

# SHEET METAL BENDING & FORMING MACHINE



## GENERAL FEATURES

### 1. Streamlined Design:

- New EU design.

### 2. Frame Integrity:

- Integrated welding and stress elimination through tempering.

### 3. Rust Protection:

- Shot blast frame, anti-rust treatment.

### 4. Precision Machining:

- CNC three-dimensional machining center for frame formation, ensuring parallelism and verticality.

### 5. Synchronized Control:

- Controller manages Y1 and Y2 axes for synchronous ram movement.

### 6. Quiet Operation:

- Low noise levels (approx. 25 decibels) during pressing and return, thanks to closed-loop servo motor control.

### 7. Energy Efficiency:

- Main oil pump energy consumption 60% lower than general CNC press brakes, thanks to servo main motor drive.

### 8. Stable Oil Temperature:

- Stable machine oil temperature for extended service life of hydraulic system components.

## MACHINE TOOL FEATURES

### Structural Features

- 1. Electro-hydraulic Synchronization:** Utilizes advanced electro-hydraulic synchronization technology.
- 2. Axis Configuration:** Equipped with Y1, Y2, X, R, V (4 + 1) axes.
- 3. Frame Composition:** Comprises an oil tank, support, worktable, left and right wall plates, and slider for robust structural integrity.
- 4. Structural Robustness:** The frame is meticulously welded, stress-relieved, and processed on a precision milling-boring machine for enhanced strength.
- 5. Slider Precision:** Employs vertical processing technology to ensure the utmost straightness of the top punch mounting surface in its vertical working state.

### Host structure

- 1. Robust Construction:** All-steel welding frame, assembled worktable for precision, and rigidity.
- 2. Welding Excellence:** Defect-free welding, polished surface, no spatter.
- 3. Optimized Design:** Main components analyzed for beauty, reliability, and stability.
- 4. Stress Relief:** Key welding parts undergo stress relief for enhanced stability.
- 5. Precision Machining:** Processed with large milling-boring machine for overall workpiece accuracy.
- 6. Accurate Measurement:** "C" shaped plate mechanism ensures precise distance detection between molds.
- 7. Anti-Eccentric Load:** Grating ruler feedback and synchronous valve control for robust anti-eccentric load capacity.
- 8. Dual Grating Rulers:** On Y1 and Y2 axes, connected to the worktable for unaffected positioning.
- 9. High-Precision X Axis:** Servo motor, linear guide, and ball screw for accuracy and positioning.
- 10. V Axis Convexity:** V axis represents the Vera's convexity..

## Slider structure

- 1. Upward Moving Bending Design:** Ensures low noise and stable working conditions.
- 2. Self-Lubricating Slide Rail:** Surface equipped with wear-resistant, self-lubricating guide plate for enhanced durability.
- 3. Slider Connection to Oil Cylinder:** Rigid connection ensures synchronization accuracy in fast forward, working, and fast return states.
- 4. Programmable Dwell Time:** Bottom dead center programmable for dwell time, ensuring accuracy for different workpieces.
- 5. Slow Return Control:** Operator-controlled slow return function for better workpiece control.
- 6. Universal Top Punch Mounting Surface:** Meets clamping requirements of various molds..

## Hydraulic system

- 1. Advanced Control System:** Utilizes state-of-the-art all-electro hydraulic servo synchronous control system.
- 2. High-Quality Hydraulic System:** Complete hydraulic system imported from HAWE Germany.
- 3. Precision Guidance System:** Imported liner grating ruler, high-precision guidance system, position measurement, and hydraulic equalization for full-length or eccentric processing.
- 4. Sealed Oil Cylinder:** Inner seal of the oil cylinder from an international famous brand ensures strong sealing performance and extended service life.
- 5. Safety Features:** Hydraulic system equipped with overload overflow safety protection and oil pump high-pressure filter blocking alarm.
- 6. Visual Oil Level Display:** Clear and visual display of oil level height.
- 7. Stable Continuous Operation:** Machine can work continuously under rated load, hydraulic system ensures stability and high precision with no leakage.
- 8. Precision Oil Cylinder:** Oil cylinder crafted through forging, rough processing, tempering, finishing, inner wall grinding, floating boring, and rolling, ensuring wear resistance and high cylindricity Precision.
- 9. Durable Piston Rod:** Piston rod forged with rough processing, tempering, quenching, finishing, hard chromium plating, external grinding, and more for longevity and precision..

## Electrical system

- 1. Quality Electrical Components:** Imported or joint venture electrical components meet international standards, ensuring safety, reliability, long service life, and strong anti-interference capability.
- 2. User-Friendly Operation:** Movable buttons (including foot switch) for easy operation, featuring an emergency stop function.
- 3. Limit Protection Measures:** Working system incorporates necessary limit protection, capable of immediate detection and alarm in case of abnormalities.
- 4. Efficient Electrical Cabinet Layout:** Reasonably laid out electrical cabinet with separate consideration for the main and control circuits, ensuring ample space for easy maintenance.
- 5. Durable Terminal Block:** Terminal block with protective nose, clear wire numbering, oil-proof and durable construction.
- 6. Sealed Circuit Entrances and Exits:** Sealing measures at electrical circuit entrances and exits, with clear circuit direction and markings.
- 7. Motor Protection:** Motor overload and short circuit protection through automatic air switch.
- 8. Control Circuit Safety:** Short circuit protection for the control circuit.
- 9. Emergency Stop Interlock:** All "emergency stop" buttons are interlocked, pressing any one of them stops the machine tool.
- 10. Reliable Grounding:** Ensures a reliable electrical grounding device.

# TECHNICAL SPECIFICATION

	MODEL	UNIT	WADE-250T/4000
	Bending Force	KN	2500
	Bending Length	mm	4000
	Bending Thickness	mm	8 & 4
	Upright Distance	mm	3100
	Throat Depth	mm	450
	Stroke	mm	250
	Open Height	mm	540
	Fast Speed	mm	100
	Working Speed	mm	8.5
	Oil Tank	L	440
	Main Motor	Kw	22
	Weight	Ton	19
	Dimensions	L×W×H mm	4600*2100*3100
	Power supply	/	480V/60HZ/3PH
	Return speed	mm	100
Machine Tool Accuracy	Slider repeat accuracy	mm	≤±0.03
	Slider positioning accuracy	mm	≤±0.03
	Repeat positioning accuracy of backgauge	mm	≤±0.05
	Workpiece straightness	mm	0.5
	Bending angle error	°	<±0.5
	Grating Ruler Resolution	mm	0.005
	Hydraulic Oil Standard	/	#46 Antiwear hydraulic oil

## STANDARD COMPONENTS

**Controller**

DA58T

**Backgauge Axi**

4+1 (Y1, Y2, X, R+V)

**Hydraulic Valve**

HAWE

**Hydraulic Gear Pump**

HAWE

**Grating Ruler**

-Fagor / Givi

**Tubing Connector**

JS / EMB

**Clamps**

SellEton Fast clamp

**Pedal Switch**

Roller Type

**Front Protection**

Left t & Right Guard

**Rear Protection**

Fully Enclosed Rear Guard

**Main Motor Normal Type**

Siemens

**Electrical Components**

Schneider

**Crowning**

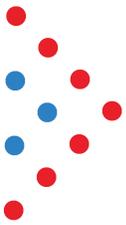
Motorized Crowning

**Ball Screw and Linear Guide**

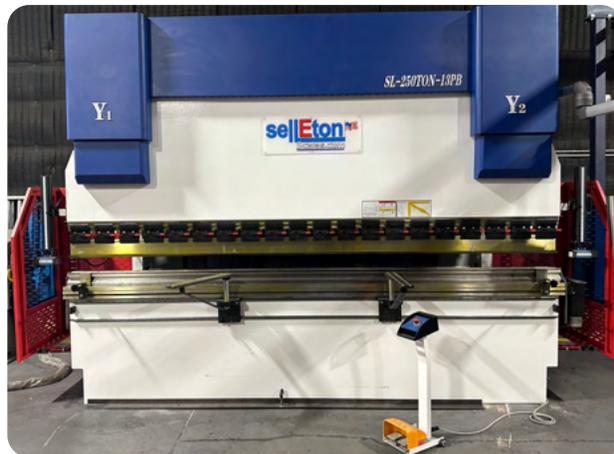
PMI / PYM

**Servo Motor/ Servo Drive**

Estun



● **Front Side View**



● **DA58T Control system**

● **Back Side View**



- **HAWE Hydraulic System**



- **Siemens Motor**

- **Schneider Electrical**



- **SellEton Stop Fingers**



- **Front support with Linear Guide**

- **Motorized Table Crowning**



● **SellEton Fast Clamps**



● **SellEton Petal Switch**

● **Laser Protection**



## CONTROLLER

2D graphical touch screen programming

5"high resolution colour TFT

Bend sequence calculation

Crowning control Servo and frequency inverter control

Advanced Y-axis control algorithms for closed-loop as well as open-loop valves

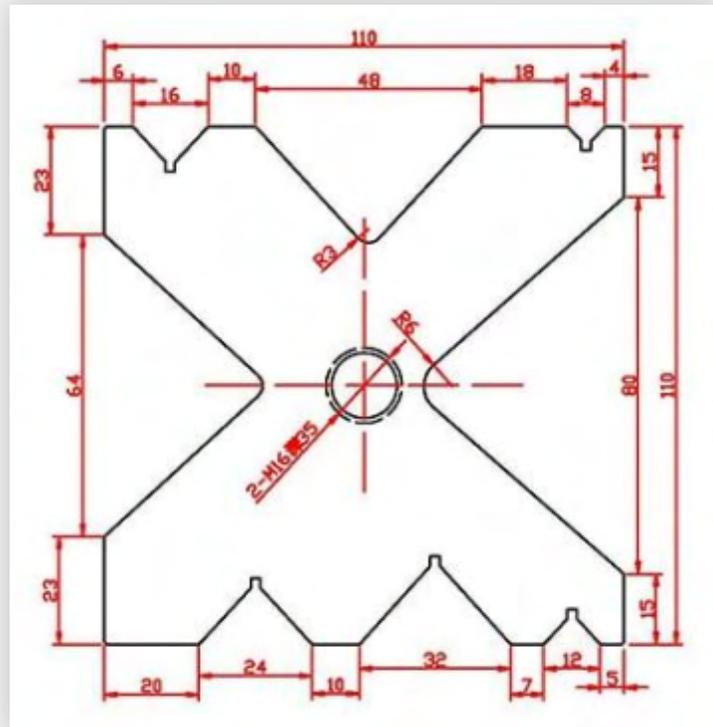
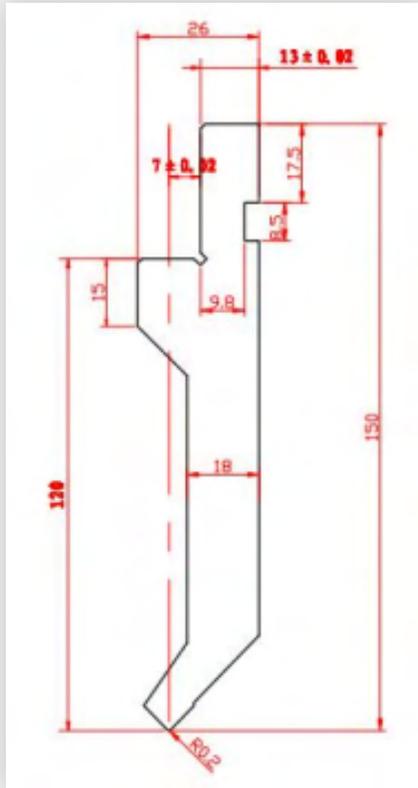
USB, peripheral interfacing

Profile-T offline software



- **DA-58T:** State-of-the-art 2D graphical control solution for synchronized press brakes.
- **CNC Programming:** Easy with Delem graphical touch screen interface.
- **Automatic Bend Sequence:** Includes calculation and collision detection.
- **High-Resolution Display:** 15" TFT with industrial-grade multi-touch screen technology.
- **Proven User Interface:** Direct navigation between programming and production.
- **Ergonomic Design:** Functions located optimally for user convenience.
- **Efficient Workflow:** Quick program-to-production sequence, minimizing machine adjustments and test bends.
- **Single-Touch CNC Program Generation:** Immediate readiness for production with automatically computed axes positions.
- **Real-Scale Simulation:** Bend sequence simulated with machine and tools in real scale.
- **Production Mode:** DA-58T assists in graphically simulating the bend process, guiding the operator during press brake operation.

**PUNCH & DIE DRAWING**



**Standard tooling**

Adopt double-V bottom die ,material adopts 42Crmo or C45 high quality steel hot-treatment HRC 47±2°

**Standard section:**

5 Piece\*800mm