Warning!

When using the machine, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury.

Read all instructions before attempting to operate this machine and keep these instructions.

1. Operator must know about the construction and feature of the machine. If more than one person operates the machine, a director must take charge of the producing!
2. Prohibited the hands enter between the upper punch and lower dies!
3. Keep the machine and around ground clean and the lines isolating!
4. Keep the worktable area clear, avoid something enter between the toolings making accident!
5. Inspect all parts of the machine usually; make sure there is no hidden danger!
6. The max working pressure is 23 MPa: it has been adjusted before outing the factory, the user can adjust it according to the actual situation.
7. Opening the electric cabinet by not authorized service personnel is prohibited! Please make sure the Power switch is on the OFF position before opening the door of electric cabinet!

Safety notes!

1. DANGREOUS:

Error operation may cause die or serious injure.

2. NOTE:

Fault operation may cause mid-grade harm, flesh wound or damage.

There are emergency stop buttons on the handle control station. When there happens error operation or other accidents, push the emergency stop button, the machine will power off.

Safety device checking list

Please check the safety related device according to the below checking list before starting the machine:

Item	Check Item	Result	
		Pass	Fault
1	Safety Guards		
2	Light/Laser Beam		
3	Emergency stop		
4	Main Switch		
5	Electric Cables		
6	Function of Hydraulic Valves		
7	Pipe Connection		
8	Motor rotating		

Catalogue

Please be note:

We reserves the right to change the content of this manual without notice, every effort has been made to ensure that this manual is correct in every detail.

Introduction!

We suggest all users and operators to read this operation manual carefully before using this machine.

This manual is designed for specialized and qualified personnel. It comes completes with diagrams and all the documentation necessary to lift, move and place the machine and instructions for the safe use and maintenance of this machine. All information contain in here are accurate at the time of print. However, our company reserves the rights to modify and improve specifications without prior notice.

This machine should be properly installed as instructed; regular inspection and faithful maintenance service should be carried out so that good performance can be maintained.

Any incorrect and irresponsible usages may cause irreparable damage to the machine and nullify the safety protection for the operator.

We do not assume any responsibility for improper services or modifications or connections made by unauthorized personnel.

1. Functions and Range of Work

1.1 This machine is high-efficiency and high-precision in bending metal sheet. The opening size of V-gutter on lower dies is usually eight times larger than the sheet thickness, it should be regulated for sheets in different thickness. Using different kinds of upper and lower dies can bend many kinds of work pieces (See Fig.1).

1.2 The machine is structured in steel plate fabrication with sufficient strength and rigidity. The hydraulic drive prevents the machine from serious overload operation accidents caused by the change of sheet thickness or bad choice of lower die cavity. Additionally, this machine is also featured by the steadiness of work, convenience of operation, and reliable safety. The connecting section to the upper die is provided with compensation device, which compensates the deflection of worktable and slider in bending and guarantees the high work precision. Meanwhile, the mechanic block is equipped in the oil cylinder to ensure the fixing accuracy when the slider travels to the bottom dead point and so as to assure the consistency of bending angle in bulking production.

1.3 It is equipped with hydraulic electric control, freely adjustable slider travels and inch operating criterion convenient for module trial and adjustment.

1.4 This machine is advanced in technology and reliable in performance, and among the ideal shaping apparatuses. It is widely used in plane, automobile, shipbuilding, and machine with high production efficiency.

1.5 Operation condition:

Temperature: 5~38℃（Working temperature）

Environment moisture： Relative moisture 20～80%RH。

Keep far away from powerful vibration and electromagnetic interference.

No pernicious and corrosiveness gas, and no dust.

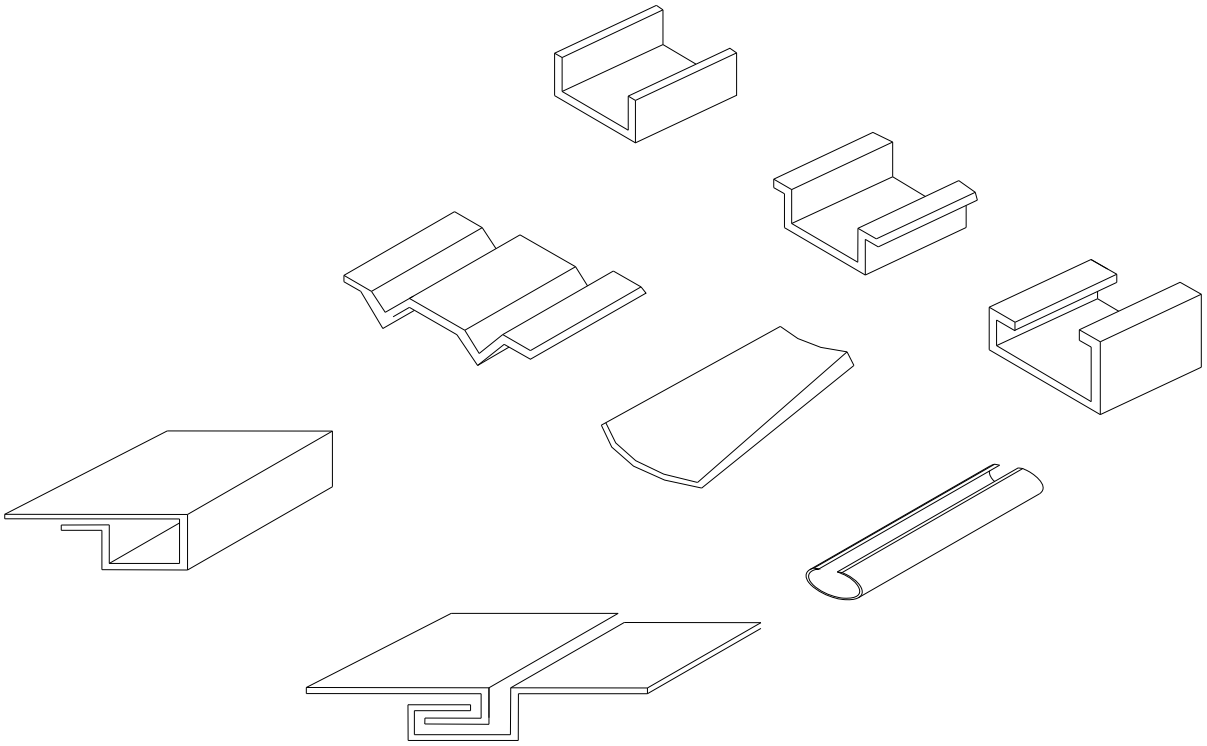


Fig.1

2. Installation of Machine

2.1 Lifting

It must be ensured that when lifting the press-brake for transportation and/or positioning it must be done with crane having sufficient lifting capacity so that there will be no risk of the press-brake falling.

When lifting use two slings of steel rope and shackles using the appropriate holes available at the top of the machine. The steel rope must be of an adequate size to lift the weight of the press-brake. It must also be of an adequate length, given that its weight carrying capacity diminishes when the angle between the ropes widens. (See Fig. 2)

2.2Transport

When transporting the press-brake, keep in mind that the weight of the machine is concentrated mainly to the front. Ensure that the top ram of the press-brake is all the way down for maneuvers or transportation.

When the press-brake is to be load onto the truck, the rear side of the machine is position as far as possible to the side of the vehicle.

The press-brake is to be anchored to the truck using steel rope

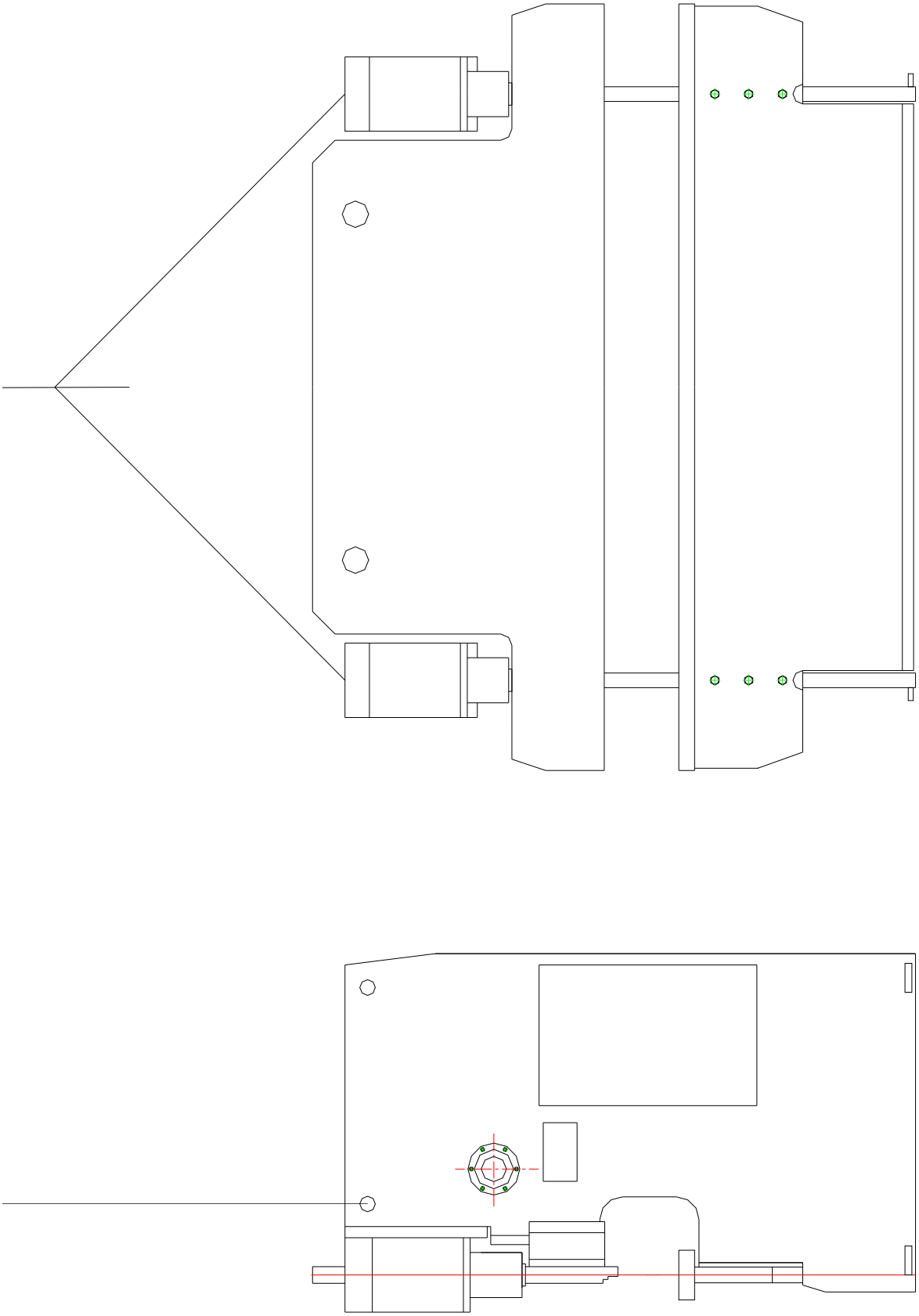


Fig. 2

2.3Installation

2.3.1 The foundation

To ensure that the machine works correctly and is not disturbed by vibrations check that the pavement is firm and steady. Prepare a concrete foundation, which must be adapted to the conditions of the ground, if necessary. And detail drawing of foundation as attachment.

Ensure that there must be adequate space surrounding the machine once position. This is necessary to cater for maintenance work and special jobs. Furthermore, an adequate space on either the left or right side of the press-brake equals to the length of the machine to cater for tool changing operation.

All exposed surfaces on machine are coated with rust guard, easily removable by kerosene or solvent.

2.3.2 Leveling

For the press-brake to function correctly, it is necessary that the machine be leveled correctly.

- Check that the press-brake is level horizontally by placing the spirit level on the machine table.
- Check that the press-brake is level vertically by placing the spirit level on the machine table.

Eventual adjustments are done by regulating the leveling bolts in the feet of the press-brake

3. Electrical wiring

3.1 The following steps are to be cared for by the owner and must be carried out by specialized personnel.

- Check the machine nameplate and confirm that the wiring of the machine
- Corresponds to the available power in your facility.
- If the required power does not meet the requirement of the machine please contact your electrical supplier.
- The power incoming to the machine should be fused so that the machine can be fully disconnected for repair.
- The power incoming to the machine should be connected to the RST clamps in the control cabinet.

3.2 The Electric drawings check the following attachments, different controller has different drawings. Detail description as follows:

3.2.1 Connect the three-phase power lines to the inlet terminals in the electric box. The feet switch socket is under the box, plug the socket, then close the power switch QF and close the door of the electric box, the lamp HL1 is lighting shows the machine is powered on.

3.2.2 Start the oil pump motor button HL2 on the operation panel for a short while; observe the turning direction of the motor whether the direction it is correct or not. If it’s not correct, change the phase of the inlet lines, never change the internal lines inside the electric box, then start the oil pump motor.

3.2.3 Jog mode: after several minutes of normal operation, turn SA2 to the jog mode, step the foot switch “up”: the ram goes up, loosen foot switch the slider stops, continue to raise the ram up when touch the limit switch SQ1 will stop; step “down”, the ram quickly drops, due to the effect of the limit switch SQ2, the ram go down slowly to add pressure, loose the foot switch ram will stop.

3.2.4 Single travel mode: turn SA2 to “single time”, step “down” of the foot switch, the ram goes down first quickly—slowly---pressure keeping, then the ram automatically goes up to the upper limit switch SQ1. Adjust the working time of time relay KT1, make the working time meet the requirement of bending pressure on the work piece, adjust the pressure-keeping time of time relay KT2.

3.2.5 Continuity mode: turn the SA2 to “continuity”, step the foot switches for repeating the single travel mode. The time relay KT1 may adjust the waiting time of circulation.

Note: To guarantee the safety, machines with CE certificate without continuity mode.

4. Hydraulic system

4.1 Clean the hydraulic Oil

The hydraulic system has high requirement for the cleanliness of hydraulic oil. The clean of oiltank is very important.

When replace the hydraulic oil, you must discharge the cover of oil tank. Use the towel toclean the bottom of tank (do not use cotton yarn), then wash with cleaning coal oil gasoline. Forlimitation of tank cover, the arm cannot reach the end of tank; you can wrap the towel on thebamboo or stick to wipe each corner. Loosen the leaking plug or brake valve to leak out the dirt oil.

Use the cleaning towel to dry the sides and bottom of tank until it's clean. If necessary, roll thedough at the welding seam or difficult cleaning places to cling the dirt, and then put on the cover.

4.2 Choose the hydraulic oil

The mark value of hydraulic oil is equal to the average value of viscosity, when the temperature is 40℃.

If the working pressure and temperature of hydraulic system is higher, and the working speeds slower, the chose hydraulic oil mark is higher.

It is recommended to use antiwar hydraulic oil ISO VG46# (the average value of viscosity is46mm2/s, when the temperature is 40℃.). If the machine operates under 5℃ for a long period, you can choose hydraulic oil ISO VG32#.

It is also recommended not to use the machine at very low temperatures (below -5°). However, should this occur, and then let the machine run idle for a while. An oil heater can be fitted in circuit if required.

Under the normal working conditions the oil temperature must not exceed 70C. Under special conditions, oil cooler can be fitted necessary.

4.3 Fill the oil

The using oil must clean. Screw the nut of air filter, filling through air filter. If using the filling equipment with filter, you can open the cover of oil tank and fill directly. Observe oil gauge, when ram stops at Top Dead Spot, the hydraulic oil fills at 80~90% of interspaces.

Make the machine work, first idling then at maximum stroke to expel any air bubbles in the hydraulic circuit.

5. Standard control equipment

5.1	Start button	:	To start the main motor running and Control circuit.
5.2	Stop button	:	To stop the main motor running and Control circuit.
5.3	Auto/Manual Mode Selector Switch	:	Select the working mode
	In Auto mode		-The ram will rise automatically when Preset pressure is reach and the dwell time is up.
	In Manual mode		-Lowering and rising of the ram is by pressing the foot pedal.
5.4	Foot pedal	:	Push and hold to command lowering the ram to reach bending point, release when the ram is moving up in AUTO mode.
		:	Press to command lowering the ram and press to command raising the ram in Manual mode.

6. Starting up the machine

Prior to the start-up of the machine, please check the following

- The guide ways is cleaned and greased.
- The hydraulic system is checked for any leakage.
- Check the oil level at the level gauge at the side of the tank with the top ram in the all up position. Top-up the oil is necessary.
- Check the sense of rotation of the motor by checking that the cooling fan is turning in a clockwise direction or, in any case, in the direction of the arrow. If this is not the case, invert two wires in the supply line. When doing this, it is important that the motor is made to work by inching.

6.1 Turn the machine on

- Turn on the main switch.
- Switch the selector to auto.
- Turn on the main motor by pressing the green button.

6.2 Turn the machine off

The press-brake must always be turned off when left unused for a few hours. When turning off, do the following:

- Select manual mode.
- Descend the ram by pressing the down pedal to make the top tool close to the V-die as possible.
- Press the stop button.
- Turn off the main switch.

6.3 Upper and lower tool setting (Tooling drawings See the attachments)

The upper tool and the selected V – opening must be aligned before any bending commence to ensure good bending result. Ensure that the V-die base and table surfaces are clean before the following

Steps is carry out.

- Lower down the system pressure by turning the pressure – regulating knob anti-clockwise.
- Set the mechanical depth stop to low position either manually or electrically.
- Select MANUAL MODE and step the down pedal to lower the ram until the top tool is as near to the V-die as possible.
- Align the upper and lower tool by adjusting the V-die tightening bolt.
- Once the setting is correct, secure all the V-die tightening bolts.
- Raise the ram by stepping on the UP pedal.

We advice the following:

- To check regularly the fixing bolts of the tool clamp.
- To store the tool on a rack near the press-brake. This way to prevent the top tool against damage.
- Always remember that each tool has a maximum charge force.

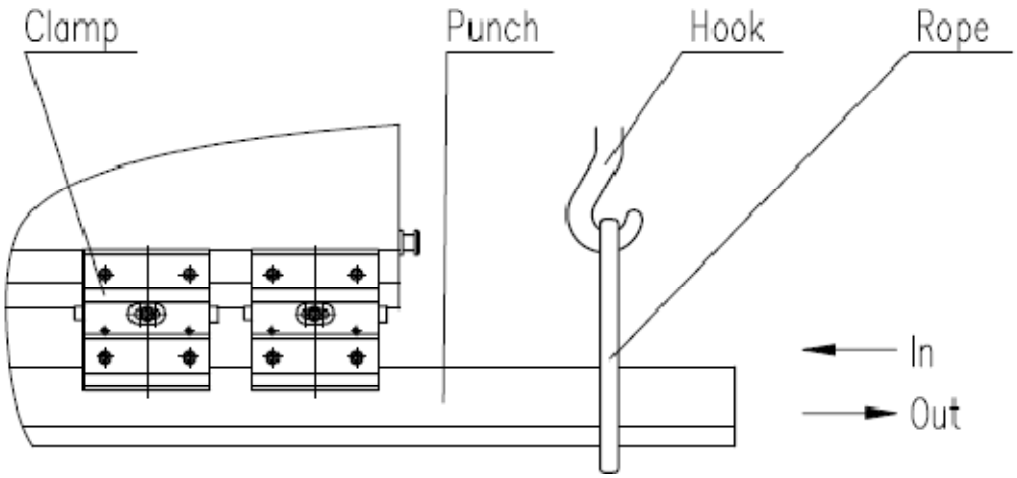
Tools Change Procedure

✖TOP TOOL

When the top tool needs to be change, do the following:

- Turn the mode selector to manual.
- Lower the ram as near to the V-die as possible.
- Turn the machine off.
- Loosen all the fixing bolts of the tool clamp.
- Remove the tool from the side of the machine.
- Mount the new top tool by sliding it in from the same side.
- Tighten all the fixing bolts of the tool clamp.
- Turn the machine on and check that the mode selector is on manual.

- Lower the ram to make the top tool sit in the V-die. When doing this reduce the system pressure by turning the pressure regulating knob anti-clockwise so as to avoid damaging the tool.



✖LOWER TOOL

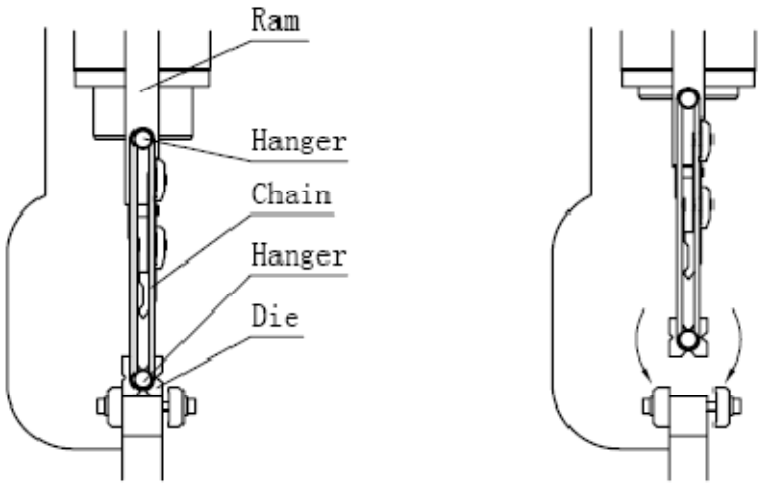
When need to change a different vee on your multi-vee die, do the following:

- Free the V-die by unscrew all the tightening bolts.
- Turn the mode selector to manual.
- Turn the machine on.
- Lower the ram as near to the V-die as possible.
- Hook on the V-die to the ram at both end with the appropriate chain.
- Raise the ram by stepping the UP pedal to a height where the V-die can turn.
- Turn the desired Vee facing up.
- Lower the ram by stepping the DOWN pedal so that the die is resting on the machine table and to the point that the chains can be unhooked.
- Centre the Vee with respect to the top tool.
- Lock the V-die in place by tightening the bolts

✖FRONT SUPPORT ARM

The press brake is supplied with two front support arms as standard equipment. These are used for placing the plate on during the various bending phases. They can be adjusted

vertically and along the length of the press brake. Support arms generally need to be adjusted when a different size bottom tool is used or a larger or smaller size plate is being bent.



DANGEROUS!

IF THE PUNCH AND DIE ARE NOT PLACED CORRECTLY, YOU MUST NOT START THE MACHINE, ANY TIME, DON'T PULL YOUR HANDS OR ANY PARTS OF BODY INTO THE SPACE BETWEEN PUNCH AND DIE, IT IS VERY DANGEROUS!

6.4 Mechanical depths stop setting

DO NOT ATTEMPT TO ADJUST THE MECHANICAL DEPTH STOP SETTING WHEN THE RAM IS AT THE DOWN POSITION AS THIS MAY CAUSE UNNECESSARY DAMAGE TO THE MACHINE.

- The depth setting determines the bending angle.
- The mechanical depth stop could be set either manually or electrically.

6.5 Pressure Setting

Normally the bending chart is fixed on the side of the machine, a copy is enclosed. The bending force is function of :

-The plate thickness

-The width of the die opening. (8 x plate thickness)

The required bending force can be computed from the Table 1 formulate.

Table 1 Bending Pressure

v		4	5	8	10	12	14	16	13	20	24	23	32	36	40	45	50	55	60	65	70	80	90	100	120
b		2.8	4	5.5	7	8.5	10	11	12.5	14	17	20	22	25	28	31	35	36	42	46	49	50	63	70	85
r		0.7	1	1.3	1.6	2	2.3	2.6	3	3.3	3.8	4.5	5	6	6.5	7	8	9	10	10.5	11	13	14	18	19
s	0.5	40	30													Calculation Formula for plate bending force									
	0.6	60	40	30												**P=650S^2L/V(Qb=450N/mm^2)**									
	0.8		70	50	40	30										P: Bending force (KN)									
	1		110	80	70	50										S: The thickness of the plate(mm)									
	1.2			120	100	80	70	60								L: The width of the plate(m)									
	1.5				150	120	110	90	80							V: V-width of the bottom die(mm)									
	2					220	190	170	150	130	110					(8 x plate thickness)									
	2.5							250	220	200	170	150	130												
	3								330	290	250	210	180	160											
	3.5									400	330	290	250	220	200	180									
	4										440	370	330	290	200	230	210								
	4.5											470	410	370	330	300	270	240							
	5												510	450	400	360	330	300	270	250					
	6															520	470	430	390	360	340	300			
	8																		700	640	600	520	460	420	
	10																					810	720	550	
	12																							970	780
	14																							1200	1100

Note: This formula and the values in table are all based on carbon-steel plates with tensile strength Qb=450KN.

Stainless steel plate: the P value from table multiply by 2

Aluminum plate: the P value from table multiply by 0.7

6.6 Parallelism control and setting

The parallelism of the ram is control by a solid anti-torsion bar, which is linked to both side oil cylinders. The top ram is calibrated parallel to the V-die at the factory. However, if re-calibration is needed please note the following steps:

- Find the torsion bar linkage connected to the top ram on rear (left side) of the machine
- Loosen the a screw (M8/M10) on the torsion bar
- Now, turn the outer flat piece about 15º to 30º (Clockwise or anti-clockwise) using the appropriate spanners, which in turn will rotate the eccentric pin inside
- Tighten back the screw (M8/M10) and check the parallelism of the top tam by test bend
- Repeat the above procedure until the required accuracy is reached.

7. Trouble shooting

7.1 Machine can not start

- Check incoming power supply.
- Check that Emergency Stop is release.
- Check for broken fuses.
- Check transformer output.

7.2 Ram could not be lower

- Check foot pedal cable for possible broken wire.
- Check that limit switch.
- Check that motor rotation in correct.
- Check that micro-switch inside foot pedal is working.

7.3 Bending angle not even on entire bend length

- Worn off upper tool or lower tool.
- Machine table surface and the under side of the V-die is dirty.
- Top and bottom tools not properly aligned.

Failure	Reasons	Trouble removal
System doesn't work without pressure	1. Negative rotation of motor	Change the rotation direction of motor
	2. Main overflow valve blocked	Clean main overflow valve
	3.Electromagnetic valve does not work	Check electric and electromagnetic coils
Ram Slider cannot rise	Valves jammed	Clean electromagnetic valves
Slider declines automatically	Valves jammed	Clean electromagnetic valves
Normal rising and dropping but there's no force in bending	Valves jammed	Clean electromagnetic valve
Leaking in components, pipe fittings and oil cylinder	Sealing pieces are ageing.	Change sealing rings

8. Maintenance of Machine

Any persons who operate and maintenance this machine must carefully read and comprehend this manual. Only the instructions are strictly followed can satisfying effect be achieved.

--Special persons must be assigned for this machine, and the operators must be familiar with the use of machine and the knowledge of safety in production.

--The bending force of work piece must not be more than nominal force.

--To make moulds wear well, do not damage the moulds due to inappropriate bending width, especially when bending narrow sheets, the working pressure should be reduced properly. As for each length 630mm, the bending load should not be over 400KN.

--The bending sheets should be in the middle of machine and should not be partially loaded. Meanwhile, the machine must not be unilaterally loaded so as to avoid the precision of work pieces and the machine. If a work piece should be worked out on single side, the load should not be more than a quarter of the nominal force. The bending should be on both sides.

--The hydraulic oil in oil tank must be changed after using for the first month, and afterwards, it must be changed in less than a year. The normal working oil tank should be at 15-60℃ (if the temperature is too high, the cooler must be equipped).

--This machine is applicable for scattered lubrication and lubrication should be carried out according to working conditions and all the lubrication points.

--User must keep ready accessories for maintenance from time to time.

-- The precision of this machine after heavy repair must be up to the factory standards. Please see the certificate of quality for details.

8.1 Hydraulic oil

- Check regularly the oil level in the tank.
- First oil change after 500 working hours.
- Subsequent oil change at every 2000 working hour.
- Always use oil meeting the characteristics of the oil type mentioned.
- The mark value of hydraulic oil is equal to the average value of viscosity, when the

temperature is 40℃.

- If the working pressure and temperature of hydraulic system is higher, and the working speed is slower, the chose hydraulic oil mark is higher.
- It is also recommended not to use the machine at very low temperatures (below -5℃). However, should this occur, and then let the machine run idle for a while. An oil heater can be fitted in circuit if required.
- Under the normal working conditions the oil temperature must not exceed 70℃.. Under special conditions, oil cooler can be fitted necessary.
- It is recommended to use antiwar hydraulic oil ISO VG46# (the average value of viscosity is46mm2/s, when the temperature is 40℃). If the machine operates under 5℃ for a long period, you can choose hydraulic oil ISO VG32#.

Refill or replace only with same grade of oil as follows:

- FIAT-HTF 46, ENERGOL HLP 46, ESSO NUTO H46,SHELL-TELLUS S46, TOTAL-AZOLLA 46

8.2 Oil Filter

- Regularly clean the oil filter by rinsing and brushing in a solvent.
- Oil filter should be changed when cleaning is not possible or damage.
- Use the same grade of oil filter when replacement is necessary.

8.3 Lubrication

The number of lubrication points is reduced to a minimum and easy to reach. Lubricate weekly with good grease. The parts exposed to wear, which are not fitted with lubrication points must be lubricate twice a week. （More details plase check the lubrication drawing）

8.4 Electrical terminal

Regularly check all connections in the main panel and the electrical switches. If necessary tighten the screws. Replace defect fuse and signal light.

8.5 Mechanical parts

It is recommended to check at least once a month the following:

- Torsion bar bearing is properly secure
- Slides are not worn off
- Cylinders rod are properly secure
- The top ram is properly secure

9. Safety preventing and machine main construction

Note！

—The section is used in the machine with special demands, it is only reference to othermachines.

For preventing the safety of people and equipment, we design the safety equipment. Operator must not change, remove or discharge the safety equipment.

9.1 Light Beam/Laser Beam

There is a light beam or laser (according to customer's request), If the operator wards off the light of curtain, the safety module will work. The ram cannot move downward. To avoid the operator injured.

9.2 Safety grid

There is safety grid at side and back of machine. It can keep the operator away from dangerous areas. Safety grid connects electrical system by safety switch. When opens the safety grid, the electrical system starts, the machine cannot operate.

9.3 Emergency stop

There is an emergency stop button on the handle control station, hanging control station. When there happens error operation or other accidents, push the emergency stop button, the machine will stop all actions.

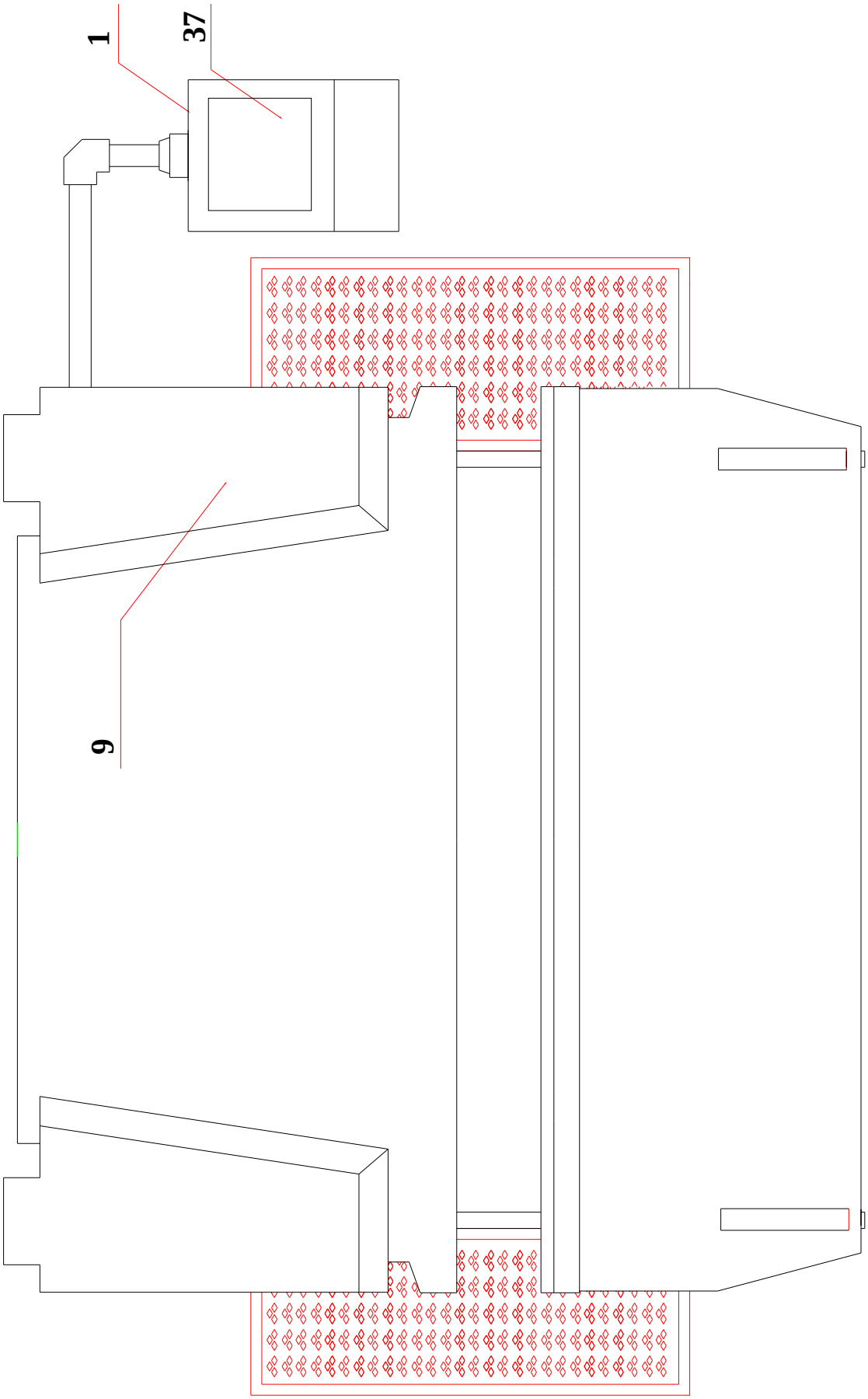
9.4 Hydraulic system

Ram's falling is very dangerous. To avoid its falling, the system adds the safety lifting valve. The valve cores of exchanging valve and safety lifting valve have checking signal. If the valve core is abnormal, the checking signal will stop the electrical system to avoid the falling injury.
If the valve cores of exchanging valve and safety lifting valve cannot reset, check the valve.

9.5 Troubleshoot

The normal operation is safety.
If it happens any strange accidents, or when you maintain or repair the machine, you lock in the safety grid, push the emergency stop button, which inside the uprights, then call for help.
If your hands or other parts of body are clamps by the punch or sheet, push the emergency button; check the condition then restarts the machine. Switch the operating mode to "inch" position. Then pushes the handle return button, the ram returns, pulls the clamped parts out.

Overall drawings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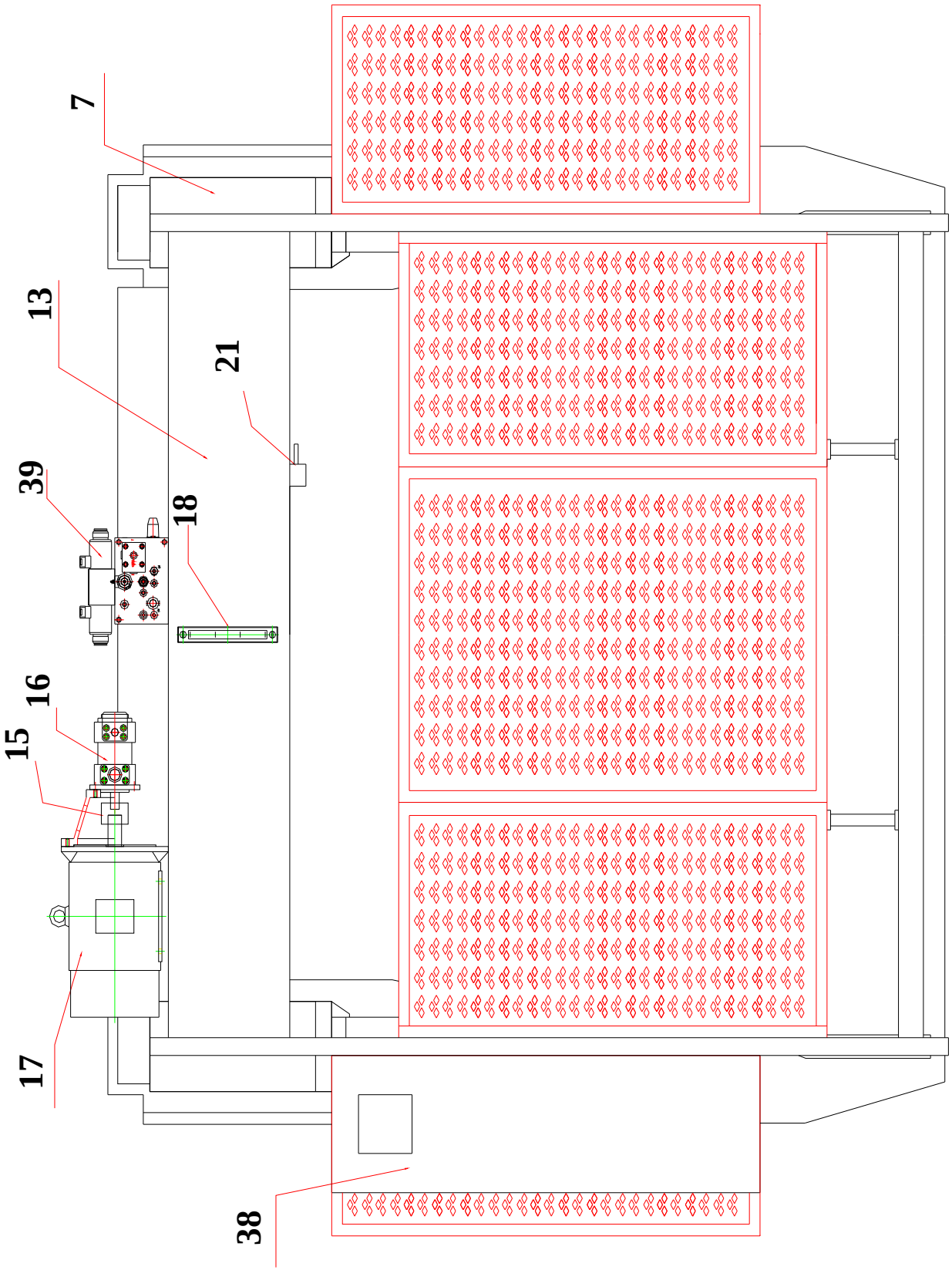
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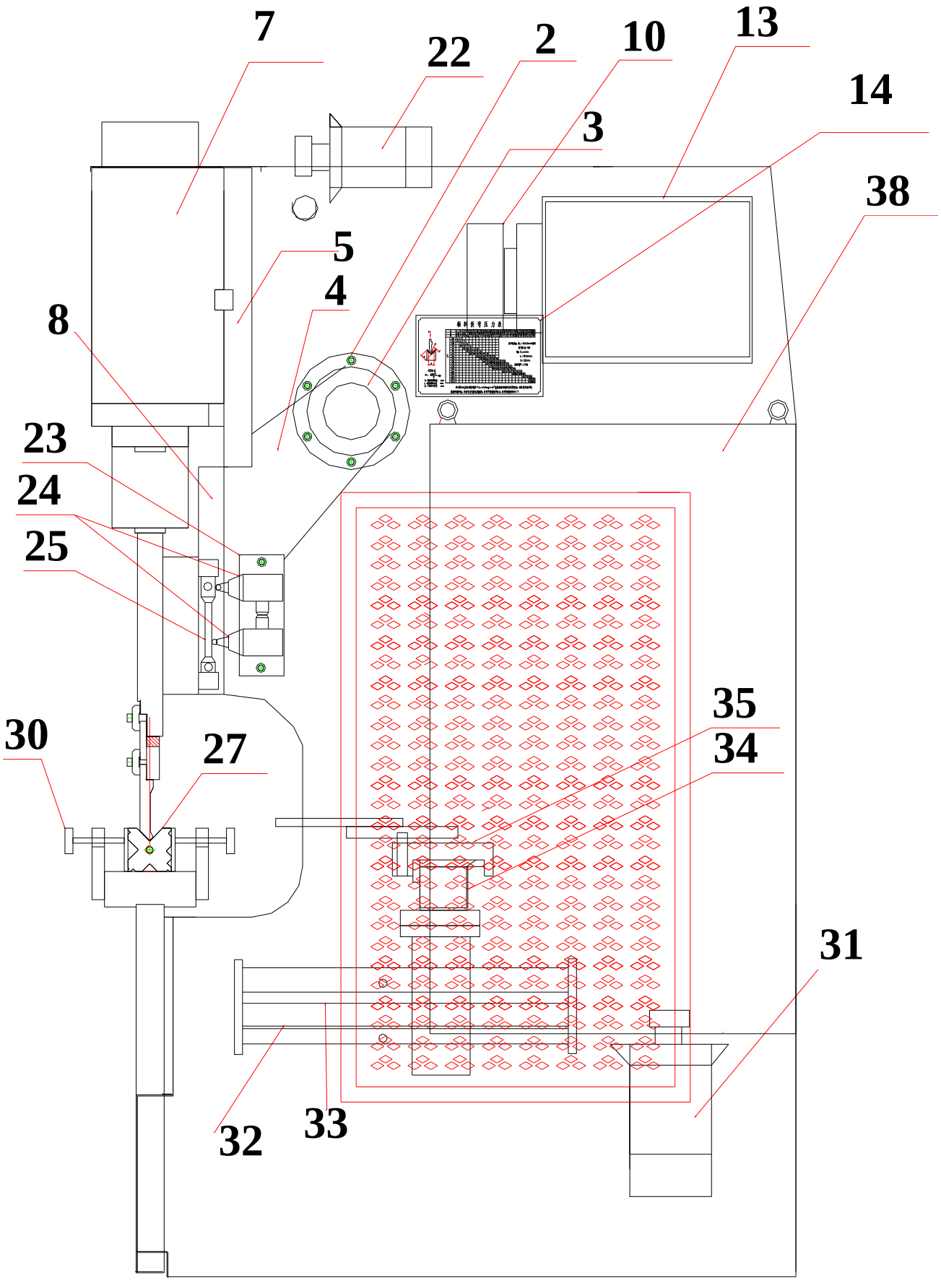
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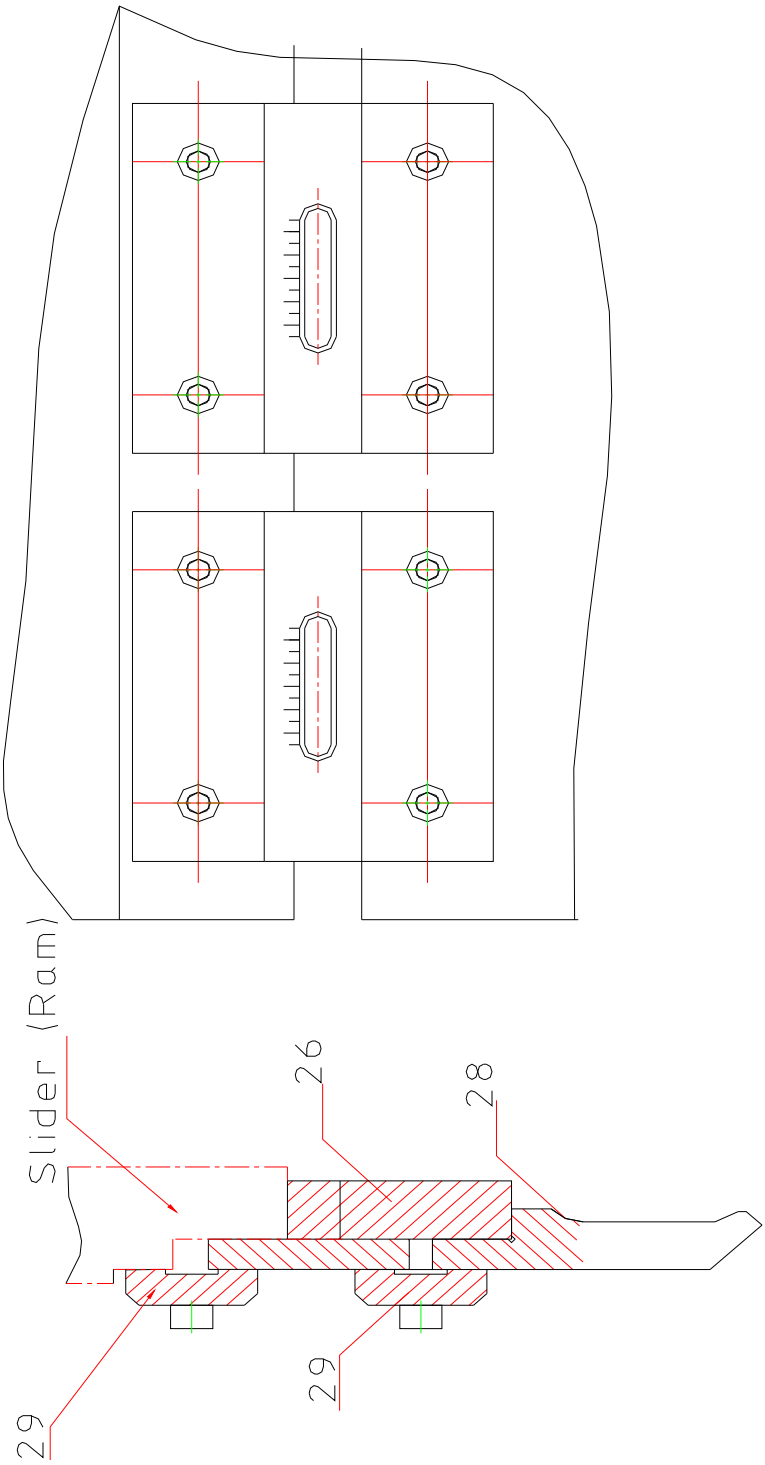


Part list

Part No.	Name	Qua.	Sr. No.
1	Control panel	1	909001
2	Bearing block	2	909002

3	Torsion bar	1	909003
4	Pendulum pole	2	909004
5	Cylinder base block	2	909005
6	Connect pole	4	909006
7	Oil cylinder	2	909007
8	Guide rail	2	909008
9	Cylinder cover	1	909009
10	Single Control Valve	1	909010
11	Pipe connector	1 set	909011
12	Pipe	1 set	909012
13	Oil tank	1	909013
14	Manometer box	1	909014
15	Coupling	1	909015
16	Gear Pump	1	909016
17	Main motor	1	909017
18	Level Gauge	1	909018
19	Filter 4-50	1	909019
20	Filter 250	1	909020
21	Close valve	1	909021
22	FWMBM	1set	909022
23	Saddle of travel switch	1	909023
24	Travel switch	2	909024
25	Pole of travel switch	1	909025
26	Connecting plates	16 sets	909026
27	Lower die	1	909027
28	Upper punch	1 set	909028
29	Press plate	52	909029
30	Star handle	4	909030
31	Motor of back gauge	1	909031
32	Ball screw	2	909032
33	Guid rail	2	909033
34	Stop beam	1	909034
35	Stop finger	2 sets	909035
36	Foundation screw	4	909036
37	Controller system	1 set	909037
38	Electric system	1 set	909038
39	Valve system	1 set	909039

10.Certificate of Conformity

Hydraulic Press Brake

The Machine Is Certificated, Permit to delivery out of the factory.

Model	:	
Serial no.	:	
Year	:	
Inspector	**:**	

Brief Direction

The duty of accuracy inspection of this standard can be different from fact inspection. For conveniently inspect and use inspection tools, can be according to

any duty.

During the accuracy inspection, forbid to adjust frame and parts about effect on accuracy.

Demand condition of work accuracy inspection:

The demand of test pieces for work accuracy inspection

The length of test pieces

The length of worktable ≤2000 mm, the length of test pieces is equal to the length of table;

The length of worktable >2000 – 3200 mm, the length of test pieces is 2000 mm;

The length of worktable > 3200 mm, the length of test pieces is 3000 mm.

The width of test pieces is not below 100 mm.

The thickness of test pieces

Nominal force ≤1000 KN, thickness is 2 mm.

Nominal force >1000 –2500 KN, thickness is 3 mm.

Nominal force >2500-6300KN, thickness is 4 mm.

The material of test pieces:

A3 steel plate, tensile strength Qb≤450 Mpa.

The amount of test pieces: no less 3 pieces.

The open size of low-mould is 8-10 times as the thickness of test pieces.

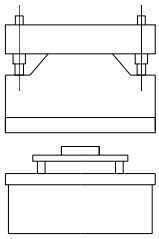
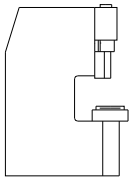
Put on the middle of worktable, forbidden single side load weight.

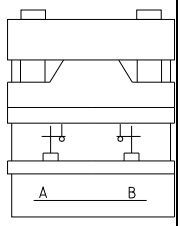
Bending angle is 90’.

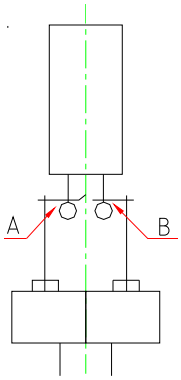
Begin to measure at 100 mm from the head of test pieces

Pre-adjust inspection

No	Graph	Inspection	Permission error	Inspection	Inspection ways according to article of GB10923	Real value

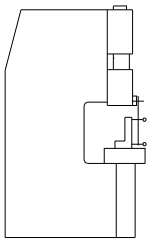
	A:  B: 	program Adjust level A. vertical B. cross	A. and B. 0.20/1000	tools leveler Level ruler Measure bars	Put equal height bars symmetrically on the worktable, put the level ruler on equal height bars, and then put leveler between level rulers, read the data. Put leveler between the two end of jumping high worktable at 50 mm from the table end, read the data.	

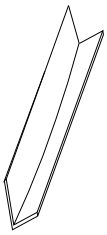
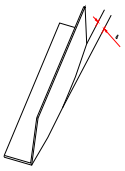
<table>
<tr>
<td></td>
<td>A:
 

B:
 
</td>
<td>The parallelism between the level support block near up-mould and worktable a. vertical b. cross</td>
<td>
<table>
<tr><td colspan="2">A.</td></tr>
<tr><td>The length of worktable</td><td>parallelism</td></tr>
<tr><td>1600</td><td>0．12</td></tr>
<tr><td>1600-2500</td><td>0．16</td></tr>
<tr><td>2500-4000</td><td>0．18</td></tr>
<tr><td>1000-6300</td><td>0．20</td></tr>
<tr><td>6300-8000</td><td>0．22</td></tr>
<tr><td colspan="2">B.</td></tr>
<tr><td>The width of level support block</td><td>parallelism</td></tr>
<tr><td>50</td><td>0．04</td></tr>
<tr><td>50-100</td><td>0．10</td></tr>
</table>

The front end of sliding block only permits tilting down.
</td>
<td>Inspection : display meter</td>
<td>5.4.1.2.1
When sliding block stop at the down limit, put a display meter on the A point of worktable, the head of display meter touch the level support near up-mould, read the data of B point. Once again, the error is difference between the data of A point and B point.

When sliding block stop at the down limit, put a display meter on the worktable A point, the head of the meter touch the level support near up-mould, decide the inspection place according to the reality construction, and remove the meter from front to behind, read the difference data. At B point, do so above. The error is bigger difference between A point and B point, A point or B point is 500 mm from end of worktable. (As installed pre-adjust or compensation device, no need inspection; as double-joint bending plate, inspection each one by one.)</td>
<td></td>
</tr>
</table>

<table>
<tr><th>No.</th><th>Graph</th><th>Inspection program:</th><th>Permission error</th><th>Inspection too</th><th>Inspection ways according to the article of GB 10923</th><th>Real value</th></tr>
<tr><td></td><td>  </td><td>Sliding block stroke to the vertical surface of up-cross bracket and the level support surface near up-mould.</td><td><table><tr><td>Sliding block stroke</td><td>vertica lity</td></tr><tr><td>≤100</td><td>0．20</td></tr><tr><td>100-250</td><td>0．25</td></tr><tr><td>250-500</td><td>0．40</td></tr></table>Sliding block go down, only permit tilting inside the machine frame, that is clockwise</td><td>Display meter, angle meter.</td><td>5.5.2.2.1
put an angle meter on worktable A point, the display meter is fitted tightly on sliding block or up-cross bracket, the head of display meter touch the test surface of the angle meter, when sliding block stroke down max, read the data. At B point, repeat the measure process, A point and B point measure place see G2. The error is bigger data between A point and B point. (down-mobile type: the angle meter is fitted tightly on the level support surface between up-cross bracket near up-mould, the display meter is fitted tightly on sliding block, the head of the display meter touch the test surface of the angle meter, when sliding block go up max stroke, measure at A,B(see G2)two point, the error is bigger data.</td><td></td></tr>
</table>

No.	Graph	Inspection program	Permission error		Inspection tool	Inspection ways according to the article of GB10923	Real value
		the angle of bending test pieces	Accuracy class	At full length	Universal angle meter	6.2.3 The universal angle meter depend on the out-surface of bending test pieces, measure more point (at least three point per one meter), the error is max difference between max angle and 90 or min angle and 90.	
			Ⅰ	±30′			
			Ⅱ	±1°			
			Ⅲ	±1°30′			
		The linearity of bending test pieces	Accuracy class	At 1000 length	Inspection tools: plug meter, inspection level ruler	6.2.1.2 the inspection surface of 1000 mm length ruler depend on the slant side of bending test pieces, the gap between the ruler and the slant side by plug meter, the error is max data at any one meter length.	
			Ⅰ	0．30			
			Ⅱ	0．75			
			Ⅲ	1．0			

Packing list

Model	:	
Serial no.	:	
Year	:	

NO.	Name	Quantity
Standard accessory parts(total parts be packed/unpacked into 3 units)		
1	Machine	1 set
2	Operation manual	1 book
3	Bottom screw	4 pieces
4	Chain	2 pieces
5	Grease gun	1 piece
6	Seals	1 set
7	Front support arms	2 pieces
8	Foot switch	1 piece
Additional accessory parts		