

Press release

Liebherr reaches a new milestone in tunnelling

- Liebherr-Components Biberach GmbH has produced one of the largest main bearing for tunnel boring machines to date
- The main bearing is to be installed in one of the world's largest tunnel boring machines
- With main bearings for constantly growing tunnel boring machines, Liebherr takes a step towards meeting the increasing demand for tunnel construction systems

Nussbaumen (Switzerland), October 26, 2021 – With its main bearing for Shanghai Tunnel Engineering (STEC), a Chinese system provider of tunnel boring machines (TBMs), Liebherr has reached the next dimension in tunnel construction. With the diameter of almost eight metres and the weight of 44 tons, the roller bearing is a real heavyweight to be used in one of the largest tunnel boring machines. At the same time, the bearing is the largest TBM main bearing of its kind produced by Liebherr to date.

When a main bearing weighs as much as 44 small cars at once, it is expected to be able to do a lot. Used in the cutter head of a TBM, it helps to bore a tunnel about the height of a six-storey building. This is possible due to its double rollers in the bearing track, an extremely precise internal gearing, as well as due to 20 pinions, that drive the bearing on the inner ring.

And that's not the end of it. In addition to the main bearing, Liebherr also manufactures the erector bearing for the said tunnel-boring machine. With a diameter of 7.3 metres and a weight of 5.7 tons, it may not seem quite as big in comparison, but it still has an important function in tunnel construction. It sits behind the cutter head and ensures that precast concrete elements are placed all around the wall during tunnelling. The concrete elements primarily have the task of securing the tunnel. In the second step, these concrete elements support the TBM, when moving forward.

With a height of 15.5 metres, the eight-kilometre tunnel in the city of Foshan in the south of China will ensure that vehicles can travel back and forth in three lanes on two superimposed roadways. In more and more cities, the infrastructure is being newly developed and expanded. Therefore, the demand for subway construction or road tunnels is growing worldwide. Also tunnel systems for mining, hydro power, as well as supply and disposal systems are currently in great demand, showing strong growth. For Liebherr, the production of the TBM main bearing is hence a step in the right direction.

Liebherr has already completed several projects with the STEC company. With this assignment, however, Liebherr-Components contributes to the success of the major project.

About Liebherr-Components AG

In this segment, the Liebherr Group specialises in the development, design, manufacturing of high-performance components in the field of mechanical, hydraulic and electric drive and control technology. Liebherr-Component Technologies AG, based in Bulle (Switzerland), coordinates all activities in the Components product segment.

The extensive product range includes diesel and gas engines, injection systems, engine control units, axial piston pumps and motors, hydraulic cylinders, slewing bearings, gearboxes and winches, switchgear, electronic and power electronics components, and software. The high-quality components are used in cranes and earthmoving machinery, in the mining industry, maritime applications, wind turbines, automotive engineering or in aviation and transport technology. Synergy effects in other product segments of the Liebherr Group are used to drive continuous technological development.

About the Liebherr Group

The Liebherr Group is a family-run technology company with a highly diversified product portfolio. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality and user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 140 companies across all continents. In 2020, it employed around 48,000 staff and achieved combined revenues of over 10.3 billion euros. Liebherr was founded in Kirchdorf an der Iller in Southern Germany in 1949. Since then, the employees have been pursuing the goal of achieving continuous technological innovation, and bringing industry-leading solutions to its customers.

Images



liebherr-main-bearings-in-production.gif

When two become one: The retaining and the support rings are precisely placed on top of each other.



liebherr-heavy-weight.gif

The finishing touch: The slewing bearing is preserved, so that it safely reaches China.

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