



## CNC PRESS BRAKES

PBA

PBG

PBC

PBH

PBM

PBE

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**National Single Champion Product in Manufacturing Industry**

Since 1976, Yawei has entered the press brake industry, and has been committed to the R&D and manufacturing of efficient, high-precision and energy-saving pressbrakes. With more than 50 years of technology and process, Yawei has been dedicated to serving customers in various metal sheet processing industries. Rich product series and functional parts provide you with better bending process solutions.

**Products Advantages**

- All new outlook design
- High speed and high efficiency bring higher profits
- High rigidity and high precision decide better quality
- Easy to operate, low maintenance cost



**PBA Series**

**High Speed CNC Press Brake**

- Main servo motor drives the oil pump, energy-saving and fast
- Trustworthy Yawei quality, stable and reliable
- High quality bending operations to all types of workpieces
- Automatic worktable mechanical crowning system, closed-loop control



**PBG Series**

**Double Servo CNC Press Brake**

- Double servo motor drives double oil pumps for faster speed
- Proportional valve control technology, higher synchronization accuracy
- Small oil tank, reduce later use cost for customer
- No pipeline structure design, eradicate the hidden trouble of oil leakage



**PBC Series**

**High Performance CNC Press Brake**

- Low oil temperature control technology reduces hydraulic failure and improves service life
- High precision and high efficiency bending operations to all types of workpieces
- High frequency response valve control technology, high dynamic response and high precision
- Load sensitive adjustment, more energy saving and more stable



**PBH Series**

**High Speed CNC Press Brake**

- High frequency response valve control technology, high dynamic response, high precision
- Low oil temperature control technology, reduce hydraulic failure, improve service life
- Suitable for high precision and high efficiency bending processing for all kinds of workpiece



**PBM Series**

**High-end Reversible Pump CNC Press Brake**

- Oil-electric hybrid drive system, pump-controlled synchronous control technology
- Higher precision, good energy saving effect, faster speed, high efficiency
- High precision and fast bending operations to all types of workpieces
- Higher parameters and configuration design, more suitable for high-end customer needs



**PBE Series**

**Electric Servo Drive Press Brake**

- Mechanical servo drive system, ball screw drive, high dynamic performance
- High precision, good energy saving effect, fast speed, high efficiency
- High precision and high efficiency bending operations to all types of small workpieces



## PBA Series

### High Speed CNC Press Brake

- All new simplified design, elegant appearance
- Better parameters, better core configurations, stable performance, and easy to operate
- High rigidity machine frame, automatic worktable mechanical crowning control reaching high precision bending operations
- Main motor adopts servo motor to drive oil pump, save about 40% energy than normal electro-hydraulic press brakes

## Multiple Configurations Flexible Combinations

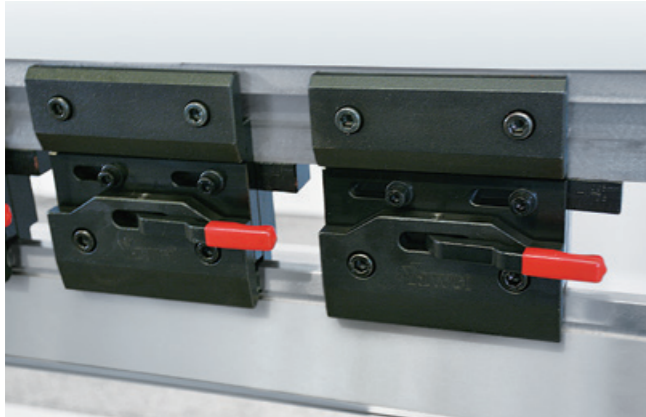
### Backgauge



#### Standard Backgauge (Standard )

- CNC axis driven by AC servo motor, moved with precision ball screw, guided by linear guide

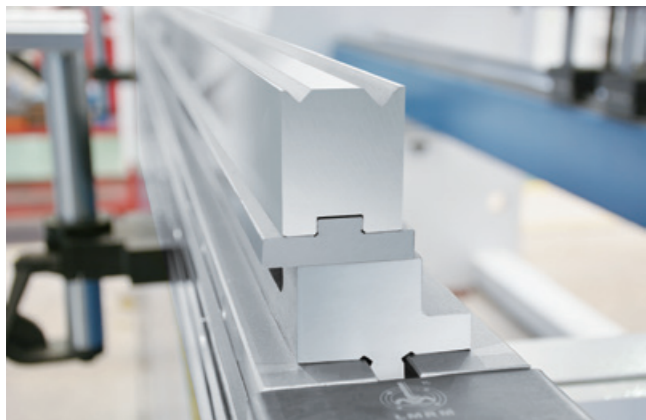
### Upper Tool Clamping



#### Mechanical Fast Clamping for Upper Tool (Standard)

- Mechanical fast clamping enables a fast change of upper tool

### Lower Die Clamping



#### 2-V Clamping for Lower Die (Standard)

- 2-V T-shaped fast clamping enables the fast change of lower die

### Crowning Compensation



#### Mechanical Crowning Device (Standard)

- Mechanical crowning device can be adjusted automatically according to the instruction of CNC programming

### Front Sheet Support



#### Step-adjusted Front Sheet Support (Standard)

- Standard front sheet support, manual adjustment of height, can be turned left and right

### Laser Safety Guard



#### Laser Guarding Device (Option)

- CNC and safety controller can communicate and monitor the machine operations in real time to effectively protect the fingers and arms of the operator

## Multiple Configurations Flexible Combinations

## Outstanding Parameters Extraordinary Performance

### NCY64 CNC Controller (standard)



#### Function Features

- Color LCD display, 15" widescreen TFT
- Over 2000 programs and tooling storage space
- Data stored by USB
- One-page parameter fast programming
- Automatic calculation of worktable crowning compensation
- 2D programming, 3D/2D simulation
- Automatic calculation of bending pressure and tooling safety zone
- Online running and analysis
- Angle correction database (option)
- System diagnosis function
- Up to six axis control (Y1, Y2, four auxiliary axis)

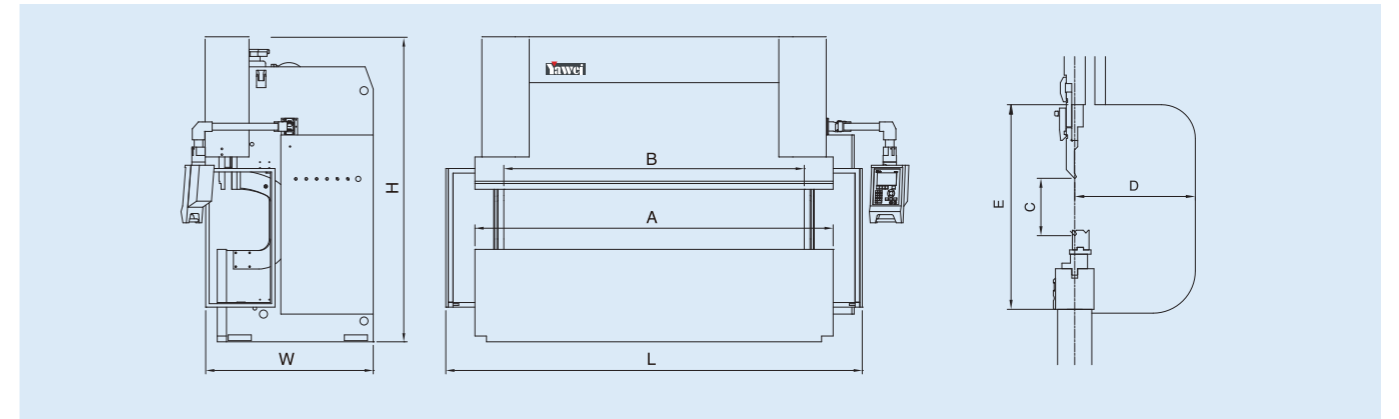
### DA53T CNC Controller (option)



#### Function Features

- 10.1" widescreen, TFT color display touch screen
- Up to four axis control
- Memory capacity 1GB
- One-page parameter fast programming, navigation shortcut keys
- Internal integrated valve amplifier
- Online running and analysis
- Network tandem linkage (Option)
- System diagnosis function
- Real-time WINDOWS operating platform, ensuring the stability of system operation, supporting instant shutdown
- Automatic calculation of worktable crowning compensation
- Tooling library for 30 sets of upper tool/30 sets of lower die

### Technical Parameters



Model	Bending force	Bending length A	Distance between uprights B	Throat depth D	Ram stroke C	Die setting height E	Ram speed			Main motor power	Oil tank volume	Overall dimension LxWxH			Machine Weight
	kN	mm	mm	mm	mm	mm	mm/s			kW	L	mm			kg
PBA-35/1250	350	1250	950	300	120	450	180	16	180	5	100	1930	1400	2200	3000
PBA-63/2050	630	2050	1750	350	175	480	180	12.5	140	6	150	2700	1450	2360	4000
PBA-63/2550		200	3200								1450	2360	5000		
PBA-110/3100	1100	3100	2600	410	215	520	220	15	180	8.7	250	3665	1430	2620	7000
PBA-110/4100		300	4665								1430	2620	8500		
PBA-160/3100	1600	3100	2600	410	215	520	180	13	155	10.8	350	3685	1500	2750	8600
PBA-160/4100		400	4685								1500	2820	10500		
PBA-220/3100	2200	3100	2600	410	215	530	160	12	150	16.7	400	3705	1745	2830	10800
PBA-220/4100		500	4705								1745	2930	12800		
PBA-300/3100	3000	3100	2600	410	265	580	140	12	120	21.4	450	3725	1925	2980	13800
PBA-300/4100		600	4725								1925	3080	15800		



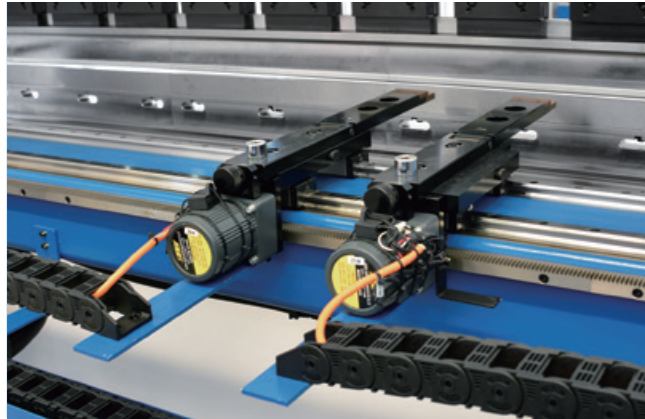
## PBG Series

### Double Servo CNC Press Brake

- Technology of double servo motor driving double oil pump, fast speed, high efficiency
- Advanced pressure control technology, more energy saving, less oil, more stable and reliable of the machine
- Small oil tank, low maintenance cost
- New no-pipeline structure design can prevent the oil leakage due to loose of pipe joints

## Multiple Configurations Flexible Combinations

### Electric Finger-stops



#### Electric Z1 Z2 Finger-stops (Standard for Curtain Wall Models)

- Two finger-stops Z1 and Z2 are electric controlled, moving leftward and rightward along double linear guide, easy to operate, no safety risks

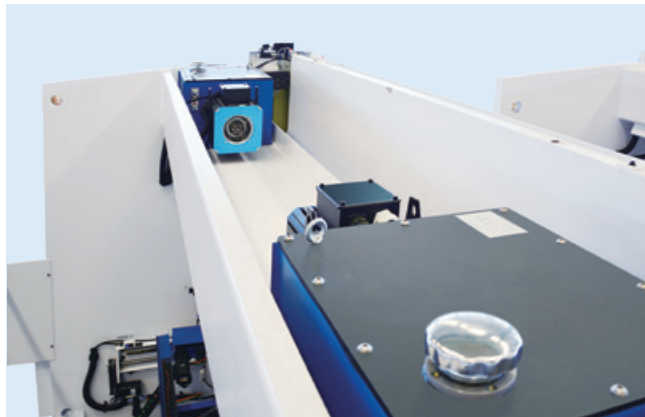
### Rear Drive Stop Gauge



#### Rear Drive Stop Gauge (Standard for Curtain Wall Models)

- X axis adopts double motor rear driving structure, fast speed, avoid bending interference of typical workpiece in curtain wall industry

### Control Technology



#### Double Servo Control Technology (Double Servo Standard)

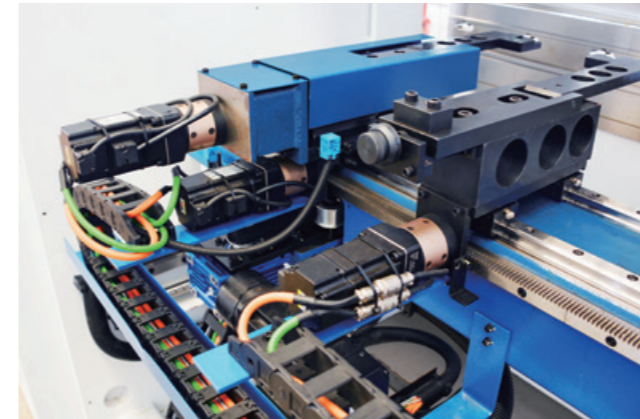
- Double servo motors and proportional valves control cylinders on both sides, faster speed, higher synchronization accuracy, more stable operation of machine

### Backgauge



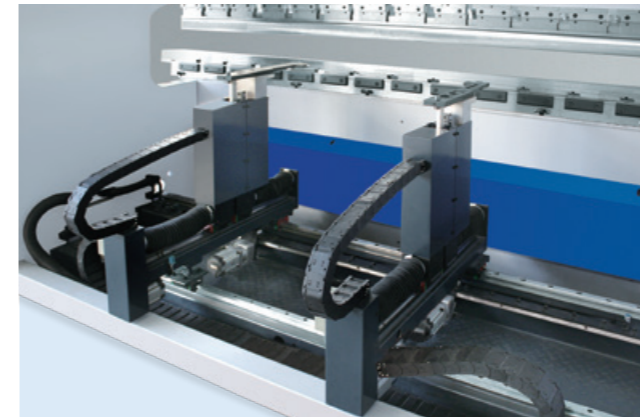
#### Double Linear Guide Rail Backgauge (Standard)

- Axis number: X, R
- CNC axis driven by AC servo motor and precision ball screw drive, guided by linear guide rail



#### Five-axis Backgauge (Option)

- Axis number: X, R, Z1, Z2, X1
- Available for bending positioning of complex workpiece and inclined surface workpiece



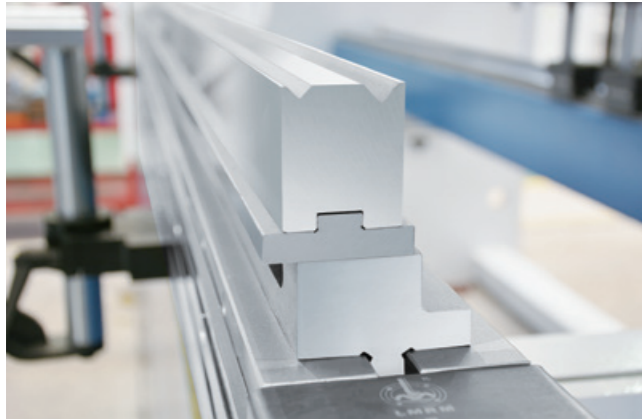
#### Six-axis Backgauge (Option)

- Axis number: X1, X2, R1, R2, Z1, Z2
- Available for both bending positioning of complex workpiece and inclined surface workpiece

## Multiple Configurations Flexible Combinations

## Outstanding Parameters Extraordinary Performance

### Lower Die Clamping



#### Lower Die Double V Construction (Standard)

- The lower die adopts double V- "T" shaped fast clamping, which can realize fast replacement



#### Single V Clamping of Lower Die (Option)

- Single V clamping of the lower die, high precision, easy to change, narrow width, suitable for bending of complex flanging workpiece

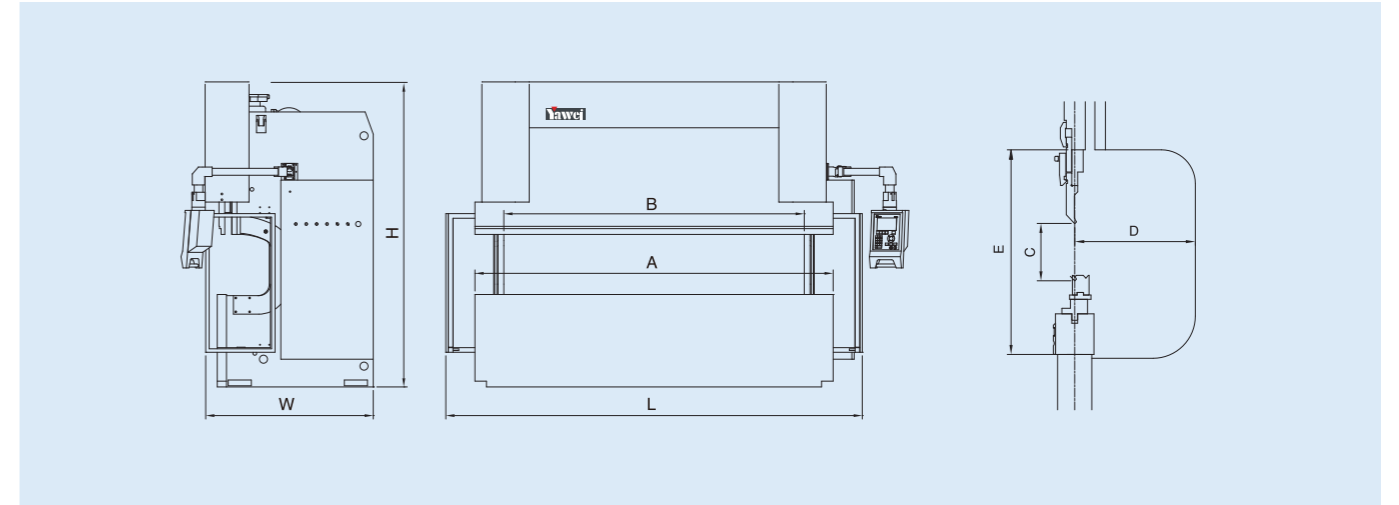
### Bending Help



#### Mechanical Servo Bending Help (Option)

- When bending workpiece, the supporting plate can realize the function of turning over and following, and the following angle and speed are automatically calculated and controlled by CNC controller, bending help can move leftward and rightward along the linear guide

### Technical Parameters



Model	Bending force	Bending length A	Distance between uprights B	Throat depth D	Ram stroke C	Die setting height E	Ram speed			Main motor power	Oil tank volume	Overall dimension LxWxH			Machine Weight
	kN	mm	mm	mm	mm	mm	mm/s		kW	L	mm		mm	kg	
PBG-110/3100	1100	3100	2600	410	215	520	220	18	200	2x7.9	2x60	3670	1430	2620	7000
PBG-160/3100	1600	3100	2600	410	215	520	200	18	200	2x7.9	2x60	1500	3690	2750	8600
PBG-160/4100		4100	3600										4690	2820	10500
PBG-220/3100	2200	3100	2600	410	215	530	180	15	180	2x11	2x80	1750	3710	2830	10800
PBG-220/4100		4100	3600										4710	2930	12800
PBG-110/4100 Curtain wall	1100	4100	3600	550	215	630	220	18	200	2x7.9	2x60	1700	4670	2780	8800
PBG-110/4500 Curtain wall		4500	3800										5070	2870	9500



## PBC Series

### High Performance CNC Press Brake

- All new outlook design, friendly human-machine interface
- Worktable mechanical crowning compensation, higher precision, more stable
- Optimized parameters and configurations, more functions while easier to operate
- High frequency response valve control technology, high dynamic response and high precision
- Load sensitive adjustment, more energy saving and more stable

## Multiple Configurations Flexible Combinations

### Crowning Compensation



#### Mechanical Crowning Compensation Device (Standard)

- Automatic adjustment of crowning compensation according to the instructions programmed by CNC
- Two-way adjustment function

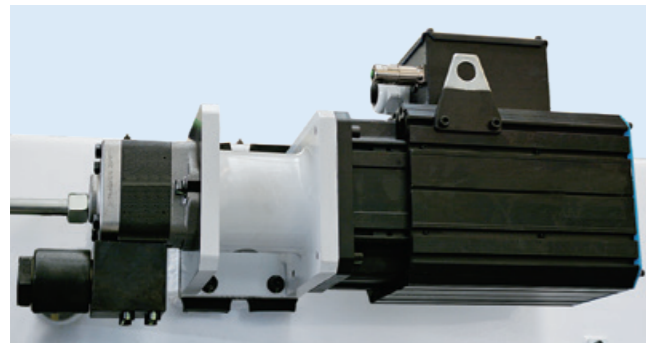
### Control Technology



#### Hydraulic Following Control Technology (Standard)

- Hydraulic following control technology guarantees the synchronization precision of Y1 and Y2 axis in high speed operation, reaching higher bending efficiency

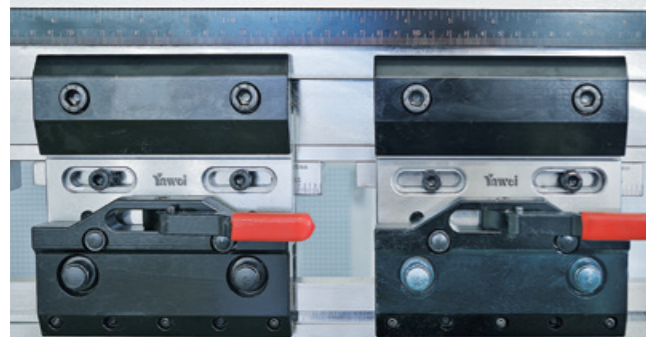
### Servo Drive



#### Servo Main Motor (Standard)

- Standard servo main motor can save energy, reduce oil temperature, increase overall life time and reduce maintenance cost

### Upper Tool Clamping



#### Mechanical Fast Clamping for Upper Tool (Standard)

- Mechanical fast clamping enables a fast change of upper tool
- Upper tool can be mounted and dismantled from the front side

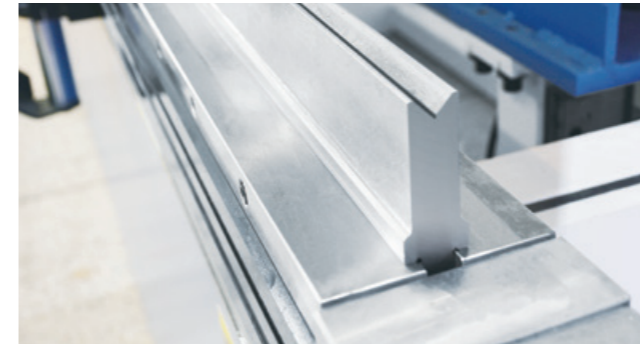
### Upper Tool Clamping



#### Hydraulic Clamping of Upper Tool (Option)

- Clamping and loosening actions are electrically controlled, strong and stable clamping force, easy and effective change of upper tool

### Lower Die Clamping



#### Single V Clamping of Lower Die (Option)

- Single V clamping of the lower die, high precision, easy to change, narrow width, suitable for bending of complex flanging workpiece

### Lower Die Clamping



#### Single V Automatic Hydraulic Clamping for Lower Die (Option)

- Clamping and loosening actions are electrically controlled, easy and effective change of lower die

### Front Sheet Support



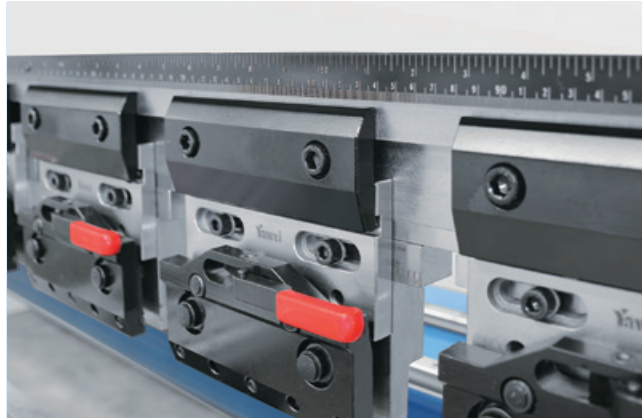
#### Front Sheet Support Moving Along Linear Guide (Standard)

- Front sheet support moving leftward and rightward along linear guide, height can be manually adjusted up and down

## Multiple Configurations Flexible Combinations

## Outstanding Parameters Extraordinary Performance

### Ram Scale



#### Scale (Standard)

- Scale mounted at the ram, both metric and inch scale display, easy for the operator to change tools and alignment bending

### DA66T CNC Controller (option)



#### Function Features

- 2D touch graphical programming
- 3D product graphical simulation display
- 17" high resolution TFT true color display
- Complete Windows application package
- Compatible with Delem modular construction system
- USB, peripheral port
- User application in a multi-task environment
- Angle detection sensor interface

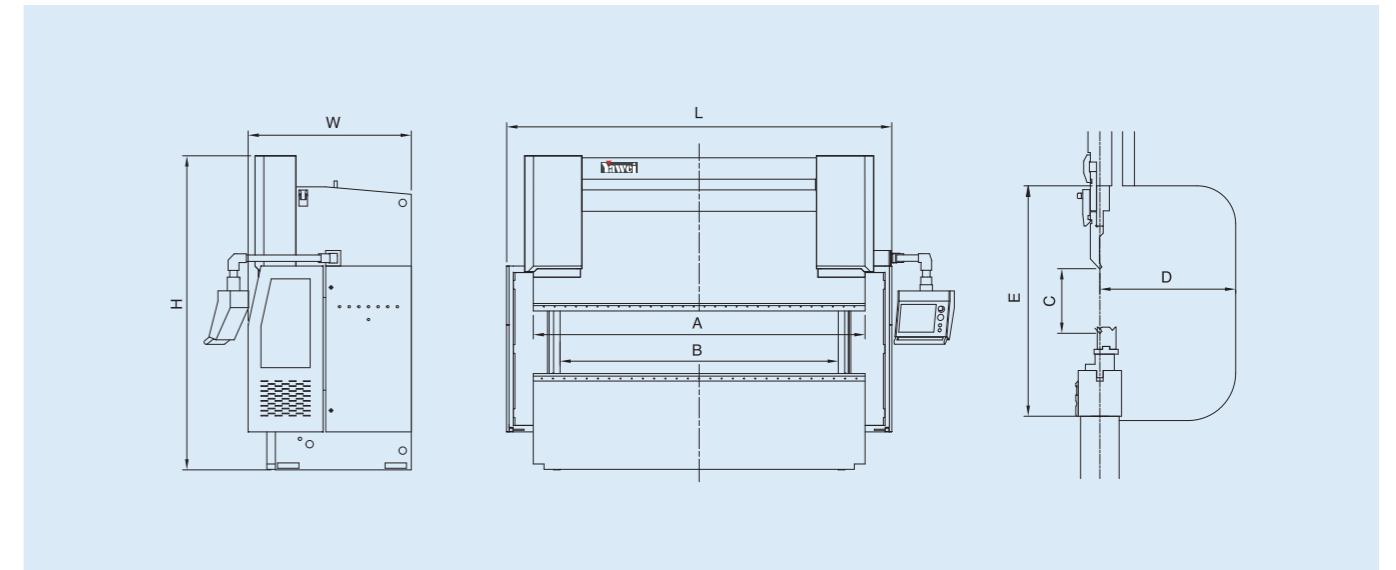
### DA58T CNC Controller (option)



#### Function Features

- Color LCD display
- 15" widescreen TFT
- Full touch screen operation
- 1GB storage capacity
- 2D programming and 2D display
- Data stored by USB
- Automatic calculation of bending process
- Network tandem linkage (Option)
- Automatic calculation of worktable crowning compensation
- Internal integrated valve amplifier

### Technical Parameters



Model	Bending force	Bending length A	Distance between uprights B	Throat depth D	Ram stroke C	Die setting height E	Ram speed			Main motor power	Oil tank volume	Overall dimension LxWxH			Machine weight
	kN	mm	mm	mm	mm	mm	mm/s		kW	L	mm			kg	
PBC-30/1050	300	1050	950	90	120	450	200	18	200	3	40	1790	1235	2385	3000
PBC-50/2050	500	2050	1750	350	175	495	200	18	190	6.2	150	2550	1450	2485	4500
PBC-80/2550	800	2550	2150	350	175	495	200	18	200	8.5	200	3140	1540	2485	6000
PBC-110/3100	1100	3100	2600	410	215	535	220	18	200	13	200	3610	1550	2785	8500
PBC-110/4100		4100	3600									4610	1550	2835	9200
PBC-160/3100	1600	3100	2600	410	215	535	200	15	180	18	300	3630	1600	2835	10000
PBC-160/4100		4100	3600									4630	1600	2875	11900
PBC-220/3100	2200	3100	2600	410	215	545	180	13	160	22	300	3650	1850	2845	12300
PBC-220/4100		4100	3600									4650	1850	2975	14000



## PBH Series

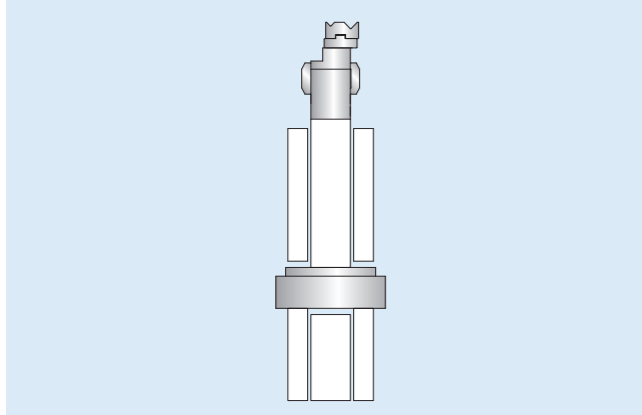
### High Speed CNC Press Brake

- High frequency response hydraulic control technology, fast speed, high efficiency, stable precision
- Balance valve control technology, overflow reduced, low oil temperature, more stable and reliable for machine
- More outstanding parameters and configuration, more powerful functions, easier operation
- There is option that worktable can be equipped with dynamic hydraulic compensation function, closed loop control, higher precision and good stability

## Multiple Configurations Flexible Combinations

## Outstanding Parameters Extraordinary Performance

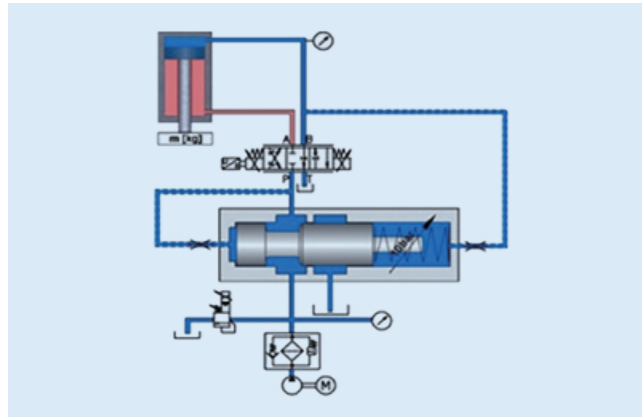
### Crowning Compensation



#### Hydraulic Crowning Compensation Technology (Standard)

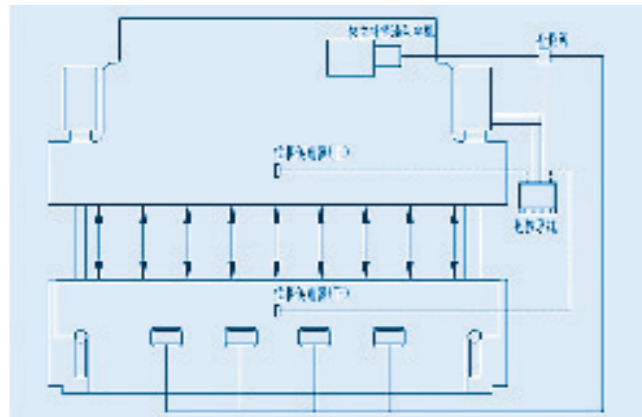
- Hydraulic crowning compensation is composed of a set of oil cylinders under worktable, which can make worktable move relatively and form an ideal convex curve to ensure that the relative position to ram remains no change after bearing force. Compensation amount is automatically calculated by CNC control system according to thickness of sheet metal, die opening and material characteristics

### Balance Control



#### Differential Pressure Balance Control Technology (Standard)

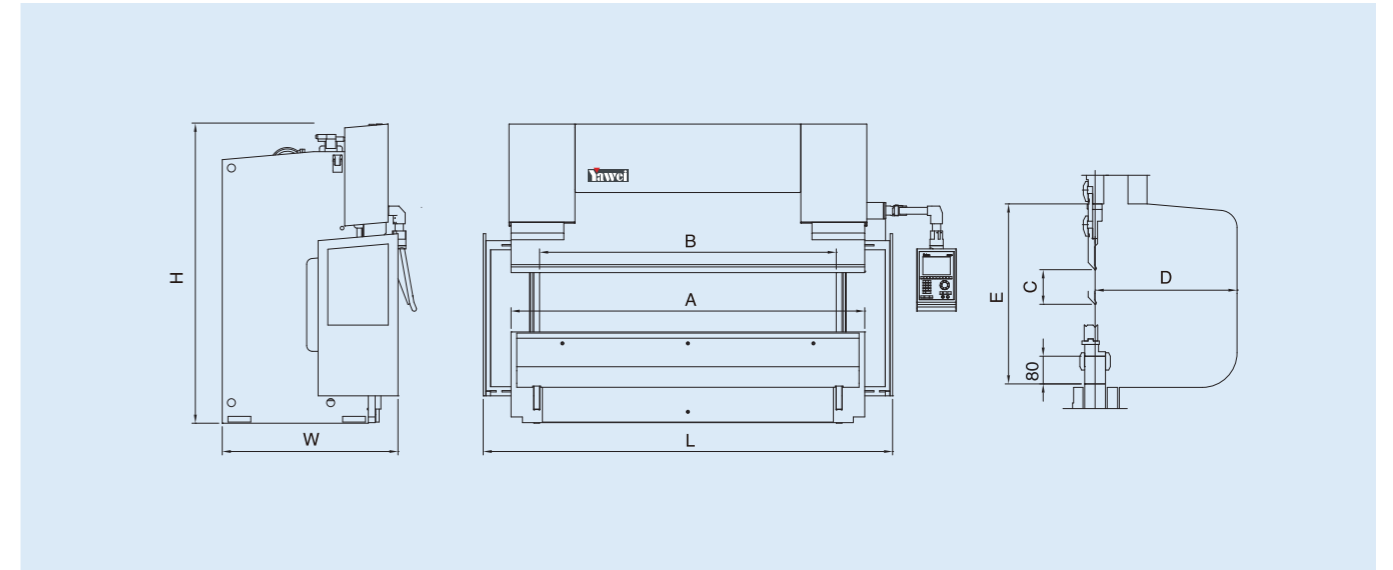
- The differential pressure balance system is used to control the overflow of the hydraulic system in advance and effectively control the temperature rise of the hydraulic system, which is conducive to the long-term stability of the machine



#### Dynamic Compensation Control Technology (Option)

- Sensor will feedback the actual deformation of ram and worktable to the CNC system, and then CNC system controls the compensation valve, pressurizing the compensation cylinder to move to the specified position, complete closed-loop control, higher precision, and better consistency

### Technical Parameters



Model	Bending force	Bending length A	Distance between uprights B	Throat depth D	Ram stroke C	Die setting height E	Ram speed			Main motor power	Oil tank volume	Overall dimension LxWxH			Machine Weight
	kN	mm	mm	mm	mm	mm	mm/s		kW	L	mm			kg	
PBH-80/2550	800	2550	2150	350	175	480	200	18	200	9.8	230	3140	1540	2450	6500
PBH-110/3100	1100	3100	2600	410	215	520	220	18	180	12.5	300	3610	1550	2620	8800
PBH-110/4100		4100	3600	410	215	520					360	4610		2670	11000
PBH-160/3100	1600	3100	2600	410	215	520	180	15	170	18	380	3630	1600	2670	10300
PBH-160/4100		4100	3600	410	215	520					430	4630		2720	12500
PBH-220/3100	2200	3100	2600	410	215	520	160	13	150	24.4	400	3650	1850	2735	12800
PBH-220/4100		4100	3600	410	215	520					500	4650		2935	16000
PBH-250/3100	2500	3100	2600	410	215	530	150	12	130	24.4	400	3650	1850	2735	13000
PBH-250/4100		4100	3600	410	215	520					500	4650		2935	16200
PBH-300/3100	3000	3100	2600	410	265	580	120	9	100	22	450	3130	1890	2980	16000
PBH-300/4100		4100	3600	410	265	580					600	4310		3080	19000



## PBM Series

### High-end Reversible Pump CNC Press Brake

- Higher parameters and configuration design, more suitable for high-end customer needs
- The latest synchronous control technology by double servo pump control, faster speed, higher efficiency, higher precision, energy saving and environmental protection
- High rigidity machine design, smaller frame and ram deformation, higher workpiece precision
- Larger stroke and die setting height, convenient for large workpiece bending operation
- High performance backgauge, faster speed, higher precision

## Multiple Configurations Flexible Combinations

## Outstanding Parameters Extraordinary Performance

### Configuration and Function Components



#### C-shaped High Speed Backgauge (Standard)

- Adopt high precision rack and pinion to drive, higher precision
- X axis driven by double servo motors, faster speed



#### Bidirectional Crowning Compensation Worktable (Standard)

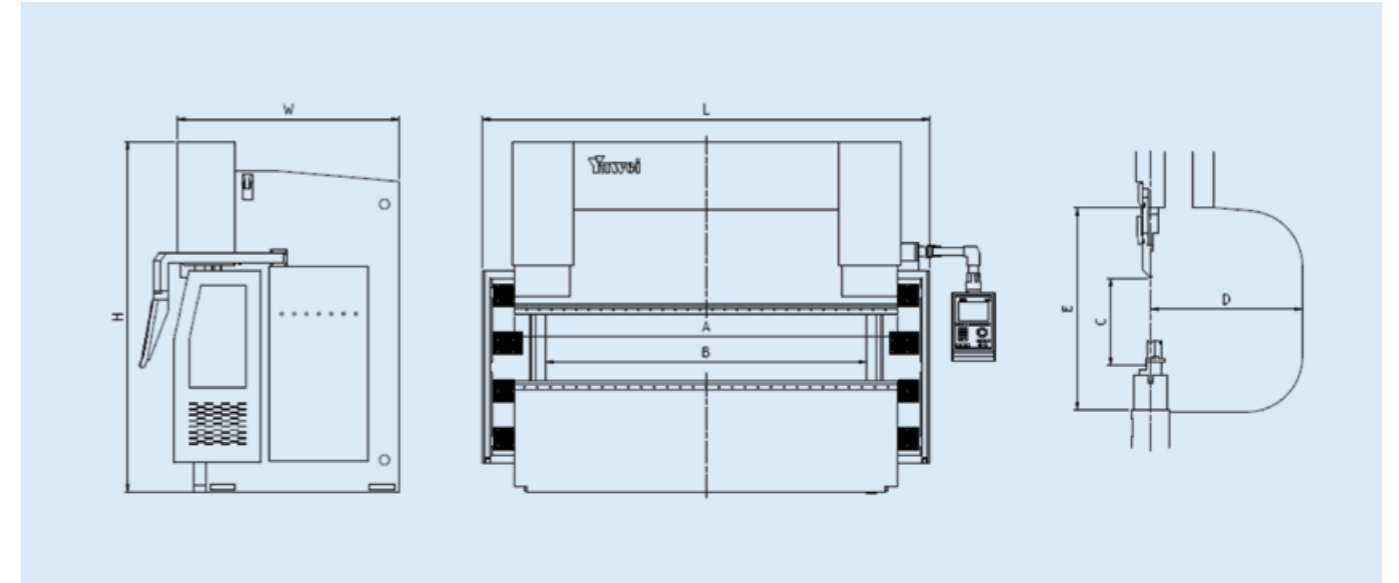
- The length direction can be adjusted as a whole to compensate the deflection deformation of the ram
- Each wedge point can be manually compensated to make up for local machining errors, and higher precision can be obtained



#### Four-axis Backgauge (Option)

- Add Z1 and Z2 axis on the basis of X+R axis, programmable to automatically control two finger-stops moving leftward and rightward

### Technical Parameters



Model	Bending force	Bending length A	Distance between uprights B	Throat depth D	Ram stroke C	Die setting height E	Ram speed			Main motor power	Overall dimension LxWxH			Machine Weight
	kN	mm	mm	mm	mm	mm	mm/s	mm/s	mm/s	kW	mm	mm	mm	kg
PBM-110/3100	1100	3100	2600	410	265	600	250	20	220	5.5×2	3610	1550	2935	9000
PBM-110/4100	1100	4100	3600	410	265	600	250	20	220	5.5×2	4610	1550	2985	9700
PBM-160/3100	1600	3100	2600	410	265	600	220	18	220	7.5×2	3630	1600	2985	10500
PBM-160/4100	1600	4100	3600	410	265	600	220	18	220	7.5×2	4630	1600	3025	12400
PBM-220/3100	2200	3100	2600	410	265	600	200	15	200	15×2	3650	1850	2995	13000
PBM-220/4100	2200	4100	3600	410	265	600	200	15	200	15×2	4650	1850	3095	14700



## PBE Series

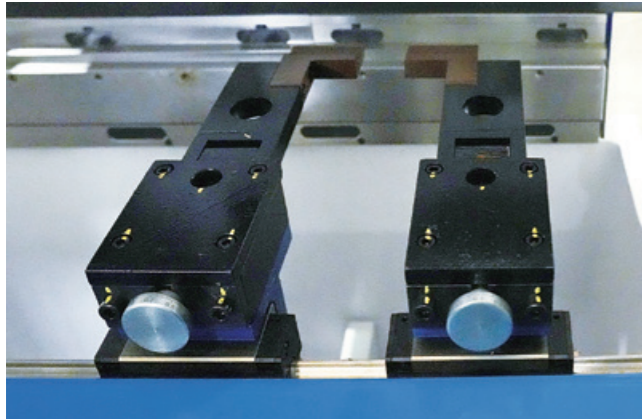
### Electric Servo Drive Press Brake

- Humanized high speed, high efficiency electric servo press brake
- High speed, high precision, the best choice for bending small and medium sized parts
- All-electric without oil, low energy consumption, less maintenance, machine more stable and reliable
- Compared with electro-hydraulic machine, the comprehensive energy saving by more than 30%, lower use cost
- Compared with electro-hydraulic machine, the comprehensive efficiency improved by more than 40% (under specified working conditions)

## Multiple Configurations Flexible Combinations

## Outstanding Parameters Extraordinary Performance

### Configuration and Function Components



#### Backgauge

- Overall structure adopts lightweight materials, high rigidity, fast speed
- Standard two axis X and R, finger-stops can move leftward and rightward along the cylindrical guide



#### Mechanical Fast Clamping for Upper Tool

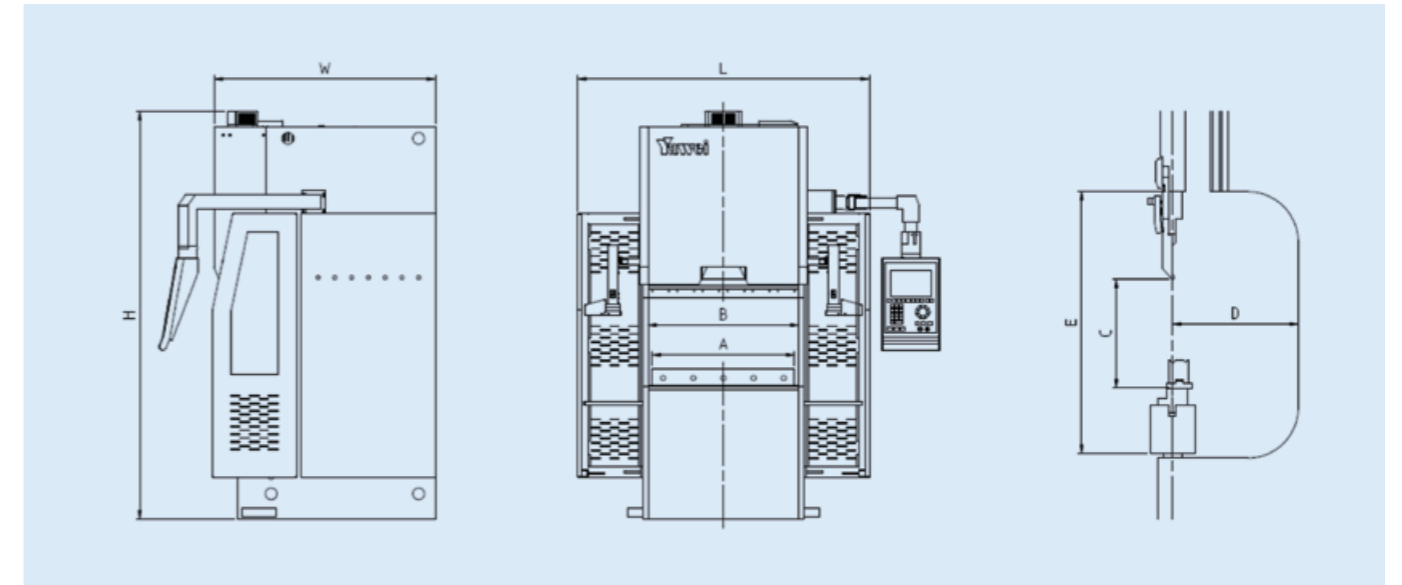
- Standard mechanical fast clamping for upper tool



#### Lower Die 2-V Fast Change

- Lower die adopts 2-V fast change clamping, and single V mechanical clamping is optional

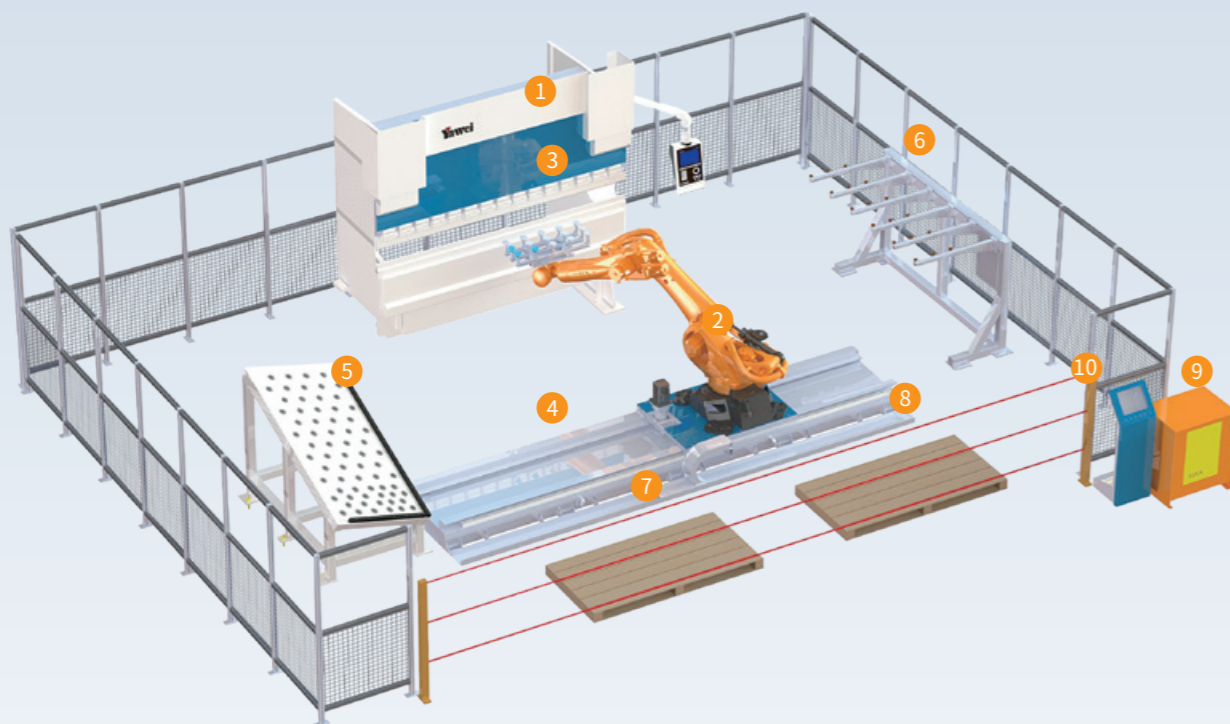
### Technical Parameters



Model	Nominal force	Worktable length A	Distance between uprights B	Throat depth D	Ram stroke C	Die setting height E	Ram speed			Motor power	Overall dimension LxWxH			Total machine weight
	kN						mm	mm	mm		mm/s	kW	mm	
PBE-25/850	250	850	900	250	190	520	200	20	200	6	1740	1555	2420	3000
PBE-35/1250	350	1250	1050	250	150	480	200	20	200	6×2	1940	1500	2380	3000
PBE-50/2050	500	2050	2120	-	190	495	180	20	180	6×2	3100	1720	2300	6000

# Forming Cell

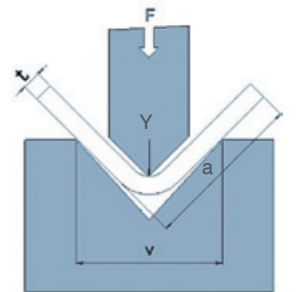
## Six Axis Robot Type



- 1 CNC Press brake
- 2 6-axis robot
- 3 Pneumatic sucker gripper
- 4 Robot rail
- 5 Centering table
- 6 Turn-over frame
- 7 Loading tray
- 8 Stacking tray
- 9 Electrical system
- 10 Safety protection

### Reference Table of Air Bending Force

The data in this table are calculation results based on 90° bending of length 1 m; this data table can help you to easily calculate the bending force needed per meter on different workpieces; the bending force needed is up to the thickness of the sheet metal and the opening width of the lower die; the shortest lap length and inner arc bending radius can be read based on different opening width of the lower die.



V	6	8	10	12	16	20	24	32	36	40	50	60	63	80	100	120	130	140
a	4.5	5	7	8.5	12	15	17	23	25	28	35	43	45	57	71	85	92	100
r	1	1.2	1.6	2	2.5	3	3.5	5	5.5	6	8	9.5	10	12	15.5	19	21	23
thickness of sheet metal	0.5	2.5																
	0.8	7	4.8															
	1	11	8	6														
	1.2		12	9	7													
	1.5			15	12	8												
	2				23	16	20											
	2.5					26	20	15										
	3						30	24	16									
	4							44	31	28								
	5								47	43	31							
	6									61	45	36						
	8											69	65	47	36			
Mild steel 450N/mm <sup>2</sup>	10													80	60	47	43	
	12														90	71	65	58

V	6	8	10	12	16	20	24	32	35	40	50	60	63	80	100	120	130	140
a	4.5	5	7	8.5	12	15	17	23	25	28	35	43	45	57	71	85	92	100
r	1	1.2	1.6	2	2.5	3	3.5	5	5.5	6	8	9.5	10	12	15.5	19	21	23
thickness of sheet metal	0.5	4																
	0.8	11	8															
	1	18	13	10														
	1.2		19	14	11													
	1.5			24	19	13												
	2				37	26												
	2.5					42	32	24										
	3						48	38	26									
	4							70	50	45								
	5								75	69	50							
	6									98	72	58						
	8											110	104	75	58			
	10													128	96	75	69	
Stainless steel 700N/mm <sup>2</sup>	12														144	114	104	93

F: bending force T/m V: opening of lower die mm a: shortest lap length mm r: inner arc bending radius mm

Optimum opening width of lower die

# JIANGSU YAWEI MACHINE TOOL CO., LTD.

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