



TYF MACHINERY



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SMART REBAR PROCESSING EQUIPMENT





01 COMPANY INFO

Founded in 1988, Tianjin TYF MACHINERY Machinery System Engineering Co., Ltd. is a time-honored company specialized in manufacturing intelligent rebar processing equipment, artificial intelligence production management software, rebar products, and complete sets of equipment. TYF MACHINERY established overseas branches and subsidiaries in Australia, Singapore, India, and Bulgaria, etc. with its products proudly exported to more than 100 countries globally.

TYF MACHINERY is the business partner of China Railway Construction Corporation (CRCC), China State Construction Engineering Corporation (CSCEC), China Communications Construction Company (CCCC), and China Energy Engineering Group Co., Ltd. TYF MACHINERY's products have played significant roles in the construction of major projects as Indonesia's Jakarta-Bandung High-Speed Railway, Equatorial Guinea's Bata Port, Argentina's Santa Cruz River Hydroelectric Power Station, and Saudi Arabia's NEOM City, etc.

TYF MACHINERY has proudly invented the patented 'stepless mesh welding machine', which ignores the spacing limits between longitudinal bars, enables the user to adjust clearance at will. This great feature, compared with traditional way of mesh binding, saves more than 40 workers while significantly enhances efficiency, making it unique in China and a pioneer in the world.

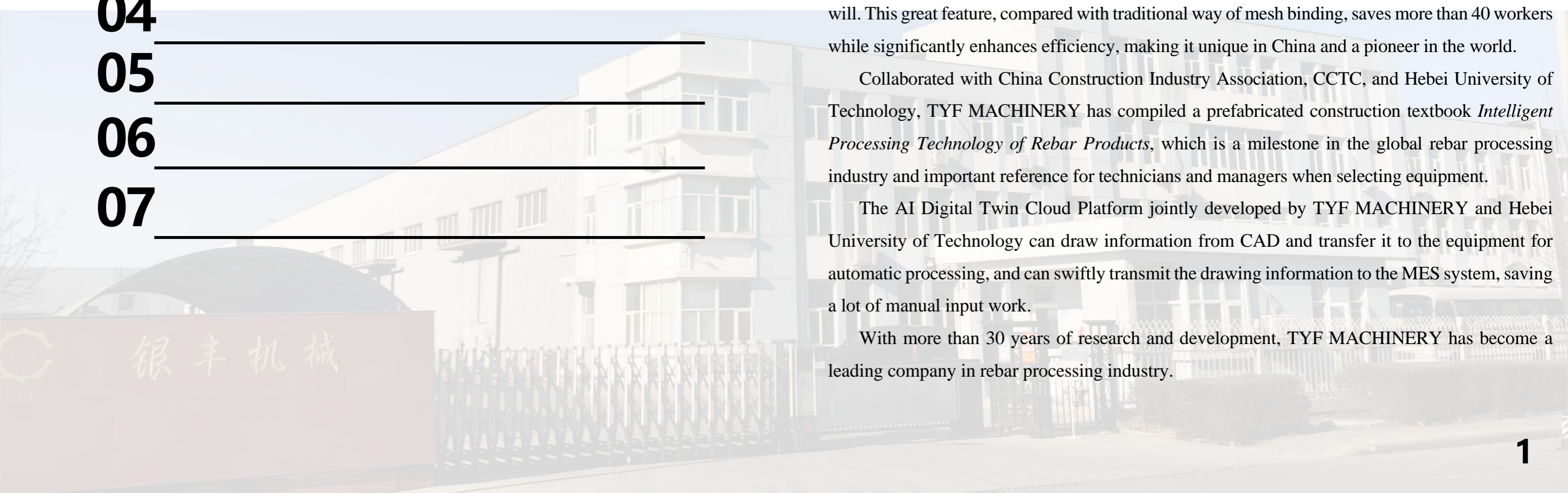
Collaborated with China Construction Industry Association, CCTC, and Hebei University of Technology, TYF MACHINERY has compiled a prefabricated construction textbook *Intelligent Processing Technology of Rebar Products*, which is a milestone in the global rebar processing industry and important reference for technicians and managers when selecting equipment.

The AI Digital Twin Cloud Platform jointly developed by TYF MACHINERY and Hebei University of Technology can draw information from CAD and transfer it to the equipment for automatic processing, and can swiftly transmit the drawing information to the MES system, saving a lot of manual input work.

With more than 30 years of research and development, TYF MACHINERY has become a leading company in rebar processing industry.

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02

Smart Mesh Welding Production Line

The traditional welding machine can only produce one specification each time, and takes 40 minutes for switching, which is too slow for mass production of various specification. Being free from the 50mm-multiple restriction of longitudinal spacing, the Smart Mesh Welding Production Line can freely adjust the spacing and automatically switch mesh specifications according to demand, produce more than 200 meshes in different shapes each shift, fully meeting the mass production needs of prefabrication. With the assistance of the digital twin cloud platform developed by TYF Machinery, it can easily import CAD drawings and automatically export BOM codes, saving a lot of manual efforts of code input, and realizing full-automatic production. After the adoption of this equipment, more than 40 workers of rebar processing, handling and binding can be saved every day, and the equipment investment can be recovered in half a year.



Stepless Mesh Welding Production Line



Item	Data	Note
Mesh Type	Standard, windowed	
Mesh Width	500-4000mm	Standard, windowed
Mesh Length	800-10000mm	Standard, windowed
Transverse spacing	≥ 50 mm	Stepless adjustment
Longitudinal spacing	≥ 50 mm	100-300mm Stepless Adjustment
Transverse bar diameter and type	Φ5-16mm	Hot rolled or cold rolled ribbed steel bar
Straightening Mechanism	2-6 unit selectable	Each unit can work for different diameter. High speed straightening.
Feeding Type	rod	
Max. Welding Capacity	16+16mm	
Num. of Welding Heads	7 movable welding heads	Selectable based on actual situation
Max. Working Speed	10-40 row/min	
Welding Method	Med-frequency welding	Conserve 30% more power, no shock for the grid



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Smart Lattice Girder Production Line

Due to the fact that the production of lattice girder is quite different from the general rebar processing, it requires that the wire feeding, straightening, bending, welding, collecting, and stacking be completed in one go. Traditional manual work no longer meets the demand, so the use of smart equipment has become the mainstream. The smart lattice girder production line only requires two people to operate, and all the above procedures can be automatically completed. It has been widely used in China's high-speed railways and civil buildings. The line adopts Innovance electrical control system, which ensures rapid and stable production and meets the precision requirements. The numerical control collection mechanism automatically collects and conveys the products, reducing labor and improving efficiency. Reliable accessories are adopted for other components to guarantee its long service life and stable performance.



Smart Lattice Girder Production Line



Item	Data	Note
Girder Height	70-350mm	No foot when higher than 320mm, still qualified for double-layer wall and prefabricated pipe corridor when higher than 350mm
Girder Width	70-110mm	Max. width
Upper/Lower bar diameter	5-12mm	
Side bar diameter	4-7mm	
Girder Length	2~14m	customizable
Production Speed	≤17m/min	Based on the specification of girder
Shearing Method	Movable shearing	Any size, no subject to multiple of 100
Collecting Method	Stacker	Multi-layer Automatic Stacker
Tracting Method	Hydraulic clamp traction	Durable, automatic tracting length adjustment

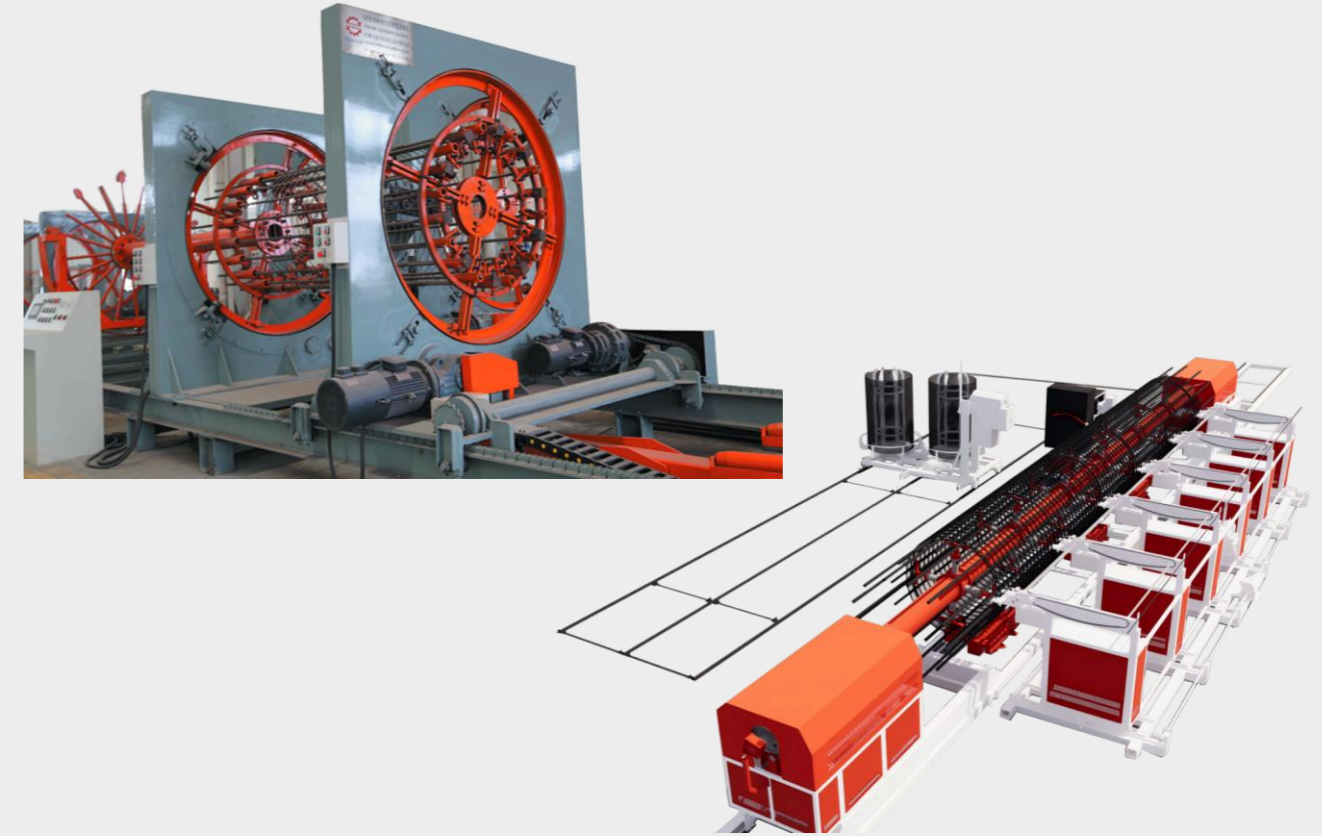


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04 Smart Pile Cage Production Line

In the past, pile cages were traditionally made by manual binding or welding. Besides the low efficiency, the most significant drawback was the poor quality and the inconsistent dimensions, which affected the construction period and quality of the whole project. The Smart Pile Cage Production Line can integrate the separate processes in traditional way such as shearing, straightening, cold-drawing reinforcement, bending, welding, and connecting, etc. This enables the production of pile cages to be largely mechanized and automated, reducing the production time and coordination deviations between processes, significantly improving the quality and efficiency of pile cage forming. At the same time, it greatly reduces the labor intensity of operators, creating good economic and social benefits.

Smart Pile Cage Production Line

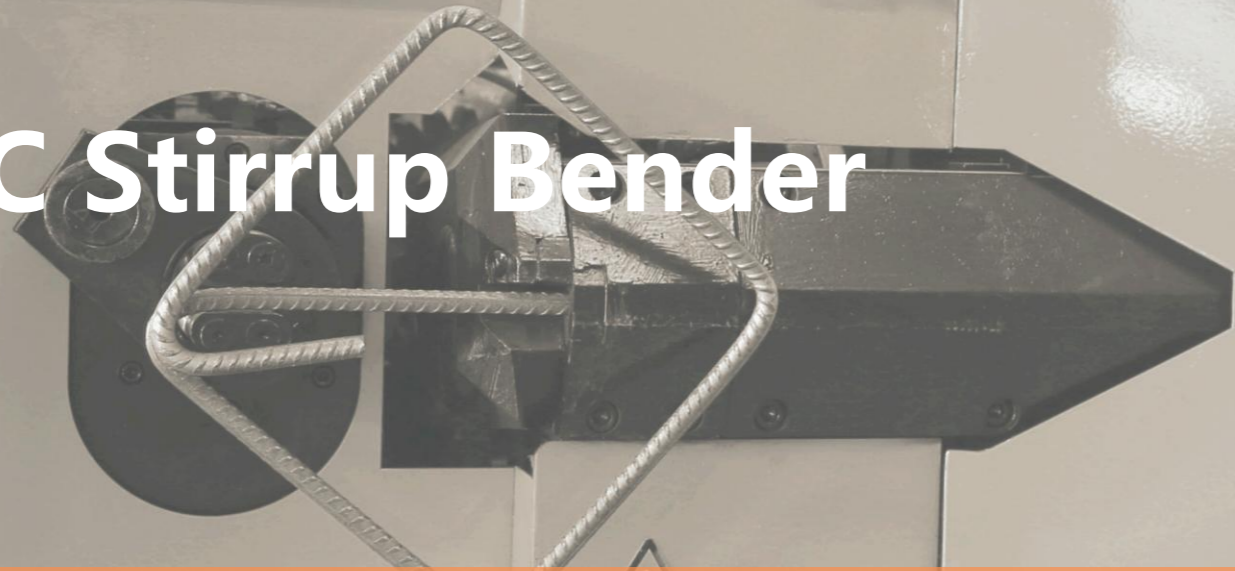


Item	Data	Note
Cage Diameter	Φ200~2500mm	
Cage Length	3-24m	Adjustable based on requirement
Main Bar Diameter	Φ12~40mm	
Spiral Bar Diameter	Φ6~16mm	
Spiral Bar Spacing	50~500mm	Adjustable at will
Welding Type	Manual/Auto	
Welding Speed	45 welding spot/min	



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05 CNC Stirrup Bender



CNC Smart Stirrup Bender adopts a servo control system and integrates the straightening system, bending system and shearing system into one. It can directly process coil steel bar into stirrup, formed bar, or cut-to-size bar. Another important feature of this machine is that it can quickly switch bar diameters, avoiding the need to consider changing bars compared with the traditional mode of pre-straightening and manual bending, thus improving overall production efficiency. The numerical control and flow production mode only requires one worker to complete the production and processing of various specifications of stirrups, significantly reducing the number of workers and labor intensity, directly lowering production costs and achieving remarkable economic benefits. It is widely used in the construction industry, large steel bar processing plants and other fields.



CNC Stirrup Bender



Item	Data	Note
Single Bar	Φ5 – 16 mm	
Double Bars	Φ5 – 10mm	
Max. Bending Angle	±180°	
Max. Bending Speed	1450 °/s	
Max. Tracting Speed	130m/min	
Length Compensation	± 1mm	
Bending Compensation	± 1 °	
Daily Productivity per Unit	8T	
Bending Direction	Two directions	
Other Functions	Power Off Memory	In any case of power failure, it can continue to work from the last stop position



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Smart Rebar Processing Production Line

Mainly used for shearing, bending and threading of various sorts of straight steel bars. The bending equipment comes in 3 types, inclined, flat and vertical, with the maximum bar diameter reaching up to 60mm. The shearing equipment comes in two types, mechanical and hydraulic, with the maximum bar diameter reaching up to 50mm. The sawing and threading equipment is available in two types: band saw and circular saw, with the maximum bar diameter reaching up to 40mm. The whole set of equipment only requires 1 to 2 people to operate and is widely applicable to projects such as highways, railways, bridges, building construction and nuclear power station, etc.



Smart Rebar Shearing Production Line



Shearing Strength	1200 [Kn] – 2,000 [Kn]					
Conveyor Speed	40 – 80 [m/min]					
Shearing Tolerance	± 2 [mm]					
Shearing Length	750 – 12,000 [mm]					
Payload of Conveyor	800 [kg]					
Collecting Rack Number	6*2					
Rebar Diameter (mm)	10-14	16-20	22-25	28-30	32	40-50
Shearing Number	20	12	8	4	2	1



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Smart Vertical Rebar Bending Production Line



Bending Capability	Rebar Specification					Bending Angle				
	Φ6-Φ32					+180°-120°				
Diameter	10	12	14	16	18	20	22	25	28	32
Number	6	5	4	3	2	2	2	1	1	1
Moving Speed (m/s)	0.6									
Bending Speed (°/s)	60									
Length Accuracy (mm/m)	±1									
Min. Bending Length (mm)	90									



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Smart Rebar Sawing, Threading, Grinding Production Line



Item	Data
Diameter Φ	12-40mm
Threading Length	65mm (extendable)
Sawing Speed	≥60m/min
Length Tolerance (mm)	±1mm/m
Conveyor Speed	90m/min
Sawing Length	800-12000mm
Number of Grinding Motors	2 sets



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