Passion and struggle, efficient and pragmatic, unity and cooperation

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WACO Product Brochure

Make formwork safer and smarter

Customer first, People oriented

WACO

旺 科 模 板



Catalogue

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Company Profile

WACO Formwork Co. Ltd. was established in 2013, it is a professional formwork design and development, production, sales and leasing, import and export and on-site services formwork company, which is the ideal partner of each construction contractor.

We have first-class manufacturing shop and strong technical research and development. The manufacturing workshop is equipped with laser metal cutting machine, electro-hydraulic CNC bending machine, CNC punching machine, welding robot, shot blasting machine, etc.

Through independent research and development, we can provide various types of hydraulic climbing formwork, box girder section formwork, cantilever formwork and other formwork. Our products are widely used in super high-rise, nuclear power, hydropower, subway, LNG and other concrete construction projects. Now we have patent rights of hydraulic climbing formwork and a number of other formwork technology.

Over the years, we have been involved in the construction of a number of highways, railways and other large projects at home and abroad, accumulated rich construction experience and scientific and standardized management system, focused on improving the safety of high-altitude work, improved construction efficiency, promoted environmental sustainable development.

We undertake many projects and have good development. It has been constantly exploring, innovating and making breakthroughs. In order to provide customers with best products and optimal solutions, mitigate risks, real-time monitoring and maintaining, we adhere to professional intentions, layer upon layer control, high standard of requirements and after-sales service.

We create "solid inside and beautiful outside", to help you realize the construction of highly lightweight structure, long span, large equipment mechanization.

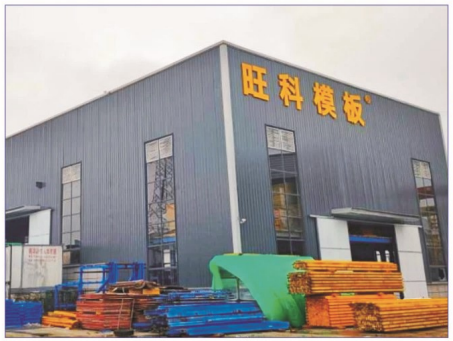






There's nothing wrong with choosing us.

We are a professional formwork design and development, production, rental and sales, logistics, import and export and on-site technical services as one of the high-tech building formwork company.





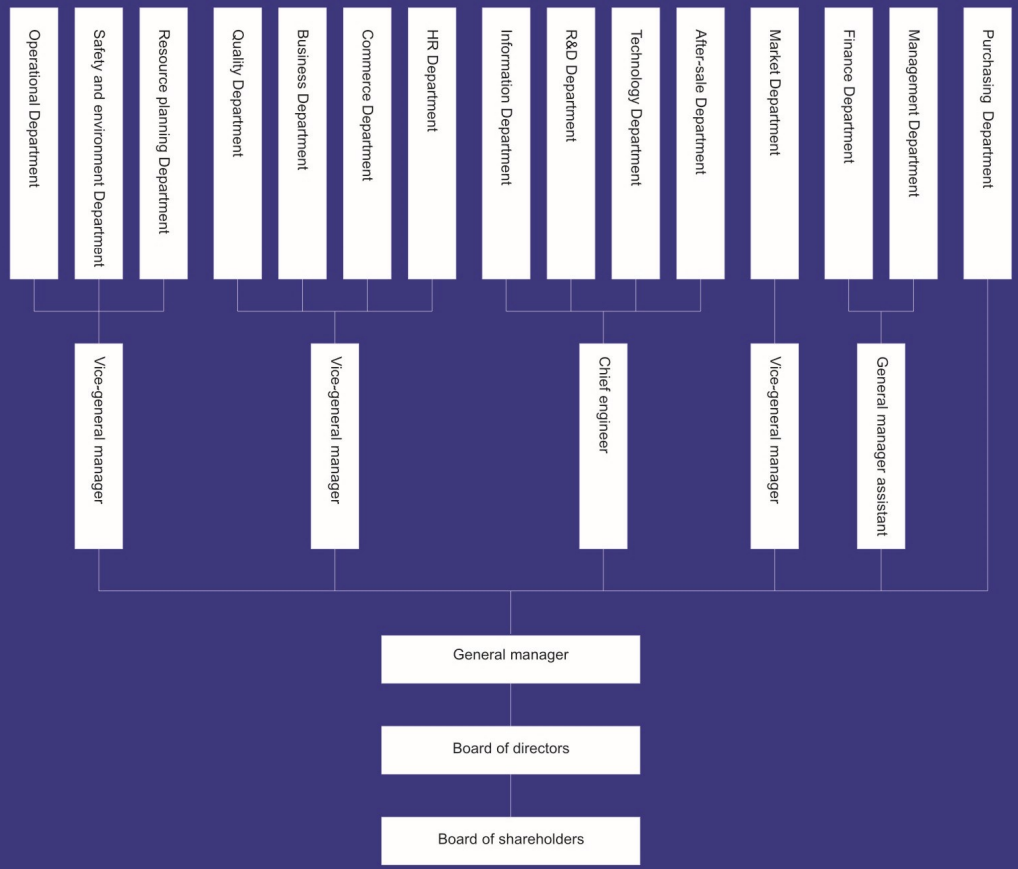








Organization



Company Culture

Enterprise Mission

Make formwork safer and smarter

Corporate Vision

Lead the world and realize the smart building of high-quality formwork in CHINA

Core Values

Customer first, People oriented

Passion and struggle, efficient and pragmatic, unity and cooperation













WACO Formwork Co. Ltd. WACO 旺科模板

Qualifications


营业执照
（副本）
统一社会信用代码
名　称　湖北旺科建筑工程有限公司
类　型　有限责任公司（自然人投资或控股的法人独资）
法定代表人　陈旺
经营范围　建筑模板、脚手架、钢结构、建筑机械设备的设计、生产、销售、租赁以及相关技术开发、技术转让、技术咨询、技术服务；建筑工程施工（凭资质证书经营）；建筑劳务分包（凭资质证书经营）；建筑装饰装修工程施工（凭资质证书经营）。（依法须经批准的项目，经相关部门批准后方可开展经营活动）
注册资本　壹仟伍佰万元整
成立日期　2021年01月14日
营业期限　长期
住　所　湖北省黄冈市红安县经济开发区5号路
登记机关　2021年01月14日


营业执照
（副本）
统一社会信用代码
名　称　武汉旺科模板有限公司
类　型　有限责任公司（自然人投资或控股）
法定代表人　陈旺
经营范围　建筑模板、脚手架、建筑机械设备的设计、生产、销售、租赁以及相关技术开发、技术转让、技术咨询、技术服务；建筑工程施工（凭资质证书经营）；建筑劳务分包（凭资质证书经营）。（依法须经批准的项目，经相关部门批准后方可开展经营活动）
注册资本　壹仟伍佰万元整
成立日期　2013年05月13日
营业期限　2013年05月13日至2033年05月12日
住　所　武汉市黄陂区罗汉寺街武汉新型工业园
登记机关　2019年07月15日


营业执照
统一社会信用代码
名　称　湖北旺科模板有限公司
类　型　有限责任公司（自然人投资或控股的法人独资）
法定代表人　陈旺
经营范围　建筑模板、脚手架、钢结构、建筑机械设备的设计、生产、销售、租赁以及相关技术开发、技术转让、技术咨询、技术服务；建筑工程施工（凭资质证书经营）；建筑劳务分包（凭资质证书经营）。（依法须经批准的项目，经相关部门批准后方可开展经营活动）
注册资本　贰仟万元整
成立日期　2020年10月07日
营业期限　长期
住　所　湖北省黄冈市红安县经济开发区5号路
登记机关　2020年10月13日


高新技术企业
证书
企业名称：湖北旺科模板有限公司
证书编号：GR202042000854
发证时间：2020年12月1日
有 效 期：三年
批准机关：
湖北省科学技术厅　湖北省财政厅　国家税务总局湖北省税务局


建筑业企业资质证书
企业名称：湖北旺科模板有限公司
详细地址：湖北省黄冈市红安县经济开发区5号路
统一社会信用代码：91421122MA488XGX20
法定代表人：陈旺
注册资本：2000万元
经济性质：有限责任公司（自然人投资或控股的法人独资）
证书编号：D342375772
有效期至：2026年01月28日
资质类别及等级：模板脚手架专业承包不分等级
钢结构工程专业承包叁级
请使用微信小程序"鄂建通"扫描二维码
发证机关：2021年03月10日
湖北省住房和城乡建设厅制


安全生产许可证
证书编号：（鄂）JZ安许证字[2021]052245
单位名称：湖北旺科模板有限公司
主要负责人：陈旺
单位地址：湖北省黄冈市红安县经济开发区5号路
经济类型：有限责任公司（自然人投资或控股的法人独资）
许可范围：建筑施工
有效期至：2024年11月08日
本使用件仅用于：工程项目承揽
使用期限：2021-11-09至2024-11-08
请使用微信小程序"鄂建通"扫描二维码
发证机关：2021年11月9日

Honor





WACO Formwork Co. Ltd. WACO 旺科模板







WACO Formwork Co. Ltd. WACO 旺科模板

Quality System Certificate













Patents



Segment girder formwork and Jumbo



Safety tower ladder



Low jacking climbing construction platform



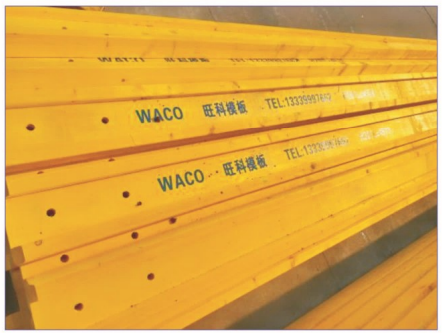
Concrete curing device of climbing formwork

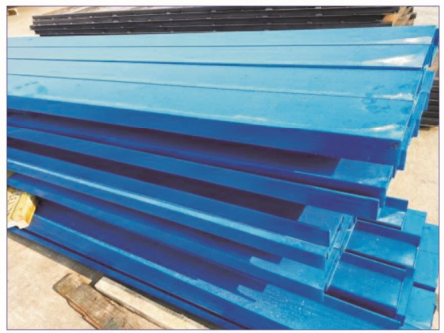
Product

Timber I-beam formwork

The formwork consists of plywood, timber beams and steel waler. The plywood and timber beams are fixed by tapping nails. The timber beams and the steel waler are connected by connecting claws. It is easy to assemble, dismantle, reform. It has light weight after assembly, convenient construction and transfer.

Commonly used plywood of 18mm and 21mm; Woodworking beam H20 weight about 5Kg/m, length from 600mm to 6100mm and can be connected by connecting plate, bending resistance of 5KN·m, shear resistance of 11KN; The waler is [12-[14 double channel steel.





Product Timber beam and waler



Product Assembly of formwork



Product Finished formwork

Product

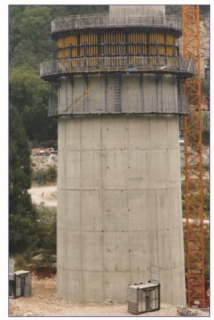
Adjustable arc formwork



Adjustable arc formwork panels are timber plywood, because plywood has a certain toughness, the deformation is relatively large after stress. As long as the design of a suitable force system, so that the corresponding parts of the plywood subjected to uniform external force, the formwork side can bend into the user needs curvature.

The stress system of adjustable arc formwork is mainly composed of adjustable screw and adjustable support, wherein the adjusting support is fixed with the vertical to form a whole. The regulator connects the adjusting support of the whole formwork, which has the function of stretching and shortening. By changing the length of the regulator, the formwork is deformed evenly and the radius of the design is obtained.

Features



1. The adjustable arc formwork can be used in the radius greater than 2.5 meters;
2. The formwork is similar with large steel formwork, which can be assembled as a whole;
3. Its radius can be adjusted, which increase the turnover of the formwork;
4. The plywood can be replaced.
5. The parts of the formwork are standard, it is suitable for leasing. It can effectively reduce the cost
6. The operations are simple and convenient;
7. Material utilization is high, which has less waste and more environmental protection
8. The railway pier needs to be fully equipped with steel formwork, but adjustable arc formwork only need to configure a set. The price advantage is obvious
9. A set of adjustable arc can be configured for sample debugging on site

Steel vertical rib curve formwork

Panel :18mm thick imported plywood;
Vertical ribs: steel structural parts;
Side ribs: Angle steel;

Timber vertical rib curve formwork

Panel :18mm thick imported plywood;
Vertical ribs: timber I-beam;
Side ribs: Angle steel;

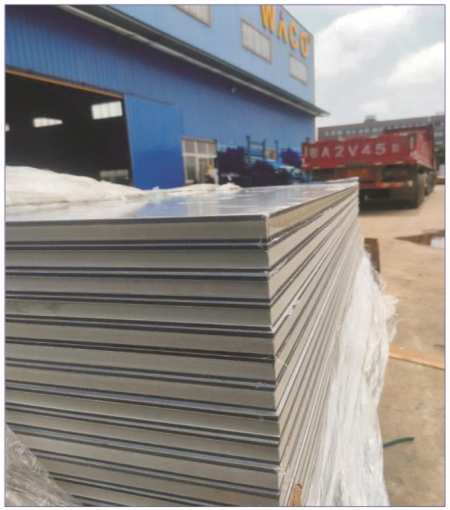


Product

Aluminum plastic panel

Aluminum plastic panel is a special panel developed by WACO. It is made of aluminum composite high-strength plastic, combined with a lightweight PVC high-strength foam sandwich layer, and has high strength, light weight, anti-corrosion, fire resistance, and high usage times. It is an ideal substitute for traditional laminated panels.





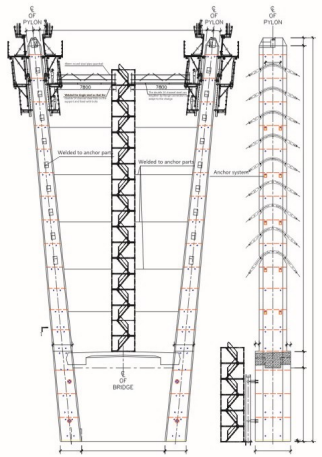
Features

1. The surface of the aluminum plastic panel is made of aluminum material, which is not absorbent or wrinkled overall.
2. The composite process is not easy to peel, does not require sealing after cutting, and the material soaked in water does not decay.
3. The panel has high strength and light weight, with traditional panels of 45KG/square meter and aluminum plastic templates of 25KG/square meter.
4. Special composite plastic material, easy to cut, can be easily cut using a woodworking electric saw.
5. Excellent panel properties and surface quality, with a turnover rate of up to 100 times.

Product

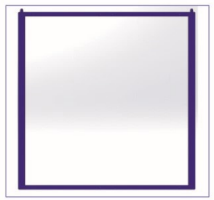
Frame ladder cage

Standard section dimensions: 3.0m long x2.0m wide x2.0m. Maximum assembly height on the surface: 100m

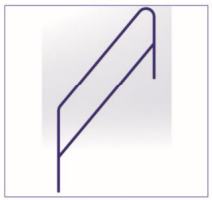


Components

The standard section of ladder cage is composed of 6 types of components: side bracket (2 pieces), top bracket (1 piece), bottom bracket (1 piece), staircase (1 piece), stair handrail (1 piece), protective net (10 pieces)



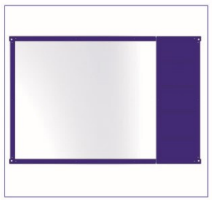
side frame



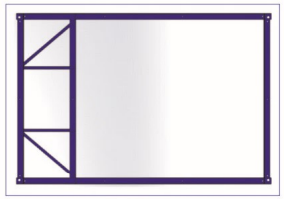
stair railing



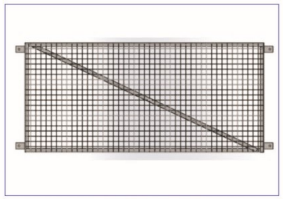
ladder



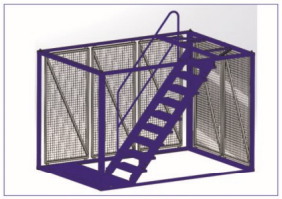
under frame



top frame



protective mesh



standard cell 3D diagram

Accessory

1. Connecting bolts

The frame type ladder cage uses three types of bolts, M8 bolts (Class C) for the protective mesh connection. M16 high-strength bolts (Class 8.8) are used to connect units at the column, and M12 high-strength bolts (Class 8.8) are used to connect units at other positions

2. Attached wall parts

The height of the ladder cage can not exceed three cantilevers, which need to connect with an attached wall part. There are reserved bolt holes for connecting wall parts on the ladder cage unit. The project can be configured according to the site conditions.

Features

1. The structure is compacted as a whole, and the column is made of 75x75x6mm Angle steel

2. The slope of the stairs is 45°, and the width of the stairs and walkway is 0.7m, which makes walking comfortable and humanized

3. According to the specification design and scientifically split components, segments assembled on the ground to complete the overall hoisting. Its strength and overall stability is good, safe and reliable

4. The special wedge-shaped head butt is adopted between segments with high positioning accuracy and high speed.

5. The maximum component weight is 75kg, which can be fully manual assembly. The maximum size of a single piece is 3.0mx2m, which is suitable for various kind of transport.

6. There are 6 types of standard unit components, which are easy to assemble;

7. A wall attachment interface is provided for wall attachment connection to improve reliability.

Application





Product

Ring lock ladder cage

The ladder cage is based on φ48 and φ60 lock scaffold. The section size is divided into 1200*2400mm and 1500*3000mm. The standard segment height is 3m and each of it contains two sets of ladders, the steps and the side of the platform are equipped with safety handrails. The ladder cage is equipped with the outside of the protective mesh fixed by special connecting parts.






Features

1. The advantages of the light ladder cage: safe and convenient, rapid disassembly, reasonable force, strong bearing capacity; Adjustable base at the bottom, easy to level; No processing cycle, can be put into use at any time.

2. There are two types of specifications available: φ48 series and φ60 series. φ48 series can be built up to 80m high, φ60 series can be built up to 120m high, and every 2-3 segment need to set up an attached wall part.

Application




Product

Pier construction frame platform

The product in accordance with the standardized, modular design, reasonable force, strong bearing capacity, rapid disassembly, quick transfer, can effectively solve the traditional pier column construction process, the use of scaffolding construction platform brought cumbersome installation and disassembly, transfer difficulties, construction personnel safety risks and other problems

Features

1. The product from the Angle of specialization, to ensure the safety of personnel from the scaffold construction, reinforcement binding, formwork installation to concrete casting and other construction links to improve the construction efficiency of the pier

2. The pier column construction platform can meet the needs of pier column construction of different heights and different structural forms. When used, it is pre-installed into a standard section on the ground, and then the whole hoisting and connecting height.

3. We can provide our customers with a full range of services. Construction platform scheme design; Structural design and calculation; Sales and leasing of construction platforms; Construction platform installation and use training

Application

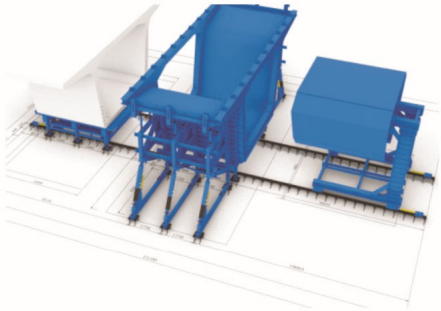


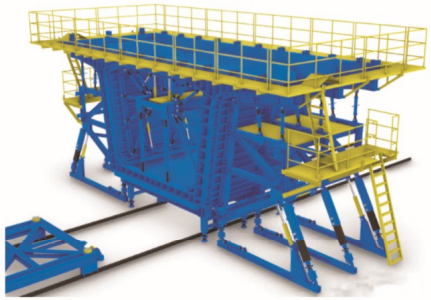


Product

Precast mould for segmental box girder

Precast segment assembly technology is a construction technology that divides the beam body into several segments, precast in the beam making yard near the factory or site, transported to the bridge position, and then lifted and assembled the segment as a whole by applying prestress. Precast formwork of segmental box girder is a very important equipment in this process.





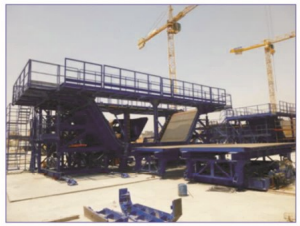
Features

1. A set of precast formwork of segmental box girder is mainly divided into the following parts: bottom formwork, bottom formwork jumbo, side formwork and bracket internal formwork, bracket internal formwork jumbo, fixed end formwork and bracket floating end formwork and bracket, running mechanism, etc.

2. The functions of the formwork system such as closing, demoulding and running are all realized by hydraulic or electric system. The formwork and its support shall not only satisfy the requirements of strength, stiffness and stability, but also satisfy the requirements of non-deformation after repeated use and guarantee the precast accuracy of segments. The connection between the formwork and the matching segment should be tight and without leakage.

Application







Product

Cast-in-place box girder formwork

The Panels are made of timber plywood -WISA, the second keel is made of timber beam, and the main keel is made of double-channel steel. The turnover times are more than 30 times, and the surface of the concrete can achieve the effect of fair-faced concrete. The formwork system has the characteristics of convenient cutting, short processing and supply cycle, and convenient on-site assembly. Box girder flange plate formwork can adopt movable supporting bracket, which has high turnover and reverse efficiency.

Application



Product

The scaffolding tower

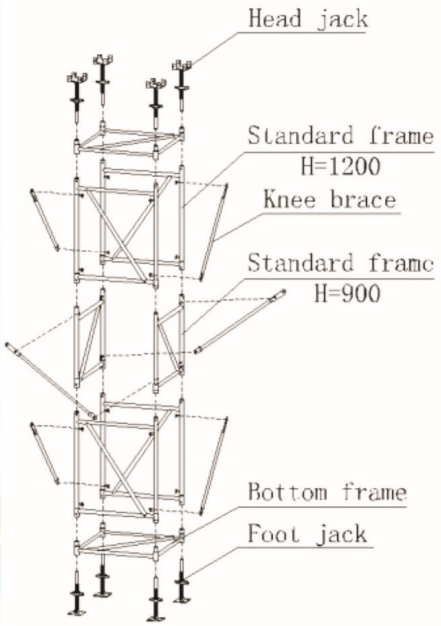
The scaffolding tower is an effective supporting system. A single bracket is made up of pole, diagonal brace, horizontal pole, they are made by tubes. They can construct backstop into any height, together with knee brace and horizontal brace. It is tower structure, so its bearing capacity and stability is good. If tower is higher than the common height, we can use the common scaffolding tube, fastener and shear brace to become a steady support system. The product components have high degree of standardization therefore the assembly and disassembly are rapidly and have more turnover times. It can be widely used for the construction of industry, residential buildings, bridges, tunnels ,dams etc...

At present, there are mainly three kinds of scaffoldings in our company, we can do the choice according to the demand of different projects.

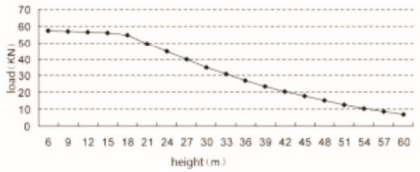
The first type:Square scaffolding tower

The cross-sectional size of this type of tower is 1000mmX1000mm square, and the diameter of the upright pole is Φ 48mm.

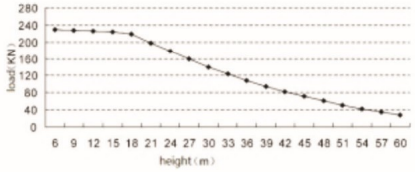




Bearing capacity



Curve of bearing capacity and height of a single upright pole



Curve of the overall bearing capacity and height of the tower

Installation procedure

·Leveling the base, the base must have enough bearing capacity. If the base is soft, wooden board should be used to average the load.

·Position the foot jack.·

·Put the bottom frame and adjust the foot jack to proper height.

·Install standard frame 1200 or standard frame 900 and knee brace.

·Install the bottom frame on the top.

·Set the head jack and adjust it to design height.

·Connect horizontal brace and crossing brace with normal scaffolding pipe and couplings if needed.

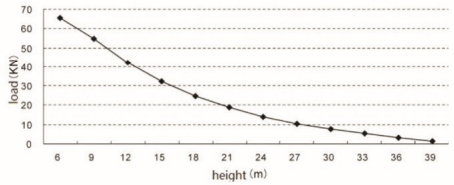
The second type:Triangular tower

The main standard components of this type of tower are triangles, with three cross-sectional sizes: 1000mmX1500mm, 1000X1000mm, and 1500X1500mm. The diameter of the upright pole is Φ 48mm.

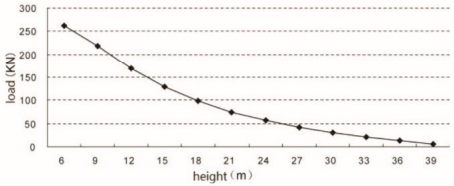




Bearing capacity



Curve of bearing capacity and height of a single upright pole

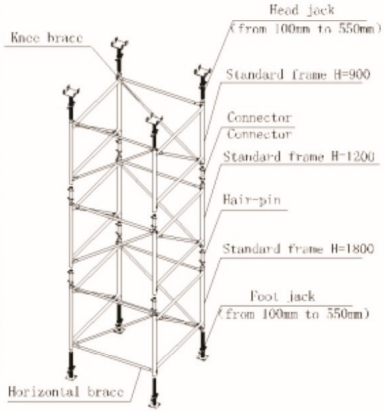


Curve of the overall bearing capacity and height of the tower

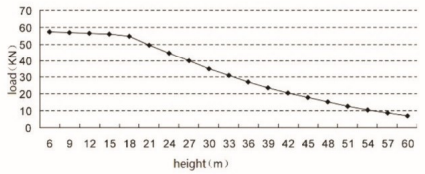
The third type, Φ 60 rectangular tower

This type of tower has multiple cross-sectional dimensions, with a minimum size of 1500mmX1000mm and a maximum size of 1500X2500mm. The diameter of the upright pole is Φ 60mm.

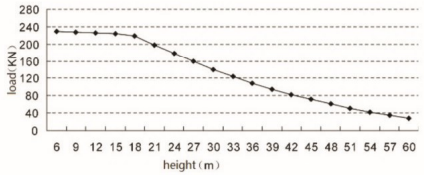




Bearing capacity



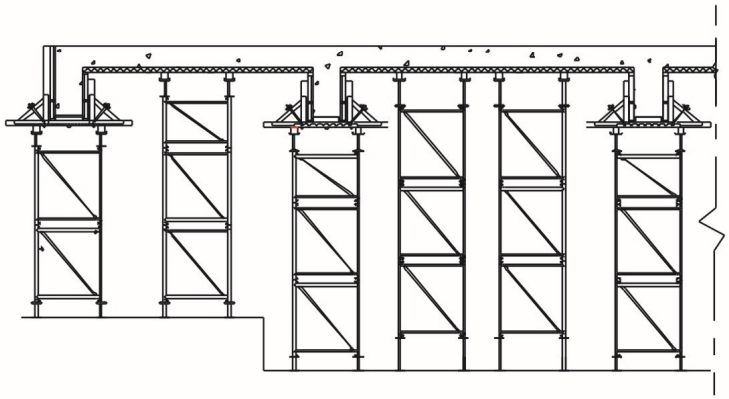
Curve of bearing capacity and height of a single upright pole



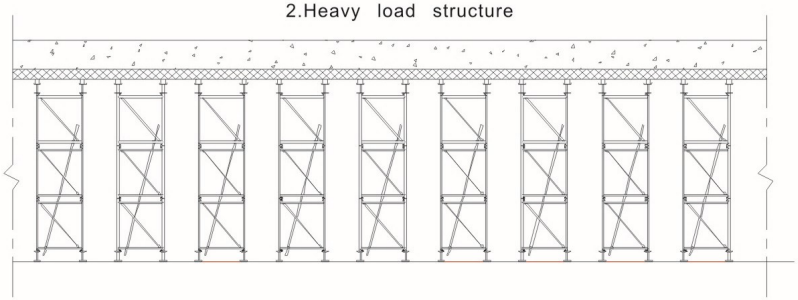
Curve of the overall bearing capacity and height of the tower

Scaffolding tower can be widely used in normal structure, heavy load structure and special structure. The sketches are shown below:

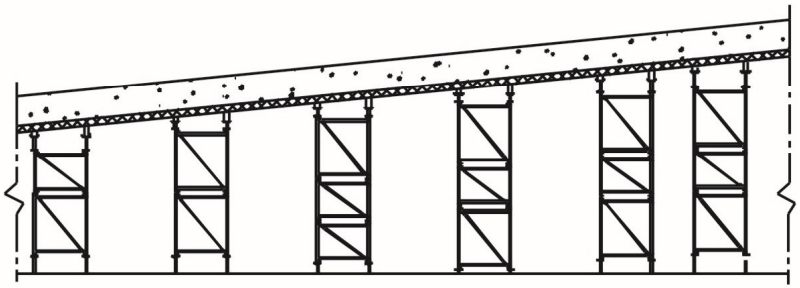
1.Normal structure:



2.Heavy load structure



3.Special structure



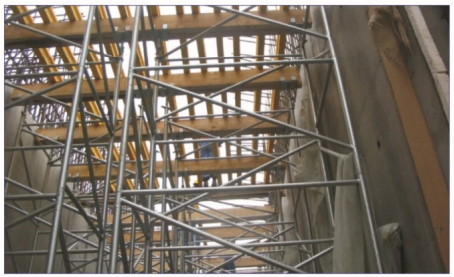


Cast-in-situ beam formwork and tower



A fully equipped tower





WACO Formwork Co. Ltd. WACO 旺 科 模 板

Product

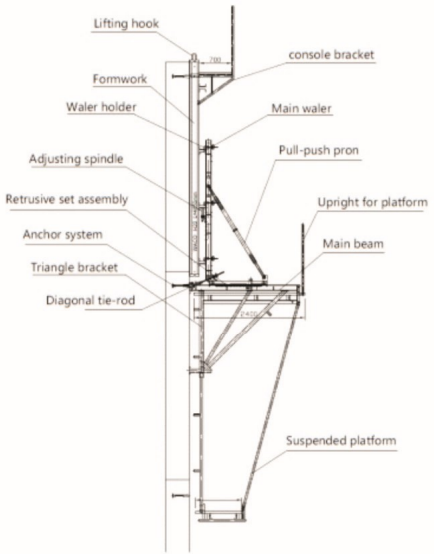
Cantilever formwork WA180/200/240

Cantilever formwork WA180 platform width 1.8m, cantilever formwork WA240 platform width 2m, they're similar.

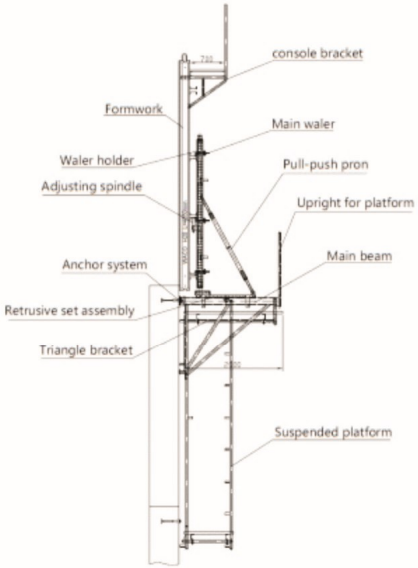
WA180 is mainly used for dam, anchorage, retaining wall, tunnel, underground factory and other large area construction. There is not need to wear the wall rod, the cement side pressure is all borne by the support and anchor parts. The formwork can adjust slope, which does not have to set reinforcement measures and easy to use. It is an ideal single-side wall formwork system

WA240 is suitable for the construction of bridge piers and high-rise buildings and other vertical structures. The concrete side pressure is borne by the screws and anchor parts. The formwork can be moved back 650mm as a whole, divided into two kinds of diagonal support and truss type. The maximum concrete casting height can reach 6 meters.

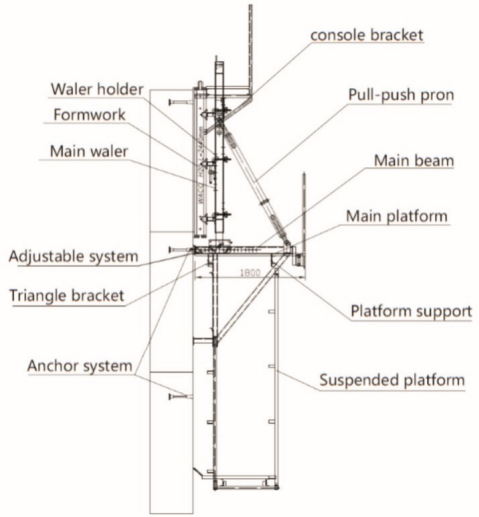
Cantilever formwork Wa180



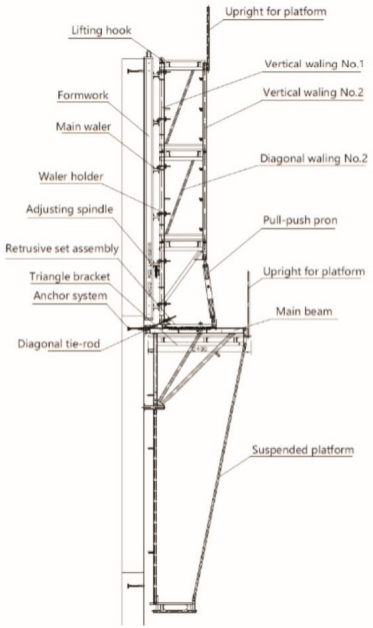
Cantilever formwork Wa200



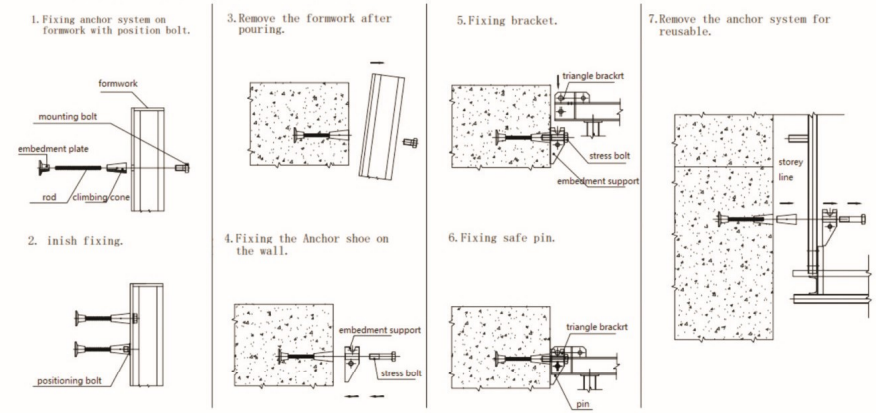
Cantilever formwork WA240(diagonal)



Cantilever formwork WA240 (truss)



Installation and removal process of anchor parts



Features

1, The side pressure of concrete is borne by the anchor parts and brackets and the surface of concrete is smooth and clean

2, The plywood and waler can be moved back as a whole to facilitate cleaning and binding of steel bars

3, The formwork can be made to fit the bottom to against the concrete by vernier device

4, Each bar has a high degree of standardization and strong versatility

Application









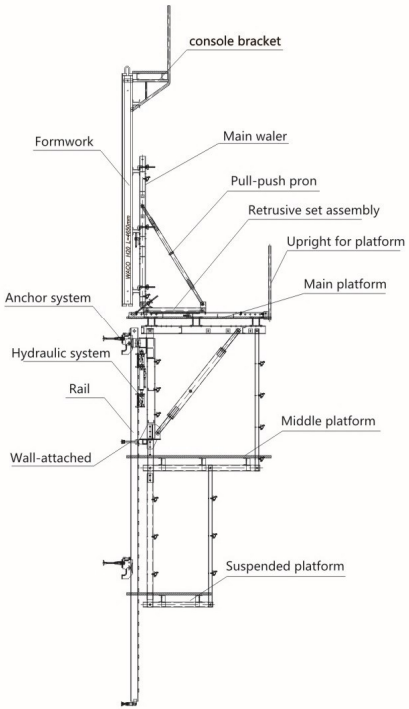
Product

Hydraulic climbing formwork

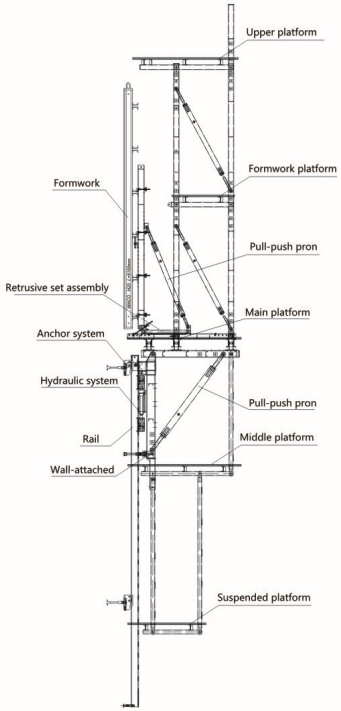
The power of hydraulic self-climbing formwork comes from its own hydraulic system. Hydraulic system includes hydraulic cylinder and up and down reversing device reversing device can make the bracket and guide rail form mutual climbing, so that the hydraulic self-climbing formwork steadily upward climbing. Hydraulic climbing formwork in the construction process without other lifting equipment. It is easy to operate and fast climbing speed and high safety factor. It is the preferred formwork system for the construction of high pier, cable tower and super high-rise buildings.

There are mainly two types of standard hydraulic climbing formwork produced by our company, which are HCB-80 and HCB-100. The commonly used casting height is 4.5 meters and 6 meters. The special-shaped climbing formwork system can also be customized according to the special requirements.

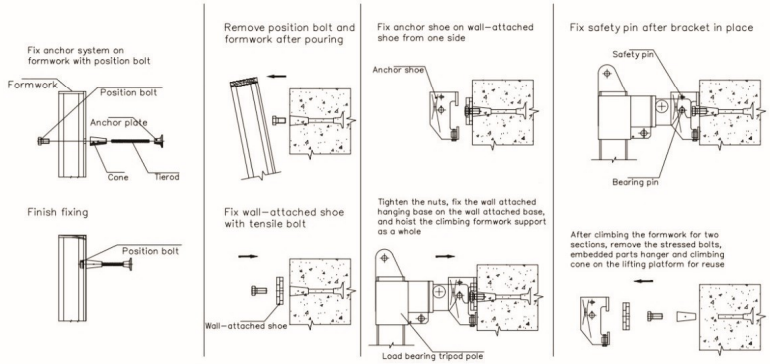
HCB-80



HCB-100



Installation and disassembly process of anchor parts



Features

1, Hydraulic climbing formwork can climb straightly and obliquely. The climbing speed is fast.

2, The plywood and the main waler can be moved back 650mm, which is convenient for workers to clean and other work. The maximum pouring height can reach 6 meters

3, The hydraulic climbing formwork can climb as a whole or as a unit. The climbing process is stable, synchronous and safe

4, The hydraulic climbing formwork is assembled once to the top without falling to the ground. It saves the construction site and reduces the damage of the plywood.

5, The system provides multi-layer operating platform and comprehensive closed protection. It is quick and safe to use

6, Structure construction error is small and can be eliminated layer by layer

7,It can greatly reduce the operations of tower crane

Application





Product

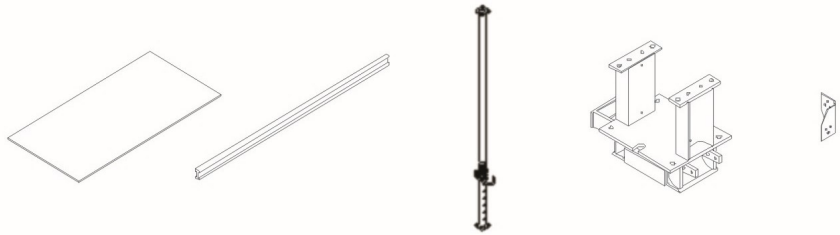
Table Formwork



As table formwork is a kind of formwork that specially applies for concreting floor slab, it is widly used for high-rise building or super high-rise building, multilayer industry workshop, structure under ground etc. In the process of construction, after some floor slab concreting and reach the schedule intensity, the whole formwork can be lifted to upper floor and continue to use that need not disassemble. Compared with traditional formwork, this table formwork has advantages that structure is simple, assembly and disassembly are easy, and it can be reused. Roof support system which using bowl buckle to connect with timber plank is abandoned, so construct rate remarkably improves and manpower is saved greatly.

Table Formwork Assemble

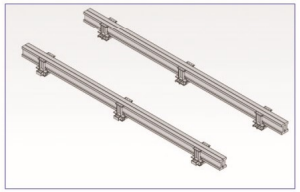
One table formwork unit includes panel, timber beam, jointing piece, angle connector, steel prop etc. which is shown in below fig. when assembled, all components of formwork are a whole except the steel prop, including panel, timber beam, jointing piece, angle connector etc. panel and secondary girder are connected with flooring nails, then main girder and secondary girder are connected with angle connectors. After assembled, formwork is held by holding bracket and fixes steel prop that fastened with jointing piece by pin.



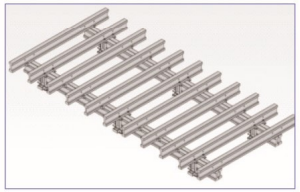
Panel Timber beam Steel prop Jointing piece Angle connector

Assembly step

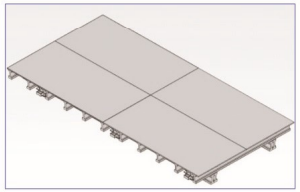
1.Fix the main beams.



2.Fix the secondary beams with main beams by angle connector.



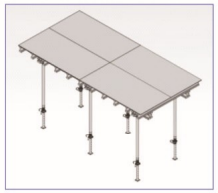
3.Lay panel



4.Lift formwork and fix steel prop



5.Table formwork unit assembled

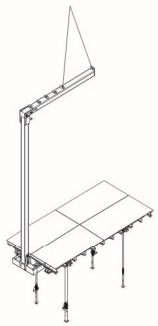


Holding bracket operation

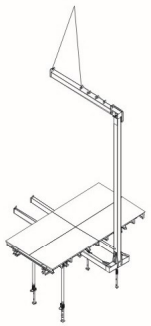
Holding bracket is used to lift table formwork unit. When it is betaken, all pins are ensured in corresponding position. Rated load of holding bracket is 1t. It can be used to lift else tools or equipments but table formwork. If fork frame is yielded when lifting, center of gravity of formwork deflects to right. So steel wire 1 should be adjusted to right and fastened to corresponding bore side, otherwise it is adverse. Two forks must infix between main girders that ensure the formwork unit stability. If the forks are not easy to infix between main girders, it can support main girders directly that formwork is laid transversal. But this state is avoided in all possible.

1.two ways of holding bracket used

(1)hold vertically(advice to use)

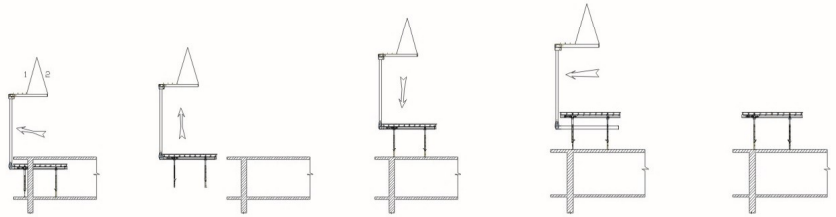


(2)hold transversally(unused in all possible)



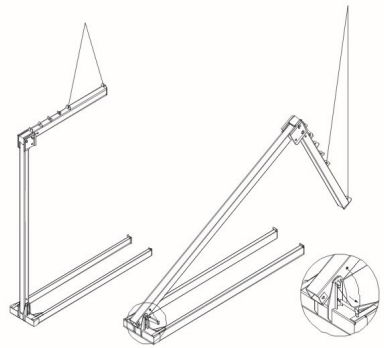
2.use step in holding bracket operation

(1) Fork frame infixes between main girder (2)formwork lifted when it is balanced and moved out (3)formwork is placed on upper floor and holding bracket is moved down (4) Move holding bracket (5) lifting operation finished



3.unused state of holding bracket

The nether pins are drawn out and stanchion is turn to make top girder grounding, shown in fig below.



Shifting Trolley Operation

Shifting trolley is used to transport table formwork on the same floor. It includes two parts that one is lifting appliance and the other is power drive. When using it, shifting trolley is droved to the middle of four steel props firstly, and then it withstands the timber beams of formwork by starting the hydraulic pressure system. Secondly turn the handle, loosen the returning pin, move upward the inner tube (the height make certain according to the fact), and insert the returning pin then make shifting trolley go down(in general 10cm) by hydraulic pressure system. Thirdly shifting trolley is droved to appointed position, start the hydraulic pressure system, pull out the returning pin and plug it in again when inner tube extends to the needed height. At last shifting trolley goes down by hydraulic pressure system that table formwork is placed to the prearranged side.

Product

Independent steel support

Steel support is a support member for vertical structure, suitable for vertical support of floor slab templates of any shape in the plane. It is simple and flexible to use, easy to install, small footprint, easy to store and transport, economical and practical, and generally equipped There is a tripod as a reinforcement device.





Features

1. The independent steel support has large bearing capacity, convenient height adjustment and simple support.

2. The versatility is particularly strong, and it can be adapted to the cast-in-place reinforced concrete floor formwork project with different heights and thicknesses.

3. The application range is wide, and the support rod is not restricted by the fixed plane size.

4. The supporting and dismantling of the mold is simple and convenient, and the speed of supporting and dismantling the mold is improved.



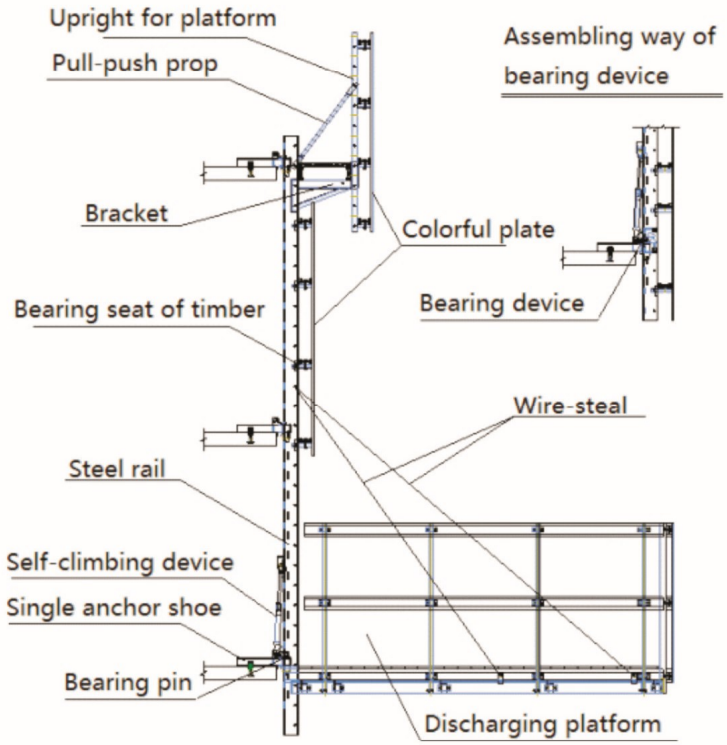
5. Independent steel support can be used for heights ranging from 1.4m to 5.5m.

Product

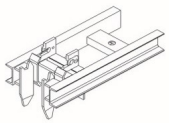
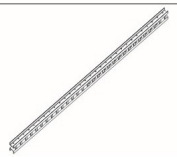
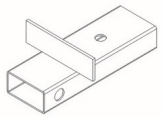
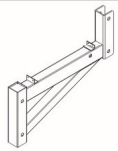
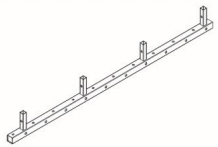
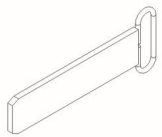
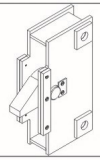
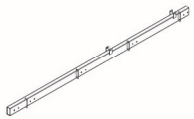
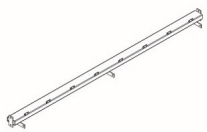
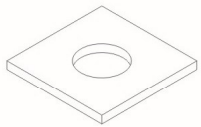
Climbing Protection Panel

The climbing protection panel is an auto-climbing device by hanging on the wall. There are many features like simple structure, easily assembled, convenient operation, safety and quick construction. Its power comes from a hydraulic system by itself which can elevate the steel rail and the shelves. There is no need other hoist apparatuses in the process of climbing construction.

The climbing protection panel is separated to normal unit and discharging unit. So we can use these two parts to achieve many kinds of combination which can meet complex project plans. Moreover, the climbing protection panel which is advanced construction equipment is corresponded with the demand of security and civilization.



Application

Name And NO.	Diagrammatic Drawing	Name And NO.	Diagrammatic Drawing
Single Anchor Shoe		Self-climbing device	
Steel rail		Bearing Seat of Timber	
Bracket		Diagonal Brace	
Upright For Platform		Bearing pin	
Bearing Device		Main Beam	
Beam(1)		Beam(2)	
Upright of Discharging Platform		Packing Piece	

The Features of Climbing protection panel

(1)The outside of the climbing protection panel is concise clean and tidy.

(2)The climbing protection panel system is firm. It is fixed on the wall by anchors that is the reason why it can load more weight.

(3) The whole system can be used repeatedly which can reduce the cost of construction.

(4) The climbing protection panel can be elevated by the hydraulic system which is convenient for it's climbing.

Notes of Using Climbing protection panel

(1) You must connect two units stably and put up the platform safely.

(2) There must be a person whose mission is ensuring that all anchors are laid at right place before injecting concrete.

(3) Clean sundries on the system over after you disassemble the hydraulic system to prepare for next using.

(4) Stretch out bearing pins before elevating every unit.

(5) Make sure that every unit is at the same surface level.

(6) The amount of wire-steal can be decided by the surroundings.

(7) Check the looseness of bolts in every unit regularly and if there is any problem you must screw it in time.

Measures of Safety

(1) Workers must attach the belts when assemble or disassemble the climbing protection panel and the belts must be connected with stable shelf.

(2) There must be a person to conduct elevating the climbing protection panel.

(3) Working platform must be corresponded with the demand and must be connected with steel rail stably. As soon as you find some problems you must repair it till meet the demand, or the work will not be going on.

(4) Set safe area around the climbing protection panel to prevent falling things hurting somebody.

Safe Measures of Working High Above the Ground

All works that 2m higher than the ground must comply with following provisions:

(1)Workers high above the ground must attach belts, put on safety cap, shoes of slide protection. Prohibit working when you taking off your shoes.

(2)As soon as you find somebody climbing the shelf of climbing protection panel you must stop them immediately.

(3)Prohibit working when the wind is higher than strong breeze.

There must be professional drivers of hoist on the job site and must have one person conduct the driver. You must make sure that the lines are right and wire-steals are safe before operating it every time.

Product

Telescopic Discharging Platform

The telescopic discharging platform is a material transfer equipment used in the construction of high-rise buildings. It can choose electric drive and manual drive. It is characterized by fast and convenient installation, safe and reliable work, flexible and convenient turnover and use, suitable for different High-rise buildings are indispensable material transfer equipment for modern high-rise buildings.







Features

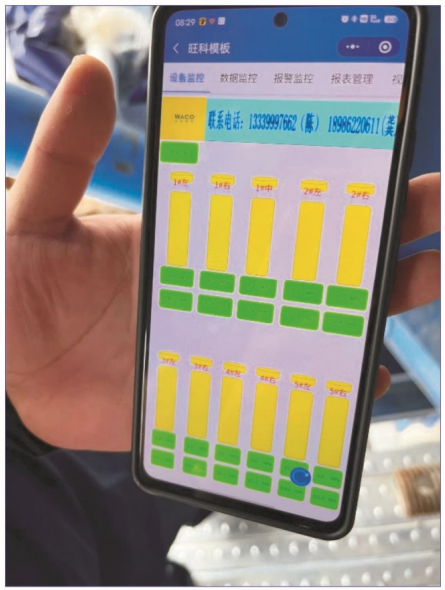
1. Simple structure, convenient and quick to assemble;
2. Safe and reliable work;
3. Easy to disassemble, convenient for storage and transportation;

Product

Intelligent climbing formwork

With the rapid development of the construction industry, Our company after a year of hard R & D, launched the intelligent climbing formwork and hydraulic climbing formwork synchronous spray curing system.

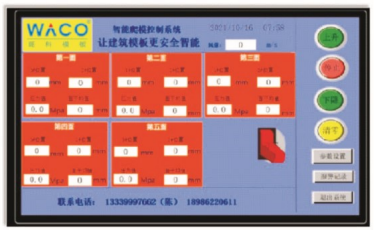




The main functions are

1.Intelligent synchronization system

A set of intelligent climbing system is installed in each hydraulic cylinder. During the process of hydraulic formwork climbing, the synchronization of the cylinders in each position can be controlled within 2mm. The cylinders exceed the set upper bracket limit will be stopped immediately, while those below the limit will continue jacking until all the machines synchronize.

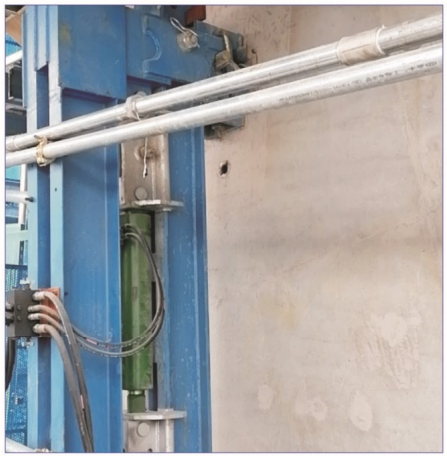


2.Pressure feedback system

During the climbing process, the load pressure of the cylinder of each machine position can be timely fed back to the centralized control cabinet.It real-time monitors the pressure of each machine position.

3. Spray system

A set of water spraying equipment is installed on the hydraulic platform and lifting platform to facilitate timely removal of formwork and water spraying for concrete curing.





4. Intelligent fog making and maintenance system

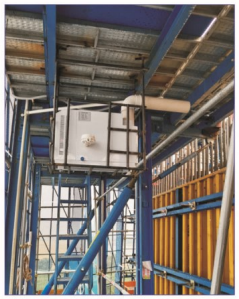
In response to the difficulty in maintaining concrete for tower columns in high-altitude environments, this intelligent maintenance system is specially designed and used.

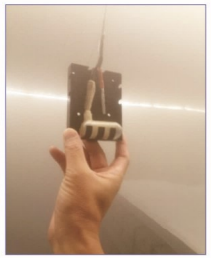
The system is closely combined with the new intelligent climbing platform, which can climb up synchronously with the platform, realize the function of concrete surface curing, simplify the tower column curing operation, and ensure the curing effect.

The intelligent maintenance system consists of three major parts: a maintenance machine, a fully enclosed curtain system (poured layer and maintenance layer), and a control system.

It can achieve fog curing and winter steam curing.







sensors



water collection system

Feature

The operation button, data leveling button, displacement synchronization button, historical data button and internal parameter button on the monitoring interface are operable buttons

[Operation button] In the system's single acting state, the operation button can prohibit the hydraulic pump station from being put into operation. Any combination of hydraulic pump station units that need to be put into operation can carry out synchronous lifting work.

[Displacement synchronization] The button can change the displacement synchronization mode into pressure synchronization mode

[Data leveling] The button can adjust displacement and pressure data to the same data according to the maximum displacement and pressure data in the display.

[Historical Data] The button can open the historical data screen. The historical data page records the monitoring data saved during system operation

[Internal Parameters] button can open the internal parameters interface, the internal parameters can modify the sensor mileage, adjust the accuracy of the display data, adjust the relevant engineering parameters to enable different operators to achieve different system engineering process requirements

Application





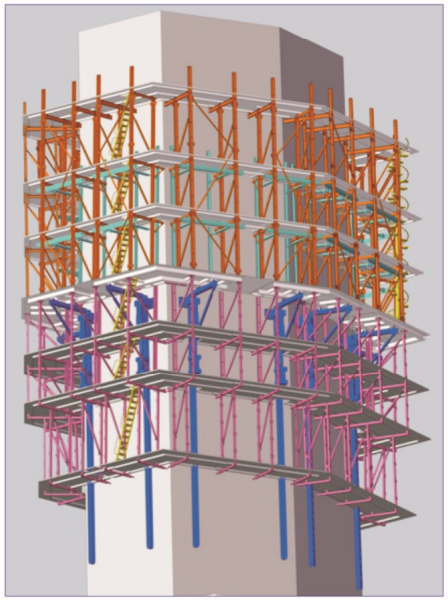
Product

Tower-casting machine

In response to a series of problems in the traditional climbing formwork construction of the main tower, a XF500 intelligent tower-casting machine suitable for 9M main tower segmentation is specially developed. This frame includes:

1. Inner and outer frame bodies and protective systems.
2. 6M/9M formwork and hydraulic demolding systems
3. Anchor parts and climbing mechanisms
4. Intelligent hydraulic lifting systems
5. Intelligent maintenance systems
6. Material distribution machine systems
7. Anti falling devices, etc.

This equipment adopts a fully enclosed integrated frame and protection system,





intelligent hydraulic lifting system with small points and large tonnage, 6M/ 9M hydraulic automatic demolding system, double-layer intelligent maintenance system, concrete auxiliary distribution system, and a series of new technologies, which can effectively improve the intelligent level of main tower construction, improve construction efficiency and quality, and ensure construction safety.

Climbing mechanism and embedded parts



Project	parameter
maximum climbing capacity	400kN
single step climbing	450mm
guide rail length	14.7m
suitable for maximum climbing angle	±10°
climbing speed	6~9m/h

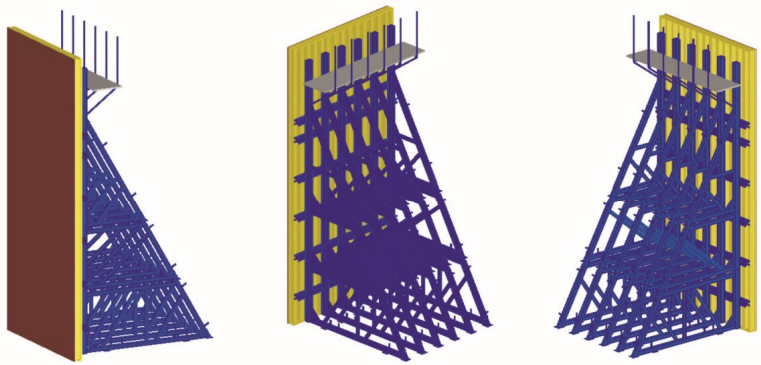
features

1. All the sides of the bracket are connected as a whole, so that the tower casting machine in the construction process of lifting and casting is more stable and safe, which like walking on the ground.
2. Compared with the traditional climbing formwork, the single climbing bracket has stronger lifting force and larger travel
3. There is long curing time with formwork, which compares with single formwork system efficiency can be increased by 50%
4. Its climbing process is intelligently and synchronized. The pressure, displacement and other information feedback can early warn. Climbing system can achieve one-key operation and multi-point synchronous automatic climbing.
5. It includes video monitoring, structural stress and strain monitoring, climbing mechanism monitoring, environmental monitoring, concrete curing monitoring, etc., which can provide data interface access to information management platform
6. It realizes intelligent automatic spray in summer and steam curing in winter. The curing time of concrete is longer and the curing effect is better.
7. The placing boom pump system is arranged on the pitshaft platform and climbs with the whole bracket.
8. It has 360 degrees full protection without dead angle, which is safe, comfortable and beautiful.

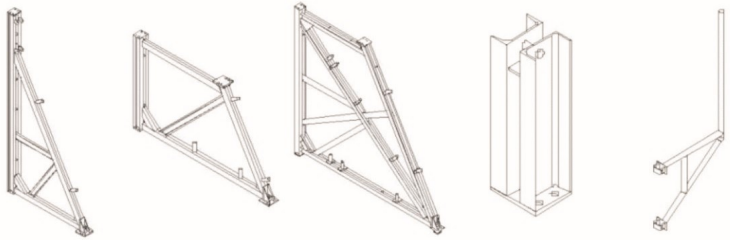
Product

Single-side formwork

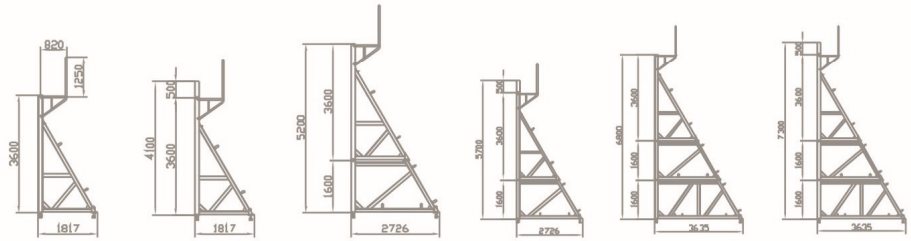
Single-side formwork is used for single-side wall concrete casting construction. Its components have strong universality, convenient construction, simple and quick operation.It can be assembled into a variety of heights, with a maximum height of 7.5 meters in a single cast. Because there is no tie rod, the wall after casting is absolutely waterproof, so the formwork system is widely used in the construction of basement exterior wall, sewage treatment plant, subway retaining wall and so on.



The composition of single-side formwork: formwork, anchor parts, bracket. The formwork can choose different types; The anchor parts are composed of anchor bolts, external tie rods, connecting nuts, pressure beams, nut gaskets, etc. The bracket has four specifications according to the height : H=500/1600/3200/3600mm enhanced segment.



Different combination height



features

1,The overall stiffness is large to ensure no lateral movement and no leakage of the formwork

2,It is simple to operate and convenient to construct

3,It does not need to tie rod, so concrete forming effect is good and satisfies the underground structure waterproof requirements

4,In addition to the anchor bolt is disposable, other connecting rods can be used in turnover with good economy

5,The bracket can be constructed with various types of formwork system in different connection ways

Application



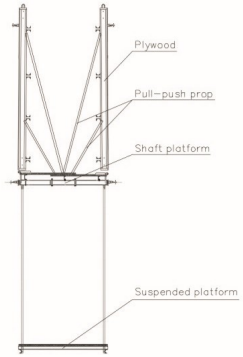


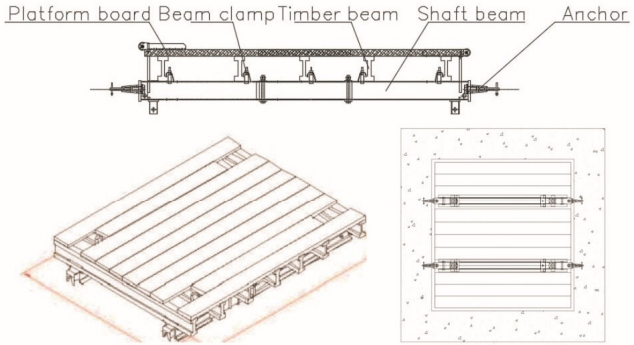
Product

Pitshaft platform

The pitshaft platform is mainly used for concrete casting of elevator shaft, equipment shaft, stairwell and other shaft structure of high-rise buildings. The lateral pressure of concrete is mainly borne by the wall screw, which is simple, rapid and economical to use.

The pitshaft platform is composed of platform plates, timber beams, connecting claws, and platform beams, anchor parts, etc





In the picture, LB is the length of timber beam; W length is adjustable. The pitshaft platform beam has a variety of specifications, which covers any length from 1.45m to 5.9m to adapt to different shaft widths.

Application





Product

WAE electric climbing formwork

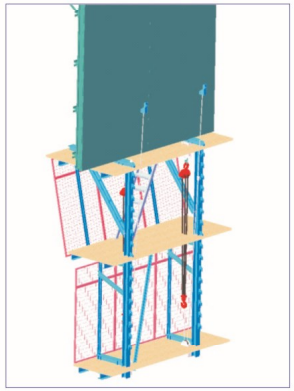
WAE75 electric climbing formwork is composed of formwork system, anchor system, bracket system, lifting system and protection system.

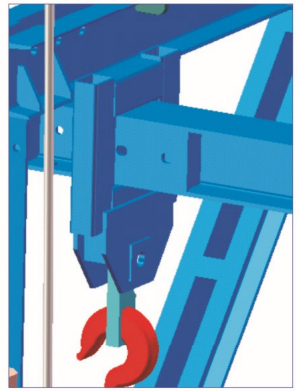
The formwork system adopts timber beam formwork system with imported WISA and high quality domestic plywood, etc.

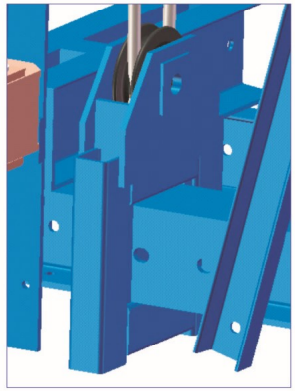
The anchor parts system adopts WACO mature integrated anchor parts system, which has good strength and safety. Bracket system adopts qualitative frame structure, the force is clear and simple, the structure is safe. Hoist system adopts electric hoist hoist.

Protection system adopts WACO mature protection system with various specifications of steel bracket wire mesh, punching mesh and other products. You can choose to use full or half closed protection effect.

Product parameters: Maximum lifting capacity of a single bracket is 7.5T and the maximum lifting speed is 120mm/min.







Features

1. The overall structure has clear force
2. The weight of the single bracket is light
3. Three-layer wall attached, integral design, safe and stable
4. The power lifting system is simple and efficient with high safety.
5. The bracket is easy to assemble and dismantle
6. High lifting synchronization
7. It configures real-time lifting display, which has high degree of visualization.

Lower bracket components of a single machine

Bracket beam (1 piece), bracket diagonal support (1 piece), external steeve (2 piece), platform beam 1 (1 piece), platform beam 2 (2 piece), reinforcement rod (1 piece), guide rail (1 piece), upper bracket and lower lifting bracket (2 piece)

Lifting system parts instruction

Electric hoist (1 set), lifting wire rope (1 set), lifting hanging seat (1 piece), guide wheel (set)











Application

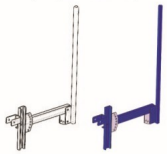
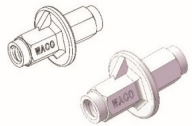
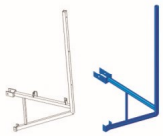
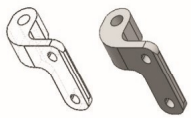
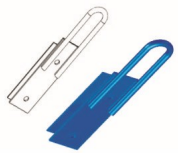
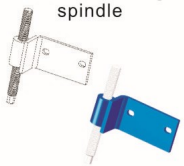
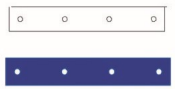
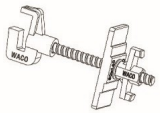
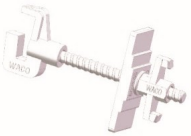
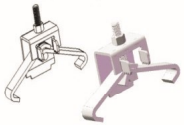


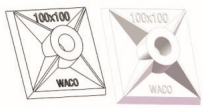
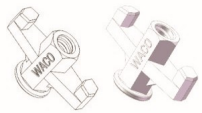
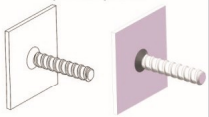
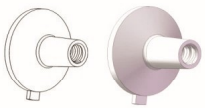


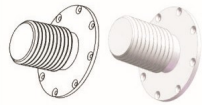
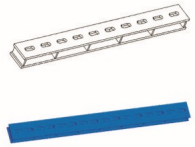
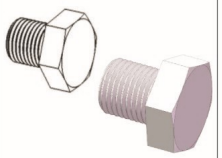
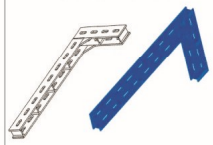
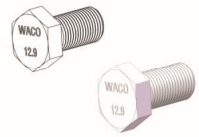
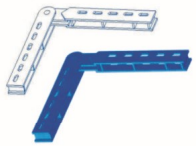




Component List

NameSpec	Remarks	NameSpec	Remarks
Console bracket (adjustable) 	Fix in the timber beam of formwork,used for setting operating platform.	Water stop connector D15/D20 	Used for the connecting of wall-through tie rods in the wall.
Console bracket (circular steel tube) 		Cast adjusting spindle 	Fixed in vertical waling used for adjusting the height of the formwork
Lifting hook 	Used for ifting the formwork.	Welded adusting spindle 	
Connecting plate 	Used for connecting timber beams	Waling-to-bracket holder 	Usedfor assembling formwork and bracket. 
Flange clamp [10~[12 [14 [16 	Used for joining timber beam and steel waling Thespace between two walings is 50mm.	Tie-yoke [12-[16 [10 	Used for outside corner of vertical angled formworks.

NameSpec	Remarks	NameSpec	Remarks
Castplate100X100 	Matched with D15 tie-rod and D15 nut.	Castplate120X120/φ26 	Matched with D20 tie-rod and D20 nut.
Punchedplate120x120 		Wing nut D15/D20 	Matched with D15 tie-rodMatched with D20 tie-rod
Jointnut D15/D20 	Matched with D15 tie-rod Matched with D20 tie-rod	Tie-rod D15/D20 	The lengthis according to customers' demand
High-strength rod D20/L=300 D26.5/L=350 	Used in anchor system lost, the same material with tie-rod.	V-climbingcone D15/D15 D20/D20 	Used for connecting D15 or D20 tie-rods.
V-climbingcone M24/D15 M30/D15 M36/D20 M42/D20 M42/D26.5 	Used in anchor system., can be reused.	Taking out tool of climbing cone D15 D20(M24) M30 M36 M42 	Usedfor taking out climbing cone
Welding embedded parts plate 	Used in anchor system.. one-off,can't be reused..	Anchor plate D15 D20 D26.5 	Used in anchor system., one-offcan't be reused..

NameSpec	Remarks	NameSpec	Remarks
Wedge 	Matched with coupling	Position disk M42X55 M36X40 M30X40 	Used for the location of anchor system on the plywood.
Coupling [10L=870 [12 L=980 [12 L=820 [14L=1220 	Used for connecting formwork units in line	Positionbolt M30 L=50 M36L=50 M42L=50 	
Corner coupling [10 475x475 [12 620x620 [14 730x730 	Used for connecting right-angled formwork units.	Tensile bolt M36/L=90 M42/L=90 M36/L=150 M30/L=110 	Used in anchor system, is the most important support part. 
Articulated coupling [10 510x510 [12 610x610 [14 630x630 	Used for connecting angled formwork units.	Tensile bolt M36/L=73 M30/L=80 M36/L=80 	

Company projects

China Railway Bridge Bureau Group Fifth Engineering Co., Ltd
Tanzania New Sailand Cross Sea Bridge







WACO Formwork Co. Ltd. WACO 旺 科 模 板

Da Nang Bridge in Vie




CCCC Third Harbor Engineering Co., Ltd
BINTULU-JEPAK Bridge, Malaysia




Bạch Đằng Bridge, Haiphong, Vietnam



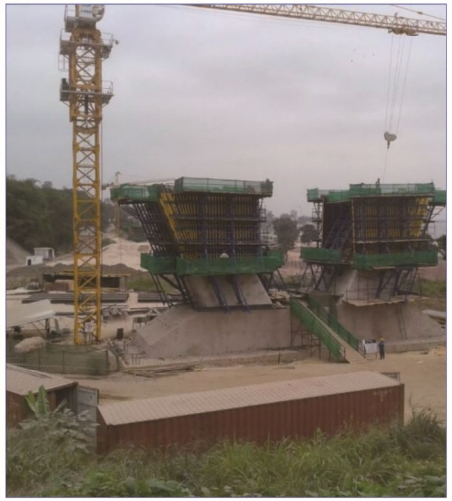


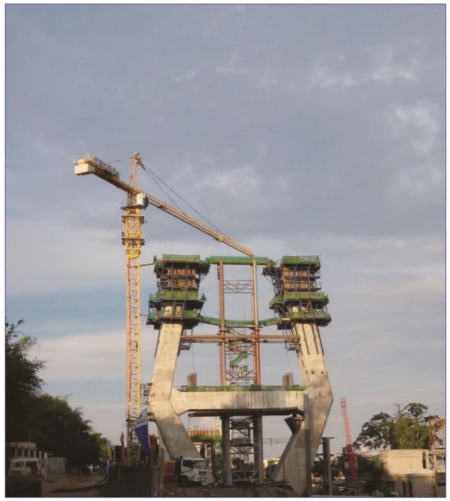
Gaolan Bridge, Vietnam





China Road and Bridge Corporation/CCCC Second Highway Engineering Co., Ltd
Congo Brazzaville Bridge





China Railway Eleventh Bureau Group Co., Ltd The First Engineering Co., Ltd
Hubei XiShi high speed railway Hanjiang River Bridge



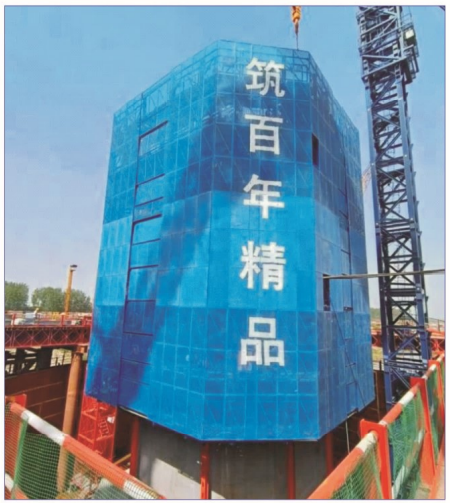
China Railway Major Bridge Engineering Group Fourth Co., Ltd
Anhui G3 Tongling Yangtze River bridge



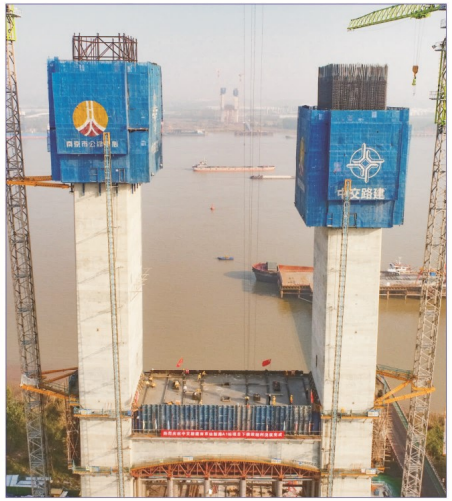


China Railway Major Bridge Engineering Group Fifth Co., Ltd
Huanggang Yanji Yangtze River Bridge





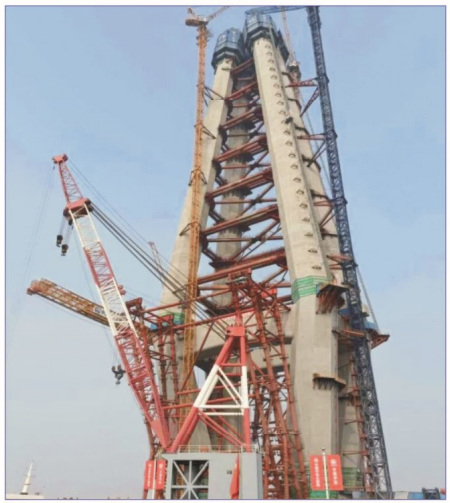
China Road and Bridge Corporation Co., Ltd
Nanjing Xianxin Road crossing channel A1





China Railway Major Bridge Engineering Group Second Co., Ltd
Changzhou Changtai Yangtze River Bridge





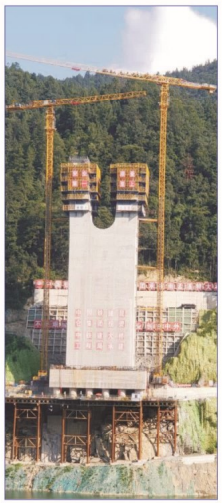
China Railway Bridge Bureau Group Co., Ltd.
Ezhou Shuangliu Yangtze River Bridge





CRCC Bridge Engineering Bureau Group Co., Ltd
Guizhou Jianli fourth Nanmengxi bridge







China Construction Railway Investment and Construction Group Co., Ltd
Tower Building Crane for Lugou River Extra Large Bridge on the Chongqing Hunan Double Line









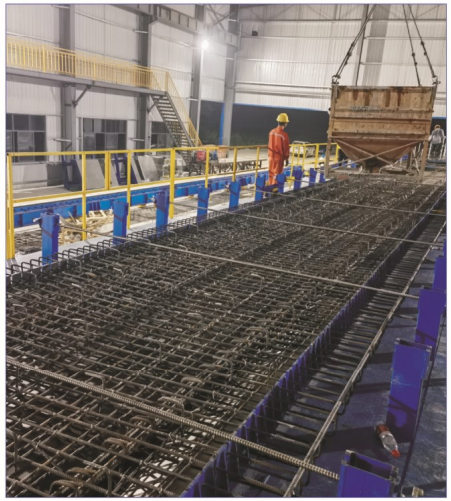
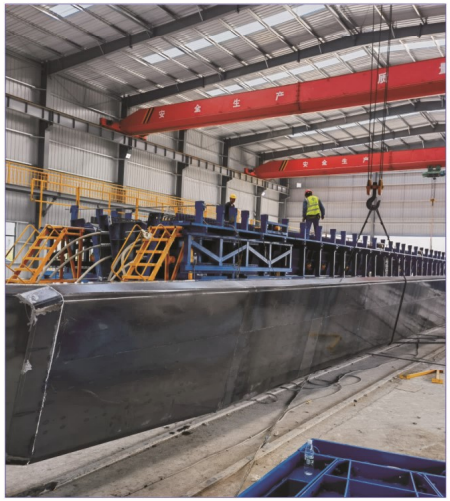
Wuhan Municipal Road and Bridge Co., Ltd
Wuhan to Tianmen expressway section 1, Hanchuan smart casting yard






WACO Formwork Co. Ltd. WACO 旺 科 模 板

CCCC Second Highway Engineering Co., Ltd
Yichang branch pine four standard smart casting yard



Project summary

Project name	Product name	Time
BUCG Co.,Ltd		
Xuancheng city Shuiyangjiang Avenue closed section east project	Hydraulic climbing formwork	2014.11
Tonggu to Wanzai expressway C2 project management department	Hydraulic climbing formwork	2018.9
Hubei Road and Bridge Group Co.,Ltd		
Wuxue Yangtze River Bridge	Hydraulic climbing formwork	2018.2
Qiqizhou Yangtze River Highway Bridge QPZ-2 mark	Cantilever formwork	2018.9
Hubei Gezhouba multi-energy formwork Engineering Co.,Ltd		
Zhang Guan high speed hydraulic climbing die	Hydraulic climbing formwork	2023.1
Jinan Urban Construction Group Co.,Ltd		
G104 Jinglan Line Jinan Yellow River Highway Bridge extension project HHDQ-3 section	Hydraulic climbing formwork	2022.8
Ma 'anshan Sheng Hao machinery parts sales department		
Huizhou Boluo Bridge	Tower lock ladder	2018.3
QiPanZhou Bridge connection line Yangxin to Daye section of the second bid, China Railway 14th Bureau project management Department		
Chessboard Zhou Bridge connection line	Tower lock ladder	2015.6
Sichuan Highway and Bridge Construction Group Co.,Ltd		
Dangzhisong Expressway DZSTJ-3 project management department Bailizhou Yangtze River Bridge hydraulic climbing mold	Hydraulic climbing formwork	2023.4
Dang Zhisong Expressway DZSTJ-3 project management Department	Intelligent beam field	2023.5
Wuhan Municipal Road and Bridge Co.,Ltd		
Wutian high-speed a standard Wuhan section project	Box gider formwork	2023.1
Yunnan construction investment fourth construction Co.,Ltd		
Daga Expressway engineering Section 4, Section 4-1, work area	Hydraulic climbing formwork	2017.7
Yunnan Construction and Investment Holding Group Co.,Ltd		
Dali to Yangbi to Yunlong to Lanping expressway Yunlong to Lanping section	Hydraulic climbing formwork	2020.12
China Railway First Group Co.,Ltd		
Zhengdong New District Longhu inner Ring Road No. 12 bridge and road engineering project Department	Hydraulic climbing formwork	2015.5
China Railway Second Engineering Group Co.,Ltd		
Yalong River Bridge, Management Department of TJ Standard Project of National Highway 318 Quality Improvement Project	Hydraulic climbing formwork	2023.2
China Railway Second Engineering Group Co.,Ltd The First Engineering Co.,Ltd		
Guizhou Jinrentong expressway six standard project management department	Cantilever formwork and accessories	2022.10
China Railway Third Engineering Group Co.,Ltd		

WACO Formwork Co. Ltd. WACO 旺 科 模 板

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BUCG Co.,Ltd		
Xuancheng city Shuiyangjiang Avenue closed section east project	Hydraulic climbing formwork	2014.11
Tonggu to Wanzai expressway C2 project management department	Hydraulic climbing formwork	2018.9
Hubei Road and Bridge Group Co.,Ltd		
Wuxue Yangtze River Bridge	Hydraulic climbing formwork	2018.2
Qiqizhou Yangtze River Highway Bridge QPZ-2 mark	Cantilever formwork	2018.9
Hubei Gezhouba multi-energy formwork Engineering Co.,Ltd		
Zhang Guan high speed hydraulic climbing die	Hydraulic climbing formwork	2023.1
Jinan Urban Construction Group Co.,Ltd		
G104 Jinglan Line Jinan Yellow River Highway Bridge extension project HHDQ-3 section	Hydraulic climbing formwork	2022.8
Ma 'anshan Sheng Hao machinery parts sales department		
Huizhou Boluo Bridge	Tower lock ladder	2018.3
QiPanZhou Bridge connection line Yangxin to Daye section of the second bid, China Railway 14th Bureau project management Department		
Chessboard Zhou Bridge connection line	Tower lock ladder	2015.6
Sichuan Highway and Bridge Construction Group Co.,Ltd		
Dangzhisong Expressway DZSTJ-3 project management department Bailizhou Yangtze River Bridge hydraulic climbing mold	Hydraulic climbing formwork	2023.4
Dang Zhisong Expressway DZSTJ-3 project management Department	Intelligent beam field	2023.5
Wuhan Municipal Road and Bridge Co.,Ltd		
Wutian high-speed a standard Wuhan section project	Box gider formwork	2023.1
Yunnan construction investment fourth construction Co.,Ltd		
Daga Expressway engineering Section 4, Section 4-1, work area	Hydraulic climbing formwork	2017.7
Yunnan Construction and Investment Holding Group Co.,Ltd		
Dali to Yangbi to Yunlong to Lanping expressway Yunlong to Lanping section	Hydraulic climbing formwork	2020.12
China Railway First Group Co.,Ltd		
Zhengdong New District Longhu inner Ring Road No. 12 bridge and road engineering project Department	Hydraulic climbing formwork	2015.5
China Railway Second Engineering Group Co.,Ltd		
Yalong River Bridge, Management Department of TJ Standard Project of National Highway 318 Quality Improvement Project	Hydraulic climbing formwork	2023.2
China Railway Second Engineering Group Co.,Ltd The First Engineering Co.,Ltd		
Guizhou Jinrentong expressway six standard project management department	Cantilever formwork and accessories	2022.10
China Railway Third Engineering Group Co.,Ltd		

Project name	Product name	Time
China Sea world World Garden project Department	Hydraulic climbing formwork	2014.6
China Railway Eleventh Bureau Group Co.,Ltd The First Engineering Co.,Ltd		
Xi shi high speed railway Hubei section standard XSZQ-1 project management Department two branch	Hydraulic climbing formwork and protection system	2022.4
China Railway Eleventh Bureau Group Co.,Ltd The First Engineering Co.,Ltd		
Baoping Expressway LJ-1 contract section project management department	Cantilever formwork	2018.1
Xiangyang City ring line speed improvement (inner ring) project management department	Hydraulic climbing formwork	2021.6
China Railway Eleventh Bureau Group Co.,Ltd The Second Engineering Co.,Ltd		
Changqing Road transformation cross railway project management department	Tower lock ladder	2017.5
Qiaojia County reconstruction grade highway project management department	Hydraulic climbing formwork	2019.7
China Railway Eleventh Bureau Group Co.,Ltd The First Engineering Co.,Ltd		
Hehui Dongguan high speed 7 standard	Cantilever formwork	2017.8
China Railway Eleventh Bureau Group Co.,Ltd The Fifth Engineering Co.,Ltd		
Project Management Department of TJ34 Contract section of Longchuan to Huaiji Highway, Guangdong Province	Cantilever formwork	2016.6
Qianjiang River transit highway	Cantilever formwork	2018.1
China Railway Twelfth Bureau Group Co.,Ltd		
Guijin Expressway 15th project management department	Hydraulic climbing formwork	2022.3
Hongde North Road Project (Changang Road to Luo Wu Road) Construction (Section SG-01) Hongde Bridge	Hydraulic climbing formwork	2022.7
China Railway Twelfth Bureau Group Co.,Ltd The Third Engineering Co.,Ltd		
Yunnan Molin Road TJ5 standard project management department	Cantilever formwork	2018.8
China Railway 14th Bureau Group Co.,Ltd		
Wuhan City rail transit Line 7 North (Qianchuan Line) fourth section of the civil engineering project management Department	Tower lock ladder	2021.4
China Railway 14th Bureau Group Co.,Ltd The Fourth Engineering Co.,Ltd		
Wuda Expressway section 3 project management department	Tower lock ladder	2020.9
China Railway 15th Bureau Group Co.,Ltd		
Chengdawan high-speed railway engineering headquarters	Hydraulic climbing formwork	2023.6
China Railway 15th Bureau Group Co.,Ltd The Fourth Engineering Co.,Ltd		
Cangxi to Bazhong expressway project second branch project management Department	Cantilever formwork	2020.10
China Railway 15th Bureau Group Co.,Ltd The Fifth Engineering Co.,Ltd		
Cangxi to Bazhong expressway project four branch project management department	Hydraulic climbing formwork	2020.12

Project name	Product name	Time
China Railway 16th Bureau Group Co.,Ltd		
New Fu-Xiamen railway 3 standard project management department	Hydraulic climbing formwork	2019.4
Zhangwu Expressway Nanjing section A4 contract section project management department	Hydraulic climbing formwork	2019.9
China Railway 16th Bureau Group Co.,Ltd The Second Engineering Co.,Ltd		
Guijin Expressway 14th project management department	Hydraulic climbing formwork	2021.8
China Railway 16th Bureau Group Co.,Ltd The Fifth Engineering Co.,Ltd		
Bpu Yan high-speed Sanming section YA3 standard project department	Cantilever formwork	2018.8
China Railway 17th Bureau Group Co.,Ltd		
G244 line Qingyang transit section construction general contract (members of the consortium) the second division of Huoxiang Goute bridge hydraulic climbing	Hydraulic climbing formwork	2023.1
China Railway 17th Bureau Group Co.,Ltd The First Engineering Co.,Ltd		
Chongqing Wuzhen expressway first contract section project management department	Hydraulic climbing formwork	2021.6
China Railway 17th Bureau Group Co.,Ltd The Third Engineering Co.,Ltd		
Guizhou Jinrentong high-speed three standard project management department	Cantilever formwork	2022.2
China Railway 18th Bureau Group Co.,Ltd		
Lixi high-speed LJ3 project Department	Cantilever formwork	2021.4
Guizhou Jianli Expressway TJ-3 standard project management department	Hydraulic climbing formwork	2022.4
China Railway 18th Bureau Group Co.,Ltd The Tunnel Engineering Co.,Ltd		
Reference Hanjiwei Phase II project North main line water pipeline construction III standard project department	Hydraulic climbing formwork	2022.9
China Railway 19th Bureau Group Co.,Ltd The First Engineering Co.,Ltd		
Wuchang five standard Jichangbao bridge	Cantilever formwork	2022.3
China Railway 19th Bureau Group Co.,Ltd The Third Engineering Co.,Ltd		
Geqiao highway project management department	Hydraulic climbing formwork	2018.9
Dongchuan Gele to Qiaojia Cucukou expressway project	Hydraulic climbing formwork	2019.5
China Railway 20th Bureau Group Co.,Ltd		
Xuefu Road east extension across Taiping River bridge project section one project management department	Hydraulic climbing formwork	2022.6
Pengyou Road 5 standard project management department Abeng River Bridge	Basket protection	2023.3
China Railway 20th Bureau Group Co.,Ltd The Municipal Engineering Co.,Ltd		
Yinkun Expressway LJ13-1 mark	Cantilever formwork	2022.3

Project name	Product name	Time
China Railway 23rd Bureau Group Co.,Ltd		
Management Department of XXTJ-2 Project, West Section of the Xixi Expressway	Hydraulic climbing formwork	2020.8
China Railway 23rd Bureau Group Co.,Ltd The Third Engineering Co.,Ltd		
Chengjincangba expressway project management Department 14 branch	Cantilever formwork	2021.6
China Railway 24th Bureau Group Co.,Ltd Nanchang Railway Engineering Co.,Ltd		
Zhenhe high-speed Chaidi River bridge	Hydraulic climbing formwork	2018.11
China Railway 24th Bureau Group Co.,Ltd Anhui Engineering Co.,Ltd		
Jiangjihuai project Wenchangxi Road and bridge project management department	Hydraulic climbing formwork	2019.11
China Railway 24th Bureau Group Co.,Ltd Fujian Engineering Co.,Ltd		
Anxi County Jiandou Dongyang Bridge and connecting line project department	Cantilever formwork	2022.9
China Railway Major Bridge Engineering Group Co.,Ltd		
Shuangliu Yangtze River Bridge XGTJ-4 project management department	Hydraulic climbing formwork	2023.3
China Railway Major Bridge Engineering Group Second Co.,Ltd		
Mark CMSG-1 of the Nest Horse Intercity Railway	Hydraulic climbing formwork	2021.10
China Railway Major Bridge Engineering Group Fifth Co.,Ltd		
Yanji Yangtze River Bridge YJTJ-2 project management Department	Design and development drawing	2022.9
Yanji Yangtze River Bridge YJTJ-2 project	Hydraulic climbing formwork	2022.11
China Railway Major Bridge Engineering Group Sixth Co.,Ltd		
Wuhan Yangsigang Yangtze River Bridge project management Department	Hydraulic climbing formwork	2016.4
Yilai high speed Hefeng east section civil construction second standard project department	Hydraulic climbing formwork	2020.8
China Railway Major Bridge Engineering Group Seventh Co.,Ltd		
Wuhan Jianghan seven bridge project management department	Tower lock ladder	2018.6
Construction avenue on the trans-rail project department	Hydraulic climbing formwork and protection system	2022.5
China Railway Major Bridge Engineering Group Eighth Co.,Ltd		
Xiangli expressway civil construction 9th-II project management department	Protection system	2017.5
Ludian to Qiaojia Expressway project Civil engineering 2 project management department Yunnan Guangming Niulanjiang Large bridge	Hydraulic climbing formwork	2023.5
China Railway Major Bridge Engineering Group Ninth Co.,Ltd		

Project name	Product name	Time
Qinghua high-speed TJ3 standard project management department Beijiang large bridge	Hydraulic climbing formwork	2023.3
Qinghua high-speed TJ3 standard project management department	Intelligent beam field	2023.4
CRCC Harbour&Channel Engineering Bureau Group Co.,Ltd		
Shenmao Railway JMZQ-3 standard engineering headquarters	Hydraulic climbing formwork	2016.3
China Railway Construction Engineering Group Co.,Ltd		
Yunnan Yuchu Expressway TJ-7 standard project management department	Hydraulic climbing formwork	2019.6
Yunnan Yuchu Expressway TJ-7 standard project management department	Protection system	2019.6
China Railway Beijing Engineering Bureau Group Co.,Ltd		
Hunan Rusi Expressway TJ3 standard project Department	Cantilever formwork and protection system	2022.2
China Railway Beijing Engineering Bureau Group Second Engineering Co.,Ltd		
Yunnan Yuchu expressway II-12 standard project department	Hydraulic climbing formwork	2019.6
China Railway Shanghai Civil Engineering Group Sixth Co.,Ltd		
Yibi highway project management department	Cantilever formwork	2018.6
China Railway Guangzhou Engineering Group Co.,Ltd		
Guangshan railway GSSG3 standard project management department	segment girder formwork	2020.2
Guangzhan railway station first three standard project management department	Hydraulic climbing formwork and protection system	2022.3
China Railway Jiujiang Bridge Engineering Co.,Ltd		
Yunnan Dayong high-speed project Department	Hydraulic climbing formwork	2018.2
China Railway Tunnel Group a Co.,Ltd		
Kunif highway 1 standard project management department	Hydraulic climbing formwork	2020.12
China Railway Tunnel Bureau Group Co.,Ltd Big shield engineering branch		
Yixing railway ZQ-3 standard project management department	Hydraulic climbing formwork and protection system	2022.4
CCCC First Highway Engineering Co.,Ltd		
Renzun high-speed RZTJ-4 contract section project management department	Cantilever formwork	2019.9
Zhengluo high-speed ZLGSTJ-3 bid section project management department	Hydraulic climbing formwork	2023.6
CCCC-FHEC Third Engineering Co.,Ltd		
Wanzhou Loop highway project Division 3	Hydraulic climbing formwork/Cantilever formwork	2019.3
CCCC-FHEC Fourth Engineering Co.,Ltd		
Guizhou Deyu expressway sixth contract project management	Cantilever formwork	2020.11

Project name	Product name	Time
department		
CCCC Second Highway Engineering Co.,Ltd		
Hong Kong-Zhuhai-Macao Bridge bridge project CB03 standard project management Department	Protection system	2013.12
Jiujingqu Railway JQJXZQ-5 standard project Department A division	Tower lock ladder	2014.6
CCCC-SHEC International Co.,Ltd		
SEJINGKAT Bridge Project Management Department, Sarawak, Malaysia	Hydraulic climbing formwork	2022.11
CCCC-SHEC First Engineering Co.,Ltd		
Dang Zhisong expressway DZSTJ-4 standard project management Department	Intelligent beam field	2023.4
Dangzhi Song Expressway DZSTJ-4 project management Department	formwork and Protection	2023.5
CCCC-SHEC Second Engineering Co.,Ltd		
Guiweng Expressway second general contract, Section 5, Project Management Department, Division 2	Tower lock ladder	2013.12
Tonghuai high-speed second management department	Tower lock ladder	2017.3
CCCC-SHEC Third Engineering Co.,Ltd		
Nanyi expressway seventh contract section project management department	Cantilever formwork	2016.3
CCCC-SHEC Fourth Engineering Co.,Ltd		
Turning dam Jiangbei high speed one mark	Cantilever formwork	2018.3
Lehua Ditan Village bridge	Cantilever formwork	2021.2
CCCC-SHEC Fifth Engineering Co.,Ltd		
Guihuang high speed first manager department	Hydraulic climbing formwork/Cantilever formwork	2019.12
CCCC-SHEC Dong Meng Engineering Co.,Ltd		
Management Department of EPC project of Taixi and Xiaban Bridge renovation project	Cantilever formwork	2020.9
Zhejiang Jingning to Wencheng highway JWTJ-05 standard project management Department	Cantilever formwork	2020.6
CCCC Construction Group Co.,Ltd		
Hubei Province Shuibuya Qingjiang Bridge construction project management Department	Hydraulic climbing formwork	2015.3
CCCC Fourth Highway Engineering Co.,Ltd		
Yongji 10 standard project management department	Hydraulic climbing formwork	2014.7
CCCC Second Highway Engineering Co.,Ltd		
Wuxi to Kaizhou highway WYKTJB2 project management department	Cantilever formwork	2022.2

Project name	Product name	Time
Wuxi to Kaizhou expressway WYKTJB2 standard project management department	Hydraulic climbing formwork	2022.1
CCCC Second Highway Engineering Co.,Ltd Engineering design and research institute		
2000m class suspension bridge ultra-high tower intelligent climbing platform service	Design and development drawing	2022.4
CCCC First Harbor Engineering Co.,Ltd		
Dazhou Airport Avenue	Cantilever formwork	2018.8
CCCC Second Harbor Engineering Co.,Ltd		
Dangzhi Song Expressway DZSTJ-5 project management Department	Hydraulic climbing formwork	2023.2
CCCC Third Harbor Engineering Co.,Ltd		
Duxiang 6 standard cantilever	Cantilever formwork	2019.11
CCCC Second Harbor Engineering Co.,Ltd NO.5 Branch		
Wujiagang Yangtze River Bridge	Cantilever formwork	2019.6
CCCC Second Harbor Engineering Co.,Ltd		
Zhuankou Yangtze River Highway Bridge project manager branch	Tower lock ladder	2015.3
China Communications 2ND Navigation Bureau 2ND Engineering Co.,Ltd		
Jinshajiang River bridge main tower hydraulic climbing mold	Hydraulic climbing formwork	2017.8
Zhuhai Honghe Bridge 3 marks	Cantilever formwork	2018.4
Minhou second bridge project	Hydraulic climbing formwork	2020.4
CCCC Harbor Engineering Bureau Engineering Materials Co.,Ltd		
Sanhang Ningbo branch of Malaysia Sarawak Riba bridge project	Hydraulic climbing formwork	2020.11
CCCC Tunnel Engineering Co.,Ltd		
Hehui Dongguan Expressway TJ2 standard project department	Cantilever formwork	2017.2
CCCC Road and Bridge construction Co.,Ltd		
Shiwu North Highway SWYB-2 project management Department	Hydraulic climbing formwork	2022.7
CCCC Road and bridge South China Engineering Co.,Ltd		
South China Guiqian high-speed 8 contract section project management department	Tower lock ladder	2014.5
CCCC Road Bridge North Engineering Co.,Ltd		
North Guizhou high-speed TJ9 contract section project management department	Tower lock ladder	2014.5
CCCC Tunnel Bureau Co.,Ltd		
Guangxi Lipu to Yulin Expressway project civil construction №17 branch	Cantilever formwork	2019.6
CCCC Tunnel Engineering Co.,Ltd		
108 National Highway Yu gate Yellow River Bridge project	Hydraulic climbing formwork	2017.1

Project name	Product name	Time
management department		
CCCC Infrastructure Maintenance Group Co.,Ltd		
S436 Xunyu Road and other four provincial road reconstruction project general contract project management department	Cantilever formwork	2021.5
CCCC Investment Nanjing Co.,Ltd		
Guijin Expressway fifth project management department	Cantilever formwork	2021.6
China Construction Third Engineering Bureau Group Co.,Ltd		
Taihang Mountain Expressway Jingwei section Shimen large bridge project	Hydraulic climbing formwork and Cantilever formwork	2017.4
Chongqing rail transit Line 15 phase I civil engineering 05-1 standard project management Department	Hydraulic climbing formwork	2022.5
The Second Construction Co.,Ltd Of China Construction Third Engineering Bureau		
Huangshi Xingang Avenue North extension road project EPC project	Hydraulic climbing formwork	2018.1
Pinghu City East Bridge	Hydraulic climbing formwork	2018.8
The Third Construction Co.,Ltd Of China Construction Third Engineering Bureau		
Central South Branch Wuhan Hanjiang Bridge	Hydraulic climbing formwork	2013.11
The Sixth Construction Co.,Ltd Of China Construction Fourth Engineering Bureau		
Zunyi Medical College Xinpu Hospital	Hydraulic climbing formwork	2016.9
The Guizhou Investment construction Co.,Ltd Of China Construction Fourth Engineering Bureau		
Leishan to Rongjiang Expressway project in Guizhou Province PPP section 1 project	Hydraulic climbing formwork	2020.4
China State Construction Bridge Co.,Ltd		
Chongqing Guojiatuo Bridge and south extension project	Hydraulic climbing formwork	2019.5
China State Construction Railway Investment&Engineering Group Co.,Ltd		
Chongqing-hunan expressway project	Tower-casting machine	2021.4
China Road and Bridge Co.,Ltd		
Cote d 'Ivoire	Hydraulic climbing formwork	2019.12
China Railway Construction Bridge Engineering Bureau Group		
Chongqing rail ring line phase II civil construction seven standard project management department	Hydraulic climbing formwork	2015.2
CRCC Bridge Engineering Bureau Group Co.,Ltd		
Chongqing Railway Line 18 civil construction five standard project management department	Hydraulic climbing formwork	2021.1
Guizhou Jianli Expressway TJ-4 standard project management department	Hydraulic climbing formwork	2021.7
CRCC Harbour and Channel Engineering Bureau Group Co.,Ltd		
Yin-bai-expressway (G69) Tianyong section TY16 project	Cantilever formwork	2018.12

Project name	Product name	Time
management Department		
Zhuhai West Central City (Area A) project Department	Cantilever formwork	2018.4
China Nuclear Industry 24 Construction Co.,Ltd		
Zhangzhou nuclear power plant phase I project	Hydraulic climbing formwork	2020.9
Containment cylinder template for Langfang Phase II project of North China Branch of CNNC 24	Cantilever formwork	2022.1
China Nuclear Industry 22ND Construction Co.,Ltd		
Xudabu nuclear power civil engineering	Vertical wall formwork	2022.1
Sanmen Nuclear Power Plant 3, 4 nuclear islands	Vertical wall formwork	2022.5
China Gezhouba Group Fifth Engineering Co.,Ltd		
Luzhou Yangtze River six bridge one section construction project department	Tower lock ladder	2018.7
Luzhou Yangtze River six bridge one section construction project department	Protection	2019.7
China Gezhouba Group Road and Bridge Co.,Ltd		
Nayong to Qinglong expressway T6 contract section project management department	Hydraulic climbing formwork	2021.11
The second section of Xinxin Expressway project Department Akagi Bridge	Hydraulic climbing formwork	2023.4
Sinohydro Bureau 14 Co.,Ltd		
Construction (Jiji) Yuan highway TJ3 standard two branch project management department	Hydraulic climbing formwork	2018.3
Yizhao Expressway B3 project management Department	Cantilever formwork	2019.9
China Construction Fourth Engineering Bureau Co.,Ltd		
Onma railway tower building machine technical services	Design and development drawing	2022.4
New Wengma Railway north-south extension line nine marks	Tower lock ladder	2022.11
China Construction Sixth Engineering Bureau Co.,Ltd		
Leirong project management department five branches	Cantilever formwork	2020.6
China Overseas Traffic Construction Co.,Ltd		
S36 Lintao to Kangle to Guanghe expressway LKG1 mark	Cantilever formwork	2021.9
ZheJiang Communications Construction Group Road And Bridge Construction Co.,Ltd		
Zhejiang Jingning to Wencheng highway JWT-06 project management department	Hydraulic climbing formwork	2020.4
ZheJiang Communications Construction Group Co.,Ltd		
Jixin high-speed JXSG-2 standard project management department	Hydraulic climbing formwork	2022.6