



金辰智荟（天津）装备制造有限公司

Jinchen Zhihui (Tianjin) Equipment Manufacturing Co., Ltd.

## Company Profile

Jinchen Zhihui (Tianjin) Equipment Manufacturing Co., Ltd. set equipment manufacturing, research and development, design, production and sales as one of the automated factory. The company is located in the national development zone (Tianjin Beichen high-end Equipment Park), the company covers a total area of 60 acres, production workshop 25000 square meters, office building 3000 square meters, R & D building 2000 square meters, the company has advanced 30000 watts automatic laser cutting machine, There are more than 80 sets of international first-class intelligent high-end equipment such as large plate rolling machine, bending machine, combined punching and shearing machine, intelligent programming robot, and the annual production capacity reaches 70000 tons. Our company is committed to the design, development and manufacturing of supporting equipment for high-speed rail, subway, expressway, wind power generation, offshore oil and other industries. The main products are intelligent beam field, tunnel lining trolley, intelligent hydraulic prefabricated beam production line, steel trestle, steel pipe column, shield starting frame, shield steel ring, and I-steel for ground wall. Tunnel cable support, lattice column, subway steel support, bridge steel module, metro light rail steel template, high-speed rail special steel template, pipe gallery plane steel mold, wind turbine machine bin components, wind power equipment transport support, fan blade mold, etc. Jinchen Zhihui is based on advanced technology, the implementation of modern production, large-scale management, to create energy saving, environmental protection, high efficiency, high precision, high quality of modern smart factory.

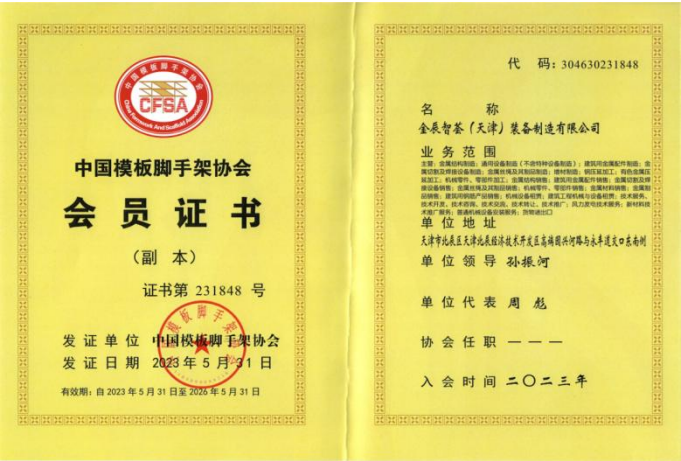
Jinchen Zhihui with advanced technology, excellent quality, satisfactory service, to provide the best solutions for customers across the country, sincerely look forward to cooperation with friends from all walks of life, hand in hand, create a better future.





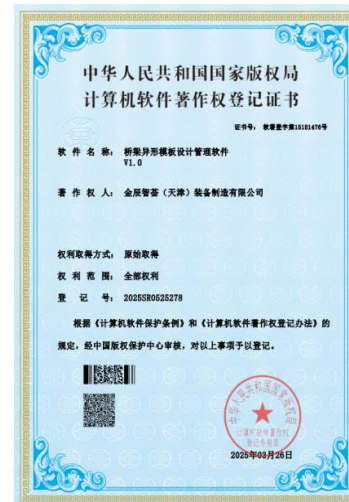
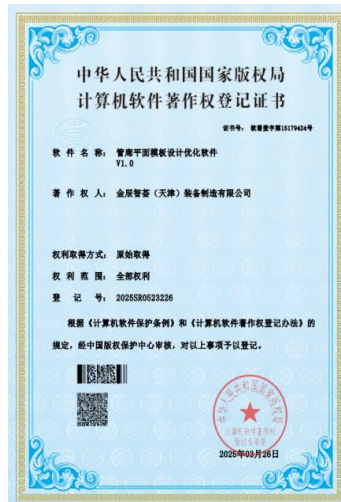
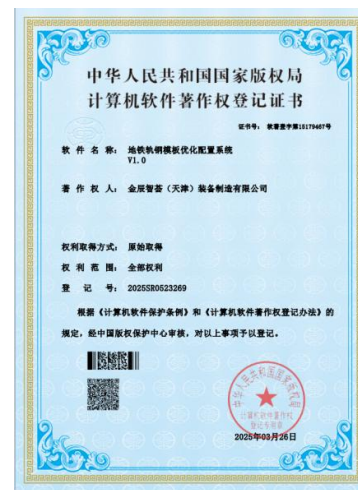


Enterprise Qualifications and Honors





# Patents Certificate



## H Beam

H-beams are the structural steel profile shaped like an H in section. It is incredibly strong. It gets its name because it looks like a capital H over its cross section.

Beam theory shows that the H-shaped sections is a very efficient form for carrying both bending and shear loads in the plane of the web. H-beams are widely used in the construction industry and are available in a variety of standard sizes. H-beams may be used both as beams and as columns.

H-beam is a new type of economic construction steel. The section shape of H-shaped steel is economical and reasonable, and the mechanical properties are good. The points on the section during rolling are more uniform and the internal stress is small. Compared with ordinary I-beam, it has the advantages of large section modulus, light weight and metal saving.

### H beam Usages:

1. workshop, warehouse, plant
2. Steel web frame structure
3. Steel H-column and steel H-beam
4. Portal frame products
5. High rise building project
6. Others steel structure buildings

### Advantages:

1. Lower cost with better quality.
2. High safety performance.
3. Easy to assemble and dismantle.
4. Manufacture under complete quality control system - ISO9001.
5. Installation with instruction of experienced engineers
6. Non-pollution.

### ① High Quality

The products are made of high-quality materials,the quality is guaranteed,and the quality is firm and reliable.

### ② Different Specifications

Powerful manufacturers support non-standard customization,manu-facturers produce fast,and guarantee product quality

### ③ Special Handling

The product adopts special processing technology,has accumulated many years of experience and is skilled in tehcnology.





## Product Introduction of Intelligent Tunnel Lining Trolley:

The construction progress is fast, the structure is reliable, the operation is convenient, and the tunnel forming surface is good. It is widely used in highway, railway, water conservancy and hydropower, municipal, national defense and military and other projects.

The self-developed and produced lining trolley focuses on universality and humanized construction, maximizing the savings of funds and human resources for customers. When combined with other auxiliary machinery, it can effectively accelerate the construction progress. It has the advantages of reliable structure, convenient operation, and good tunnel forming surface.

## Advantages:

1. The construction progress is fast
2. Reliable structure
3. Easy to operate
4. The tunnel formation surface is good

## Product Display of Intelligent Tunnel Lining Trolley:







The tunnel layer distributor is used in conjunction with the lining trolley



## Intelligent Hydraulic T-beam Formwork

Based on years of experience in template design and construction, we independently designed and manufactured a self-propelled hydraulic T-beam system pot bag demolding device, which effectively improves the demolding efficiency and ensures the appearance of the beam body.

### Product performance:

(Reduce labor intensity) (Reliable performance, convenient turnover, quick accessories) High precision, reliable performance, good operability, and convenient turnover.

The complete set of templates is divided into three parts: the outer side mold, the end mold and the bottom mold. According to the clamping methods of the side die and the bottom die, it can be classified as: a) Wedge block type; b) Pull rod type.

Outer side mold: Reliable structure, quick and convenient installation and commissioning; Set a reasonable demolding slope to facilitate rapid demolding and prevent the occurrence of missing edges and corners during demolding.

The longitudinal moving hydraulic T-beam formwork can be moved as a whole along the track to the next beam-making base by the self-powered longitudinal moving trolley, achieving one set of outer formwork with multiple sets of bottom formwork, which improves the construction efficiency. The outer formwork is automated for formwork erection and demolding through a hydraulic system, which reduces the labor intensity of workers, improves the efficiency of formwork erection and demolding, and the formwork only needs to be assembled once, significantly reducing the frequency of use of gantry cranes.

End die: Laser positioning for blanking is adopted, and the spatial positions and angles of each anchor hole in the end die are accurate. Sealing strips are set at the connection points between the end mold, the bottom mold and the outer mold to ensure that no slurry leakage occurs during the prefabrication process of the T-beam.

### Advantages:

1. Simple structure, clear force application, with high rigidity and strong torsional resistance
2. The equal cross-section form can greatly save formwork, accelerate the bridge construction progress, and is simple and economical
3. The upper and lower parts of the bridge can be constructed in parallel, which greatly shortens the construction period
4. There is no need to fabricate components at high altitudes, the quality is easy to control, and batch production can be carried out in one place, thereby reducing costs









## Beam Formwork Product Features:

1. The Beam Formwork is reusable and does not deform.

2. The Beam Formwork is simple to operate and easy to disassemble and assemble. Application Of Beam Formwork: Beam Formwork could build a shopping mall

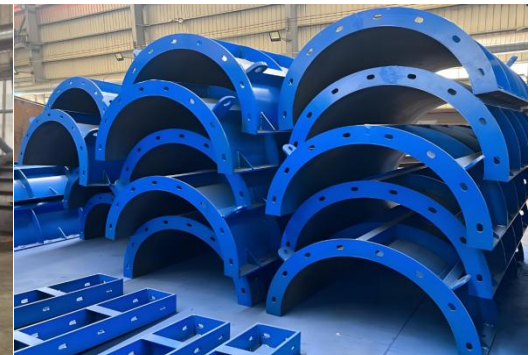
Beam Formwork can be applied in residential projects Beam Formwork can be used in municipal projects Beam Formwork can be used in industrial buildings

Bearing capacity: It must meet the lateral pressure requirements of concrete (such as  $\geq 60\text{kN/m}$ ) Turnover rate: Steel formwork  $\geq 100$  times Surface treatment: Steel formwork needs anti-rust treatment , Assembly requirements: Modular design, tight joints (gap  $\leq 1\text{mm}$ ), and convenient disassembly and assembly.

Customized panel size and shapes are available;

## Advantage:

- \* Ready to use pre-assembly;
- \* Can be cast into any size and shape according to different project structure;
- \* Fast & simple erection on site by steel pins or wedges;
- \* Light in weight that can be handled by manual





## Pier column formwork:

Widely used in highway Bridges, railway Bridges, pedestrian walkways and other Bridges, overpasses, ramp Bridges, overpasses and other projects

For the types of piers and columns, the universality of piers and columns is jointly extracted to achieve the rentable and recyclable use of pier and column formwork, maximizing cost savings for customers.

Pier columns generally include cylindrical, round-ended pier columns, conical columns, Y-shaped columns, hyperbolic columns, vase columns, straight pier columns, V-shaped columns, rectangular columns, etc. They are the most important components in highway Bridges, railway Bridges, pedestrian walkways and other Bridges, overpasses, ramp Bridges, overpasses and other projects.

## Advantages:

1. High versatility, rentable, and maximum cost savings for customers
2. Customized on demand, precise mold matching
3. The product has high processing accuracy, with laser blanking and production on a tooling assembly line
4. The operation is simple and convenient, reducing the workload and labor intensity of construction workers











## Cantilever Form Traveller:

The cantilever form traveller system is a non-standard mechanical equipment used for continuous cantilever construction. For many years, Jinchen Zhihui cantilever form traveller has been committed to the research and development of standardization and universality of cantilever form traveller. It can provide various cooperation forms such as cantilever form traveller sales, sales repurchase, and leasing, providing customers with an overall solution for road and bridge equipment construction.

Applied to: railways, highways, municipal engineering

Beam type features: single box single room, single box multiple rooms, highway double width, municipal wide width

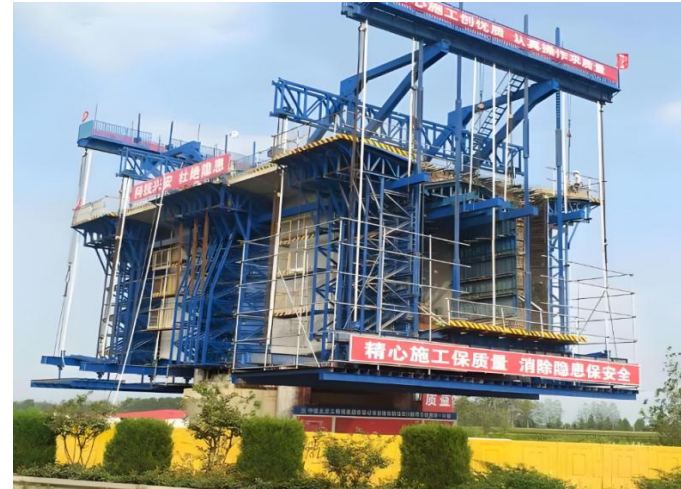
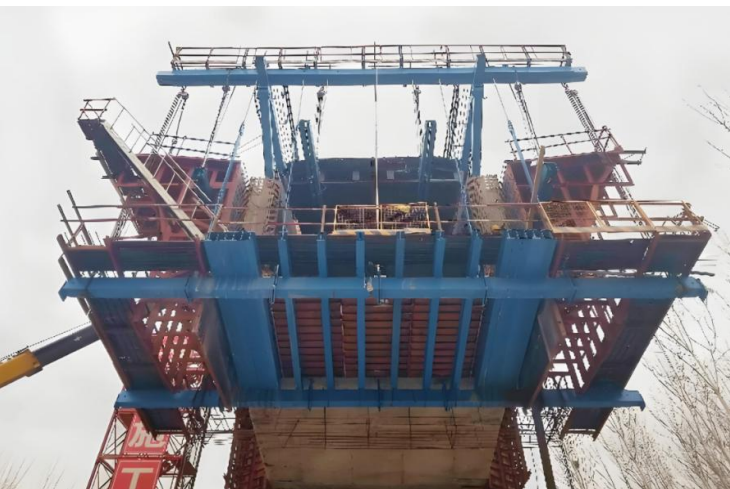
Types: Large hanging baskets, medium hanging baskets, small hanging baskets, micro hanging baskets, special for small pier top construction, etc

## Advantages:

The hanging basket is light in weight, has a high utilization coefficient and belongs to the category of lightweight hanging baskets

2. It has an attractive appearance and a clear structure. The main nodes are connected by pins, which is convenient for disassembly and assembly, saving time and labor
3. The walking system is rationally constructed, featuring segmented tracks. When the hanging basket is walking, the tracks can be extended for continuous recycling
4. The inner and outer formwork is suspended by sliding beams, allowing the formwork to move into place in one go. Meanwhile, the sliding beams serve as fixed guide beams, achieving dual functions with one beam
5. The outer formwork is designed from top to bottom, with a segmented height connection type. The excess parts can be disassembled according to the changes of the beam body, fully ensuring construction safety
6. The structure is simple, the force is clear, the overall structure has high rigidity and is not easy to deform





## **Intelligent cantilever bridge construction machine:**

Applied in: railway, highway, municipal engineering

### **Advantages:**

1. Creatively adopting a bottom-supported structural form, it offers better overall stability and safety
2. It adopts a modular structure design, which greatly reduces the number of on-site anchor points
3. Integrating automatic control, intelligent monitoring and information management, it has enhanced the degree of automation of on-site construction operations
4. Fully releasing the construction operation surface of the beam surface provides a feasible solution for the factory prefabrication of segmental steel cages

### **Safety:**

Over 30 safety data detections and multi-point on-site monitoring ensure real-time equipment safety and construction safety.

### **Efficiency:**

1. The track does not require anchoring, there is no track pressure beam, and it can be operated by one person. The walking time can be shortened to 20 minutes.
2. The automated adjustment template significantly reduces the labor intensity of workers while enhancing efficiency.
3. Barrier-free pouring: The pouring operation surface has no interference, greatly reducing the difficulty of construction coordination for tower cranes, pump trucks, etc.

### **Intelligentization:**

More than 30 intelligent technologies are applied to processes such as symmetrical synchronous running, precise turning on flat curves, template adjustment, and elevation adjustment.

### **Informationization:**

The data collected on-site is uploaded to the information cloud platform through 5G cloud and digitally twin. Supported by big data, risk prediction and remote control are achieved.

1. Eliminating the influence of the overall environment: Less cast-in-place construction is beneficial to environmental protection, providing a great deal of flexibility in the construction process, which is of positive significance for the protection of urban roads.
2. It can be constructed simultaneously. The prefabrication of the beam body can be carried out simultaneously with the construction of the bridge's substructure, which can shorten the construction period
3. The segments are light in weight, small in size, convenient for transportation and fast in assembly and construction
4. It has a high degree of mechanization and is suitable for the rapid construction of long Bridges. During the prefabrication process, prefabricated components do not require tensioning or grouting, which speeds up the prefabrication process
5. It can significantly reduce the shrinkage and creep of concrete after the bridge is completed
6. It is suitable for external prestressing, which can reduce the cross-sectional size of small beams and improve the efficiency of material utilization
7. Proper control of geometric shapes can significantly enhance the aesthetic appeal of concrete structures





## Precast Segment Box Girder Mould

It includes five major parts: the outer mold system, the bottom mold system, the plug plate system (fixed end mold and mobile end mold), the inner mold system and the bottom mold trolley. The advantages of this method lie in its small land occupation, simple operation, relatively less restricted by terrain, relatively convenient layout of the beam yard, and high utilization rate of the base and formwork.

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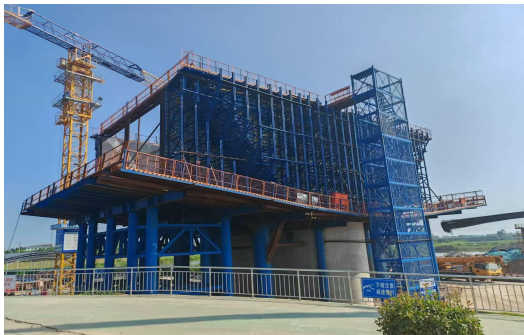
## Self-propelled Invert Trestle:

The trestle bridge has realized the overall process circulation and flow construction operation of the tunnel, improving the construction efficiency and project quality, highlighting the superiority of this industrial equipment. It is composed of the anti-floating support system, the inverted arch pouring trolley, the distributed hydraulic and electrical control system, and the intelligent control system, etc. The clear width of the trestle bridge deck is 4 meters, with a rated load capacity of 60 tons. It can ensure the smooth passage of engineering vehicles such as loaders, excavators, dump trucks and three-arm rock drilling jumpers. The effective construction length of the trestle bridge is 36 meters, which can accommodate the simultaneous binding of the inverted arch reinforcement, the pouring of the inverted arch and the backfilling pouring. A pedestrian passage is set inside the main beam, which can be used for emergency and escape in the tunnel. The bridge deck of the trestle is equipped with preset flip covers at intervals of 1.5 meters. By opening the covers, the pouring of the inverted arch concrete can be completed, facilitating on-site construction. The middle support can be moved close to the arc formwork of the inverted arch, supporting the ground, which can significantly increase the load-bearing capacity of the trestle. It can meet the simultaneous pouring requirements of two tank trucks. At the same time, a waterproof board hanging platform and device are set on the outside of the middle support legs. The longitudinal waterproof board laying work of the tunnel arch waist can be completed quickly. The anti-floating support system is composed of two "door" type frames, trusses and a hydraulic system. Through the extension and retraction of the hydraulic cylinder, the "door" type frame can be supported up and down, completely eliminating the lead screw support. Effectively control the upward floating of the inverted arch arc formwork during concrete pouring, significantly improve the pouring efficiency of the inverted arch, ensure the construction quality of the inverted arch, and reduce the work intensity.





## Enterprise products:





## Intelligent Production Equipment:



Laser cutting machine



Bending machine



Plate cutting machine



Punching and shearing machine



Plate winding machine



Hydraulic press



Automatic press



Welding smoke suction equipment



Spraying production line





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