Ulm project spokespersons

The challenge

About 90% of the deep construction work takes place in the city center. Downtown Stuttgart consists of valleys and hills with vineyards, and also comprises some mineral water springs. The geological conditions are demanding and partly unstable.

There are nine active tunneling sites at present, each with very limited access and space for logistics and storing of machines and material. The time pressure is great, since even the slightest delay is very costly and critical for the project.

Our customers, the contractors and consortiums of this project, work 24/7 and expect local product and service supply without delay. To fulfill these expectations, three Sulzer hubs offer pumps and spares to meet the high requirements in lead times and express/overnight shipments.

The solution

The groundwater level in Stuttgart has been lowered by deep wells and a central water management pumping and neutralization system, which connects all tunneling sites in the city and finally ends in the river Neckar. In a challenging tunneling environment like this, excessive water, however, needs to be removed, and Sulzer was able to offer the customer its fleet of portable submersible dewatering pumps for different geological conditions, various construction phases and weather conditions. Sulzer has already delivered almost one hundred pumps of different models and provided rental pumps to four different tunneling sites of this deep construction project.

The construction site of Steinbühl railway tunnel close to Stuttgart

Customer benefit

- Technical support from a reliable partner
- Full range of submersible dewatering pumps and accessories
- Reliable, light but wear-resistant submersible drainage and sludge pumps
- The XJ range dewatering pumps are leading in total efficiency, life-cycle costs and unique features against wear and breakdowns
- Clearly reduced maintenance and breakdown times
- Less spare parts and easy supply due to modular system in the J and XJ ranges
- Outstanding complete solution comprising “products + services + concepts and local consulting”
- On-site service training for the customer

The Sulzer difference

- Long-standing experience as a partner for construction companies
- 24/7 product and service supply without delay
- A full range of state-of-the-art submersible dewatering pumps
- The quality and wear resistance of our products are proven in the most wear-intensive applications
- The XJ range dewatering pumps are leading in total efficiency, life-cycle costs and unique features against wear and breakdowns

Product data

With the XJ range of submersible pumps we have been able to introduce this state-of-the-art and still today unique dewatering product directly to the leading tunnel building companies. The AquaTronic controlling, leveling and data storing functions of the XJ range offer a number of features which are tailor-made for tunneling applications. The power consumption, maintenance costs and unavoidable wear problems are optimized by the XJ range. AquaTronic combined with highly efficient electric motors and hydraulics with closed impellers as well as modularity in spare parts give measurable benefits, e.g. lower life-cycle costs of the pump.

The Sulzer submersible drainage pumps XJ are ideal for pumping water and dirty water mixed with soil. When delivered to a site you can start using them right away. Pumps with a built-in AquaTronic unit will always have the correct direction of impeller rotation, ensuring peak performance and reduced wear.

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