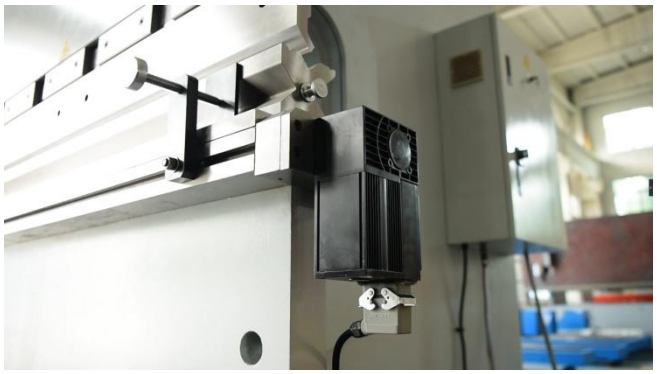
TECHNICAL DESCRIPTIONS

For CNC Hydraulic Press Brake

Model: WEK-200T/6000(ESA- S630) 5 axis

☞ CNC SYNCHRO HYDRAULIC PRESS BRAKE

CNC back gauge(X,R axis) & automatic crowning (V axis)
Heavy-duty back gauge, Ball screw, Linear guide



Automatic crowning table, controlled by ESA S630

- **Machine main features:**

1) The frame is steel-welded construction; eliminate internal stress by heat treatment, with high strength and good rigidity. The machine sandblasted and sprayed with anti-dust paint; The machine frame is processed completely by heavy duty boring and milling machine. which ensures the parallelism and verticality of each installation.

2) The machine is mainly comprised of machine frame, working table, ram, main oil cylinder. The perfect design and manufacturing technology can ensure the manufacturing and using precision of machine. The technological procedures of main parts are as follows (please see Fig.1,2,3 separately for the structure stress design analysis of uprights, working table, ram)

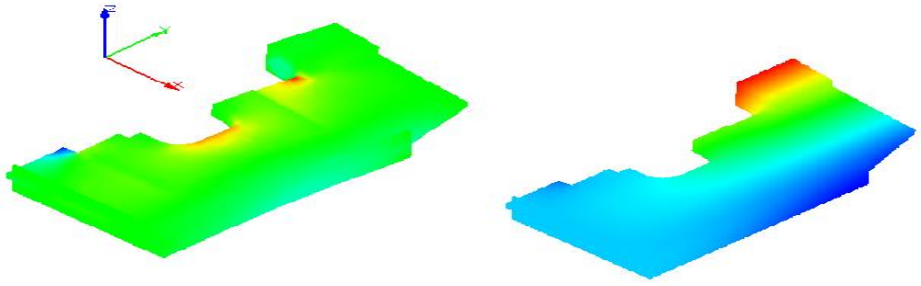


Fig.1 Upright

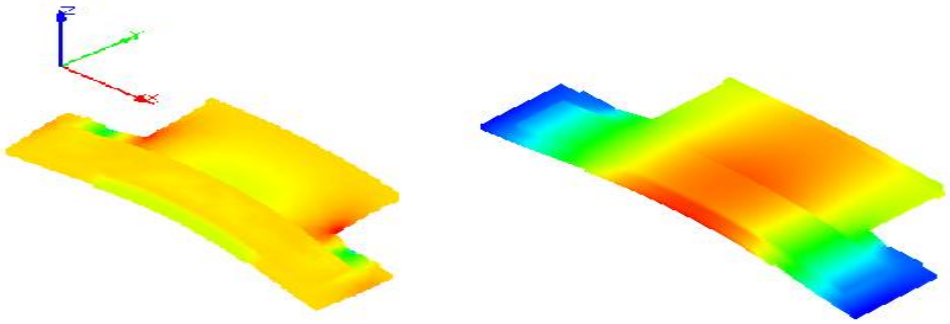


Fig.2 Ram

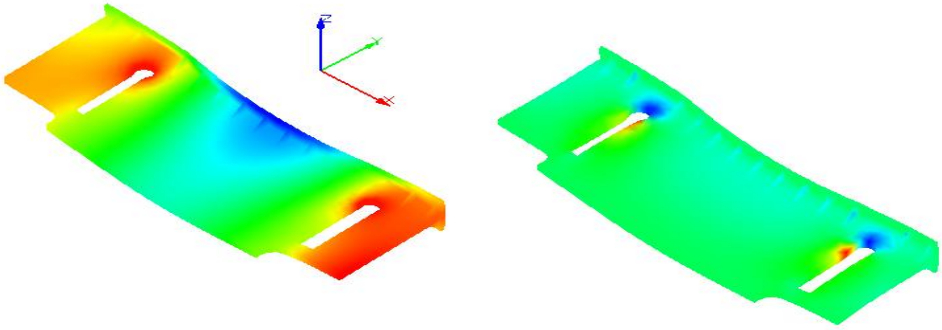


Fig.3 Working Table

Steel plate to warehouse →physical & chemical inspection→ steel plate ball blasting (dust-proof) processing → cutting through CNC flame cutting machine → cutting and processing to each welding junction plane → compound welding→ Air protecting welding → Vibrating aging treatment →processing through heavy-duty floor type boring and milling machine, heavy-duty gantry milling machine → fabrication

3) Adopted reliable electro-hydraulic proportional servo synchronization. It can support eccentric load. The hydraulic system also has the overload and overflow safety protection.
4) Ram stroke and back gauge are controlled by ESA S630. The optimizing software can search for the best bending cycle. The CNC system permits automatic programming bending forces, position and retraction of back gauge, top dead point and speed changing point of the ram, clamping point of plate, ram penetrating depth, retaining pressure time and etc.
5) Back gauge is adopted ball screw and linear guide, the repeat positioning precision of X

axis is ±0.02mm.

6) The stroke of the ram is controlled by servo valves. The speed can be selected willfully. The repeat precision of Y1 & Y2 axes is ±0.01mm. The parallelism is ±0.01mm.
7) The electro-hydraulic system of this machine is an inner closing ring control system. It can check out the synchrony discrepancies of the slide by the movement of the raster ruler. And the servo valve can correct the slide discrepancies. This can make the ram slide always be parallel to the working table.
8) Automatic work table crowning system controlled by ESA S630.

➢ **CNC control system –** ESA S630 controller

- Graphic color 10" touch screen display (1024 x 600 pixels resolution).
- 128 MB silicon disk.
- Interactive 2d graphic editor for work-pieces and tools data entry
- 2D graphic display of machine frame, work-piece and tools
- Manual 2D graphic identification of the best bending sequence(option)
- 4 fast counting circuits for line drive 0-5Vdc differential encoder or npn/push pull. The encoders are powered at 5Vdc (max 200mA per channel).
- 4 analog outputs(±10V) with 13bits + sign resolution.
- 4 digital inputs for the zero micros.
- 4 analog inputs, 12 bits resolution, ranges 0÷10V, 0÷5V.
- 2 general purposes analog outputs, 0÷10V (8 bits resolution).
- 32 digital inputs (24Vdc).

- 32 digital outputs (24Vdc, 0,7A max.) protected against overload and short-circuits.
- 2 serial port rs232.
- 1 Can port with 9 pins subd f connector.
- 1 Ethernet port 10/100 Mbit (lan connection)

- 1 VGA port for external monitor connection
- 2 USB (2.0) ports.
- 24Vdc power supply.

➢ Technical Specification:

Model	WEK-200T/6000(ESA S630)		
SR.NO.	ITEM	UNIT	SPECIFICATION
1	Nominal Pressure	KN	2000
2	Length of Table	mm	6000
3	Distance Between housings	mm	4800
4	Throat Depth	mm	400
5	Stroke	mm	200
6	Open Height	mm	470
7	Main Motor	kW	15
8	No-loading speed	mm/s	160
9	Working speed	mm/s	10
10	Returning speed	mm/s	120
11	Axis(5)		Y1,Y2,X,R,V
12	Y1,Y2 parallel tolerance	mm	±0.01
13	X position precision	mm	±0.02
14	Overall Dimensions (L*W*H)	mm	6600*1950*2960
15	Machine weight	KGS	17800

Note:

Y1, Y2 axis ---- control both sides of the cylinder, ram synchronous;

X axis ----- controls back gauge moving forward and backward;

R axis ----- controls back gauge move up & down;

V axis ---- hydraulic cylinders auto-crowning worktable.

➢ Machine main configuration:

SR.	ITEM	CONFIGURATION
1	Control system	ESA S630 from Italy
2	Hydraulic control system	ARGO-HYTOS hydraulic proportional valve
3	Main motor	Siemens from Germany
4	Servo motor	DELTA from Taiwan
5	High-pressure gear pump	Sunny from USA
6	Magnetic railing ruler	ELGO from Germany
7	Seal ring	SKF from Sweden
8	Air switch	Schneider
9	AC contactor, thermal relay	Schneider
10	Circuit breaker, button	Schneider
11	Miniature relay	Schneider
12	Linear guide, ball screw	ABBA
13	Overheat protection	Cooling system