



**PBS** Series  
**CNC PRESS BRAKE**

# **ELECTRO-HYDRAULIC MAIN SERVO**

## **CNC PRESS BRAKE**



### **HIGH PRECISION**

Excellent bending accuracy



### **HIGH EFFICIENCY**

Faster performance,  
higher productivity



### **HIGH STABILITY**

Servo system ensures  
stable and reliable operation



### **ENERGY SAVING**

Lower consumption,  
greener production



Expert of **Metal Forming**

PRECISION • PERFORMANCE • PRODUCTIVITY

**YRS**®  
YINGRUI SI

# ABOUT US

Nanjing YRS Machine Tool Manufacturing Co., Ltd. is a high-end sheet metal equipment manufacturer with a strong industry background. Our products are available worldwide, and we have established a presence in China, Germany, Australia, Malaysia, Indonesia, Russia, and Thailand.

YRS maintains comprehensive technical and business cooperation with many internationally recognized sheet metal equipment brands. Supported by its R&D center and years of manufacturing experience, the company combines advanced concepts with practical production expertise.

The company has invested significantly in intelligent CNC sheet metal processing technology, specializing in the production of premium, high-end, and intelligent sheet metal equipment.

With a strong sense of responsibility, YRS is committed to delivering reliable products and thoughtful service to customers around the world.

We provide reliable sheet metal machinery solutions, focus on press brake and metal fabrication equipment, and are committed to quality, dedication, and continuous innovation.



Professional, Consistent from Start to Finish



Focused on Precision and Excellence



A Leader in CNC Sheet Metal Machinery and a Trusted Partner in Metal Fabrication



About Us



Expert in **Metal Forming**

The main motor is a high-performance servo motor. Using single-servo pump control technology, it is a cost-effective, energy-saving, and environmentally friendly solution.



#### **Environmentally Friendly**

The single-servo pump control system reduces energy consumption, lowers noise, and helps create a cleaner working environment. It is an efficient and eco-friendly solution for modern metal forming.



#### **Unlimited Full-Length Bending**

Thanks to its advanced frame design and stable motion control, the machine supports full-length bending with high consistency and precision, offering greater flexibility in production.



#### **Low Energy Consumption**

When the upper beam is not moving, the servo motor remains idle and consumes minimal energy. This reduces power usage significantly and helps lower operating costs.



#### **Rigid Structure**

The machine body features a dynamically analyzed and precision-processed rigid structure, ensuring excellent stability, long service life, and reliable bending accuracy.



01

PBC Servo Press Brake

## Paint Spraying

The water curtain and waste gas treatment system matched with the mobile spray booth complies with national environmental protection standards and guarantees the surface painting quality.



## Machine Design

The frame and slide block are machined in one piece by large CNC floor-type boring and milling machines, ensuring the perpendicularity and parallelism of all mounting surfaces.

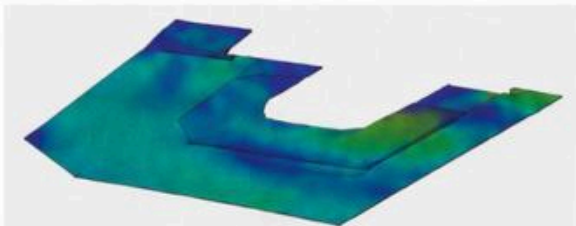
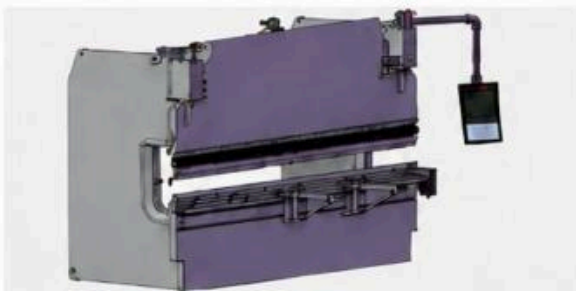


## “ Advantages of High-performance Press Brake ”

### Machine Advantages

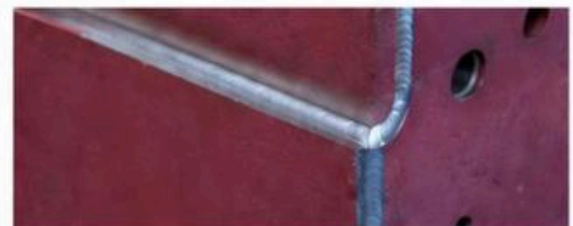
#### Machine Design

Using finite element analysis (FEA) with ANSYS software, we evaluate the frame, slide block, worktable and critical components of the machine, and optimize the overall strength and rigidity to ensure long-term reliability and service life.



#### Frame Welding

No welding defects such as undercut, porosity and cracks exist on welds. External welds are ground smooth with no spatter. The overall surface of the equipment is flat, smooth and free of dents and bulges.



# MAIN TECHNICAL PARAMETERS

| No. | Name                            |                | Parameter                 | Unit |
|-----|---------------------------------|----------------|---------------------------|------|
| 1   | Nominal Pressure                |                | 1600                      | kN   |
| 2   | Compensation Length             |                | 3100                      | mm   |
| 3   | Distance Between Columns        |                | 2600                      | mm   |
| 4   | Ram Stroke                      |                | 220                       | mm   |
| 5   | Open Height                     |                | 470                       | mm   |
| 6   | Throat Depth                    |                | 410                       | mm   |
| 7   | Controlled Axes                 |                | 4+1 Axis (Y1, Y2, X, R+W) | -    |
| 8   | Ram Speed                       | Approach Speed | 220                       | mm/s |
|     |                                 | Working Speed  | 18                        | mm/s |
|     |                                 | Return Speed   | 200                       | mm/s |
| 9   | Ram Repeat Positioning Accuracy |                | 0.02                      | mm   |
| 10  | Dimensions                      | Length         | 3350                      | mm   |
|     |                                 | Width          | 1640                      | mm   |
|     |                                 | Height         | 2780                      | mm   |
| 11  | Main Servo Motor Power          |                | 17.8                      | kW   |
| 12  | Oil Tank Volume                 |                | 300                       | L    |
| 13  | Weight                          |                | 9.8                       | Tons |

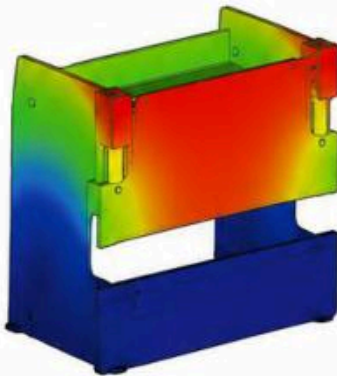
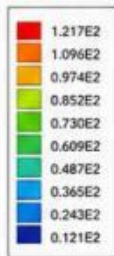
Note: The above data are standard specifications from the factory.  
If there are any errors, the actual machine shall prevail.

# HIGH-PRECISION

The PBC series press brake features a rigid frame design that minimizes deflection under load. Machine welding is completed by welding equipment and robotic welding systems. After welding, the frame undergoes stress-relief treatment through high-temperature tempering or vibration aging to improve the mechanical properties of the material, reduce deformation and rebound, and enhance long-term stability, durability, and service life.

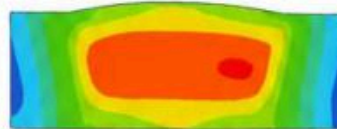
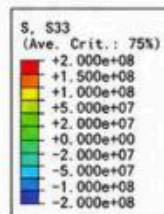
## Frame Stress Relief

Stress (von Mises) [N/mm<sup>2</sup> (MPa)]



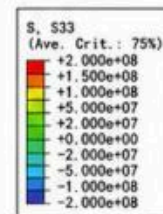
## Weld Residual Stress Relief

Stress (Pa)

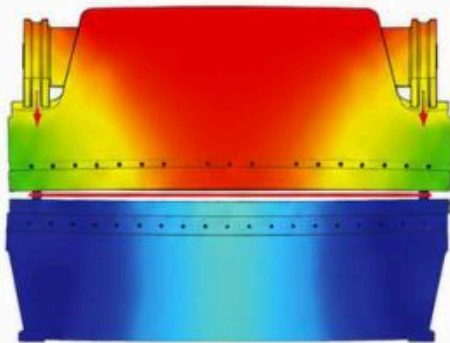


(a) Longitudinal

Stress (Pa)



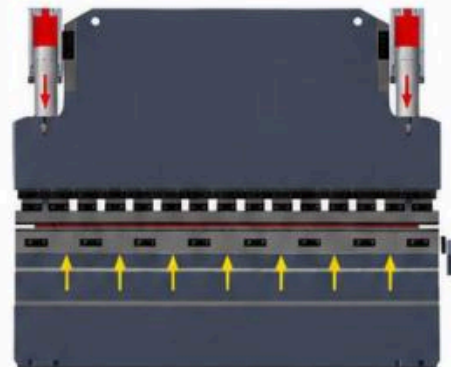
(b) Transverse



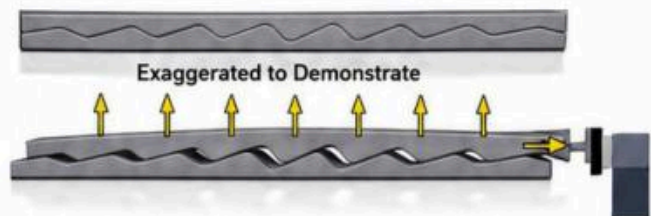
Concave



Convex



PBC offers both manual and automatic controlled crowning systems for all press brakes. Automatic CNC crowning comes standard on our PBC series machines. The crowning position and setting are automatically calculated and set through the CNC control according to program information, helping ensure consistent bending accuracy.



PBC comes standard with manual or optional CNC crowning



Rigid frame design  
minimizes deflection  
under load



Welding equipment &  
robotic welding for  
high-quality frames



Stress-relief treatment  
improves material  
properties



Enhanced stability,  
durability, and  
service life



### Energy Saving & Low Noise

## Servo Pump System

The servo pump system supplies oil on demand, greatly improving energy efficiency. The motor rotates only when needed, which reduces noise by up to 30%. Torque limit and analog speed control help reduce valve overflow and interception, significantly lowering oil temperature.



### Reliable Hydraulic Performance

## Brand Hydraulic System

The hydraulic system provides smooth and reliable operation, effectively reducing issues caused by hydraulic oil leakage. Stable performance and trusted components help ensure long-term durability and dependable bending results.

**Rexroth**  
Bosch Group

**HAWE**  
HYDRAULIK



### Fast Tool Setup

## Quick Clamping

Quick clamping makes upper-die installation faster, reduces labor intensity, and improves production efficiency. It offers high precision, easy clamping, no loosening, and no tool dropping.



### Durable and Accurate

## High Quality Press Brake Tooling

After forging and quenching, the tooling is durable and wear-resistant. It delivers high precision, high straightness, and excellent repeatability, helping achieve ideal bending performance.

## High Precision Mechanical Crowning

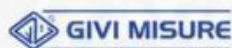
The compensation closed-loop control delivers high accuracy. The crowning compensation value is automatically calculated and set by the NC system, ensuring consistent bending angle across the full length.



## Precision Linear Grating Ruler

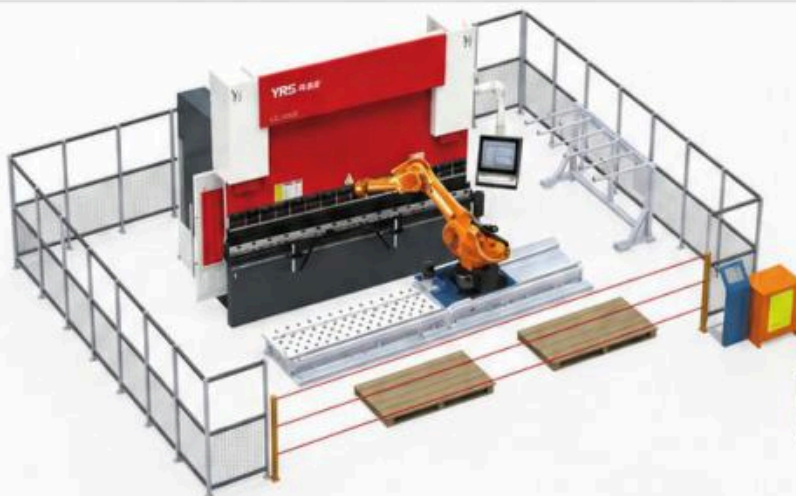
The linear grating ruler is used for positioning and monitoring on both sides to achieve high positioning accuracy. With an accuracy of 0.005 mm, it provides rapid feedback to the servo control system.

Imported high-precision displacement sensor: GIVI, Italy



## Stable and Reliable Back Gauge

Imported ball screw drive, linear guide, and dual linear guide structure of the crossbeam ensure accurate positioning. Equipped with precise multi-level stoppers, the positioning range is enlarged, making bending more convenient.



## Flexible Robotic Bending Cell

According to your production and processing needs, flexible automation solutions for sheet metal bending can be provided.



# PROFESSIONAL SHEET METAL EQUIPMENT | ONE-STOP SOLUTIONS

Complete Solutions for Modern Metal Fabrication

**We provide complete sheet metal equipment and services**

- ✓ R&D and customized machine design
- ✓ Fast delivery and global logistics
- ✓ Professional technical support and training
- ✓ Comprehensive after-sales and warranty service

**Why customers choose us**

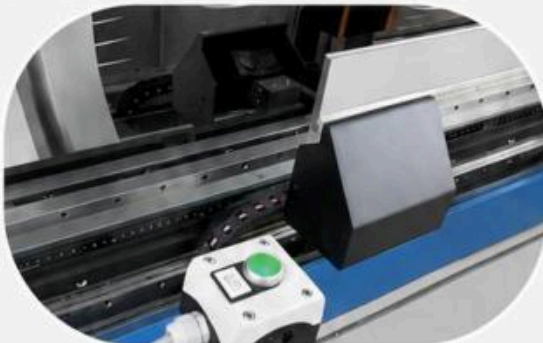
- ✓ Reliable manufacturing quality
- ✓ Efficient production solutions
- ✓ Experienced engineering support
- ✓ Long-term service commitment



**Advanced Operator Protection**

## Safety Guards

The DSP laser safety protection device, imported from Italy, provides comprehensive protection for press brake operation and helps safeguard the operator during bending work.



**Automatic Angle Detection**

## Laser Check Angle Measurement

The laser angle measurement system helps ensure a stable and accurate bending angle, improving both the efficiency and consistency of automatic processing.



**Smart Sheet Support**

## CNC Follower Supports

During bending, the follower support automatically tracks the movement and angle of the workpiece. Its speed and motion are calculated by the CNC system, and it can move smoothly left and right along the linear guide rail.

# OPTIONAL CNC SYSTEM

Available Controller Options for Press Brakes

## SYNTEC

### SCS 700



- 15-inch industrial capacitive touch screen
- Standard 6+1 axes, expandable to 8+1 axes
- Supports expansion functions
- Suitable for hydraulic press brakes
- Suitable for all-electric press brakes
- Suitable for dual-pump controlled press brakes

### SCS 920



- 21.5-inch industrial capacitive touch screen
- Standard 6+1 axes, expandable to 8+1 axes
- Supports expansion functions
- Suitable for hydraulic press brakes
- Suitable for all-electric press brakes
- Suitable for dual-pump controlled press brakes

### SCS 980



- 21.5-inch Taiwan industrial capacitive touch screen
- Windows + Linux dual system
- EMC4 industrial-grade motherboard, dual CPU, strong anti-interference capability
- Standard 6+1 axes, expandable to 8+1 axes
- Supports EtherCAT communication and full-servo closed-loop control
- DC24V power supply, analog I/O, USB, Ethernet, handwheel, and safety light curtain interface

## DELEM

### DA-53Tx (Delem)



- Hot-key touch navigation
- 15.6-inch high-resolution widescreen display
- Maximum 4-axis control (Y1, Y2, +2 auxiliary axes)
- Crowning control
- Tool, material, and product library
- Supports servo and frequency-converter control
- Advanced Y-axis control algorithm for proportional and open valves
- 2D graphic programming (optional)
- Network connection (optional)
- Network interface (optional)
- Profile-53TL offline programming software

### DA-58Tx (Delem)



- 2D graphical touch programming
- 18.5-inch high-resolution TFT color display
- Automatic bend sequence calculation
- Crowning control
- Tool, material, and product library
- Supports servo and frequency-converter control
- Advanced Y-axis control algorithm for proportional and open valves
- Sensor interface (optional)
- Network connection (optional)
- Network interface (optional)
- Profile-58TL offline programming software

### DA-66S (Delem)



- 2D touch graphic programming
- 3D product graphic simulation
- 24-inch high-resolution color TFT display
- Delem module compatibility with expandable/adaptable modules
- USB and external interfaces
- Industry 4.0 interface (OPC-UA optional)
- Workshop control and job-list functions
- Open system architecture
- Angle measurement bending and angle correction interface
- Profile-S 2D offline programming software

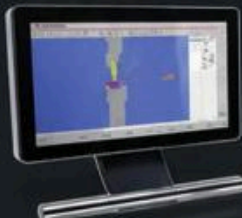
### DA-69S (Delem)



- 3D and 2D touch graphic programming
- 3D product graphic simulation
- 24-inch high-resolution color TFT display
- Delem module compatibility with expandable/adaptable modules
- USB and external interfaces
- Industry 4.0 interface (OPC-UA optional)
- Workshop control and job-list functions
- Open system architecture
- Angle measurement bending and angle correction interface
- Profile-S 3D offline programming software

## ESA

### ESA VIS-840



- 2D graphic display of machine parts and tooling
- Automatic bending-step calculation
- Can generate an angle correction database based on angle, tooling, and material; correction values can be added automatically when creating programs (optional)
- Esautomotion or Wila LED indicator light interface
- Can connect a wired Mitutoyo angle measuring instrument

### ESA VIS-860



- Multi-touch, 18.5-inch screen
- Touch application interface
- Borderless design, simple and stylish
- Supports hand-drawn workpieces
- Supports direct import and management of tool libraries (.dxf format)
- Supports upper die and lower die holder management
- Supports DataM laser angle measurement
- Supports ESA 3D Bend software
- Modbus TCP bus interface for Industry 4.0 integration

### ESA VIS-875



- 21.5-inch multi-touch screen design
- Supports multi-point touch applications
- Simple, powerful borderless design
- Supports finger-drawn workpiece design
- Supports tool import (.dxf format)
- Supports tool library management
- Supports punch and die management
- Supports data angle measurement systems
- Supports ESA 3D Bend software
- Standard Industry 4.0 Modbus TCP interface

## MAIN CONFIGURATIONS

| No. | Item                            | Qty   | Remark             |
|-----|---------------------------------|-------|--------------------|
| 1   | DA53TX System                   | 1 set | DELEM, Netherlands |
| 2   | Main Motor                      | 1 set | Inovance Motor     |
| 3   | Oil Pump                        | 1 set | ALLEAD, Germany    |
| 4   | Hydraulic System                | 1 set | Rexroth            |
| 5   | Oil Cylinder                    | 1 set | Anhui Huayang      |
| 6   | Seals                           | 1 set | NOK, Japan         |
| 7   | Main Electrical Components      | 1 set | Schneider, France  |
| 8   | Linear Grating Ruler            | 1 set | GIVI, Italy        |
| 9   | Backgauge Servo Motor and Drive | 1 set | Estun              |
| 10  | Ball Screw                      | 1 set | HIWIN, Taiwan      |
| 11  | Linear Guide Rail               | 1 set | HIWIN, Taiwan      |
| 12  | Foot Switch                     | 1 set | YRS                |
| 13  | Mechanical Crowning             | 1 set | Huangshi Sanrui    |

## DELIVERY SCOPE

| No. | Name                                                  | Qty | Unit | Remark |
|-----|-------------------------------------------------------|-----|------|--------|
| 1   | Main Machine                                          | 1   | unit |        |
| 2   | Tooling Set                                           | 1   | set  |        |
| 3   | Movable Front Support Arms with Emergency Stop Switch | 1   | pair |        |
| 4   | Linear Guide Front Support Brackets                   | 2   | pcs  |        |
| 5   | Foundation Bolts and Nuts                             | 4   | sets |        |
| 6   | Electrical Cabinet Door Key                           | 1   | set  |        |
| 7   | Grease Gun                                            | 1   | pc   |        |
| 8   | Allen Wrench Set                                      | 1   | set  |        |
| 9   | Operation Manual and Related Documents                | 1   | set  |        |



## Technical Support & Service

### 1. Technical Services

After the machine enters the installation phase, the supplier will provide free training for the buyer's operators and maintenance personnel.

### 2. Quality Assurance

The supplier follows a comprehensive quality management system and adopts strict quality control and inspection procedures.

### 3. After-sales Service

**3.1** A one-year warranty starts from the date both parties sign the acceptance report after the machine passes final acceptance. During the warranty period, the supplier is responsible for repair and replacement of parts caused by quality-related issues.

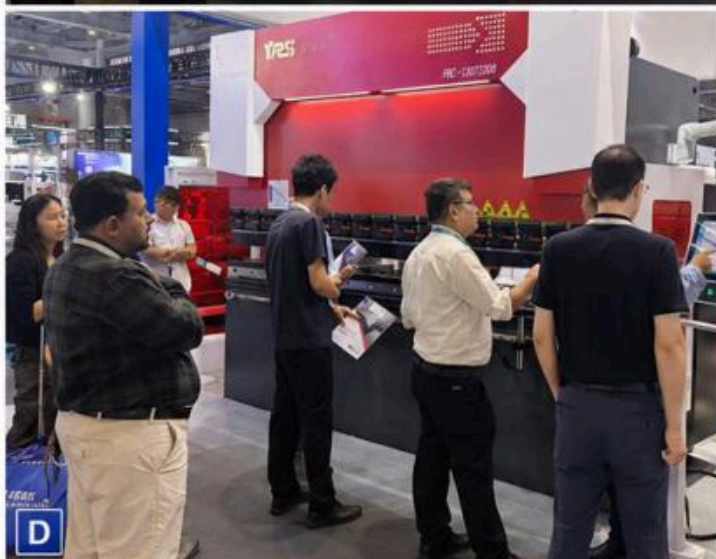
**3.2** In the event of equipment failure, after receiving notice from the buyer, the supplier will promptly provide a troubleshooting solution and arrange service within 24 hours.

**3.3** After the warranty period, the supplier will continue to provide long-term technical support.



## EXHIBITION HIGHLIGHTS

## YRS Industrial Booth Showcase





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