

BELT CONVEYOR

Tunnel field / Mining field / Industrial field

CREG CONVEYOR

Make Tunnelling Safer,
Better and Faster

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Belt Conveyor

China Railway Engineering Equipment Group Co., Ltd. is committed to making tunnel construction better, faster and safer. Within this, the belt conveyor, as a key link in tunneling operation, has always been the core focus of technological innovation and research and development, creating green, low-carbon, stable and efficient material transportation solutions for global customers.

As an integrated service provider of belt conveyors, CREG offers a wide range of solutions in terms of long-distance continuous conveyors, vertical lifting belt conveyors, small-turn belt conveyors and off-road belt conveyors. To date, the company has successively provided comprehensive solutions for more than 500 projects across sectors such as railways, highways, metros, water conservancy, hydropower, public utilities and mining energy.

CREG not only focuses on maintaining a strong presence in the domestic market, but also actively expands its international business. It has successfully exported advanced products and services to many countries and regions across Europe, Asia, Africa and America, demonstrating its strong and growing global competitiveness and brand influence.

With an excellent technical strength, rich project experience and an efficient service system, CREG collaborates with global customers to address diverse challenges in tunneling. This ensures safe performance and efficient progress of projects, creates maximum value for customers and helps pave a solid path to the future.

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The Continuous belt conveyor successfully passed through multiple R300m turning curves

TUNNEL FIELD

Solution



Ultra-long continuous belt conveyor boosts the construction of the Pearl River Delta Water Resources Allocation Project.

Continuous extension belt conveyor

- › Suitable for shield/TBM continuous tunneling
- › Enable extension without shutdown
- › The belt storage cassette can be installed horizontally or vertically, with a belt storage capacity of 200-800m
- › Equipped with an Automatic frequency conversion tensioning system

The continuous extension length of a single conveyor can reach

30 km

Maximum belt width

1800 mm

Maximum transport volume

4500 t/h

Maximum lifting height

100 m

Maximum transport volume

2000 t/h

Vertical lifting belt conveyor

- › Vertical lifting solution for bulk materials
- › Standard section and modular design, convenient for efficient disassembly and assembly
- › Embedded with special skeleton material to prolong the service life of rubber belt
- › Multiple sweeping and cleaning systems to effectively reduce slags in the return stroke



First-time achievement of continuous vertical transportation in a 75m ultra-deep shaft.

MINING FIELD

Solution



Ultra-small turning radius transportation boosts the Funing Green Energy Storage Project.

Small-turn belt conveyor

- › Designed for conveying with turning radius less than R250m
- › Customized flexible conveyor belt

Minimum turning radius

R ≥ 30_m

Enable

Spiral Conveying

Off-road belt conveyor

- › Solution for long-distance transportation of bulk materials in complex geological formations
- › Fabricated long-span design
- › Optional closed design

The fully enclosed off-road belt conveyor passes through the nature reserve in a safe and environmentally friendly manner.



INDUSTRIAL FIELD

Solution



Ship loader

The ship loader is a large-scale conveying equipment used for bulk material shipment at the wharf. It enables continuous transportation of materials from the stockyard to the cabin quickly completing the loading operation.



Stacker

The stacker is a large conveying equipment for bulk material stacking, which enables efficient transfer of materials to the storage yard.



Sandstone aggregate belt conveyor

The sandstone aggregate belt conveyor has efficient and stable transfer capacity, which can meet the material transportation requirements under various working conditions.



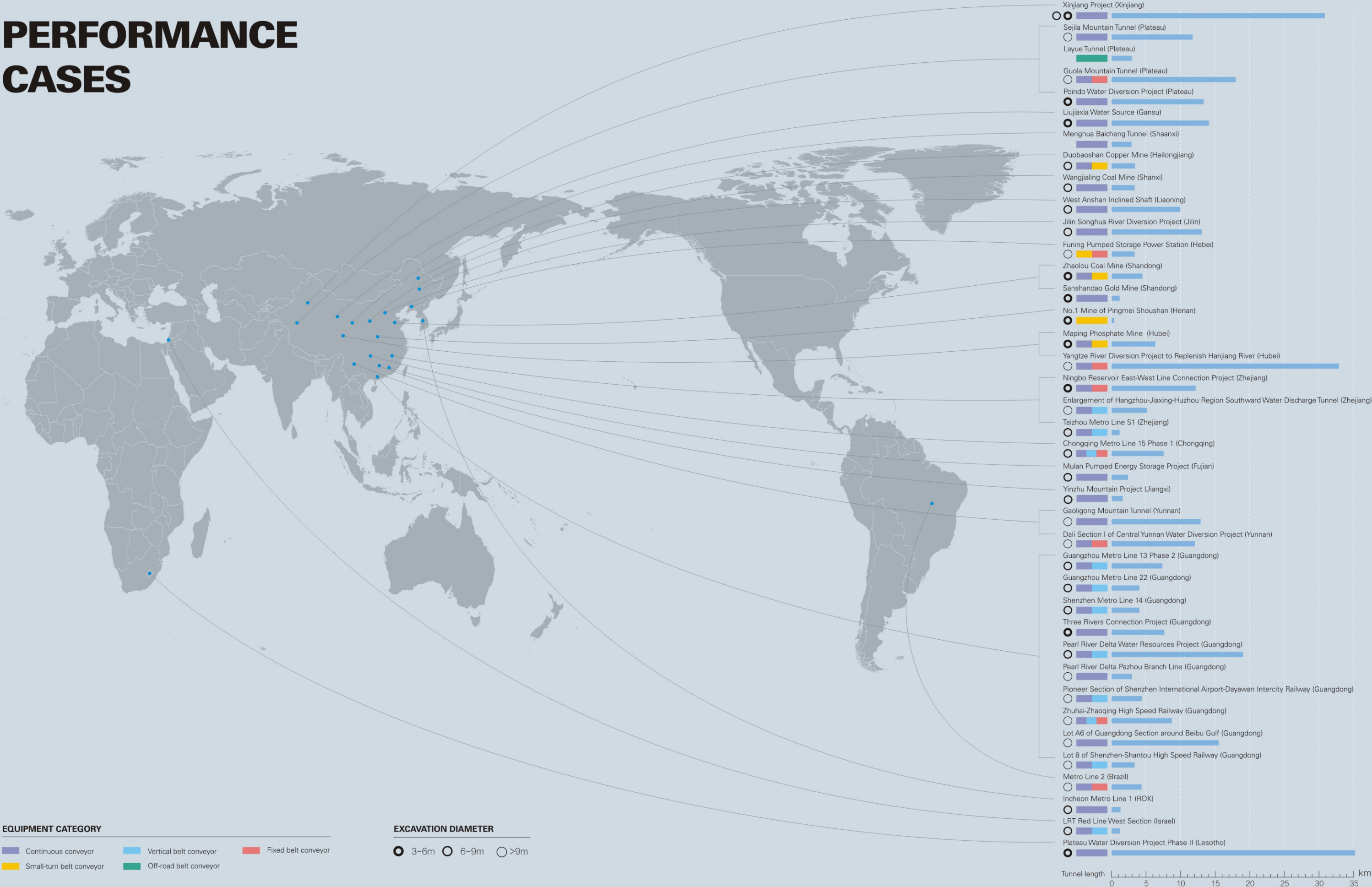
In-plant belt conveyor

In-plant belt conveyor is a widely used material conveying equipment in the plant, which enables efficient transportation of bulk materials between production processes.

Small gravel yards realize the local utilization of crushed stone resources.



PERFORMANCE CASES



New Plateau Railway Off-road Belt Conveyor Project

As a key component of the new plateau railway, the Layue Tunnel has a total length of 31.67 km. During construction, the project faced extremely complex geological conditions, combining the "five highs": high altitude, high seismic intensity, high in-situ stress, high water pressure, and high geothermal temperature, making it a world-class challenge in terms of construction difficulty. In view of the severe challenges such as winding access roads and numerous curves, vehicle drivers are easily troubled by altitude sickness, and difficult weather conditions such as rain and snow during winter

construction. Therefore, CREG provided a fully enclosed off-road belt conveyor to ensure continuous and efficient mucking of the project. This system allows safe and environmentally friendly operations that are largely unaffected by adverse weather. As the supporting transportation equipment for drill and blast in a newly built plateau railway project, the off-road belt conveyor fully demonstrates the strong strength and innovation capacity of CREG in the high-end equipment manufacturing field.

PARAMETER

- › Transportation volume: 500t/h
- › Haul distance: 3,000m
- › Belt speed: 0-3.15m/s
- › Drive power: 2×250kw
- › Belt width: 1,000mm
- › Belt strength: ST1000



The "Steel Dragon" traverses rugged Mountains.



The tripper car achieves continuous material distribution.

PROJECT FEATURE

- Supporting drill and blast for secondary transportation of muck
- Long-span truss is adopted
- Environmentally friendly



The enclosed corridor belt conveyor achieves safe, eco-friendly and dust-free transportation.

Continuous Conveyor Project for Lot 2/5 of Yangtze River Diversion Project to Replenish Hanjiang River

The Yangtze River diversion project to replenish the Hanjiang River provides an important follow-up water source for the Middle Route Project of the South-to-North Water Diversion, aiming at diverting water from the Yangtze River to the Hanjiang River to ensure ecological, industrial and agricultural water for the middle and lower reaches of the Hanjiang River. The project has long lines, large overburden and complex geological conditions. The project is of great significance in enhancing the water resources allocation capacity of the Hanjiang River Basin

and in improving the stability of water supply in northern water receiving areas. To meet the special requirements of the project, CREG customized the design and production of belt conveyors to handle different gradients and turning radii, successfully meeting the material transportation needs of each construction stage of the project, demonstrating its strong customized service capacity, and further consolidating its leading position in the field of large-scale water conservancy engineering material transportation.

PARAMETER

Continuous conveyor

- › Transportation volume: 300t/h
- › Haul distance: 2,600m
- › Belt speed: 0-3.15m/s
- › Drive power: 250kW
- › Belt width: 800mm
- › Belt strength: ST800

Vertical belt conveyor

- › Transportation volume: 600t/h
- › Haul distance: 50m
- › Belt speed: 0-2.15m/s
- › Drive power: 250kW
- › Belt width: 1,600mm
- › Belt strength: ST1250



Ultra-long continuous belt conveyor boosts the construction of the Yangtze River Diversion Project.

PROJECT FEATURE

- Long-distance transportation with multi-point drive mode
- Hanging fuselage structure is adopted, which is easy to install and remove
- Long-span truss outside the tunnel with a maximum span of 50m



Ultra-long continuous belt conveyor boosts the construction of the Yangtze River Diversion Project.

Tunnel Belt Conveyor Project for Lot 3/4 of Jiangji Section of Zhuhai-Zhaoqing High Speed Railway

Zhuhai-Zhaoqing High-speed Railway is the first high-speed railway with a speed of 350 km/h independently invested, constructed and managed by Guangdong Province. It connects Zhuhai, Jiangmen, Foshan and Zhaoqing and links the hub airport in the Pearl River Delta. Upon completion, this project will enable a 35-minute commute from Zhuhai to the hub airport, playing a key role in promoting the coordinated development of the Guangdong-Hong Kong-Macao Greater Bay Area. CREG employs a combination of continuous conveyor and

vertical belt conveyor for mucking, which ensures the rapid transportation of a large amount of spoil with an efficient transfer capacity of 1,000 tons per hour and highly stable operational performance. During the peak period of the construction, the belt conveyor operated 24 hours a day without interruption, strongly promoting the timely progress of the project and laying a solid foundation for the early completion and opening to traffic of Zhuhai-Zhaoqing High Speed Railway.

PARAMETER

Continuous conveyor

- > Transportation volume: 1,000t/h
- > Haul distance: 4,800m
- > Belt speed: 0-3.15m/s
- > Drive power: 3×280kw
- > Belt width: 1,000mm
- > Belt strength: ST1400

Vertical belt conveyor

- > Transportation volume: 1,000t/h
- > Haul distance: 50m
- > Belt speed: 0-2.15m/s
- > Drive power: 250kW
- > Belt width: 1,600mm
- > Belt strength: ST1250



The first vertical lifting belt conveyor with a belt width of B1800 in China.

Long-distance continuous belt conveyor boosts the construction of Zhuhai-Zhaoqing High-speed Railway Project.



PROJECT FEATURE

- Very large excavation section
- The first vertical lifting belt conveyor with a belt width of B1800 in China
- The rear pilot tunnel is used to accommodate the belt storage cassette, meeting the mucking requirements of the belt conveyor during launching
- The cross belt conveyor is specially designed to meet the requirements of multi-point unloading in the slag yard

São Paulo Metro Line 2 Project in Brazil

Located in the Brazilian state of São Paulo, this project aims to extend the existing Metro Line 2 to Penha Station. The completion of the project will greatly improve the public transport conditions in São Paulo, enhance urban traffic efficiency, and support local economic

development. The belt conveyor products provided by CREG have achieved stable operation while complying with strict local safety, environmental protection and quality standards.



The large inclined transfer belt conveyor realizes the initial slag discharge of TBM.

PARAMETER

- › Transportation volume: 100t/h
- › Haul distance: 4,500m
- › Belt speed: 0-3.15m/s
- › Drive power: 2×160+2×160+110kw
- › Belt width: 1,000mm
- › Belt strength: EP200/5

90°turning of multiple curves by a single conveyor is realized.



PROJECT FEATURE

- Enabling 90°turning of multiple curves with a single conveyor
- Enabling steep gradient conveying in clayey strata
- Utilizing tape flip technology for offset arrangement of tape storage cassettes

Phase II Project of Lesotho Highlands Water Project

The Lesotho Highland Water Project is designed to transfer the water resources of Lesotho to South Africa to meet its growing demand for water. The project is of great significance for improving the distribution of water resources in Lesotho and South Africa while promoting regional economic development. The belt conveyor of CREG employs advanced long-distance conveying technology and reliable mechanical structure to enable

stable transportation of 400 tons of materials per hour on a 35 km-long conveying line. This effectively ensures the smooth progress of engineering construction and highlights the strength of the belt conveyor of CREG in the field of large-scale, transnational water conservancy projects. Blind advancing is achieved by using two 18+17 km belt conveyors.

PARAMETER

- › Transportation volume: 400t/h
- › Haul distance: 17,000m+18,000m
- › Belt speed: 0-3.15m/s
- › Drive power: 4×250+200kw
- › Belt width: 650mm
- › Belt strength: ST2000



The 35km ultra-long-distance continuous belt conveyors boost the construction of the Lesotho Highlands Water Project.



The 35km ultra-long-distance continuous belt conveyors boost the construction of the Lesotho Highlands Water Project.

PROJECT FEATURE

- Mucking in coordination with auxiliary + main tunnels
- Multi-point drive, joint control
- Long distance, high belt strength and blind advancing

ROK Incheon Metro Line 1 Extension Project

The project is an extension of Incheon Metro Line 1 in ROK. Upon completion, it will help the development of the new urban area of Gyeongdan, enhance the surrounding transportation network and improve the efficiency of public transport in Incheon. With stable

performance, the belt conveyor of CREG has a fault rate of less than 1% under high-intensity construction. With an average daily operation time of 16 hours, it successfully completes the material transportation task through high-quality localization services.



PARAMETER

- › Transportation volume: 500t/h
- › Haul distance: 1,300m
- › Belt speed: 0-3.15m/s
- › Drive power: 220kw
- › Belt width: 800mm
- › Belt strength: EP200

After-sales service engineer inspects continuous belt conveyor.

PROJECT FEATURE

- Passing through a turning route in the initial stage of TBM
- The initial slag discharge of TBM enabled by continuous belt conveyor
- Considering the two tunnels on both sides, the belt conveyor is disassembled and assembled twice to complete tunnel connection



Adjustable idler frames are used for small-turn curves.



CREG headquarters

CREG

Underground Solutions Provider

China Railway Engineering Equipment Group Co., Ltd. (referred to as "CREG") is a global underground solutions provider of mechanized tunnelling technology and services. The company's headquarters is located in Zhengzhou, the provincial capital of Henan Province. We bring together more than 4,500 employees including over 700 designers to design and manufacture TBMs and associated equipment. As the largest TBM supplier in the world, CREG boasts outstanding productivity,

performance, safety and geological adaptability, impressive R&D competence, a number of invention patents, as well as excellent after-sales service and support.

CREG has 16 production bases with an annual production of more than 300 TBMs. We have supplied TBMs ranging from ϕ 2m to ϕ 18m used in all kinds of ground conditions, including hard rock, soft soil and complex geology. Our

products consist of Single/Double Shield Open-type TBM, Gripper TBM, Earth Pressure Balance TBM, Rectangular TBM, Slurry TBM, Horseshoe-shaped EPB TBM, U-shaped Open-type TBM, Pipe Jacking Machine, Shaft Boring Machine, Reamer TBM and Inclined Shaft TBM. CREG supports every client as an efficient and reliable partner in the tunnel construction field. Until now, CREG has exported more than 140 TBMs to 34 countries including Doha, Singapore, France, Italy, Australia, Lebanon, Poland, Denmark, South Korea and Austria.

With our extensive research and practical experience, CREG offers a series of auxiliary mechanized tunnelling equipment and service packages. In addition TBMs, CREG also designs and manufactures Shaft Boring Machines, Cutters, Rolling Stock, Roadheaders, Three-boom Drill Jumbos, and Wet Shotcrete Machines etc. We provide a full range of tunnelling equipment and all-around solutions.

Overseas Business and R&D institutions

- CREG TBM Germany GmbH
- China Railway Engineering Equipment Group Co., Ltd. Singapore Branch
- CREG Co., Ltd. South Korea Branch
- CREG Co., Ltd. Italy Branch
- カレグ・テクノロジー日本株式会社

Full Range Services

CREG also provides high value-added customized services, including design, consultancy, tunnelling service, maintenance, remanufacture, mechanical & electrical installation, technical service, spare parts, etc.



Ultra-small turning radius transportation extends the application scenarios of TBM.

