



INTELLIGENT FLEXIBLE BENDING CENTER TECHNICAL SOLUTION



CATALOG

01

COMPANY PROFILE

02

EQUIPMENT APPEARANCE

03

FEATURES

04

BENDING WORKPIECE DISPLAY

05

MAIN MODULES

06

MAIN TECHNICAL PARAMETERS

07

MAIN CONFIGURATION

ABOUT US

OUR HONOR

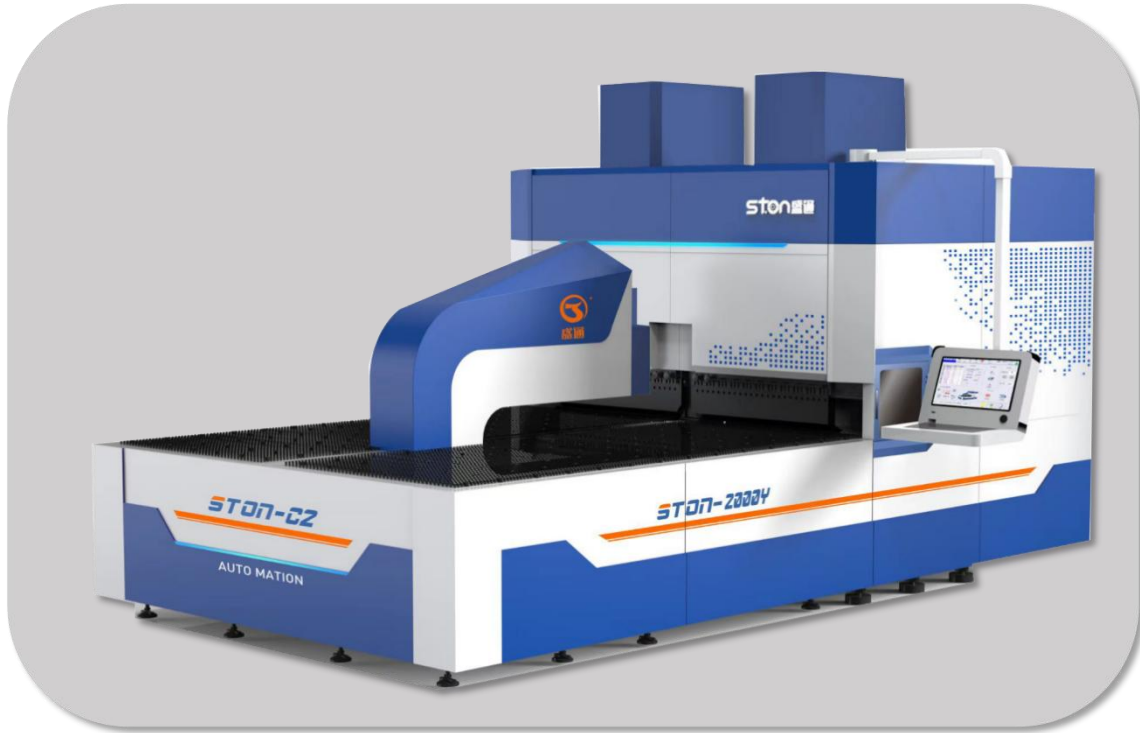


Location: Qingdao Shengtong Mechanical Technology Co., Ltd., located in the beautiful New National Economic Zone (Qingdao West Coast New Economic Zone), is adjacent to the Shenhai Expressway and Qingdao West Railway Station to the west and Qingdao International Airport at the back. The traffic is very convenient.

Main product: The company, established in 2006, is a high tech enterprise with more than ten years of experience in R&D and production of CNC machine tools. The company specializes in the production of CNC turret punch presses, intelligent flexible bending centers, CNC bending machines and CNC feeders.



Appearance

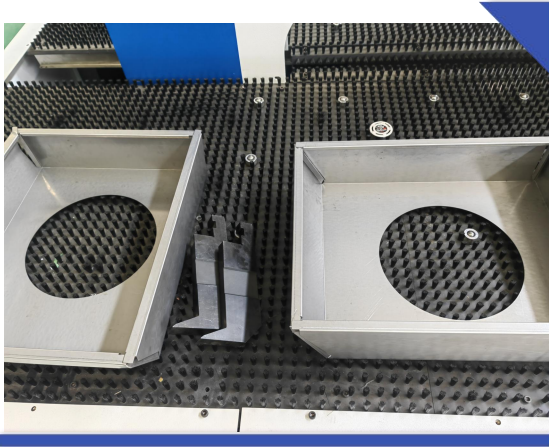


Pressure arm type



suction cup type

Features



Intelligent flexible bending center is a high-tech product developed for the sheet metal industry to improve production efficiency, reduce labor intensity, lower labor costs and enhance enterprise reputation. It has been widely used in various industries such as filing cabinets, electrical cabinets, doors, tool cabinets, kitchenware, ventilation, air conditioning, purification, education and test instruments.



Suitable for a wide range of materials, mainly including stainless steel, carbon steel plate, copper plate and aluminum plate;

Features



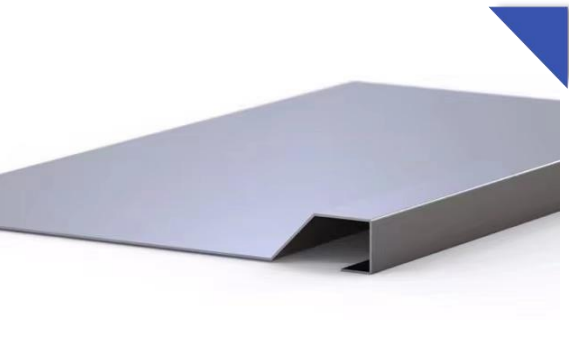
Suitable for a wide range of materials, mainly including stainless steel, carbon steel plate, copper plate and aluminum plate;



High degree of automation, simple operation and low technical requirements for operators;



Mold making is not required and complex shapes (up/down right angle and non right angle) can be freely designed and produced at any time;



The bending center has different hardware and software interfaces and can be used for various loading and unloading methods: Manual loading/unloading, truss robot loading/unloading and robotic loading/unloading;

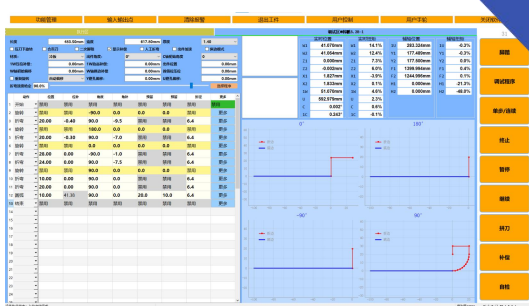
Feature



The control system actually realizes multi-axis simultaneous linkage with smooth bending action and high coordination of mechanical operation; friendly HMI is easy to understand and flexibly program;

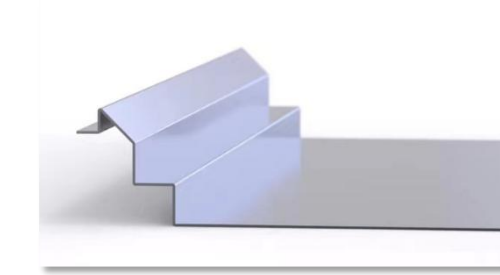
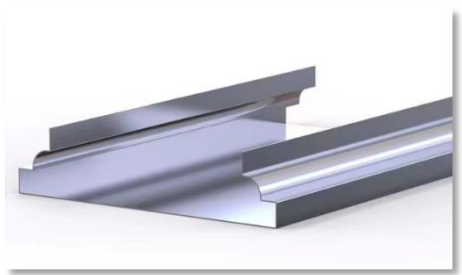
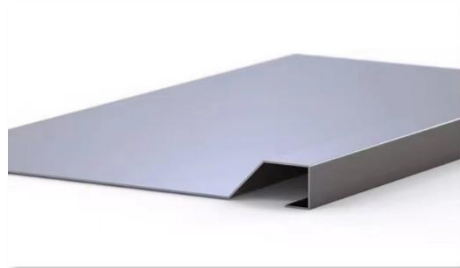
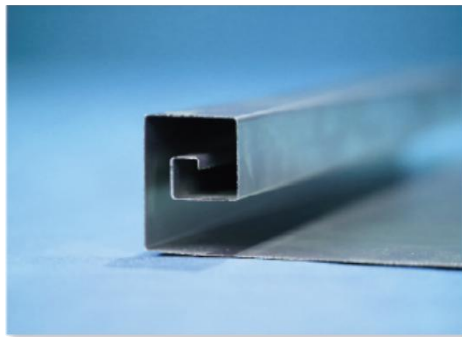
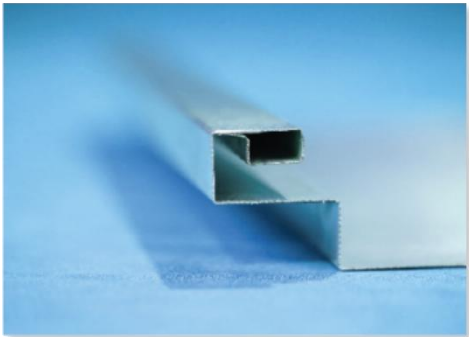
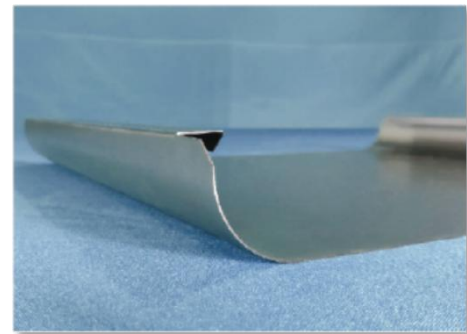
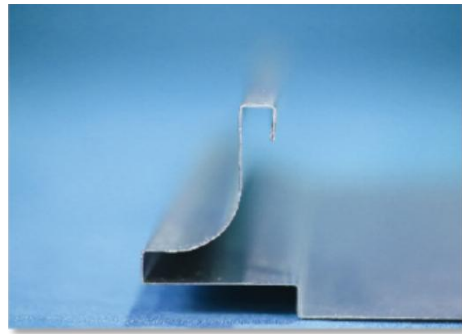
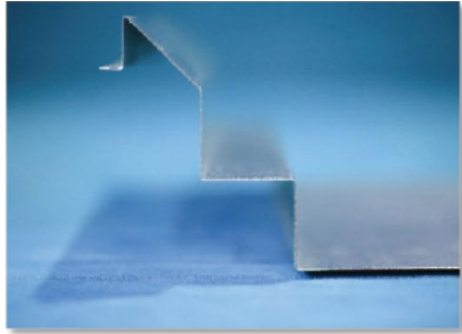
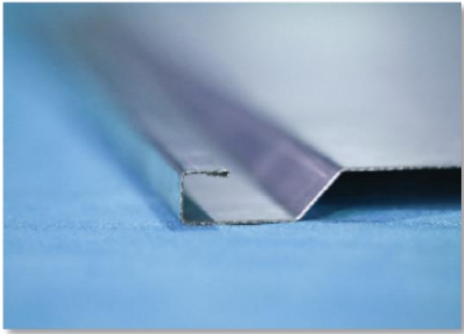
Having bias load detection system, bias load servo system and thick plate detection system, which can effectively protect the machine/workpiece and reduce the waste of the workpiece;

Cloud-based OMS for real-time monitoring of machine operation;

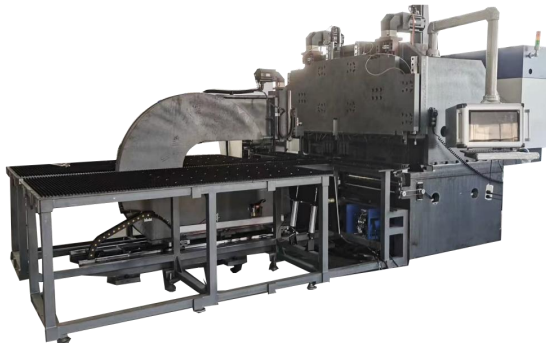


For non-standard workpieces, different positioning references can be selected according to the shape of the workpiece so as to prevent the plate cutting error on the first bending edge and ensure the accuracy of the dimensions after forming.

Bending Workpiece Display



3.1 Equipment body



- ❑ Casting parts or steel plate welding parts can be selected for the equipment body, which can meet the needs of different processes, products and users
- ❑ Accurate finite element analysis is conducted for the casted body frame, which uses the most stable circular radial triangle interconnection design after strict material analysis. We use high-grade QT500-7 and HT250 castings after strict material analysis.
- ❑ The welded body is made of high quality Q235 steel plate, which is welded on a special platform through advanced welding process to ensure the welding accuracy. The body is designed according to the scientific principles of motion mechanics. The main board of the body and the internal rib plate are reasonably designed to greatly ensure the overall stability of the body under high tonnage force.
- ❑ Two types of bodies are subjected to high-temperature annealing treatment according to the temperature curve of the material. After that, they are treated by large shot blasting machine for sand cleaning and the surface is neat and clean. The castings and welded parts undergo open-air aging treatment after rough machining to completely release the internal stress before fine machining to ensure that they can be used for a long time without deformation and ensure the stability of overall accuracy.

3.1 Equipment body



- ❑ The mounting surface and mounting holes of the body guide, screw, positioning turntable and transmission mechanism are machined by large CNC floor boring machine, CNC drilling and milling machine and machining center. For different workpieces, different tooling and fixtures are designed to reduce the clamping times, meet the tolerance requirements of each component flatness, parallelism and perpendicularity, maximize the elimination of accumulated tolerances, improve the fit accuracy of each component and improve the overall assembly accuracy
- ❑ High-precision dial gauge is used together with marble platform and marble square ruler with ten million years of aging treatment. Each workpiece is measured precisely and the processing quality is strictly controlled to ensure that the assembly accuracy of the whole machine meets the standard of high precision machine tools.
- ❑ The unique disturbance compensation design is used to solve the bending angle and straightness compensation problems of different lengths, different plate thicknesses and different materials so as to effectively control the angle and straightness tolerance of the workpiece within the minimum range.
- ❑ The guide rail is assembled by pressing the adjusting block to effectively ensure the parallelism and flatness of each guide rail, ensure the smooth operation of the machine and the roller slider will not wear under external force and is durable.

3.2 Bending tool



- The bending tool is made of 42CrMo forging material and it undergoes strict rough and fine machining, heat treatment, tempering and laser quenching to ensure the service life of the tool and bending requirements. Straight knives, curved knives, big curved knives and upper/lower press knives and pneumatic and electric control hinge knives can be designed and customized according to the user's workpiece. Auxiliary knives can also be added for complex bending processes to meet various bending requirements.

3.4 Electrical part



- Using imported electrical equipment to ensure the stability of the control system; The electrical cabinet is equipped with domestic famous brand air conditioner to dissipate heat in the electrical cabinet in hot summer and the high temperature during the use of electrical parts, and solve the downtime failure caused by high temperature overload. The equipment is also equipped with a grating ruler detection device to detect plate thickness error and avoid equipment damage caused by incorrect input of plate thickness.
- The equipment is equipped with a hand wheel for tool position and accuracy testing and to avoid tool damage caused by system mis-operation, improve the convenience of tool testing and reduce the waste of plates in the test bending.

3.5 Feeding mechanism



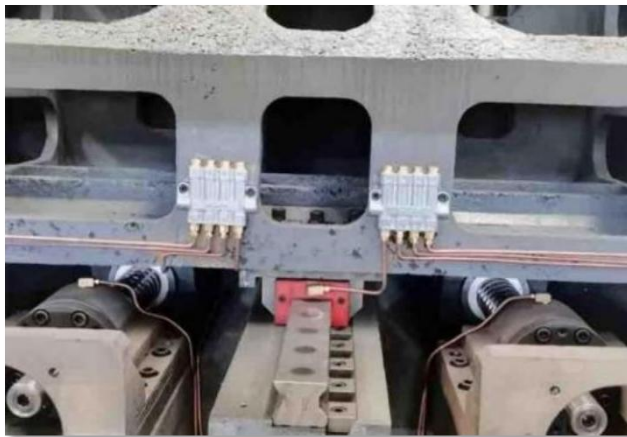
- ❑ Feeding method: Suction cup or press arm feeding method can be selected according to different workpieces. Such feeding methods have been patented, it is simple, easy to operate and safe. It is easy to rotate 360° for feeding and greatly improves the safety of workers. Different suction cup groups and press feet can be selected for both feeding methods according to different plate sizes so as to increase the suction force and pressure to feed the plate just in plate and ensure workpiece bending accuracy.
- ❑ The feeding rack is welded with thick-walled pipes and annealed by electric furnace at high temperature for high stability. After that, it is machined by large floor boring machine to ensure the fitting precision with the mounting surface of the body. The surface uses the combination of brush and universal ball to protect the plate from being scratched and increase the rotation speed.

3.6 Guide rail screw



- Large diameter grinding grade screw rods are used according to the operation requirements of different types of equipment. NSK / NACHI bearings imported from Japan are used together to have higher load capacity and transmission accuracy. Wide roller guide slider has excellent anti-wear performance and strong load bearing performance. It can effectively improve the operation stability and prolong service life of equipment.

3.7 Lubrication system



- ❑ The equipment has automatic lubrication system to make sure that the moving parts are lubricated in time, prevent the wear of screw rod balls and guide roller caused by the lack of oil and lubrication, and prolong the service life of the screw rod and guide rail.
- ❑ The automatic lubrication system automatically alarms when the oil volume is lower than the specified value and it is only need to add the lubricant according to the program. The equipment uses all-copper lubrication pipeline to eliminate the aging and bursting of plastic pipeline, ensure the service life of lubrication pipeline and timely lubrication of each part. It saves the costs of disassembling the equipment replace the pipeline and avoid affecting the reassembling accuracy.

3.8 Motor and reducer



- ❑ Choose domestic/imported servo motor according to the actual bending torque and different user needs. Servo motor signal is transmitted via bus and the control system is used to achieve closed-loop control. It ensures the real-time detection of signal transmission to avoid the signal loss and non-detectable transmission of signals; Increase the number of servo motor according to the maximum torque overload to improve the overload capacity of servo motor and drive, and prevent damage due to long-term working of motor and drive under full load. Imported or domestic well-known brand reducer is used to ensure the accuracy of the screw rod transmission and ensure to control the tolerance of bent workpiece.

Main Technical Parameter

	STON-A2	STON-B1	STON-B2	STON-C2	STON-D2	STON-E2
Upper bending auxiliary knife	optional	optional	optional	optional	optional	optional
Lower bending auxiliary knife	optional	optional	optional	optional	optional	optional
Replace the width of the sucker assembly		optional				
Suction cup group lifting		optional				
Press foot up and down	standard	standard	standard	standard	standard	standard
C axis lift and down	standard	standard	standard	standard	standard	standard
Automatic lubrication function	standard	standard	standard	standard	standard	standard
Wet slide pipe	copper pipe	copper pipe	copper pipe	copper pipe	copper pipe	copper pipe
High order	standard	standard	standard	standard	standard	standard

Main Technical Parameter

	STON-A2	STON-B1	STON-B2	STON-C2	STON-D2	STON-E2
Circular arc command	standard	standard	standard	standard	standard	standard
Plate thickness detection function	standard	standard	standard	standard	standard	standard
Bias load detection function	standard	standard	standard	standard	standard	standard
Automatic loading and unloading interface	standard	standard	standard	standard	standard	standard
High speed control module	standard	standard	standard	standard	standard	standard
Flattening function	standard	standard	standard	standard	standard	standard
up/down press dead	standard	standard	standard	standard	standard	standard
Knife adjustment device	standard	standard	standard	standard	standard	standard
operating handwheel	standard	standard	standard	standard	standard	standard

Main Technical Parameter

	STON-A2	STON-B1	STON-B2	STON-C2	STON-D2	STON-E2
Cloud-based management features	standard	standard	standard	standard	standard	standard
Rated Voltage	380V	380V	380V	380V	380V	380V
Max.bending thickness (mm)	stainless steel 1.0	stainless steel 1.2	stainless steel 1.2	stainless steel 1.2	stainless steel 1.2	stainless steel 1.2
	cold plate 1.2	cold plate 2.0	cold plate 2.0	cold plate 2.0	cold plate 2.0	cold plate 2.0
	Aluminum plate 1.5	Aluminum plate 2.5	Aluminum plate 2.5	Aluminum plate 2.5	Aluminum plate 2.5	Aluminum plate 2.5
Dimension (L×W×H)	3100×1500×2800	3500×1500×2800	4500×2000(2500)×2800	5100×2700×2800	5700×3100×2800	7000×3800×2800

Main configuration

No	Name	Supplier/Brand
1	Control system	Imported brand
2	Servo motor/drive	Imported/Domestic brand
3	Cast body	Xu chang,Henan
4	Welded body	STON,Qingdao
5	Feeding rack	STON
6	Reducer	Tainwan Dingrui/Rouist
7	Screw rod	Nanjing Technical Equipment/Shanxi Hanjiang
8	Guide rail	Nanjing Technical Equipment/ROUIST
9	Bearing	Japan NSK/NACHI

Main Configuration

Item	Name	Supplier/Brand
10	Negative press pump	Zhejiang Tengyuan (Press arm type excluded)
11	Electrical parts	Schneider, Omron
12	Grating ruler	Suzhou SINO
13	Hand wheel	Guangzhou ,nuodien
14	Machine air conditioning	Tongfei Refrigeration
15	Pneumatic accessories	Taiwan AirTAC
16	Taiwan AirTAC	AIRBEST (Press arm type excluded)
17	Coupling	Miki Pulley
18	Lubrication system	Guangdong Dingshen