ADH MACHINE TOOL

PANEL BENDER

PB-A / PB-M

ADH MACHINE TOOL

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COMPANY PROFILE

Established in 2002, ADH Company is situated in Ma'anshan City, Anhui Province, just 30 kilometers from Nanjing Lukou Airport. Our expansive 2,000,000 square meter facility specializes in manufacturing press brakes, hydraulic shearing machines, laser cutting machines (including automatic production units), CNC turret punches, intelligent flexible bending centers, and sheet metal automation equipment. As a leading high-tech manufacturer prioritizing R&D and innovation, we hold numerous patents and industry certifications.

2002	6000 +	120 +	100 +
Founded	Annual Production	R&D Personnel	Exported Countries

Mission

We are committed to research and development, improving product and service quality, in order to establish a globally renowned sheet metal manufacturing machinery center.

Vision

Our goal is to become a highly respected sheet metal support service provider, earning the trust of customers and the pride of employees.

Values

Innovation, Lean Manufacturing, Integrity, Win-Win.

ADH MACHINE TOOL

PANEL BENDER

Automatic Tool Changer

PB-A Series

- Revolutionary 0.2s servo strokes.
- 0.5s automatic tool changes.
- 24-axis sync, precise control.
- ± 0.1mm thickness detection accuracy.
- Mold-free intricate shape forming.
- Cloud monitoring, robotic integration.
- Energy-efficient 76kW peak power.
- Durable frame, high-load bearings.
- Automated lubrication, less maintenance.

ADH MACHINE TOOL

PANEL BENDER

Press Arm Type

PB-M Series

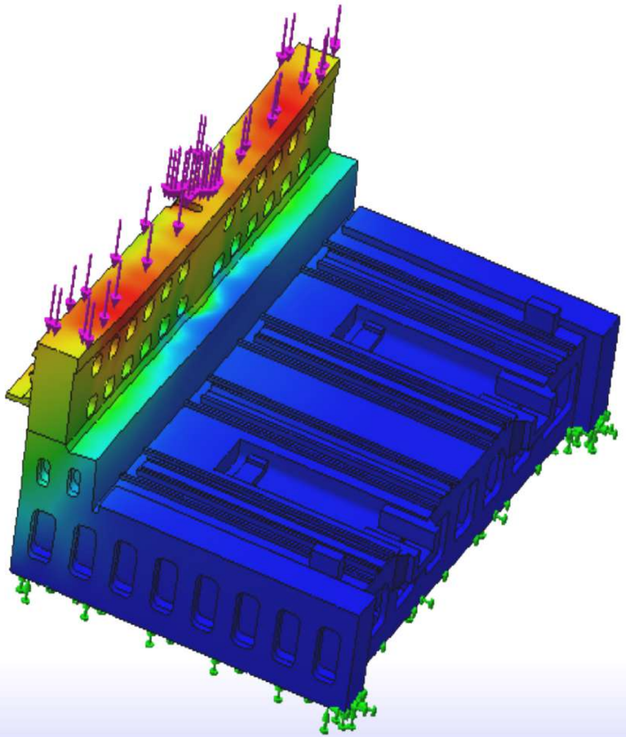
- Achieves 0.2-second cycle times per bend with 15-axis concurrent linkage control, ensuring high-speed, accurate production of complex geometries.
- Handles stainless steel, aluminum, and cold-rolled plates up to 3.0mm thickness, maintaining crisp bends across diverse industrial applications.
- Servo-electric drive system guarantees energy-efficient operation with 50dB noise levels, enhancing productivity without hydraulic power dependency.
- Patented press arm mechanism and user-friendly interface enable stable four-sided forming with minimal operator training.

ADH MACHINE TOOL

BODY

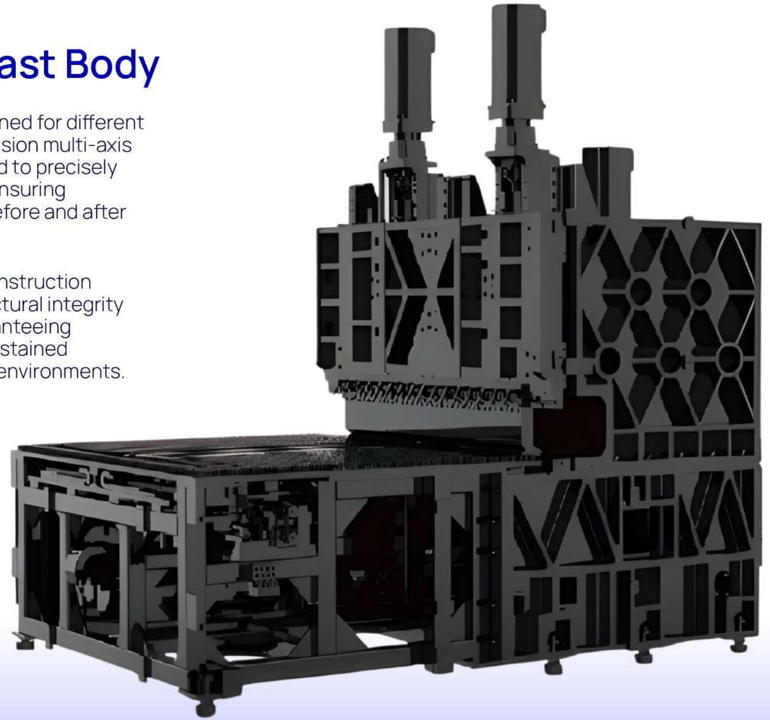
PB-A
High-Grade Cast Body

- The core frame is made of high-grade QT500-7 and HT300 castings with precise finite element stress analysis and stable triangular interconnection design, ensuring stability under high-tonnage impact forces.
- The castings are produced using high-precision temperature-controlled furnaces, undergo multiple heat treatment processes including tempering and annealing, followed by long-term full-frequency vibration aging to eliminate internal stress and prevent deformation.



PB-M
High-Grade Cast Body

- Different fixtures are designed for different workpieces, and high-precision multi-axis machining centers are used to precisely machine the workpieces, ensuring consistency in accuracy before and after clamping.
- Robust high-grade cast construction provides outstanding structural integrity and wear resistance, guaranteeing long-term durability and sustained productivity in demanding environments.



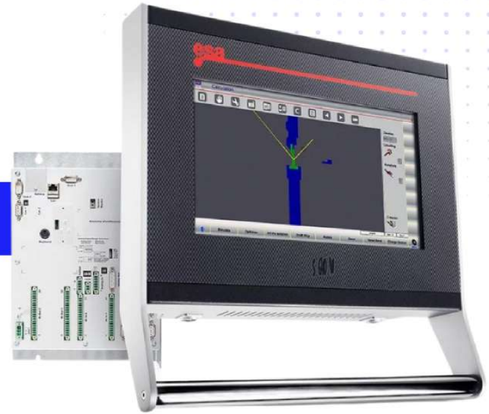
ADH MACHINE TOOL

CONTROL SYSTEM

Chinese Control System

- Equipped with a knowledge base of 10,000+ process data points, it can automatically match bending paths, increasing efficiency by over 30%.
- Micron-level positioning control with a drive accuracy of ±0.01mm, reducing scrap rates by 50%-70%.
- Simple touch control design and data feedback function, saving approximately 60% of downtime troubleshooting time.
- Supports remote monitoring and multi-language switching functions, reducing learning costs by 40%.

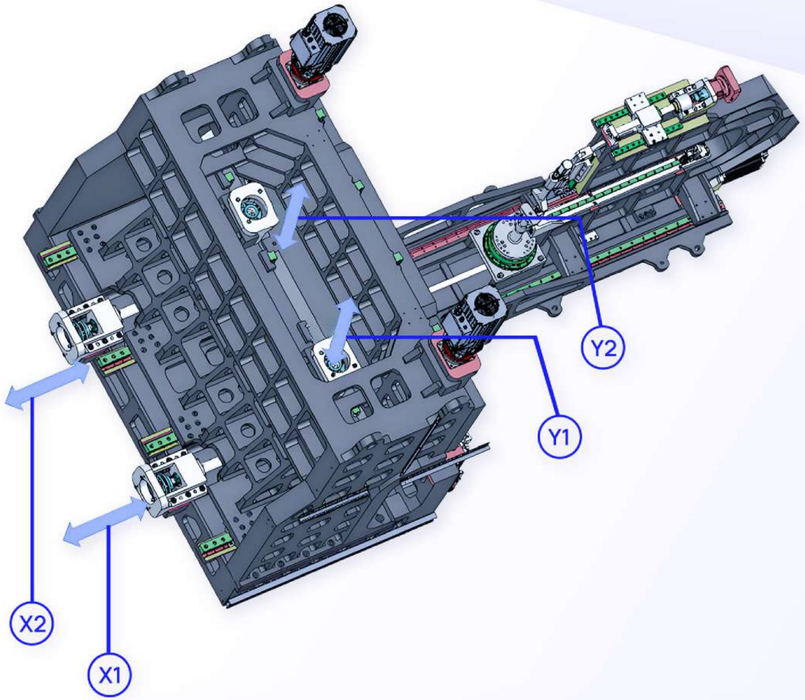
ESA Control System

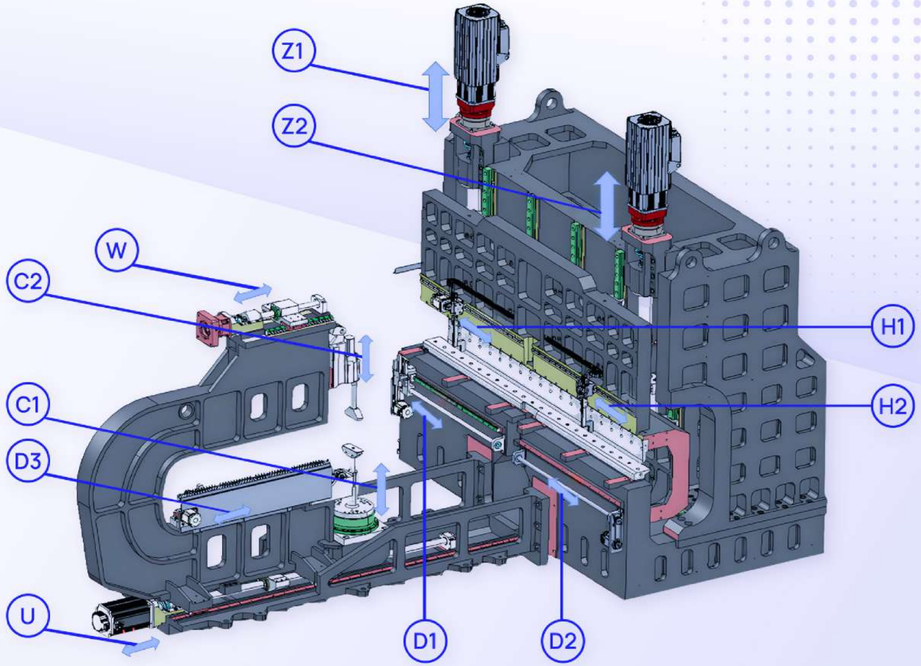


- Designed in accordance with European Industry 4.0 standards, leading the new era of intelligent manufacturing.
- 0.1-second ultra-fast response, ±0.01mm repeatability, 5 times more precise than the industry average.
- 99.9% system stability, 1000 points/second data processing capability, real-time monitoring of the entire production process.
- Seamlessly integrates with MES/ERP systems, 24/7 visual data management, making every bend intelligent and controllable.

ADH MACHINE TOOL

X1 Axis
X2 Axis
Y1 Axis
Y2 Axis





Z1 Axis
Z2 Axis
C1 Axis
C2 Axis
W Axis
U Axis
D1 Axis
D2 Axis
D3 Axis
H1 Axis
H2 Axis
Total 15 Axes

If equipped with upper and lower auxiliary tools, add 4 axes.

PB-M SERIES CNC AXIS

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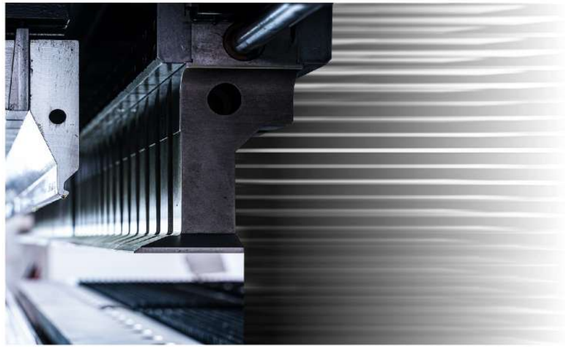
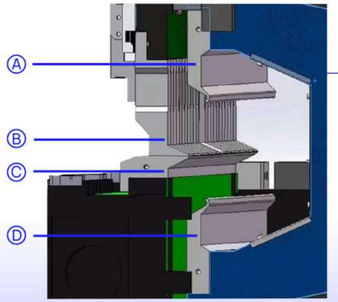
Positioning System

- The machine uses a Y-axis three-gauge positioning method combined with suction cups to secure the workpiece, making it suitable for thin sheet forming and offering good economic efficiency.



Servo Motor

- Servo motors control all machine movements with 0.01-degree resolution, ensuring accurate bending and stable synchronization for error-free production cycles.
- Industry 4.0 Integration: High-speed servo systems enable 0.2-second bending cycles while maintaining micron-level precision, fully compatible with automated production lines.



Bending Tools

- Upper and lower bending tools (A, D) deliver precise control over the bending process by moving upward or downward during operation.
- The upper press tool (B) works in tandem with the bending tools to accurately hold and bend plates, promoting efficiency throughout the process.
- The lower press tool (C) firmly secures the sheet, maintaining stability during bending and significantly improving both the accuracy and quality of the results.

Powered Hemming Tool

- Mold-free tooling enables complex shape creationwith multiple angles, featuring patented edge clearance and flexible assembly for automated precision bending.

Omnidirectional Workpiece Positioning System

- ADH's advanced clamping system uses a high-torque servo motor and clamping arm to securely grip irregularly shaped workpieces, ensuring stable operation. A high-precision RV reducer enhances rotational accuracy, making it perfect for complex tasks.
- The patented Press Arm ensures simple, safe feeding with exceptional force for accurate bends and stable support, minimizing distortion. This technology boosts productivity and precision, capturing market attention.

ADH MACHINE TOOL

Automatic Lubrication

- The automated system dispenses oil at set intervals, ensuring optimal machine performance and longevity with minimal manual intervention.

Ball Screw

- The superior quality of the China 8020 heavy load grinding grade screw rod enhances transmission stability, resulting in significantly increased accuracy and precision in product performance.
- Experience efficient power transmission and lasting durability. Our robust ball screws ensure dependable, low-friction operation, minimizing maintenance and maximizing uptime.

Roller-type Linear Guide

- The P-class 55 ball type track from China offers significantly superior load-bearing capacity compared to standard tracks, making it suitable for heavier-duty mechanical applications.
- This track also provides enhanced precision and accuracy, which translates to greater operational stability and reliability in mechanical systems.

Electrical Components

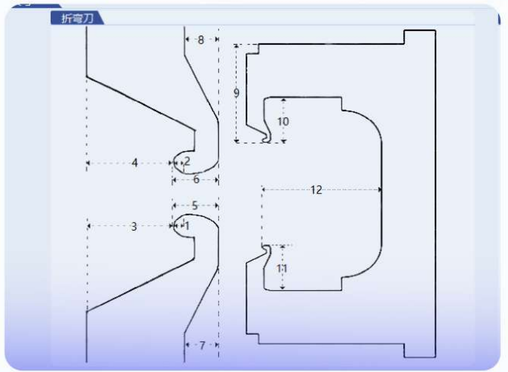
- High-quality imported electrical components ensureenhanced stability and precision, delivering consistentperformance for long-term operational reliability in demanding industrial settings.
- Premium-grade electrical systems minimize voltage fluctuations, maintaining superior control accuracy while extending equipment lifespan and reducing unplanned downtime.

Special Bearing

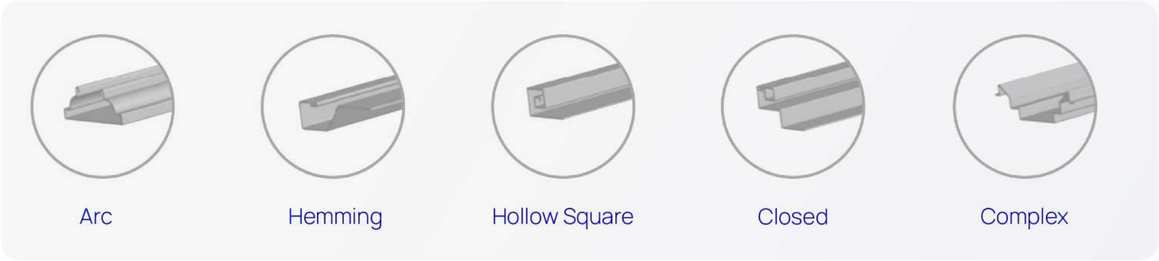
- Features imported NACHI specialized bearings, including high-load ball screw bearings with a large 16mm diameter, for superior load-bearing capacity, enhanced durability, and operational precision.
- Incorporating these high-capacity, durable bearings contributes directly to smoother, more reliable machine performance and a reduction in maintenance needs.

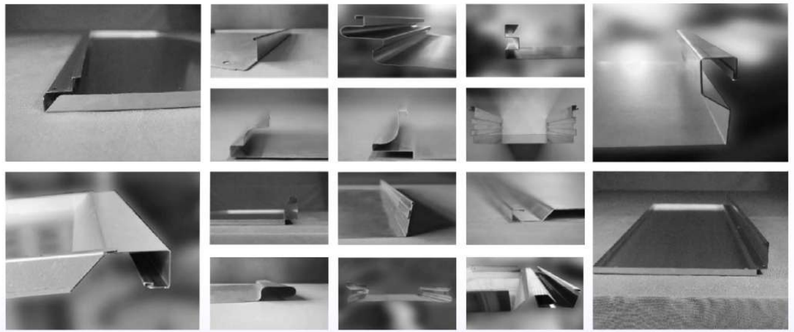
MULTI-AXIS CONCURRENT LINKAGE CNC SYSTEM

- Fully independent and controllable, 100% core technology.Completely independent research and development of underlying code, system software, and hardware circuits, with fully controllable technology.
- Ultra-high precision control, nanosecond response.System control accuracy reaches 0.0001mm, with nanosecond-level response, meeting the highest precision process requirements.
- 64-axis concurrent control, unlimited cascade expansion.Supports 64-axis concurrency, zero-time-difference high-coordinated control, and unlimited cascade expansion.
- Intelligent 3D visualization, one-click unmanned production.Real-time 3D workpiece simulation display + auxiliary loading and unloading devices, truly realizing unmanned production lines.
- Strong system stability, reserved rich automation interfaces, and extremely strong expandability.
- Precise acceleration and deceleration control, smoother equipment operation.
  More precise control of each action, greatly reducing mechanical impact and extending equipment life.



PATENTED TOOL MAGAZINE

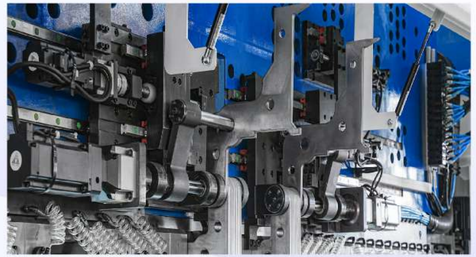




- ADH's exclusive design enables on-demand bending length adjustment and automated edge clearance during production, achieving flexible bending without molds. Features 0.5-second tool changes for seamless transitions between complex shapes.

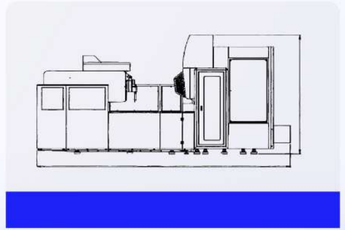
Auxiliary Bending Tool

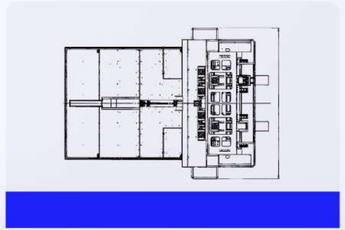
- Total length 400+400mm.
- Segments:55+50+45+40+35+30+29+28+27+26+25+20
- Allows for bending of special workpieces.

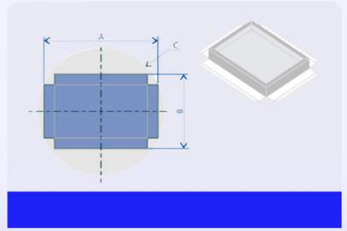


Automatic Tool Changer

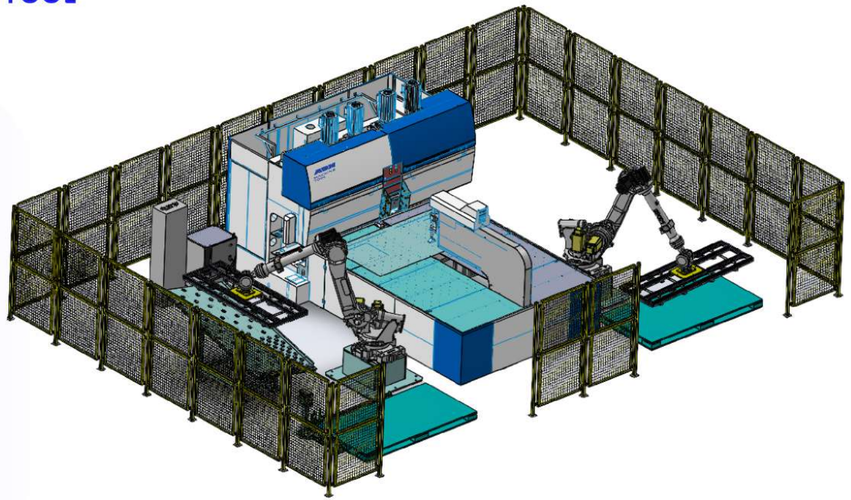
- Swift automatic system for minimal downtime and efficiency.
- Ensures accurate tool alignment for consistent, quality outputs.
- Stores multiple tools to handle diverse processing needs.
- Space-saving layout for seamless installation in tight areas.







ADH MACHINE TOOL



Self-Driving Integrated Robotic Arm

- Integrated Intelligent Control: ADH panel bender is equipped with an automatic loading and unloading robot arm controlled by the same system, with the same control center, high efficiency, and good coordination.
- Zero-Programming Intelligent Operation: The system automatically generates robot arm actions based on the bending workpiece parameters, eliminating the need for extra robot arm programming.
- Worry-Free Quick Changeover: Convenient and simple changeover between different types of workpieces, zero waiting time for production switching.
- Fully Automatic Palletizing Function: The robot arm can automatically palletize, freeing up labor and increasing production capacity.
- Seamless Production Line Integration: Easily connect to upstream and downstream automated production lines or other equipment to create a complete intelligent manufacturing chain.

Leading Technological Advantages

Unique and advanced automatic tool assembly technology significantly improves processing efficiency and precision.

Superior and Stable Performance

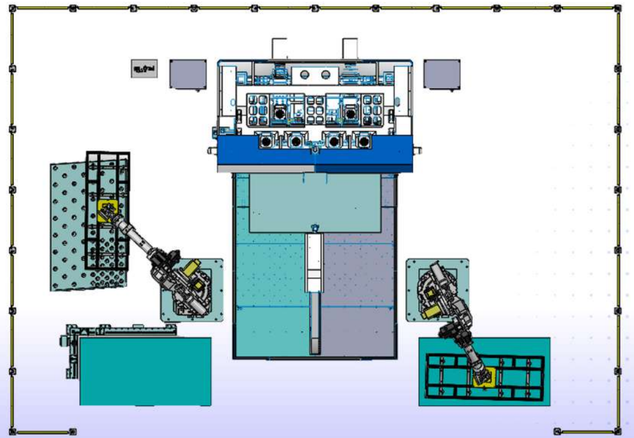
Adopts a cast iron machine body design, with stability far exceeding welded machine bodies (such as those of Yawei and other brands), effectively preventing deformation issues.

Intelligent Operating Experience

Equipped with a CNC system 3D display function, making operation intuitive and convenient, and reducing the learning curve.

Extra-Large Processing Capacity

Large processing range to meet diverse production needs, increasing return on investment with multiple uses from a single machine.



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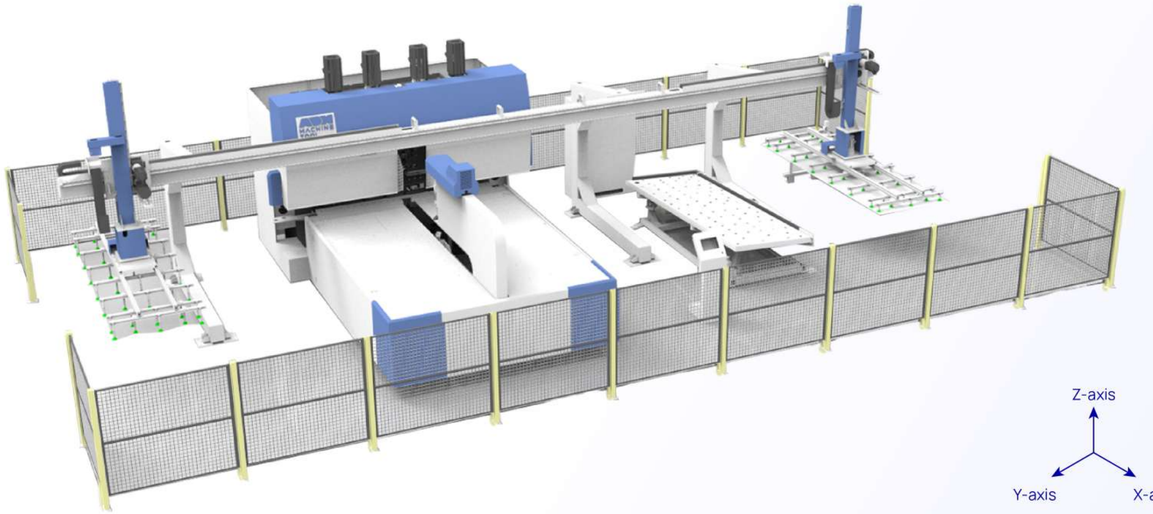

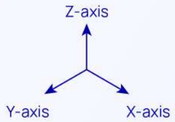

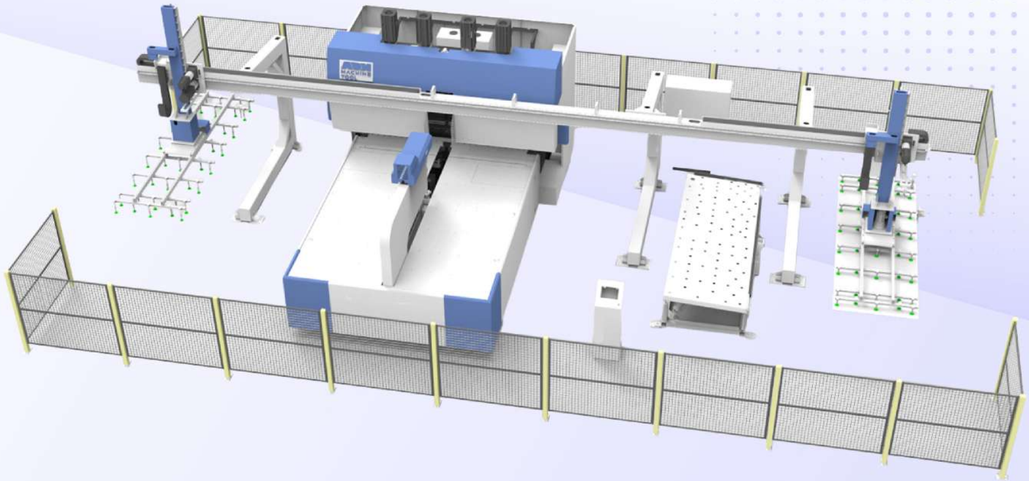

TRUSS LOADING AND UNLOADING

- Integrated with the panel bender 's control system, simple and efficient.
- Completely independently developed,compatible with more upstream and downstream devices.
- Simple structure, quickly achieves loading and unloading.

Specifications

PB-A Series

Item	SPECIFICATIONS		
	PB-A1630	PB-A2190	PB-A2610
Maximum bending thickness (mm)：304 stainless steel	1.5	1.5	1.5
Maximum bending thickness (mm)：cold plate	2	2	2
Maximum bending thickness (mm)：Aluminum plate	3	3	3
Fastest bending speed (s/)	0.2	0.2	0.2
Maximum bending width (mm)	1630	2190	2610
Bending height (mm)	200	200	200
Rated voltage (V)	380	380	380
Total power (KW)	≈44	≈89	≈118
Noise (dB)	≈50	≈50	≈50
Minimum material thickness (mm)	≈ 0.35	≈ 0.35	≈ 0.35
Minimum inner dimension for four-sided forming (mm)	≈ 370*180	≈ 370*180	≈ 370*180
Minimum inner dimension for two-sided forming (mm)	≈ 180	≈ 180	≈180
Maximum bending dimension (mm)	≈ 1600*1200	≈ 2190*1500	≈ 2610*1600
Total weight (t)	≈12	≈21	≈24
Number of axes	24	24	24
External dimensions：Length (mm)	4780	5650	6100
External dimensions：Width (mm)	2750	3650	4100
External dimensions：Height (mm)	2900	3200	3350

Note: 1. A type is for automatic tool change.
2. Optional auxiliary blade: Total length 800 [2*(20+25+26+27+28+29+30+35+40+45+50+55)].
3. Type A model: The upper pressure knife consists of a medium pressure knife, left and right clearance knives, and a strip knife (strip knife width is 5, widest combination is 70).

Specifications

PB-M Series

Item	SPECIFICATIONS					
	PB-M1600	PB-M2100	PB-M2600	PB-M3200	PB-M2000-300	PB-M2000-300
Maximum bending thickness (mm)：304 stainless steel	1.5	1.5	1.5	1.5	1.5	1.5
Maximum bending thickness (mm)：cold plate	2	2	2	2	2	2
Maximum bending thickness (mm)：Aluminum plate	3	3	3	3	3	3
Fastest bending speed (s/)	0.2	0.2	0.2	0.2	0.2	0.2
Maximum bending width (mm)	1600	2190	2610	3200	3200	3200
Bending height (mm)	180	180	180	180	180	180
Rated voltage (V)	380	380	380	380	380	380
Total power (KW)	≈38	≈76	≈108	≈154	≈154	≈154
Noise (dB)	≈50	≈50	≈50	≈50	≈50	≈50
Minimum material thickness (mm)	≈ 0.35	≈ 0.35	≈ 0.35	≈ 0.35	≈ 0.35	≈ 0.35
Minimum inner dimension for four-sided forming (mm)	≈ 280*180	≈ 280*180	≈ 280*180	≈ 280*180	≈ 280*180	≈ 280*180
Minimum inner dimension for two-sided forming (mm)	≈ 180	≈ 180	≈ 180	≈ 180	≈ 180	≈ 180
Maximum bending dimension (mm)	≈ 1600*1200	≈ 2190*1200	≈ 2610*1200	≈ 3200*1200	≈ 3200*1200	≈ 3200*1200
Total weight (t)	≈12	≈21	≈24	≈28	≈28	≈28
Number of axes	15	15	15	15	15	15
External dimensions：Length (mm)	4780	5650	6100	6900	6900	6900
External dimensions：Width (mm)	2150	2750	3250	4100	4100	4100
External dimensions：Height (mm)	2900	3200	3300	3500	3500	3500

Note: 1. M type is manual tool change.
2. Optional auxiliary blade: overall length 800 [2*(20+25+26+27+28+29+30+35+40+45+50+55)]
3. M Model: The upper creasing blade consists of a center creasing blade, an upper creasing blade, and a hinge blade; the center creasing blade is 110 wide, the hinge blade is 85 wide, and the upper creasing blade widths are 60, 45, 35, 30, 25, and 20 respectively.
4. Optional bending height up to 300mm