



中国铁建

中国铁建重工集团有限公司

CHINA RAILWAY CONSTRUCTION HEAVY INDUSTRY CO.,LTD.

**World's Leading Provider of Whole Solutions
for Intelligent Tunneling Equipment and
High-end Rail Track Equipment**

CRCHI Presentation

**Credibility-Innovation Eternal
Masterpiece-Integrity Coexisting**



1 Company Overview

China Railway Construction Heavy Industry Co., Ltd. (CRCHI) belongs to China Railway Construction Corporation (CRCC). It is an high-end equipment manufacturer, featuring **innovation, technology and service**. Its main business indicators has increased by over **30%** for consecutive ten years. The company now has a total of **7500** employees, of which more than **20%** are research personnel.



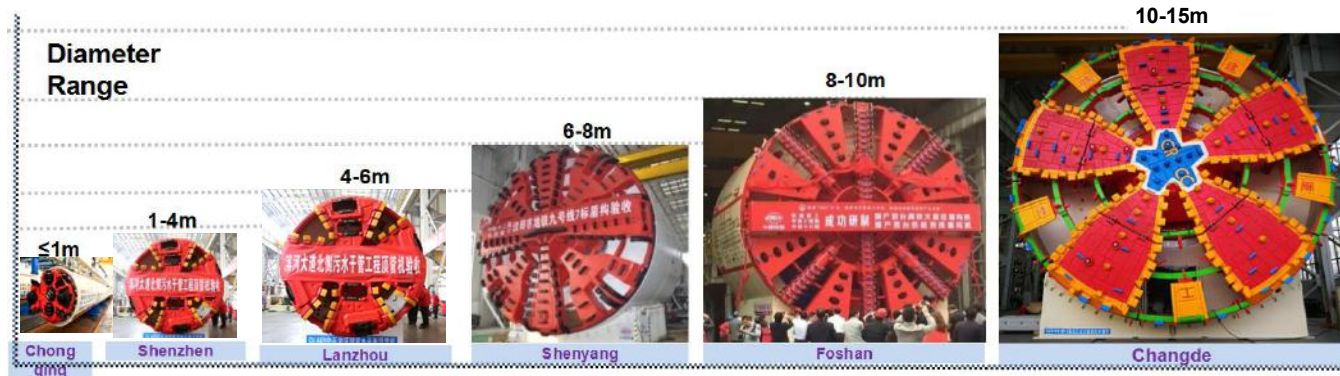
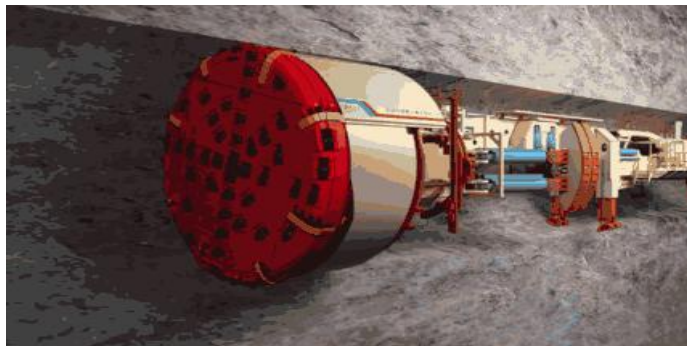
1 Company Overview

CRCHI has developed "**4+X**" fields of business, including four mature sectors which are **tunnel boring machine, specialized tunneling equipment, rail track equipment, large rail track maintenance machinery**, and other emerging industries like **new-type rail transit equipment, high-end agricultural equipment and new-type engineering materials**.

The company, with its **headquarter in Changsha**, has established 16 subsidiaries and production bases in **Zhuzhou of Hunan Province, Kunming of Yunnan Province, Longchang of Sichuan Province, Lanzhou of Gansu Province, Urumchi of Xinjiang Province, Xi'an of Shaanxi Province, Baotou of Inner Mongolia** and other cities.



CRCHI has world-class and national leading TBM manufacturing bases, with an annual production capacity up to 200 sets of TBMs. CRCHI TBMs take half the domestic market in sales, of which large-diameter hard-rock TBM occupies over 85% of Chinese market share. Our TBMs have been widely used in national important projects of metro, railway, mining and water diversion in over 30 cities, and also exported to Russia, Turkey, Sri Lanka and other countries.



2 Products • Tunnel Boring Machine



中国铁建重工集团有限公司
CHINA RAILWAY CONSTRUCTION HEAVY INDUSTRY CO., LTD.

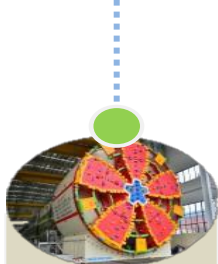
Earth pressure shield machine (ZTE serie)



77 kinds

1. Small diameter
2. Fast tunneling
3. Construction in extremely cold weather
4. Super small turning
5. General type
-

Slurry pressure shield machine (ZTS serie)



21 kinds

1. Economy
2. General type
3. Small diameter
4. Big diameter
-

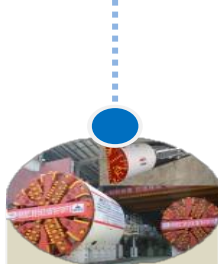
Hard-rock TBM (ZTT serie)



17 kinds

1. Long-distance tunneling & long service time
2. Small type
3. General type
-

Dual-mode TBM (ZT**serie)



6 kinds

1. Slurry&Earth pressure off-line dual mode
2. Hard rock TBM/Earth pressure dual mode
3. Inclined shaft dual mode
4. Hard rock TBM/Earth pressure online dual mode.....

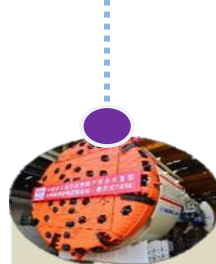
Pipejacking machine (ZTPserie)



5 kinds

1. Super small type
2. Retractable
3. Quick drill -one-time vertical drilling
4. Long distance
5. Muck discharge by a screw
-

Vertical shaft/inclined shaft TBM (ZTJ serie)



2 kinds

1. Vertical shaft TBM
2. Inclined shaft single-shield TBM
-

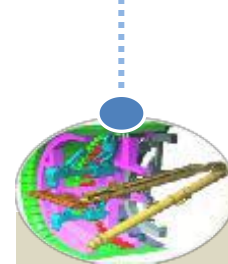
Rectangular TBM (ZTR serie)



2 kinds

1. Rectangular pipejacking machine
2. Pipe gallery operating vehicle

Multi-function soft soil TBM (ZT** serie)



1 kind

1. Special-section TBM

8 categories of TBMs

Application range covers:

- ❑ Soft soil, hard rock and other complicated geologies
- ❑ Round, rectangular and other section shape
- ❑ Single mode, dual mode and other tunneling modes
- ❑ Straight, curve and inclined shaft and other alignment

2 Products • Specialized Tunneling Equipment

Based on mechanized construction, information management, intelligent construction, collaborative innovation of construction method and equipment, CRCHI has developed 4 product series for specialized tunneling equipment, with **intelligent tunneling equipment** as the core, including **tunnel construction equipment**, **coal mine construction equipment**, **mine construction equipment** and **green building materials construction equipment**. We take the lead in building **technical systems of intelligent tunneling equipment** in China. We help to promote development of Chinese intelligent tunneling construction.



Tunnel construction equipment



Computerized three-arm drilling jumbo



Multi-function vehicle



Rock bolting jumbo



Shotcreting machine



Digitized lining jumbo



Multi-function drilling machine



Drilling jumbo

Mine construction equipment



Medium-length hole drilling jumbo



Two-arm drilling jumbo

Coal mine construction equipment



Shield-type bolter miner



Smart shotcretting machine

Green building materials construction equipment



Tunnel slag processing machine



Eco-friendly sand making complete machine

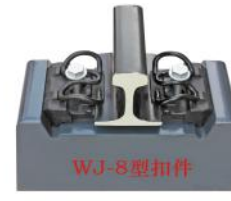
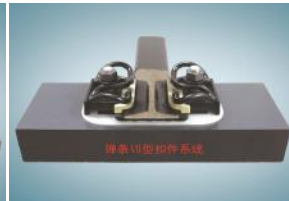
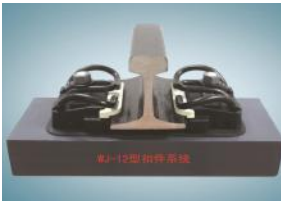
CRCHI has the best automated production lines for **turnouts, clips and fasteners, brake shoes and anchor channels.**

We have successfully produced **dozens of international advanced level products** like No.42 turnouts to 60kg/m rails for the 350km/h passenger train and high-speed railway fastening systems. These products **occupy 1/3 of Chinese market share** and help to **increase the speed and comfort level for Chinese high-speed train.** They have been sold to **over 30 countries and regions** like America, Canada, African countries and Western Asian area.

Turnout



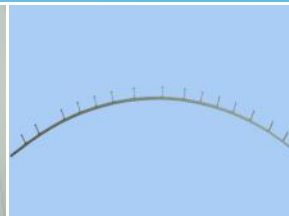
Fastening systems



Brake shoes



Anchor channels



CRCHI is developing **ingot milling steel fiber, basalt fiber, basalt fiber products** and other new-type green engineering materials. **Ingot milling steel fiber products have been successfully applied in the project of Yangmeidu Bridge in Ganzhou of Jiangxi Province.**

Ingot milling steel fiber



Ingot milling steel fiber



Distribution status of 90/60/30kg ingot milling steel fiber in the concrete

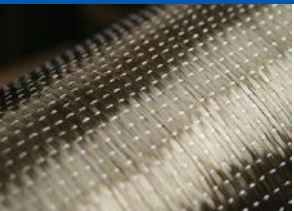


Comparison of crack resistance between ingot milling steel fiber concrete and plain concrete under the condition of the same mechanical testing

Green basalt fiber materials



Basalt fiber short-cut wire



Uni-Directional cloth of basalt fiber



Basalt fiber geogrid



Basalt fiber threaded bar