

FOR IMMEDIATE RELEASE

*Date: June 18, 2018*

**Headline: Record-Setting Robbins TBM breaks through at China’s Jilin project**

*Sub-Headline: Hard Rock Machine crosses Finish Line Nearly Five Months Ahead of Schedule*

In mid-May 2018 the national-record-setting 7.9 m (26 ft) Robbins Main Beam TBM at the Jilin Lot 3 Tunnel broke through. A formal ceremony followed to commemorate the stellar performance of the tunneling operation and its early completion. “I have participated in this project from the beginning. The project broke through 147 days earlier than scheduled. The project has achieved the fastest monthly advance rate record--1423.5 m/4,670 ft—for 7 to 8 m (23 to 26 ft) diameter TBMs in China. And the machine has reached over 1000 m (3,280 ft) per month for three consecutive months. I am so proud of these achievements,” said Mr. Wu Zhi Yong, Vice Chief Engineer and Jilin Yinsong Project Vice General Manager for contractor Beijing Vibroflotation Engineering Co. Ltd. (BVEC).

The completion of the 24.3 km (15 mi) tunnel nearly five months ahead of schedule is a monumental achievement considering the difficult ground conditions encountered. Rock types ranged from tuff to granite, sandstone, and andesite with multiple fault zones—conditions requiring nearly continuous ground support. Rock strengths varied widely from 35 to 206 MPa UCS (5,100 to 30,000 psi). The contractor cited a number of factors that contributed to the swift advance rates: “It is the stable and reliable performance of the Robbins machine, and the professional technical skills of the service technicians. The Robbins crew coordination, reasonable working progress arrangements and the sophisticated technology all allowed the project to make the fast advance rate,” said Mr. Wu.

The Robbins Main Beam TBM bored through a total of 24 fault zones utilizing a unique combination of steel McNally slats (extruded through pockets in the TBM roof shield to prevent movement of loose rock), wire mesh, and shotcrete. The TBM was specifically designed to tackle the tough conditions. “Under the variable ground conditions, especially weak, soft, and fractured rock, the optimized system and reasonable design of the machine ensured effective tunneling progress. Robbins’ unique gripper system, continuous propel system, hydraulic drives, roof support and stable cutterhead reduced the wear of cutters.The efficient belt conveyor inside the main beam allowed quick muck removal from the cutterhead to the back of the machine, which ensured the good progress of the TBM,” said Mr. Wu.

The Jilin Lot 3 tunnel is part of the Jilin Yinsong Water Supply Project, which at 736.3 km (457.5 mi) is China’s largest scale water diversion project to date. Once operational the water lines will divert the water from Fengman Reservoir at the upper reaches of Di’er Songhua River to central regions of Jilin Province experiencing chronic water shortages. These regions include the cities of Changchun and Siping, eight surrounding counties, and 26 villages and towns under their jurisdiction. The project will optimize water resource distribution, improve regional eco-systems, and ensure better food production and water safety for the people of Jilin Province.

Word count: 456

**The News in Brief:**

**--**A 7.9 m (26 ft) diameter Robbins Hard Rock Main Beam TBM broke through in mid-May at China’s Jilin Lot 3 Tunnel.

-- The speedy machine achieved a national record for machines in its size class of 1,423.5 m (4,670 ft) in one month and averaged over 1,000 m (3,280 ft) per month for three consecutive months.

-- Despite highly variable ground and 24 total fault zones, the machine broke through nearly five months early.

-- Crews utilized a combination of McNally slats (extruded through pockets in the TBM roof shield to prevent movement of loose rock), wire mesh, and shotcrete to continuously support the ground.

Images Attached to Email. If you need a higher resolution image, please contact Desiree Willis.

Captions for Images:

**Image 1:** The record-setting Robbins TBM broke through nearly five months ahead of schedule on China’s Jilin Lot 3 Tunnel.

**Image 2:** A formal ceremony revealed the Robbins Main Beam TBM during its final breakthrough in mid-May 2018.

**Image 3:** The 7.9 m (26 ft) diameter Robbins Main Beam TBM overcame 24 fault zones and difficult variable rock conditions to achieve a national record of 1,423.5 m (4,670 ft) in one month.