



# TIMKEN® TAPERED ROLLER BEARINGS PLAY CRITICAL ROLE IN XINJIANG WATER PROJECT

## CHALLENGE

The Chinese province of Xinjiang, which means “New Frontier,” is best known for its position along the “Silk Road” trade route between China and Central Asia.

Within the region, a recent water conservation project was initiated to divert water from the north to the south. In addition to harsh terrain and climate conditions, the construction project required long-distance excavation of 9.69 miles (15.6 kilometers) with a maximum burial depth of 2,192 feet (668 meters).

Tunnel boring equipment would be required to bore through hard rock, over a significant distance in extreme temperatures.

## TIMKEN SOLUTION

The bearings selected for this project were required to perform well in these tough conditions and remain in operation as long as possible to hit production targets.

Timken® tapered roller bearings, installed on the 19-inch Hengfeng hard rock hob of Hengli® drilling tools, helped the equipment to perform better than anticipated. The enhanced bearing geometry, materials and manufacturing details contributed to the longer bearing life and durability.

The bearings were made with ultra-clean steel which boosted performance and extended bearing fatigue life. Enhanced internal geometries helped distribute load and minimize bearing stresses, which increased bearing load ratings in power-dense packages.

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets bearings, gear drives, automated lubrication systems, belts, brakes, clutches, chain, couplings, linear motion products and related industrial motion rebuild and repair services.

Reduced  
Maintenance  
Costs



Extended  
Service Life



Increased  
Productivity



## RESULTS THAT MATTER

Timken tapered roller bearings helped extend tool service life by 1.24 miles (2 kilometers) throughout the project, reducing maintenance costs and increasing productivity.

Delivery of replacement bearings occurred on time, helping the project stay on target. Any delays in replacement parts would have stopped the project, costing the customer more than \$12,000 a day in lost productivity. In contrast, production continued – ahead of schedule – and the project was completed a month earlier than planned.

Comprehensive after-sales service gave the customer access to Timken engineers who were available to offer recommendations on installation or maintenance.

