

Address

ID Office: Room 1805, No.3 Ruiduguoji,
Tongzhou district, Beijing 101121, China

Headquarters: No.139 Fenghuang 6
road, Binbei development area, Binzhou,
Shandong 256659, China

Contact

Tel: +86-10-80883575

Facebook: fb.me/boyoun.cn

info@boyoun.cn

Web: www.boyoun.cn

BOYOUN TUNNEL FORMWORK

SHANDONG BOYOUN HEAVY INDUSTRIES CO., LTD



The official website

<http://www.boyoun.cn>

Partners And Certificates

Leaping through breakthroughs and pursuing excellence

On the basis of years of professional technology , research and development, BOYOUN heavy industries, adhering to the tenet of honesty and innovation as the soul, establishes win-win cooperation with customers, and provides more reasonable, more efficient, more economical, safer and better solution for the customers.





BOYOUN TUNNEL FORMWORK

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BOYOUN HEAVY INDUSTRIES

Boyoun, founded in 2005, is one of China's leading manufacturers of formwork and scaffolding. In addition to the manufacture plant in Binzhou city, Shandong province, China, 9 rental bases across China mainland are under operation. At Boyoun we offer various formwork, climbing formwork shoring formwork and scaffolding solutions - for sale and rental - in residential and commercial high-rise construction, tunnel, bridge and road engineering.



The company annually produces 50,000 tons of infrastructure equipment, owns 50,000 tons of leased materials, and supplies 100,000 tons of materials on behalf of the company; Material integration can gradually reach 100 million to 3 million tons, and achieve the integration of the market of 10 billion to 100 billion yuan; And we continue to expand to many countries rapidly, including The United Arab Emirates, Malaysia, Singapore, Pakistan, Russia, South Africa, Brazil, America and so on.

Boyoun is constantly developing and improving, always on the lookout for advantageous, new materials and unconventional solutions. On the basis of ISO 9001 and ISO 14001, all Boyoun products comply with the most stringent requirements in terms of quality and environment. Our international management stands for in-depth expertise. With the knowledge and understanding of local requirements, the right formwork and scaffolding systems are developed to meet all needs worldwide. Our goal is to be even closer to our customers around the world in the future and to be able to serve them better and faster.

Tunnel lining trolley

Product introduction and overview

The concrete lining steel formwork trolley is a non-standard product specially designed and manufactured by our company according to the user's engineering requirements. This product as an indispensable special construction equipment for the secondary lining of the current tunnel drilling and blasting method. The use of lining trolleys can be used greatly improve the construction efficiency and improve the surface quality of the secondary lining of the tunnel. The lining trolley manufactured by our company adopts full-hydraulic de-mold and electric reducer to automatically walking.

The types of lining trolleys of our company are: railway trolley, highway trolley, full-needle beam trolley, spillway tunnel trolley, subway trolley, and integrated tube trolley.



Gantry beam

Roller stringer

Top model string beam

Gantry beam

Gantry column

Horizontal scissors rack

Scissors Holder

Side stringer

Structure composition of lining trolley

The purpose of the lining trolley gantry structure is to break the convention of increasing the number of gantry frames to increase its rigidity and strength. The gantry is only set at 5 inches (as shown in the figure), but all gantry beams, columns, and bottom beams are used. The box beam structure, in special cases, adopts Q345B plate welding, which greatly increases its rigidity and strength. This reduces the number of supporting crew rods, making the lining trolley more efficient and reducing the labor intensity of workers. There are scissors holders on the gantry gantry crossbeams and columns, and the section of the scissors frame joints is arranged to greatly enhance the anti-twist ability of the trolley and increase the strength and rigidity of the trolley.

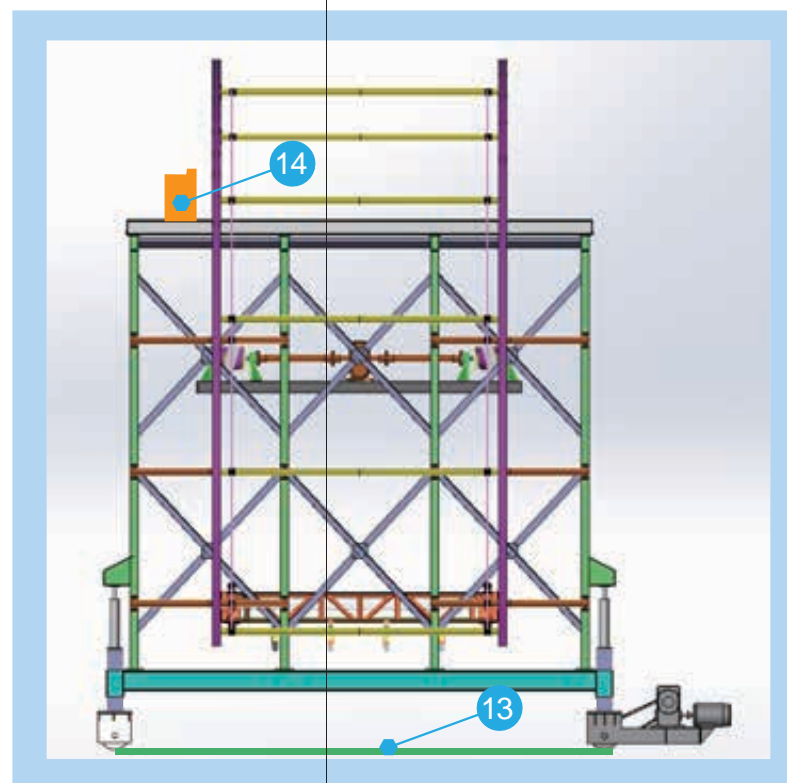
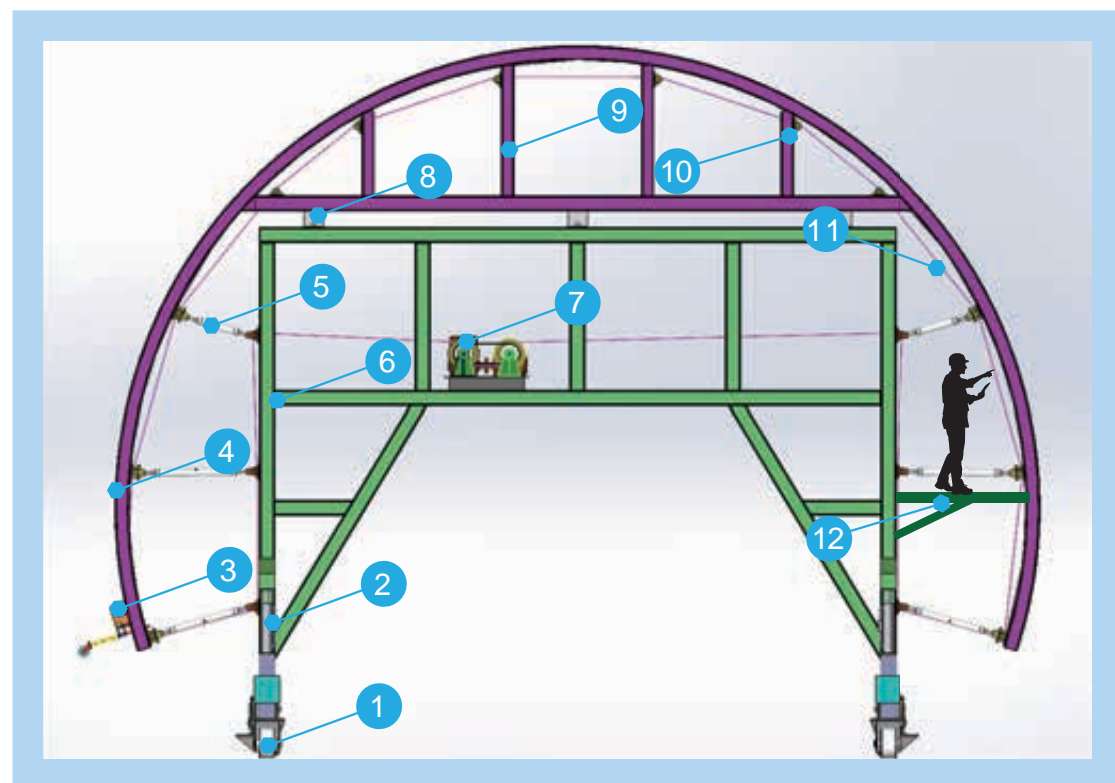
Waterproof board trolley

Product introduction and overview

Waterproof board trolley integrates hydraulic, electrical and mechanical transmission into one, which will greatly reduce the artificial labor force. Simultaneously with the design of the tunnel section, it is also possible to adjust the section through hydraulic equipment to adapt to the tunnel with different widened sections. In the process of mounting the waterproof board, the geotextile cloth or the waterproof sheet coil is mounted on the lifting device, and the lifting device rotates along the arcuate guide rail once to realize the automatic laying of the waterproof board, and the centering and jacking adjustment can be realized by adjusting the hydraulic device. Reduced labor input, and can improve the quality of waterproof board installation, to protect the safety of construction and walking.



Waterproof board trolley structure introduction



Serial number	1	2	3	4	5	6	7
Product name	Walking device	Lift cylinder	Lifting device	Curved rail	Support screw	Mast assembly	Hoisting mechanism
Number	4 pieces	4 pieces	1 pieces	2 teams	12 pieces	1 set	1 set

Serial number	8	9	10	11	12	13	14
Product name	Translation cylinder	Upper gantry	Guide pulley	Wire rope	Longitudinal walkway	Rails	Hydraulic power station
Number	2 pieces	1 set	1 set	4 roots	1 set	30m	1 set



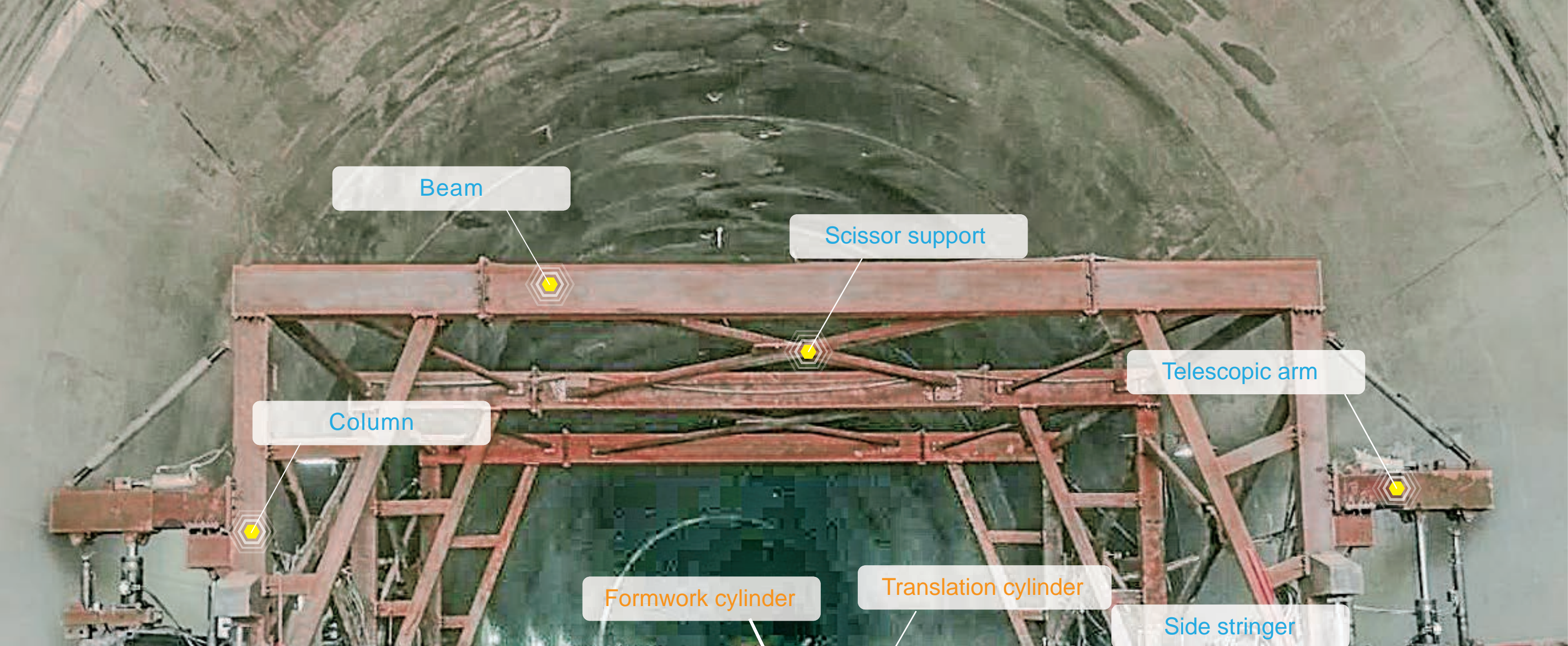
Cable trench lining formwork

Product introduction and overview

The cable trench lining formwork is a non-standard product specially designed and manufactured by our company according to the customer's engineering requirements. This product is a special construction equipment for the control of the surface finishing quality of the tunnel. The use of the cable trench lining formwork can greatly reduce the manual labor and improve the construction. Efficiency, improve the surface quality of the ditch on both sides of the tunnel. The Cable trench lining formwork manufactured by our company adopts full-hydraulic demolition mold and electric reducer to automatically walk.



It can realize rapid in-position, mold and Installation de-mold, and has the advantages of simple structure, stable quality and reasonable design. The grooved formwork is a mature product of our company and is widely used in the construction of highway and railway construction projects. It has been praised by users and awarded to our company's "quality supplier" in the construction of China Railway 20th Bureau Menghua Railway. Quality has tested by project. The Cable trench lining formwork include: railway single line, double line groove formwork, highway single line, double line cable trench lining formwork, overall hydraulic type, single side mechanical type and so on.



Cable trench lining formwork product features

The cable groove lining formwork designed by our company adopts the double-adjustment setting of the overall lifting cylinder of the portal frame and the template lifting cylinder, which meets the uneven status of the track running surface and avoids that the lifting height is not enough when the formwork is closed due to different heights. It cannot be completely removed from the concrete, and the concrete surface has been destroyed when walking.

The cable trench lining formwork is an integral gantry type full hydraulic lining formwork. The gantry adopts a square pipe structure, and the force is stable, the structure is more reliable, and all the beams, columns, lower longitudinal beams and expansion All the arms are box-type, which enhances their strength and rigidity, reduces the amount of screw support, enables rapid erection and removal of on struction, and greatly reduces the labor intensity of workers.



Tunnel Invert Trestle

Product introduction and overview

The Tunnel Invert Trestle is equipped with a walking system, hydraulic system, and an electrical system. In combination with the inverted arch formwork system, under the use of the function of the general trestle, the simultaneous pouring construction of the inverting arch and the inverting arch can be realized, thereby reducing the construction joints. Ensure the construction quality of the inverted arch.



Technical Parameters

Trestle length / m	36/45	Bridge width / m	3.6	Walking speed m/min	5~8	Drive power / kw	20.5
Rated pressure / Mpa	16	Input supply voltage	Three-phase AC 380V±10%, 50Hz	Trestle load rating / T	50	Effective lining length / m	9/12



Technical Features

1. The trestle bridge is connected with the back arch template and can be removed and closed by an electric hoist. Reduce the labor intensity of construction workers.
2. The cantilever arm of the inverted arch template can be adjusted telescopically to meet the requirements of different widened sections.
3. the water stop clamp can be adjusted, can be applied to lining different thickness of concrete. Ensure that the longitudinal construction joints are buried in the water stop.

4. The back arch template hanger is provided with guide rails, and the back arch template can be moved back and forth along the guide rail after being lifted by the electric hoist.
5. The trusses on the two sides of the inverted arch formwork adopt the Bayray structure, which has stronger bearing capacity and lighter weight.
6. The integral screw structure of the trestle screw of our company has changed the structure of the conventional welded lug plate and greatly enhanced the strength of the screw rod.



Project case

Guiguang Railway Project

Guihua-Guizhou High-speed Rail also known as the “Super-Railway Crossing Karst”. Compared with other high-speed railways in China, this railway has a unique personality. Zhang Jianbo, general manager of Guiguang Railway Co., Ltd., said that the Guigang-Guangzhou high-speed rail is located in a complex and difficult mountainous area in the southwest, with high gorges and deep valleys, and construction is extremely difficult. This 856-kilometre-long railway has 510 bridges and 238 tunnels. The ratio of bridges to tunnels is as high as 83%. One-half of the entire railway line runs underground, crossing over 270 caves. Among them, 92.1% of the bridge and tunnel ratio in Guizhou is among the highest in the national railway line.

Construction Party: China Railway Tunnel Group

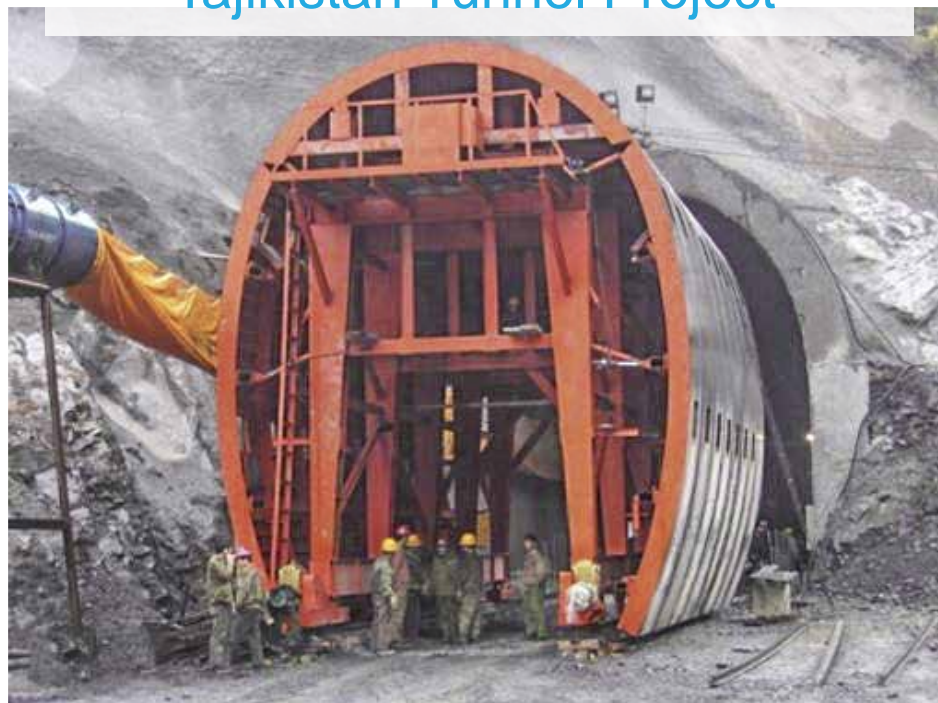
Boyuan Heavy Industry Provides Tunnel Lining Trolley



Project case



Tajikistan Tunnel Project



Qinglian Railway Project

The mainline is 194.39 kilometers long, with a total investment of 23.8 billion yuan, of which 186.6 kilometers are in Shandong and 8 kilometers in Jiangsu. The construction standard is the Grade I double-rail electrified express railway of the State-owned Railway. It is an inter-city passenger transportation system that takes into account both medium- and long-distance passenger transportation and the passenger and cargo transportation.

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