



## Machine Introduction

### Scope of Supply

- 1) Sheet metal Die spotting & Tryout hydraulic press
- 2) Technical documents
- 3) Training
- 4) After-sale

### Working Conditions

- 1) Ambient temperature:  $-5^{\circ}\text{C}\sim 45^{\circ}\text{C}$ .
- 2) Relative humidity:  $\leq 85\%$ , No condensation.
- 3) Running Ability: Support 24hours continuous production
- 4) Power supply: 320-520V, 60/50HZ TN-S
- 5) Air Supply: Dg15mm, 0.4~0.6Mpa.
- 6) Water Supply: Water Pressure 0.2~0.3Mpa, Cooling Water $\leq 30^{\circ}\text{C}$ , CL of cooling water $< 25\text{ppm}$ .
- 7) Total Power Around 90KW.

## Applications

The press machine is mainly suitable for sheet metal part processes such as **Die spotting**, Die tryout stretching, ding, crimping, forming, blanking, punching, correction, etc., and is mainly used for quick stretching and forming of sheet metal.

The press machine is been designed as assembled H-frame which has best system rigidity, high precision, long lifetime and high reliability, and is used for pressing sheet metal parts and can meet the demand of production at 3 shifts/day.

- **Automatic and Manual Locking Devices**
- **Very accurate Micro-Inching System**
- **Inching Positioning Display accurate to 0.01mm**
- **Optional 180° Slide Tilt System**
- **Suitable for Mold and Die Manufacturing**
- **Moving bolster**

## Manufacturing Standards

JB/T3818-99	《Technical conditions of hydraulic press》
GB/T 3766-2001	《General technical requirements for hydraulic systems》
GB5226.1-2002	《Safety of machinery-Mechanical and electrical equipment-Part 1: General technical requirements》
GB17120-97	《Press machinery safety technical requirements》
JB9967-99	《Hydraulic machine noise limit》
JB/T8609-97	《Press machinery welding technical conditions》

**Machine Parameters**

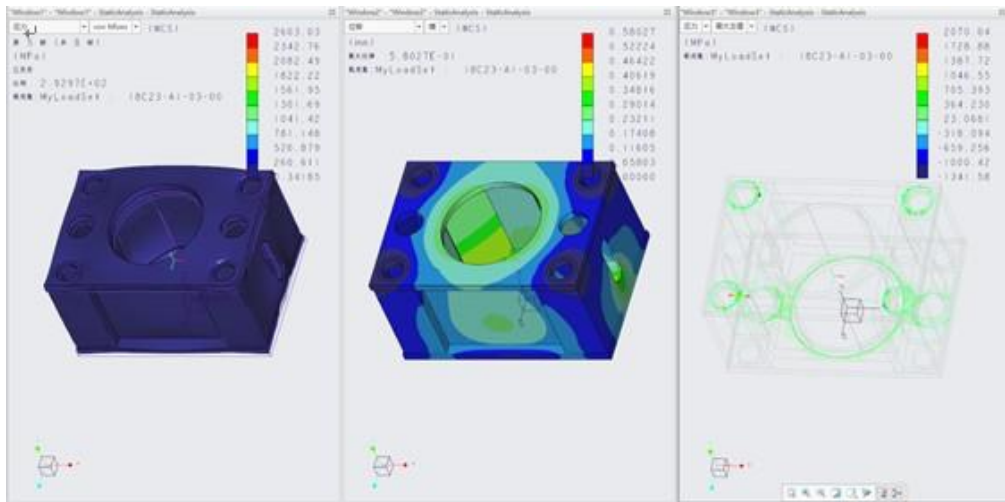
Name		Unit	Value
Name of machine			Die Spotting Hydraulic Press
Model			Yz27-800T/250T
Main cylinder force		KN	8000
Daylight		mm	2000
Main cylinder Stroke		mm	1300
Max. liquid pressure		MPa	25
Die Cushion Stroke		mm	350
Cushion force		KN	2500
Worktable size &Slide	LR	mm	3500
	FB	mm	2250
	Height	mm	800
Die cushion size	LR	mm	2620
	FB	mm	1720
Slider speed	Idle stroke	mm/s	500
	Return	mm/s	300
	Pressing	mm/s	10-35
Ejection speed	Ejection	mm/s	55
	Return	mm/s	80
T slot		/	Along the size of the press
Worktable moving distance		/	2250
Workbench load		T	40
Motor		Kw	80+18
Weight of machine		T	90

**Component Brand**

Hydraulic control system			
Oil Pump		USA PARKER	
Servo Motor		Inovance	
Pressure Sensor		Switzerland TRAFAG	
Pressure Gage		SYCIF	
Cartridge valve		TAIFENG	
Seals		Japan NOK	
Filter		LEEMIN	
Cylinder		ZHENGXI	
Level gauge		LEEMIN	
Valve		HUADE	
Electrical control system			
Servo Driver		Inovance	
PLC		Siemens	
HMI		Siemens	
Switching power supply		MEANWELL	
Low voltage electrical appliance		Schneider	
Displacement sensor (SERVO)		NOVO/MIRAN	
Pneumatic system			
Pneumatic valve		SMC	

## Main Body

The design of the whole machine adopts computer optimization design and analyzes with finite element. The strength and rigidity of the equipment are good, and the appearance is good. All welded parts of the machine body are welded by high-quality steel mill Q345B steel plate, which is welded with carbon dioxide to ensure the welding quality.



## Cylinder

Parts	Feature
Cylinder Barrel	<ol style="list-style-type: none"> <li>Made by 45# forged steel, quenching and tempering</li> <li>Fine grinding after rolling</li> </ol>
Piston Rod	<ol style="list-style-type: none"> <li>Made by Chilled cast iron, quenching and tempering</li> <li>The surface is rolled and then chrome-plated to ensure surface hardness above HRC48~55</li> <li>Roughness 0.8</li> </ol>
Seals	Adopt Japanese NOK brand quality sealing ring
Piston	Guided by copper plating, good wear resistance, ensuring long-term operation of the cylinder

## Pillar



The guide columns (pillars) will be made of **C45 hot forging steel** and have a hard chrome coating thickness 0.08mm. And do hardening and tempering treatment. The guide sleeve adopts copper guide sleeve, which is more wear-resistant and improves the stability of the machine

## Platen



The platen of this machine is welded by **Q345B** steel plate. The whole machine is heat treated to reduce welding stress and improve the stability of the machine. The platen surface is processed by a large grinder.

## Servo System

### 1) Servo System Composition



#### Principle of servo control:

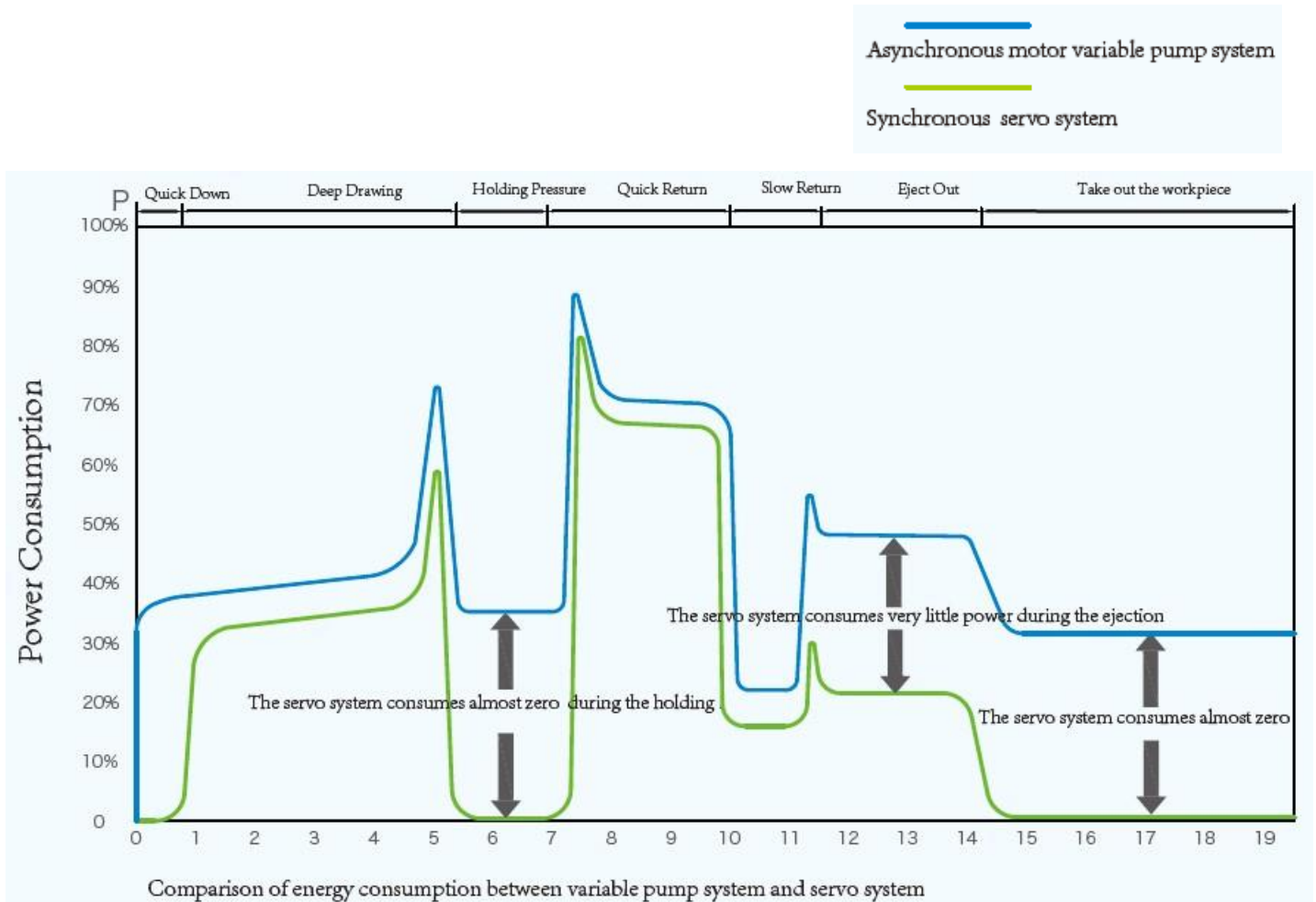
The main cylinder upper chamber equipped with pressure sensor, slide equipped with displacement sensor controller. According to the pressure feedback signal, the position feedback signal, pressure given signal, position given signal and speed given signal to calculate the rotational speed of the servo motor, to control the pump output for pressure, speed and position control.

The press adopts PID to adjust the pressure and position, through the speed of the servo motor to precede the closed-loop control. By adjusting the speed of the servo motor, it can control the pressure, speed, position and other parameters of the hydraulic press, by eliminating the pressure control valve, flow control valve and other components in the hydraulic control circuit to be simplify.



## 2) Advantages of Servo System

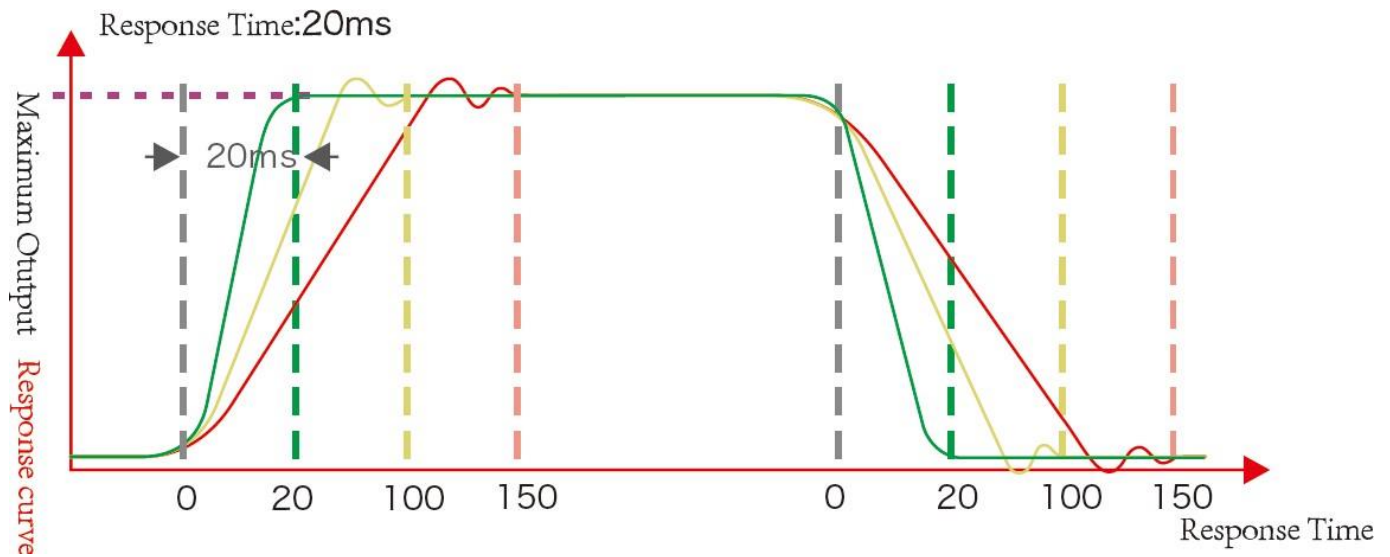
### ■Energy saving



Compared with the traditional variable pump system, the servo oil pump system combines the fast stepless speed regulation characteristics of the servo motor and the self-regulating oil pressure characteristics of the hydraulic oil pump, which brings huge energy saving potential, and the energy **saving rate can reach up to 30%-80%**

### ■Efficient

The response speed is fast and the response time is as short as 20ms, which improves the response speed of the hydraulic system.



### ■ Precision

The fast response speed guarantees the opening and closing accuracy, the position accuracy can reach 0.1mm, and the special function position positioning accuracy can reach  $\pm 0.01\text{mm}$ .

The high-precision, high-response PID algorithm module ensures stable system pressure and pressure fluctuations of less than  $\pm 0.5\text{ bar}$ , improving product quality.

### ■ Environmental protection

**Noise:** The average noise of the hydraulic servo system is 15-20 dB lower than that of the original variable pump.

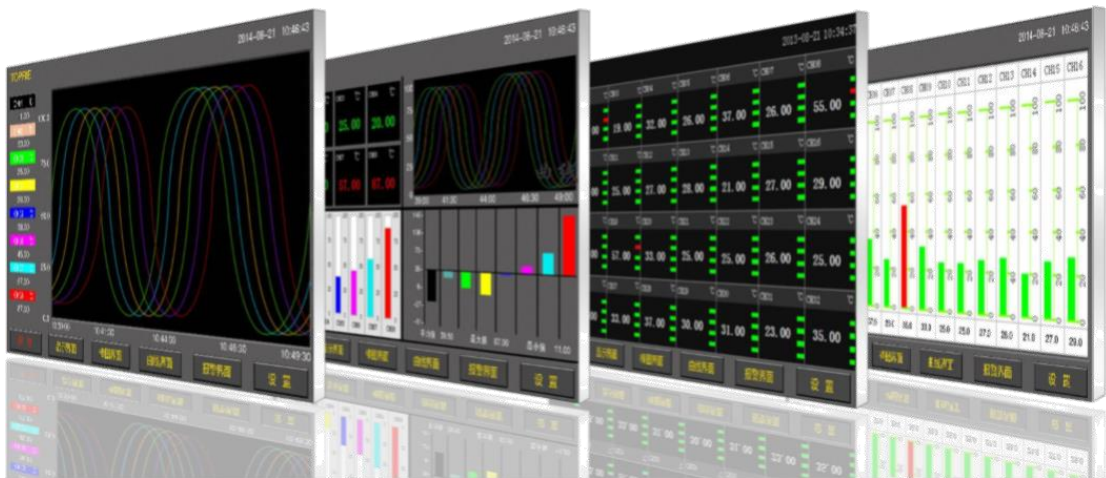
**Temperature:** After the servo system is used, the hydraulic oil temperature is reduced overall, which enhances the life of the hydraulic seal or reduces the power of the cooler.

## Program

Multi-screen industrial host computer realizes the main process parameters and fault prompts of the press, mainly including the following basic information:



- Password protected
- Digital display
- Data traceability



- Platen position, 0 at fully open position
- Cycle timer
- Security system
- Clamp pressure
- Oil temperature
- Speed
- Data record

**Safety Device**



Photo-Electrical Safety Guard Front & Rear



Slide Locking at TDC



Two Hand Operation Stand



Hydraulic Support Insurance Circuit



Overload Protection: Safety Valve



Liquid Level Alarm: Oil level



Oil temperature Warning



Each electrical part have overload protection



Safety blocks



Lock nuts are provided for movable parts

All action of press have safety interlock function, e.g. movable worktable will not work unless cushion return to initial position. Slide can not press when movable worktable is pressing. When conflict operation happen, alarm shows on touch screen and show what's the conflict.

## Hydraulic System



### Feature:

1. Oil tank been set forced water cooling filtering system make sure machine can steadily pressing in 24 hours.
2. The hydraulic system adopts integrated cartridge valve control system with fast response speed and high transmission efficiency.
3. The oil tank is equipped with an air filter to communicate with the outside to ensure that the hydraulic oil is not polluted.
4. The connection between the filling valve and the fuel tank uses a flexible joint to prevent vibration from being transmitted to the fuel tank and completely solve the problem of oil leakage.
5. The hydraulic oil pipe is mainly made of seamless steel pipe, and the large diameter oil path is flanged. The pipe connection is connected by SAE flange as much as possible. It is a butt welding type with good welding effect and effectively solves the oil leakage problem caused by poor welding.

## Electrical control system

1. The electrical system consists of power circuit and control circuit. The power circuit is AC320-500V, 50-60HZ ,TN-S, which is responsible for starting, stopping and protecting the oil pump motor. The control circuit system adopts PLC programmable controller combined with touch screen main control to realize various process action cycles of the machine tool.
2. The main power distribution control components are installed in the main control cabinet, and the main control cabinet is placed on the ground on the right side of the fuselage; the equipment execution components are connected by soft wires, the main cabinet outlets are regular, and the control lines are connected by aviation plug-ins for easy disassembly With overhaul.
3. The core function of the control part is assumed by the "PLC" programmable logic controller. According to the needs of the process, the commands issued by the main control components (selection switches, buttons, etc.), based on the signals measured by the detection elements such as displacement sensors, travel switches, pressure sensors, etc., process the switching and analog values of the machine and drive The hydraulic pilot valve and other devices realize the control of the pressure and displacement of the hydraulic actuator-cylinder, and then complete the production process of the machine.
4. The stroke of the slider is controlled by an absolute displacement sensor. The displacement sensor is arranged on the upper part of the inside of the column. The stroke and position conversion point can be directly set and displayed on the touch screen. In addition, there are upper and lower limit switches for double protection in unexpected situations.
5. The centralized operation control panel of the equipment is arranged on the main control cabinet, and the touch panel industrial display screen, working status indicator light and necessary operation buttons and selection switches are arranged on the panel.



## Technical Motion!

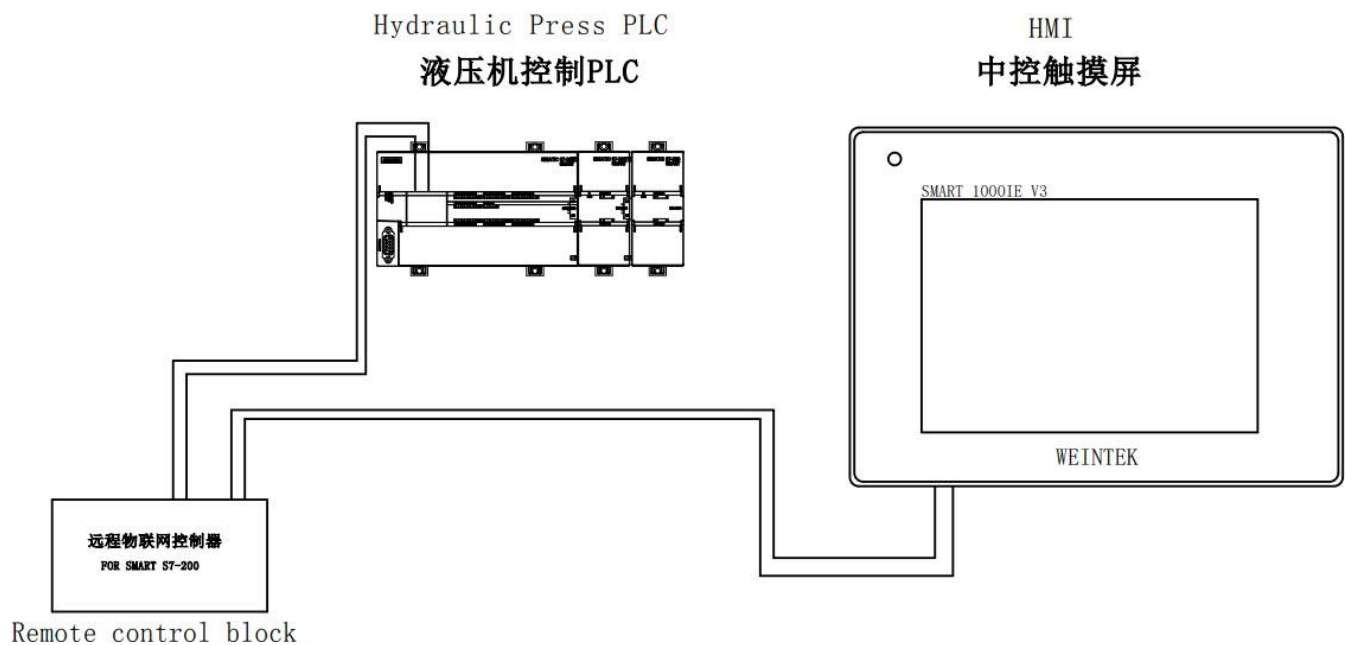
- 1) The press machine can be operated in 4 modes: adjustment (Inching), manual, semi-automatic and full-automatic, the working mode also can be divided into 2 modes: constant-distance forming and constant-pressure forming.
- 2) **Constant-distance mode:** When the current positions of slide and cushion reach a preset position, the current work is stopped. The constant-distance value of the slides are within the range of slide full stroke.
- 3) **Constant-pressure mode:** When the current pressures of the slide and cushion reach a preset pressure, the current work is stopped.
- 4) **Adjustment(inching):** Operate corresponding functional buttons to complete corresponding actions. Pressing a button for one time makes the press machine complete one-time inching. The press machine is stopped when the button is released. This mode is mainly used to adjust the press machine and replace a die.
- 5) **Manual:** Push each function button to complete a matching action, each push complete 1 action a time.
- 6) **Semi-automatic:** Double-hand push button to complete a single cycle: When a double-hand button is pressed, the press machine completes a set of process actions (Cycle process should be preset )
- 7) **Full-Automatic:** full-automatic cycle can be realized by connecting with auto feeder or mechanical hand. (auto feeder and mechanical hand are not including in this proposal, but it is available if buyer plan to add it. Full-automatic process already been input to PLC and press been designed extra I/O for feature automatic upgrading)

## Lubrication



The machine will be equipped with an automatic lubrication system, and the frequency and time of lubrication can be set on the HMI

## Remote maintenance block



The machine can be linked with the supplier through the remote module. If there is a problem with the machine, buyer can contact the manufacturer for online maintenance. If the customer does not open remote controller, the seller cannot connect to the machine.



## Technical Support

### Technical Documents

Name	QTY
Operation Manual	1pc/set
Container Loading List	1pc/set
Qualification	1pc/set
Foundation bolt and Nuts	1set/set
Filter Cartridge	1pc/set
Full set of pipe seals	1set/set

### Installation Responsibility Division

If buyer need installation on-site service on buyer's plant, should be charge \$200/day/Technician, cost of air tickets, local traffic and board and lodging are covered by the buyer.

No	Content	Buyer	Vender
1.	Buyer's on-site unloading	√	
2.	Installation and Commissioning		√
3.	Special tools for installation		√
4.	Installation and testing tools		√
5.	Power supply preparation	√	
6.	Secondary painting (if need)		√
7.	Foundation Construction	√	
8.	Lifting equipment	√	
9.	Mould	√	
10.	Raw material (sheet metal)	√	

## Quality Assurance and After-sales Service!

The warranty period of the whole press machine is **twelve (12) months** as of the date of successful final acceptance and signature. During the warranty period, the supplier provides technical and maintenance services timely and effectively. The warranty period is not applicable to quick-wear parts or the damage due to the buyer's reason or failure to follow operation instructions.

Where the press machine assembly, key parts or common parts at many positions are replaced or repaired more than two times during the warranty period, the warranty period is recalculated from the date on which replacement or maintenance is completed and the press machine operates normally.

Where the press machine fails to operate normally, the supplier promises to respond **within twenty-four (24) hours** after receipt of an email, fax or notice of any other valid form from the buyer and to complete maintenance with a reasonable period required by the buyer. The supplier promises to answer the telephone from the buyer around the clock. The supplier provides paid door-to-door maintenance service during the whole service life of the press machine. For detailed maintenance charge, contact sales personnel.

Where any part is damaged due to the quality problem of the press machine during the warranty period, the supplier will replace such part unconditionally free of charge. The warranty period of the replaced part is extended from the date of replacement.

Our after-sale idea is to remove all troubles of the press machine with excellent service, plenty of spare parts and professional technology.

After warranty, supplier provide lifetime maintenance service(paid by buyer), provide all parts supply(price chart refer below)

After warranty, supplier provide lifetime technical support.

All paid service after warranty we only charge what we cost.