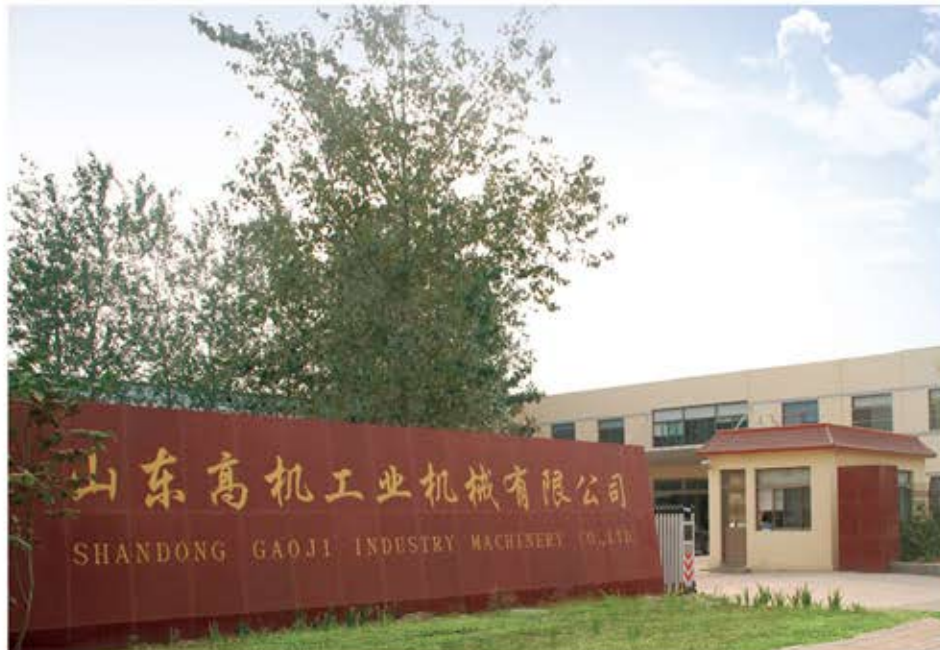




SHANDONG GJ MACHINERY

PROFESSIONAL CNC BUSBAR MACHINERY
MANUFACTURER LLC

SHANDONG GAOJI INDUSTRY MACHINERY CO., LTD.
EURO-ASIA INT'L MACHINERY GROUP



Company Introduction

Incorporated in 1996, Shandong Gaoji Industry Machinery Co., Ltd. who specializes in the R&D of industrial automated control technology, and the design and manufacturing of automated machineries, is currently the largest production and scientific research base of CNC busbar processing machinery in China, taking a leading position in the domestic CNC busbar processor industry.

The company has a strong technical force, rich manufacturing experience, and advanced process, as well as a complete quality management system, and takes the lead in the domestic industry to be certified by the ISO9001:2000 quality management system. The company covers an area of over 28000 m², including the building area of more than 18000 m². It possesses over 120 sets of various CNC machining equipment and high-precision detection devices involving CNC machining center, large-sized portal milling machine, CNC bending machine, etc., rendering a production capacity of 800 sets of series of busbar processing machines per year. Now, the company has more than 200 employees where the engineering technicians occupy 15% above, and professionals involving various disciplines such as material science, mechanical engineering, process control for computer, electronics, economics, information management and so on. The company has been successively honored as "Hi-Tech Enterprise of Jinan City", "Hi-Tech Product of Jinan City", "Independently Innovative Product of Jinan City", "Jinan City's Civilized and Faithful Enterprises", and a series of other titles.

The company has a strong ability in product design and development, owning multiple patent technologies and proprietary core technology. It leads the industry by taking up over 65% market share in the domestic busbar processor market, and exporting machines to a dozen of countries and regions.

Bosom friends within the four seas are close neighbors though separated by great distance. We appreciate the great support extended by all sectors of society and our associated partners, and welcome friends both at home and abroad to cooperate with us in strengthening our business and in creating a bright future.

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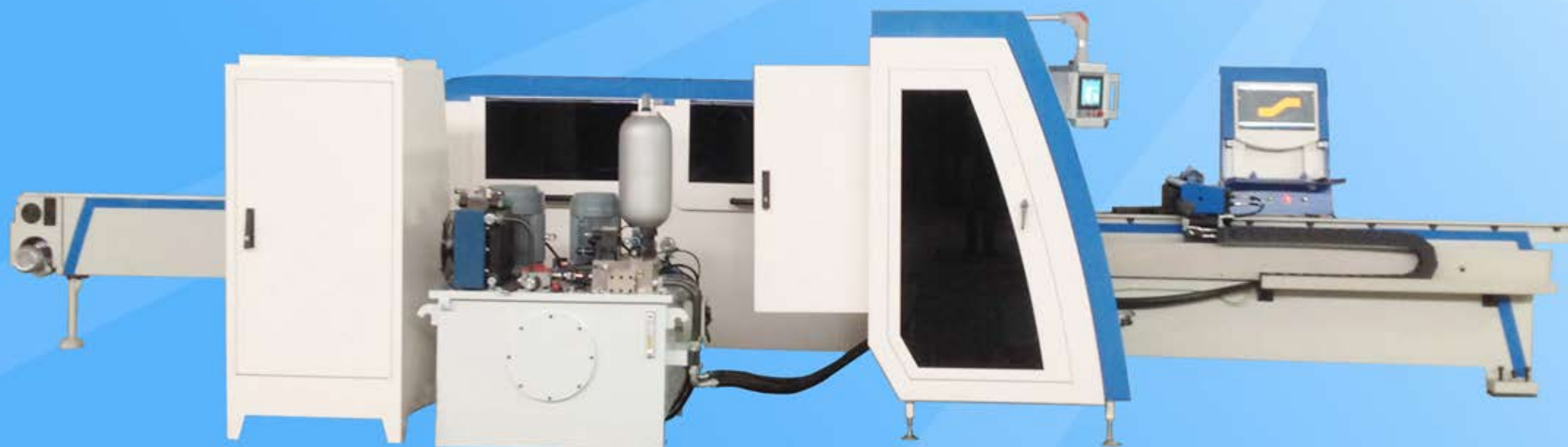


Your Best Busbar Solutions

New Fast CNC Busbar Punching and Shearing Machine

GJCNC-BP-50A

More Faster, But Same Power Consumption!



Main functions and Features:

GJCNC-BP series CNC busbar punching & shearing machine is the computer-controlled equipment of high efficiency and high precision, specially used for busbar processing; Dies of punching, shearing and embossing are placed together in the storeroom of dies; It is capable of executing punching (round, oblong and other holes), embossing, shearing, slotting, round cornering and other processes;; Automatic clamp switching can be achieved without manual intervention for longer busbars. Finished work pieces will be sent out through the conveyor. Such machine series can be used in combination with the CNC busbar bending machine to form an assembly line of busbar processing.

① GJ3D Programming Software:

The software kit of the equipment is the **special CAD software (GJ3D)** developed by our company, which can be used on line to realize the automation of programing. The software pioneers in **applying three dimensional graphics**, the state of the art technology, in the industry of busbar processing. Such software is easy to operate, and can display the processed shapes of the copper bar in a visual and three dimensional manner. It is able to calculate the accurate positions of the punched, sheared, and embossed work pieces, and **generate the machine code automatically**, therefore shortening the time of manual programming and eliminating the potential errors occurred in manual programming. Such software can **demonstrate the entire process of punching, shearing and bending**, so as to prevent material waste arisen from the error in manual code entry.

② Main and auxiliary clamps:

For one clamping, **the maximum stroke of X Axis is 2000mm, and both the main and auxiliary clamps will operate simultaneously**, which will lower the quality requirements on the flatness and bending of the bus bar, thus improving the processing accuracy; during the processing, auto-clamping is obtained to save labor, and to improve the processing efficiency and accuracy;

③ Fast Hauling Belt:

After the processing, the work pieces will be hauled away with the stainless steel hauling belt, so as to improve the efficiency and to protect the work pieces from wearing.

④ Touch Screen:

Human-computer interface is easy to operate and reflects in real time the program execution. It has the function of displaying the alarm message of equipment operation, and allows the easy setting of die parameters and the operation of equipment.

⑤ High-Speed Operation System:

This machine uses high-precision ball screws and linear guides to ensure the high precision and efficiency. Components and elements of national and world famous brands can provide longer service life and guarantee the quality.

⑥ Die Kit:

It has multiple die kit (including dies for shearing, embossing and punching) and adopts integral shearing blade, which is able to cut the busbar at a time, thus improving the processing precision, the section perpendicularity and the processing efficiency; it has special embossing die for producing larger embossing area, thus improving the contact area of busbar and the processing efficiency; the dies are easy to dismantle and assemble, safe and reliable, and easy to replace, guaranteeing the improvement of productivity under circumstances of frequent replacement of dies. The used die satisfies the requirements on accuracy and performance with the punching times no more than 50000.

Main technical parameters

Description		Unit	Parameter
Press Force	Punching Unit	kn	500
	Shearing unit	kn	500
	Embossing Unit	kn	500
X Max Speed		m/min	48
X Max Stroke		mm	2000
Y Max Stroke		mm	530
Z Max Stroke		mm	350
Stoke of Hit Cylinder		mm	45
Max Hit Speed		HPM	100
Tool Kit	Punching Mould	Set	7
	Shearing Mould	Set	1
Control Axis			3
Hole Pitch Accuracy		Mm/m	±0.20
Max Hole Punch Size		mm	Φ 32 (thickness of copper bar: < 12mm)
Max Busbar Size(L*W*H)		mm	6000*200*15
Total power		kw	15.7
Main Machine Size:(L*W)		mm	7500*2980
Machine Weight		kg	7600



Your Best Busbar Solutions

CNC Busbar Punching and Shearing Machine

GJCNC-BP-50

GJ3D Programming Software



Main functions and Features:

GJCNC-BP series CNC busbar punching & shearing machine is the computer-controlled equipment of high efficiency and high precision, specially used for busbar processing; Dies of punching, shearing and embossing are placed together in the storeroom of dies; It is capable of executing punching (round, oblong and other holes), embossing, shearing, slotting, round cornering and other processes;; Automatic clamp switching can be achieved without manual intervention for longer busbars. Finished work pieces will be sent out through the conveyor. Such machine series can be used in combination with the CNC busbar bending machine to form an assembly line of busbar processing.

① GJ3D Programming Software:

The software kit of the equipment is the **special CAD software (GJ3D)** developed by our company, which can be used on line to realize the automation of programing. The software pioneers in **applying three dimensional graphics**, the state of the art technology, in the industry of busbar processing. Such software is easy to operate, and can display the processed shapes of the copper bar in a visual and three dimensional manner. It is able to calculate the accurate positions of the punched, sheared, and embossed work pieces, and **generate the machine code automatically**, therefore shortening the time of manual programming and eliminating the potential errors occurred in manual programming. Such software can **demonstrate the entire process of punching, shearing and bending**, so as to prevent material waste arisen from the error in manual code entry.

② Main and auxiliary clamps:

For one clamping, **the maximum stroke of X Axis is 2000mm, and both the main and auxiliary clamps will operate simultaneously**, which will lower the quality requirements on the flatness and bending of the bus bar, thus improving the processing accuracy; during the processing, auto-clamping is obtained to save labor, and to improve the processing efficiency and accuracy;

③ Fast Hauling Belt:

After the processing, the work pieces will be hauled away with the stainless steel hauling belt, so as to improve the efficiency and to protect the work pieces from wearing.

④ Touch Screen:

Human-computer interface is easy to operate and reflects in real time the program execution. It has the function of displaying the alarm message of equipment operation, and allows the easy setting of die parameters and the operation of equipment.

⑤ High-Speed Operation System:

This machine uses high-precision ball screws and linear guides to ensure the high precision and efficiency. Components and elements of national and world famous brands can provide longer service life and guarantee the quality.

⑥ Die Kit:

It has multiple die kit (including dies for shearing, embossing and punching) and adopts integral shearing blade, which is able to cut the busbar at a time, thus improving the processing precision, the section perpendicularity and the processing efficiency; it has special embossing die for producing larger embossing area, thus improving the contact area of busbar and the processing efficiency; the dies are easy to dismantle and assemble, safe and reliable, and easy to replace, guaranteeing the improvement of productivity under circumstances of frequent replacement of dies. The used die satisfies the requirements on accuracy and performance with the punching times no more than 50000.

Main technical parameters

	Name	Unit	Parameter
Nominal force	Punching unit	kN	500
	Shearing unit	kN	500
	Embossing unit	kN	500
Max positioning speed of X-axis		m/min	48
Max stroke of X-axis		mm	2000
Max effective stroke of Y-axis		mm	530
Max stroke of Z-axis		mm	350
Stroke of Striking cylinder		mm	45
Max Striking frequency		HPM	60
Number of die stations	Punching die	Set	5
	Shearing die	Set	1
	Embossing die	Set	1
Number of control shaft			3
Hole pitch control accuracy		mm/m	±0.20
Max allowable diameter of primary punching hole		mm	Φ32 (thickness of copper bar: < 12mm)
Max embossing area		mm ²	160×60
Max allowable sheet dimension (L*W*H)		mm	6000×200×15
Total power		kW	15.7
Main machine dimension: L*W		mm	7500×2980
Total weight		kg	7600



Your Best Busbar Solutions

CNC Busbar Bending Machine

GJCNC-BB



Closed-loop Bending Structure

Main functions and Features:

CNC busbar bending machine is the computer-controlled equipment dedicated for busbar bending, performing various bending operations through the coordination of X-axis and Y-axis movements, assisted with manual feeding. The selection of different dies can complete the plane bending, side bending and other processes of busbar. The machine can be used in combination with GJ3D software, and is able to accurately calculate the spread length of the bend. As to the frequently bent workpiece, it can automatically find the bending order to achieve programming automation, simulate the bending order to place busbar and avoid errors in determining the bending positions.

① Closed-loop Bending Structure:

X and Y axes use a precision linear guide to ensure the fabricating accuracy and to avoid the drawbacks of open-loop bending, and to ensure the consistency of the machining angle in the width direction. During the vertical bending, the dies of this machine have automatic clamping and releasing functions, to ensure the machining plane flatness, and to reduce damages due to bending arc.

② GJ3D Programming Software:

The assistant software (GJ3D) specially used for busbar processing is adopted by networking with this machine to realize the automated programming. User can use this software to carry out operations conveniently and rapidly. This software can **accurately calculate** the punching position after the bending is spread, and **automatically generate the machine code**, thus saving the tedious manual programming of machine code. It can also demonstrate the whole process of busbar bending, which can effectively prevent from material waste caused by coding errors from manual entry. We are the first to apply **3D graphics** to the busbar processing industry, making great contribution to the industry, and such technology ranks among the foremost in the world.

③ Touch Screen:

Human-computer interface is easy to operate and reflects in real time the program execution. It has the function of displaying the alarm message of equipment operation, and allows the easy setting of die parameters and the operation of equipment.

④ High-Speed Operation System:

This machine uses high-precision ball screws and linear guides to ensure high precision and high efficiency. Long operation life and Zero noise.



Hydraulic vertical bending die



Level bending die



Dent-free female die

Main technical parameters

Name	Unit	Parameter
Nominal force	kN	400
Bending accuracy	Degree	±0.3
Max bending stroke	mm	250
Stroke of side striker	mm	2000
Max motion speed of side striker (X axis)	m/min	15
Bending head (Y axis)	m/min	Fast: 5; low: 1.25
Min inner width of U-shape bend	mm	40 (Note: Please consult us for smaller dimensions)
Max bending angle	Degree	90
Level bending (W * H)	mm	200×15
Vertical bend (W * H)	mm	125×15
Total power	kW	7.2
Main machine dimension: L*W	mm	4150×1590
Total Weight	kg	2700



Your Best Busbar Solutions

CNC Busbar Punch and Shear Machine Model GJCNC-BP-30



Main functions and Features:

GJCNC-BP series CNC busbar punching & shearing machine is the computer-controlled equipment of high efficiency and high precision, specially used for busbar processing; Dies of punching, shearing and embossing are placed together in the storeroom of dies; It is capable of executing punching (round, oblong and other holes), embossing, shearing, slotting, round cornering and other processes;; Automatic clamp switching can be achieved without manual intervention for longer busbars. Finished work pieces will be sent out through the conveyor. Such machine series can be used in combination with the CNC busbar bending machine to form an assembly line of busbar processing.

① 3D Drawing Software GJ3D :

The software kit of the equipment is the **special CAD software (GJ3D)** developed by our company, which can be used on line to realize the automation of programing. The software pioneers in **applying three dimensional graphics**, the state of the art technology, in the industry of busbar processing. Such software is easy to operate, and can display the processed shapes of the copper bar in a visual and three dimensional manner. It is able to calculate the accurate positions of the punched, sheared, and embossed work pieces, and **generate the machine code automatically**, therefore shortening the time of manual programming and eliminating the potential errors occurred in manual programming. Such software can **demonstrate the entire process of punching, shearing and bending**, so as to prevent material waste arisen from the error in manual code entry.

② Main Clamp:

For one clamping, **the maximum stroke of X Axis is 1000mm**, during the processing, auto-clamping is obtained to save labor, and to improve the processing efficiency and accuracy;

③ Quick Side Unload Type:

Adopt side unload platform to discharge the finished piece by tilting the platform. Efficient and assure without abrasive wear to busbar surface.

④ Touch Screen

Human-computer interface is easy to operate and reflects in real time the program execution. It has the function of displaying the alarm message of equipment operation, and allows the easy setting of die parameters and the operation of equipment.

⑤ High Speed Transmission System :

This machine uses high-precision ball screws and linear guides to ensure the high precision and efficiency. Components and elements of national and world famous brands can provide longer service life and guarantee the quality.

⑥ Tool Kit

It has multiple Tool Kit (including dies for shearing, embossing and punching) and adopts integral shearing blade, which is able to cut the busbar at a time, thus improving the processing precision, the section perpendicularity and the processing efficiency; it has special embossing die for producing larger embossing area, thus improving the contact area of busbar and the processing efficiency; the dies are easy to dismantle and assemble, safe and reliable, and easy to replace, guaranteeing the improvement of productivity under circumstances of frequent replacement of dies. The used die satisfies the requirements on accuracy and performance with the punching times no more than 50000.

Main technical parameters

Specification		Unit	Parameter
Press Force	Punch Unit	kN	300
	Shear Unit	kN	300
X Max Speed		m/min	48
X Max Stroke		mm	1000
Y Max Stroke		mm	530
Z Max Stroke		mm	350
Stoke of Hit Cylinder		mm	45
Max Hit Speed		HPM	60
Tool Kit	Punch Mould	Set	4
	Shear Mould	Set	1
Control Axis			3
Hole Pitch Accuracy		mm/m	±0.20
Max Hole Punch Size		mm	Φ32(Press<300KN)
Max Busbar Size (L x W x H)		mm	6000×125×12
Total Power		kW	15
Machine Size : (LxW)		mm	2000×1900
Machine Weight		kg	3200



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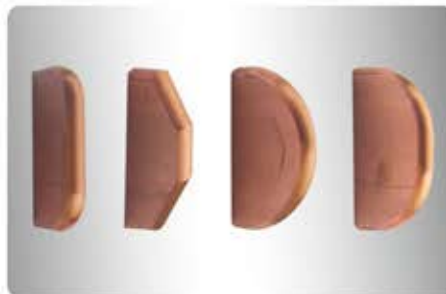
Bus Arc Machining Center (Chamfering Machine) GJCNC-BMA



Main functions and Features:

CNC bus chamfering machine mainly functions in milling fillet and big fillet in the busbar. It automatically generates the program code and transmits the code to the equipment basing on the requirements on the busbar specification and the data input onto the display screen. It is easy to operate and can machine useful busbar arc with nice looking.

- ◆ This machine is used to carry out sectional arc machining for busbar heads with the $H \leq 3-15\text{mm}$, $w \leq 140\text{mm}$ and $L \geq 280\text{mm}$.
- ◆ The bar head will be machined to the shape with fixed structure.
- ◆ The clamps adopt automatic centering technology to press the pressing head better onto the force bearing point.
- ◆ A booster is used on the pressing head to secure the stability of workpiece, rendering a better machining surface effect.
- ◆ World standard BT40 tool holder is used for easy blade replacement, fine rigidity and high accuracy.
- ◆ This machine adopts high-precision ball screws and linear guides. Heavy-load large-size guide rails have been selected to offer better rigidity of the entire machine, lower the vibration and noise, improve the quality of workpiece and ensure high accuracy and efficiency.
- ◆ Using components of domestic and world famous brands, this machine is of long service life and can guarantee high quality.
- ◆ The program used in this machine is the embedded automatic graphics programming software developed by our company, realizing the automation in programming. The operator does not have to understand various codes, nor does he/she have to know how to operate the traditional machining center. The operator just has to enter several parameters by referring to the graphics, and the equipment will generate automatically the machine codes. It takes shorter time than manual programming and eliminates the potential of code error caused by manual programming.
- ◆ Busbar machined in this machine is of fine look, without point discharge, narrowing the cabinet size to save space and remarkably reducing the consumption of copper.



Main technical parameters

Name		Unit	Parameter
Cutting sector	Speed of spindle	RPM/min	1000
	Motor power	kW	7.5
	Tool holder model		BT40
Number of die stations	X-axis stroke	mm	250
	Y-axis stroke	mm	350
	Servo power	kW	2×1.5
	Feeding speed	mm/min	1200
Tool parameter (diameter)		mm	100
Min allowable sheet length		mm	280
Max allowable sheet dimension (W*H)		mm	140×15
Min allowable sheet dimension (W*H)		mm	30×3
Air Source		MPa	0.5~0.9
Total power		kW	9.5
Main machine dimension: L*W		mm	2500×2000
Total weight		kg	2300



Your Best Busbar Solutions

Bus Duct Connection Row Machining Centre

GJCNC-CB-20-1.0



Main Functions and Features:

Bus duct connection row machining centre is the patented product developed by our company, which has the following advantages and features:

- ◆ This product is mainly used for the fabrication of bus duct connection row, realizing automation of punching, stretching, shearing and other fabrication processes related to bus duct connection row so as to improve the production efficiency.
- ◆ Hydraulic operation is applied in the working unit for stable performance and high security.
- ◆ Copper bar clamping pattern: Dual-clamp linkage is used. During the motion of clamp, the copper bar is secured stably without shifting or moving, and thus surface damage to the copper bar will be avoided (scratching, scoring, deformation, etc.).
- ◆ This equipment applies human-computer interface (touch screen), which is easy to set related parameters and operate the equipment, and reflects in real time the program execution. If there is an operation error, the equipment will display the alarm message, timely warning the operator to avoid the waste of material and damage to the machine due to misoperation.
- ◆ This machine uses high-precision ball screws and linear guides to guarantee high machining accuracy and improve working efficiency.
- ◆ This equipment uses imported components (which are all of domestic and world famous brands) for long service life and to guarantee high quality.



Main technical parameters:

Name		Unit	Parameter
Nominal force	Punching unit	kN	200
	Stretching		200
	Shearing		200
Max positioning speed of X axis		m/min	30
Operating stroke	Punching unit	mm	15
	Stretching		30
	Punching		20
Stroke of X-axis		mm	1200
Blowing frequency	Punching unit	Time/min	50
	Stretching		25
	Shearing		30
Hole pitch control accuracy		mm/m	<±0.1
Sheet processing range	L	mm	≤6000
	W		120 ~ 140(customizable)
	H		3 ~ 4.5(customizable)
Max hydraulic pressure		MPa	31.5
Total power		kW	6
Main machine dimension: L×W		mm	2330×1660
Total weight		kg	2200



Your Best Busbar Solutions

Multifunction Busbar Processing machine

BM303-S-3-8P



Main Functions and Features:

The multifunction busbar processing machine is the patented product developed by our company. Comparing with the traditional busbar processing machine, this product has the following advantages and features:

- ◆ The punching unit adopts turret-type die kit, capable of storing eight punching dies or seven punching dies with one set of embossing die;
- ◆ The shearing unit adopts round integral structure, with novel and unique design rendering reasonable force bearing, and thus effectively guarantees the long-term use without deformation;
- ◆ The bending unit uses integral structure and CNC angle control mode, allowing easy operation and high accuracy;
- ◆ This machine adopts the design approach of double-layer work bench, truly realizing the simultaneous working of three stations without mutual interference;
- ◆ The machine is provided with an automatic oil charge and discharge system, easy to operate, with the hydraulic oil charged into the oil tank via a filter so as to protect the entire hydraulic system from contamination;
- ◆ This machine is provided with stainless steel oil tank to protect the hydraulic oil from corrosive deterioration, and extend the service life of hydraulic oil and the seals;
- ◆ PLC control that is stable and reliable.

Configuration of the machine:

Work Bench Dimension (mm)	Machine Weight (kg)	Number of Motors	Total Motor Power (kW)	Working Voltage (V)	Number of Hydraulic Units (MPa)	Control Mode
Layer I: 1500×1200	1460	3+1	11.37	380	3×31.5	PLC+ CNC angle bending
Layer II: 840×370						

Main technical parameters

Name	Material	Machining W* H(mm)	Max Punched Hole	Max Output Force (kN)
Punching unit	Copper/Aluminum	H:15	$\Phi 32$ (H≤10mm) $\Phi 25$ (H≤15mm)	350
Shearing unit	Copper/Aluminum	Punching and shearing: 12×160 Simple shearing: 15×160		350
Bending unit	Copper/Aluminum	Level bending: 15×160 Vertical bending: 12×120		350



Your Best Busbar Solutions

Multifunction Busbar Processing Machine

BM303-S-3



Main Functions and Features:

The multifunction busbar processing machine is the patented product developed by our company. Comparing with the traditional busbar processing machine, this product has the following advantages and features:

- ◆ The punching and shearing units adopt round integral structure, with novel and unique design rendering reasonable force bearing, and thus effectively guarantees the long-term use without deformation;
- ◆ The bending unit uses integral structure and CNC angle control mode, allowing easy operation and high accuracy;
- ◆ This machine adopts the design approach of double-layer work bench, truly realizing the simultaneous working of three stations without mutual interference;
- ◆ The machine is provided with an automatic oil charge and discharge system, easy to operate, with the hydraulic oil charged into the oil tank via a filter so as to protect the entire hydraulic system from contamination;
- ◆ This machine is provided with stainless steel oil tank to protect the hydraulic oil from corrosive deterioration, and extend the service life of hydraulic oil and the seals; PLC control that is stable and reliable.
- ◆ Swappable dies offering extreme convenience;
- ◆ PLC control that is stable and reliable.

Configuration of the machine:

Work Bench Dimension (mm)	Machine Weight (kg)	Number of Motors	Total Motor Power (kW)	Working Voltage (V)	Number of Hydraulic Units (MPa)	Control Mode
Layer I: 1500×1200	1280	3+1	11.37	380	3×31.5	PLC+ CNC angle bending
Layer II: 840×370						

Main technical parameters

Name	Material	Machining W×H(mm)	Max Punched Hole	Max Output Force (kN)
Punching unit	Copper/Aluminum	H:15	Φ32 (H≤10mm) Φ25 (H≤15mm)	350
Shearing unit	Copper/Aluminum	Punching and shearing: 12×160 Simple shearing: 15×160		350
Bending unit	Copper/Aluminum	Level bending : 15×160 Vertical bending: 12×120		350



Your Best Busbar Solutions

Multifunction Busbar Processing Machine(For Large Busbar) **BM603-S-3(16×260)**



Main Functions and Features:

The multifunction busbar processing machine is the patented product developed by our company. Comparing with the traditional busbar processing machine, this product has the following advantages and features:

- ◆ The punching and shearing units adopt column structure, with novel and unique design rendering reasonable force bearing, and thus effectively guarantee the long-term use without deformation;
- ◆ The bending unit uses integral structure and CNC angle control mode, allowing easy operation and high accuracy;
- ◆ Comparing with common busbar processing machine, this machine is of stronger capability in busbar processing, which is able to perform the punching, shearing, bending, etc. of busbar with special width and height;
- ◆ This machine adopts the design approach of double-layer work bench, truly realizing the simultaneous working of three stations without mutual interference;
- ◆ The machine is provided with an automatic oil charge and discharge system, easy to operate, with the hydraulic oil charged into the oil tank via a filter so as to protect the entire hydraulic system from contamination;
- ◆ This machine is provided with stainless steel oil tank to protect the hydraulic oil from corrosive deterioration, and extend the service life of hydraulic oil and the seals;
- ◆ Swappable dies offering extreme convenience;
- ◆ PLC control that is stable and reliable.

Configuration of the machine:

Work Bench Dimension (mm)	Machine Weight (kg)	Number of Motors	Total Motor Power (kW)	Working Voltage (V)	Number of Hydraulic Units (MPa)	Control Mode
Layer I: 1500×1500	1800	3+1	11.37	380	3×31.5	PLC+ CNC angle bending
Layer II: 840×370						

Main technical parameters

Name	Material	Machining W×H(mm)	Max Punched Hole	Max Output Force (kN)
Punching unit	Copper/Aluminum	16×260	Φ32	600
Shearing unit	Copper/Aluminum	Punching and shearing: 16×160 Simple shearing: 16×160		600
Bending unit	Copper/Aluminum	Level bending: 16×160 Vertical bending: 12×120		350



Your Best Busbar Solutions

Multifunction Busbar Processing Machine

BM603-S-3 (for Copper Rod/Tube)



Main Functions and Features:

The multifunction busbar processing machine is the patented product developed by our company. Comparing with the traditional busbar processing machine, this product has the following advantages and features:

- ◆ The punching unit adopts column structure, with novel and unique design rendering reasonable force bearing, and thus effectively guarantees the long-term use without deformation;
- ◆ The shearing unit adopts round integral structure, with novel and unique design rendering reasonable force bearing, and thus effectively guarantees the long-term use without deformation;
- ◆ The bending unit uses integral structure and CNC angle control mode, allowing easy operation and high accuracy;
- ◆ This machine adopts the design approach of double-layer work bench, truly realizing the simultaneous working of three stations without mutual interference;
- ◆ The machine is provided with an automatic oil charge and discharge system, easy to operate, with the hydraulic oil charged into the oil tank via a filter so as to protect the entire hydraulic system from contamination;
- ◆ This machine is provided with stainless steel oil tank to protect the hydraulic oil from corrosive deterioration, and extend the service life of hydraulic oil and the seals;
- ◆ Swappable dies offering extreme convenience;
- ◆ PLC control that is stable and reliable.

Configuration of the machine:

Work Bench Dimension (mm)	Machine Weight (kg)	Number of Motors	Total Motor Power (kW)	Working Voltage (V)	Number of Hydraulic Units (MPa)	Control Mode
Layer I: 1500×1200	1500	3+1	11.37	380	3×31.5	PLC+ CNC angle bending
Layer II: 840×370						

Main technical parameters

Name	Material	Machining W×H(mm)	Max Punched Hole	Max Output Force (kN)
Punching unit	Copper/Aluminum	16×260	Φ32	600
Shearing unit	Copper/Aluminum	Punching and shearing: 12×160 Simple shearing: 15×160		350
Bending unit	Copper/Aluminum	Level bending: 15×160 Vertical bending: 12×120		350



Your Best Busbar Solutions

Multifunction Busbar Processing Machine

BM303-J-1



Main Functions and Features:

The multifunction busbar processing machine is the patented product developed by our company. Comparing with the traditional busbar processing machine, this product has the following advantages and features:

- ◆ The punching and shearing units adopt round integral structure, with novel and unique design rendering reasonable force bearing, and thus effectively guarantees the long-term use without deformation;
- ◆ The bending unit uses integral structure and angle limit control mode, allowing easy operation and high accuracy;
This machine adopts the design approach of double-layer work bench;
- ◆ The machine is provided with an automatic oil charge and discharge system, easy to operate, with the hydraulic oil charged into the oil tank via a filter so as to protect the entire hydraulic system from contamination;
- ◆ This machine is provided with stainless steel oil tank to protect the hydraulic oil from corrosive deterioration, and extend the service life of hydraulic oil and the seals;
- ◆ Swappable dies offering extreme convenience;
- ◆ PLC control that is stable and reliable.

Configuration of the machine:

Work Bench Dimension (mm)	Machine Weight (kg)	Number of Motors	Total Motor Power (kW)	Working Voltage (V)	Number of Hydraulic Units (MPa)	Control Mode
Layer I: 1200×1000	1080	1+1	4.37	380	1×31.5	PLC+ limit control
Layer II: 840×370						

Main technical parameters

Name	Material	Machining W×H(mm)	Max Punched Hole	Max Output Force (kN)
Punching unit	Copper/Aluminum	H 15	Φ32 (H≤10mm) Φ25 (H≤15mm)	350
Shearing unit	Copper/Aluminum	Punching and shearing: 12×160 Simple shearing: 15×160		350
Bending unit	Copper/Aluminum	Level bending: 15×160 Vertical bending: 12×120		350

Tool List for Multifunction BM Series:

Multifunction Busbar Processing machine

Bending unit

Shearing unit

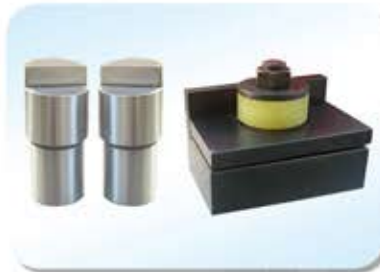
Punching unit

Bending unit

Level and vertical bending, elbow bending, cable lug molding, copper bar bending, etc. can be achieved by altering the dies.



Die of double-head level bending



Die of vertical bending



Die of Cable lug molding



Die of copper bar folding

Shearing unit

The adoption of punching and shearing approach guarantees the sectional perpendicularity, producing deformation-free workpiece with polished and nice-looking end face.

Simple shearing is applied to get rid of material waste, thus saving the raw materials.



simple shearing unit



Single shear



Punching and shearing unit



Punching shear

Punching unit

Such processes as punching hole, oblong hole, square hole and double-holes, knurling, pressing cooper bar, shearing cooper bar can be completed by changing dies.



Punching die (round/column structure)



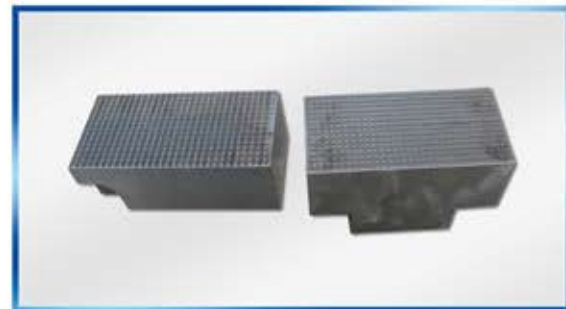
Embossing die (round/ column structure)



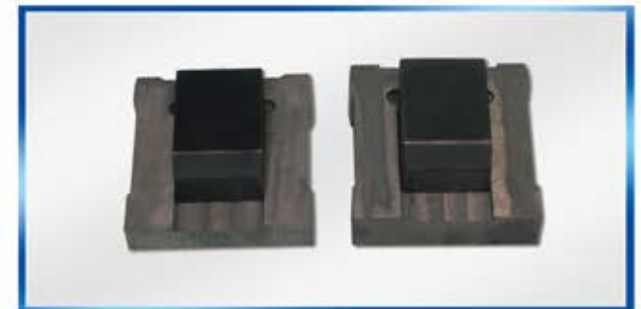
Die of shearing cooper bar



Punching die (turret structure)



Embossing die (turret structure)



Die of pressing cooper bar



Your Best Busbar Solutions

CNC Busbar Sawing Machine

GJCNC-BSM



Main Functions and Features:

CNC Busbar sawing machine is developed by our company . Specially for quick busbar cutting .

- ① Busbar cut by saw blade can be beautiful section surface and smaller waste .
- ② Auto clamp with stroke 2000mm .
- ③ Driven by spindle motor. Use high speed carbide disc blade .
- ④ High precision ball screw, linear guide rail, servo motor for position of clamp and saw blade feeding.
Assure high accuracy and work efficiency!
- ⑤ Imported and branded components assure machine life and reliable quality.
- ⑥ As per different width of busbar. Machine can be custoemerized !



Main technical parameters:

Name		Unit	Parameter
Cut Unit	Sawing RPM	RPM/Min.	2800
	Motor power	kW	2.2
Clamp Position Unit	X-axis stroke	mm	2000
	Servo power	kW	1.5
	Max. positioning speed	mm/min	48
Feeding Unit	Y-axis stroke	mm	300
	Servo power	kW	1.5
	Max. positioning speed	mm/min	16
Saw blade diameter		mm	405
Minimum allowable sheet length		mm	40
Maximum Cut Size (W * H) (Customerized Available)		mm	200×20
Minimum allowable sheet dimension (W ×H)		mm	30×3
Air Pressure		MPa	0.5 ~ 0.9
Total power		kW	5.2
Main machine dimension: L×W		mm	2800×1200
Total weight		kg	1500



Your Best Busbar Solutions

CNC Copper Rod Bending Machine 3D Bending

GJCNC-CBG



Main Functions and Features:

CNC Copper Rod Bender is the patented machine developed by Our company. It can automatically bend and cut . Option parts are Including Flat presser, Punch and Chamfer.

- ① Touch screen .Angle easily set up . Quick and high accuracy.
- ② Auto angle bend, length-way position and rotation . Realize 3D bending and cutting.
- ③ Bend and Cut can operate at same time with separate pump.
- ④ With Optional Parts can complete all the jobs to copper rod.



Main technical parameters:

Name	Unit	Parameter
Nominal force	kN	200
Bending accuracy	degree	$\leq \pm 0.2^\circ$
Primary axial stroke	mm	1500
Copper bar's allowable range	mm	$\Phi 8 \sim \Phi 20$
Minimum turning angle	degree	70°
Axial turning angle	degree	360°
Total power	kW	7.5
Voltage	V	380
Main machine dimension: L×W	mm	2000×720



Your Best Busbar Solutions

Busbar Leveling Machine

BMJP-160/260 BMJP-350



Main Functions and Features:

- ◆ This is a series of roller-type leveling machine, which is the patented product developed by our company. Basing on the traditional roller-type leveling principle, this product has undergone design optimization and restructuring, which has obtained consistent recognition from the users;
- ◆ This machine adopts chained transfer case to replace the traditional gear boxes and linkage. It is of simple structure, stable operation, high efficiency and easy maintenance;
- ◆ This machine uses double-hand wheels for the adjustment, which is convenient and fast;
- ◆ The 11-roller and double-power configuration of this machine has effectively improved the slippage of workpiece, i.e. saving the electric power and guaranteeing the surface quality of workpiece.

Main technical parameters

Specification	Number of Rollers	Overall Dimensions L×W×H (mm)	Machine Weight (kg)	Max Output Force (kN)	Max Levelled Sectional Dimension (mm)	Unevenness mm/m
BMJP—160	11	1200×800×1000	960	1.5×2	160×12	<1
BMJP—260	11	1300×1100×1400	1500	2.2×2	260×12	<1
BMJP—350	11	1500×1100×1400	2100	3×2	350×12	<1



SHANDONG GAOJI INDUSTRY MACHINERY CO., LTD.
EURO-ASIA INT'L MACHINERY GROUP LTD
ADD: NO.103 MEILI ROAD, HUAIYIN DISTRICT,
JINAN CITY, SHANDONG PROVINCE, CHINA
OVERSEAS DEPARTMENT:
TEL: 0086(531)81670640
FAX: 0086(531)81670639
HOTLINE: 008613573186398 24HR
Web: www.gjmachinery.com
Email: info@gjmachinery.com

ASEAN Area Branch Office:
No.23, JALAN RAMIN 1, BANDAR BOTANIC,
41200 KLANG, SELANGOR, MALAYSIA.
TEL: +603-3319 4919
FAX: +603-33191408
Email: jon5125@gmail.com

UAE Branch Office:
MIDDLE EAST AJMAN FREE ZONE
PO BOX 3026 AJMAN UAE
TEL: +97167427558
FAX: +97167427939
Email: erconme1@eim.ae

