

#GM-06262019



HYDRAULIC BOX & PAN BRAKES

Model: HBB-0412 / HBB-0410

HBB-0612 / HBB-0610

HBB-0812 / HBB-0810

HBB-1014 / HBB-1010

Operation & Parts Manual



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CAUTION

THIS IS VERY DANGEROUS MACHINE.

NEVER PLACE HANDS OR ANY PART OF BODY IN THE MACHINE. BODILY INJURY COULD OCCUR. NEVER OPERATE THE MACHINE WITHOUT PROPER EYES AND BODY PROTECTION.

 **WARNING!**

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

 **WARNING!**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

WARNING

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of workpiece control.

HAZARDOUS DUST. Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine **OFF** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

CHECK DAMAGED PARTS. Regularly inspect machine for any condition that may affect safe operation. Immediately repair or replace damaged or mis-adjusted parts before operating machine.

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support

I. Machine construction & Application

This machine is driven by hydraulic system, and all steel welded machine construction with high intensity, good appearance, compact, safe and reliable performance. This machine is suitable for the sheet metal processing plants, electrical protection, automobile manufacturing and other thin sheet metal bending processing, etc.

Need to fill up the oil tank with Shell #68HD hydraulic oil or equivalent. Please make sure $\frac{3}{4}$ full of the tank. Need to change hydraulic oil every 3 months or sooner subject to how many hours the machine in use every day.

II. Specifications

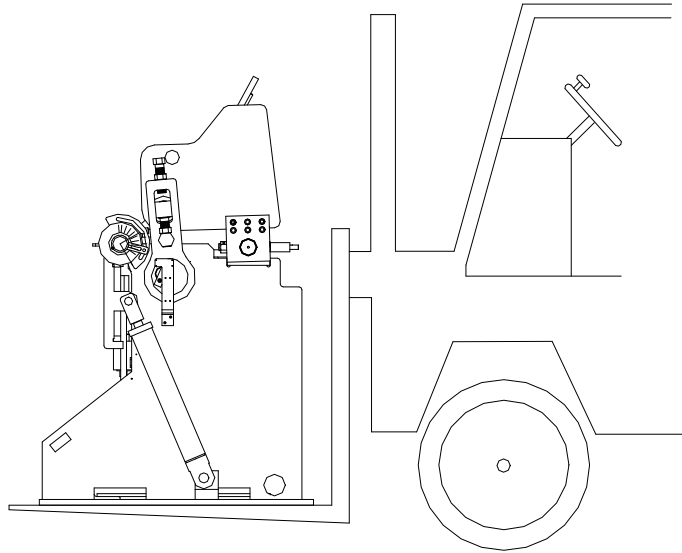
| Model | HBB-0412 HBB-0410 | HBB-0612 HBB-0610 | HBB-0812 HBB-0810 | HBB-1014 HBB-1010 |
|--|-----------------------------------|--------------------------------|----------------------------------|--------------------------------|
| Max.bending thickness | HBB-0412:12Ga. HBB-0410: 10Ga. | HBB-0612:12Ga HBB-0610:10Ga | HBB-0812: 12Ga HBB-0810: 10Ga | HBB-1014:14Ga HBB-1010:10Ga |
| Max.bending width | 48" (1220mm) | 72" (1830mm) | 96" (2440mm) | 120"(3050mm) |
| Angle(°),degree | 0 ~135 | 0 ~135 | 0 ~135 | 0 ~135 |
| Hydraulic cylinder stroke = clamp opening | 3" | 3" | 3" | 3" |
| Hydraulic cylinder pressure (MP) | 15 | 15 | 15 | 15 |
| Hydraulic cylinder speed(mm/s) | 50-58 | 50-85 | 50-85 | 50-75 |
| Motor working pressure (Mp) | 12 | 12 | 9-13 | 16 |
| Motor Speed range(rpm) | <30 | <30 | <30 | <30 |
| Motor power(HP) | 5HP | 5HP | 7-1/2HP | 10HP |
| N.W./G.W. LBS | 4310 / 4630 | 5100/5300 | 6280 /6620 | 7510/37950 |
| Packing size, inch | 81x42x67 | 105x42x67 | 128x42x67 | 153x42x67 |

III. Transportation and Installation

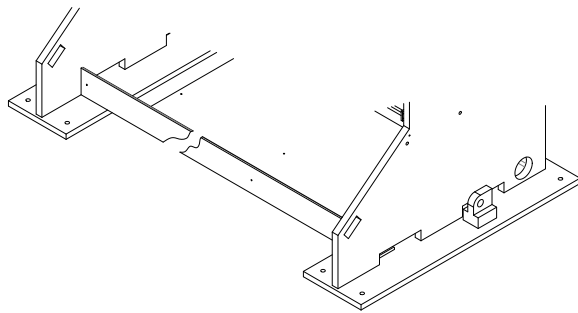
Crane or forklift is recommended

To move the machine, please move with forklift slowly and carefully, especially pay attention.

The machine is lifted by crane or moved by forklift after the removal of pallet.



2、 Installation : When installing machine should be installed in a horizontal on the bottom of foundation, level the machine very well, using leveling pads or foundation bolts.



IV. Safety inspection and Safety rules during and/or before operation

To ensure safety, it is necessary to do the following inspections for this machine after installation.

Check if the transportation procedure has influenced the accuracy and functions of the machine.

Check if the foundation of the machine is appropriate.

Check if the machine's main power switch should have earth wiring connected.

Use the multimeter to check the stability of the three-phase voltage, and the low voltage must be the range of 208V-240V or high voltage must be 440V-480V, can not use voltage higher than 480V.

Check if the control panel function and push button are functioning

Check emergency stop function.

Check if safety protection accessories are functioning well

Check if other accessories, including hydraulic and pneumatic ones, are connected well (including transformer etc.)

Check if the oil amount indicator and air pressure indicator are normal.

Make sure no obstacle is around machine and control system.

Make sure no personnel are in dangerous area.

Tools and any unnecessary items are not allowed on the machine, moving parts, or similar locations.

Before pressing/switching any button/switch always confirm that the button/switch is the correct one and never touch a switch accidentally. Malfunction and potential danger might result.

Do not operate when wearing gloves or loose clothing. Malfunction and potential danger might result.

Do not touch switches with wet hands, an electric shock could occur.

If a work requires two or more operators, the cooperation among each operator must be well organized, every step of each operator should be clarified to avoid potential danger.

Tools should be consisting with the machine's specifications, such as dimensions, weight and types. Grip workpieces carefully to minimize movement and vibration between workpieces. Too much movement/vibration might result in injuries of personnel, or damage the machine or workpiece.

Stop the machine before replacing workpiece, and reserve sufficient distance between workpiece and machine. Safety for the electrical connection/disconnection

Electrical connection:

A cable with four wires is supplied to connect your machine into the 3 phase power supply. The exact power source voltage, frequency, and number of phase shall be checked according to the installation diagram and circuit diagram. The correct direction of main motor should be checked after connecting.

Electrical disconnection:

Be sure to disconnect this machine from power source, when you want to stop the job for maintenance or adjustment.

Grounding

The grounding of this model is carried out by connecting the yellow/green terminal of supply cable to the grounding terminal of power source. Be sure to ground your machine before connecting machine to power source in any situation.

Warning!

Do not disconnect grounding terminal before disconnecting power source.

Description for the safety function of this machine

The following safety functions are equipped with this machine. Be sure to check and ensure the correct function before you start to operate your machine:

The emergency stop device:

The machine is designed to be immediately stopped under emergency situation. As soon as this device is actuated, any movement will be stopped in a short time after the actuation of emergency stop switch (E-stop).

Be sure to check that machine action will stop immediately after this button is pressed and will not cause any action when this button is disengaged.

V. Set-up and brief operation

1. Fill up oil tank to 2/3 full, using Hydraulic oil Shell # 68HD or equivalent in summer and Lighter hydraulic oil in winter.

Caution: Must remain the oil filter inside the tank input hole, do not remove it to avoid the oil dirty things to go into the oil tank.



2. Need to change hydraulic oil every 3-6 months. Watch the oil color on the oil sight gauge, when the oil color becomes dark, that is the time to change oil.
3. Make sure the machine voltage 220V or 440V, check the yellow tag on the machine. On the pick tail, (3) black wires for hot and yellow/green wire for ground.



4. when turn on the machine, check the motor rotation first, there is motor rotation arrow on the motor cover. If the rotation wrong, interchange any of two hot wires to change the motor rotation, otherwise the machine can not run.

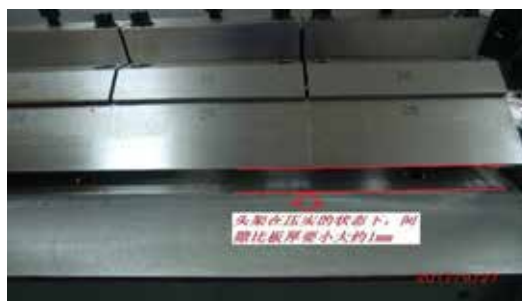


5. Set up clamping:

On below pic 1, shows the device for clamping clearance set up, loosen the nut and turn the top bolt and move the clamping beam up/down, and look at the scale, and make sure the both sides of the clamping are set up on the same scale lines. The clamping clearance is about 70% of the material thickness. There is a sticker on the clamping device, which shows roughly clamping clearance. For example, the material thickness is 10Ga., the clamping clearance is 12Ga.=0.1”

To double check the clamping clearance, press and hold the clamping foot pedal to let the clamping all the way down, and then measure the clamping clearance with feeler gauge to see if it is 0.1”

6. Set up the upper beam distance from the finger edge to the nose bar



This distance has a ratio 1.5-2.0 x material thickness, based on different material.

For example, if the material is 10Ga mild steel, this distance is 0.20"- 0.25"

There are two handwheels on the both sides, move the handwheels to set up the distance.

Please make sure the right & left sides have the same distance, do not need to measure the middle area.



7. Operation

a. Turn on the main power switch



b. The power indicator light on, press the Pump Start button , and let the pump run about 5 minutes, then operate the machine.



c. To set up the bending degree, loosen the black locking handle, and move the stopper to the degree you need and tighten down the locking handle. The degree is only roughly set up, which depends on the different material and thickness, the material has different bounce-back tension.

d. on the inch bending mode, turn the mode selection switch to inch, press and hold the unclamp foot pedal to raise the upper beam, insert the material, and press and hold the clamp foot pedal to clamp the material.





Pull up and hold the toggle switch (circled in red), the bending leaf lifts up, when release the toggle switch, the bending leaf stops. Push down the toggle switch, the bending leaf goes down.



- e. On the auto bending mode, turn the mode selection switch to inch, press and hold the unclamp foot pedal to raise the upper beam, insert the material, and press and hold the clamp foot pedal to clamp the material tightly. Then press and hold the BEND foot pedal, the bending leaf lifts up, bend the material, and return back down to the bottom position, make one cycle bend.

8. Troubleshooting

- a. If the bending degree is left side bigger than right side, need to move the left side of the beam back a little bit to get compensation
- b. If the bending degree is bigger in the middle of the material, need to adjust the tension nut on the bending leaf, see picture 1 on left, and if needed, adjust the tension nuts on the top of the beam , see picture 2



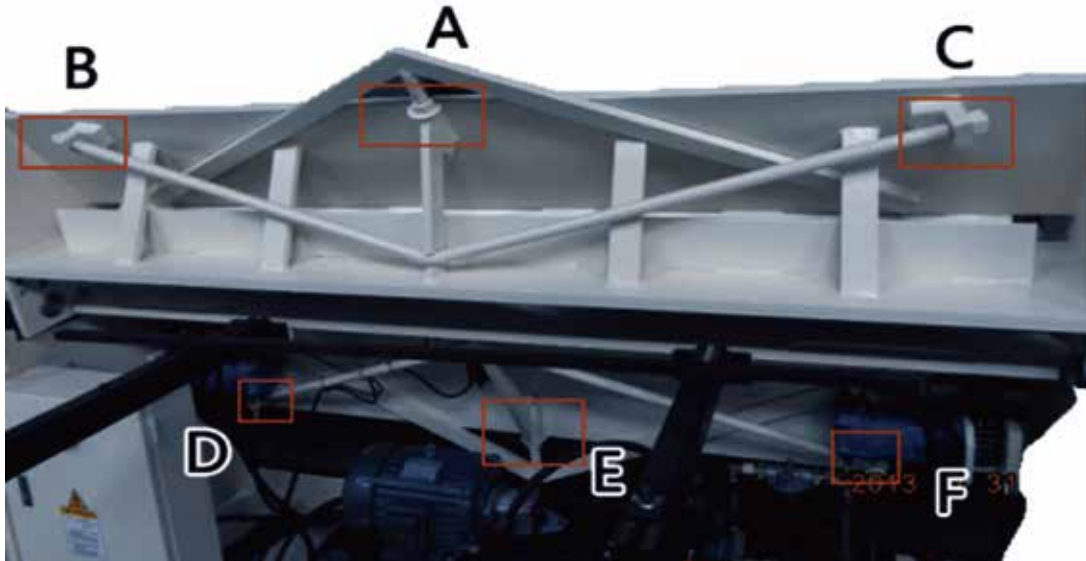
VI. Troubleshooting

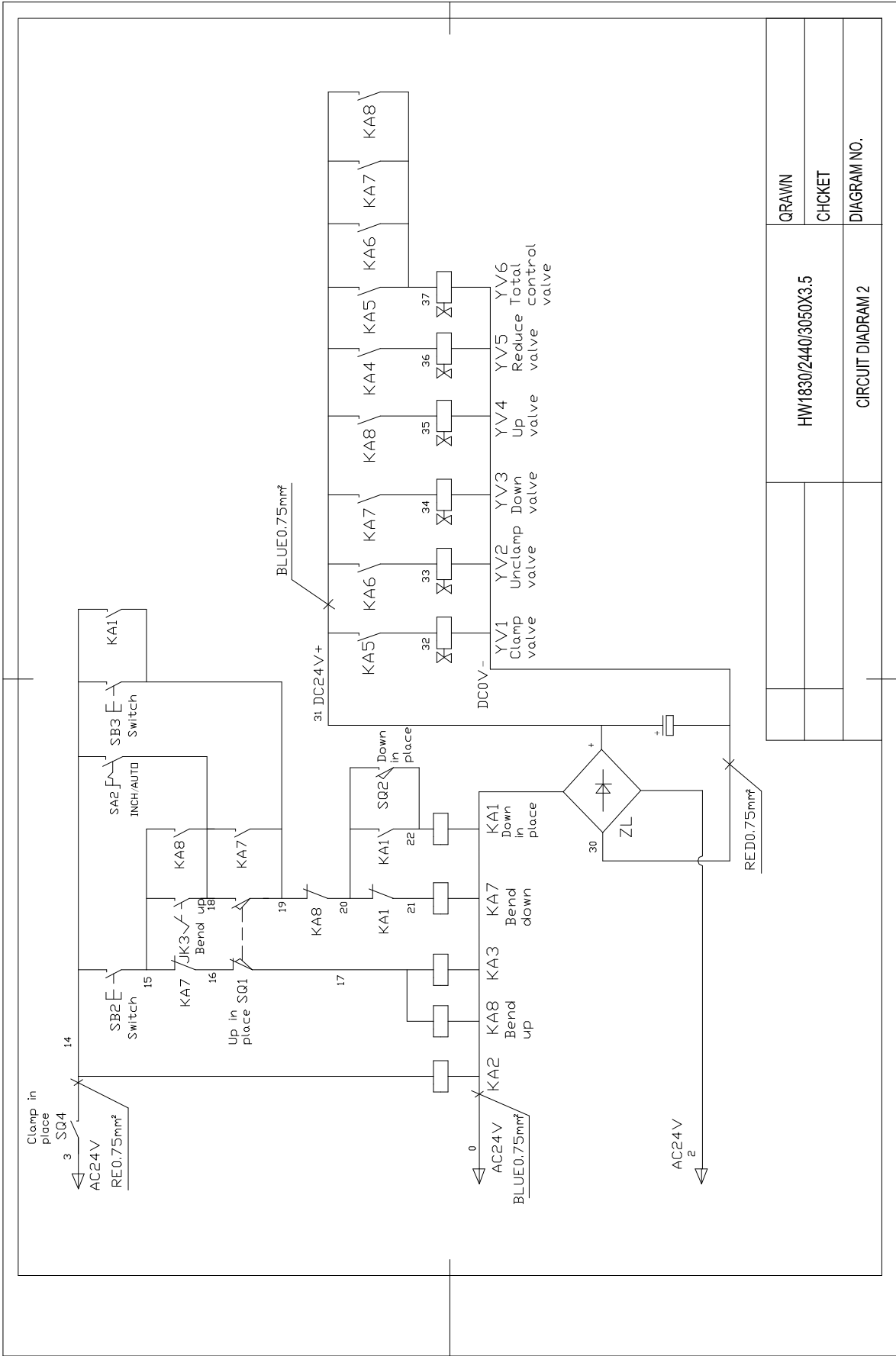
| <i>TROUBLESHOOTING FOR HBB-1010 SERIES</i> | |
|--|---|
| PROBLEM | SOLUTION |
| The motor runs and no function | Check and make sure the motor rotation is correct |
| | Check the power voltage, 220V or 440V, +- 10% |
| | Voltage can not be lower than 208V |
| The clamping does not clamp | Check the selection switch of auto and inch modes |
| | Press down the clamping foot pedal, and check the solenoid valve for the clamping to see if the light is on, if light is not on, check the wires between solenoid valve and relay KA3 & KA6 |
| | If the solenoid light is on, please clean the solenoid valve |
| After clamping;the bending leaf does not lift up | Check the limit switch on the rear ring, located in the middle of the rod, to make sure the limit switch is completely pressed down |
| | The fingers clearance is too small, need to set up correctly |
| When bending leaf returns down, and no slow approaching speed and hit | Adjust the check valve and turn the valve knob clockwise a little |
| | Check the bottom limit switch for the bending leaf return position, make sure the limit switch is solidly pressed down, at this time, if the solenoid valve light is not on, check the solenoid valve and limit switch, and wires between |
| | If the solenoid valve light is on, please clean the solenoid valve |
| When material gets over bent in the middle, left or right side | If the overbend is on the left side of the material, it needs to be moved to the left side of the upper beam, backward the material a little bit |
| | If the overbend is on right side of the material, need to move the right side of the upper beam backward the material a little bit |
| | If the overbend is in middle of the material, need to tight down just a little the tension nut on top of upper beam, or tight down a little the tension nut on the bending leaf to get the angle compensation |
| When bending, the overload relay | Check the overload relay # FR1, and press reset button, and higher the Amp amount |
| When bending the material, the material moves | The clamping gap is too big, normal clamping gap is about 70% of the material thickness, i.e. 12Ga. Material needs clamping gap about 0.07” |
| | Check the clamping device to see if the camlock is on the locking position, i.e. the cam high point is on top, if the clamping device is not on the locking position, need to re position the middle ring on the long rear rod, to make sure that bolt on this ring solid touch the clamping limit switch |
| When bending the material, the material moves | Check the middle ring on the long rear rod, and make sure it is tightened on the rod, and make sure the locking bolts sit in the small dent of the long rod |
| When the bending leaf lifts up, but stays in the air | Check the solenoid valve for clamping to see if the lights on, if not on, check the relays KA5 & KA7 inside the electrical cabinet , make sure all relays lights are on and in good connection |
| | Check the solenoid valve for clamping to see if the lights on, if lights are on, that means the solenoid valve is jammed, and need to remove the clamping solenoid valve off, and air blow all the holes very well, do not lose the O rings on all holes, then put the solenoid valve back on the machine |
| For bending 10Ga. Mild steel material, how much the clamping gap needs to set up | The clamping gap is about 70% of the material thickness, i.e. 12Ga. Material needs clamping gap about 0.07” |
| For bending 10Ga. Mild steel, how far to move the fingers back | The distance to move the fingers back is about the ratio x 1.2 of the material thickness, i.e. bending 10Ga. Mild steel, The distance to move the fingers back is |
| How to change hydraulic oil | Drain the old hydraulic oil then clean the filter inside the tank |
| | Replace the outside fine filter |
| | Clean the oil tank |

VII. Table crowning compensation

If the angles of work-piece two sides are both on 90 degree, but middle side only 89 degree, Micro adjusting screws at bending left and bottom beam for compensate the middle has the same angle.

- 1) Open the top beam, and then turn off the machine power
- 2) Tight screws A-G at upper beam and folding leaf, and make screw tight following different work-piece crowing situation.



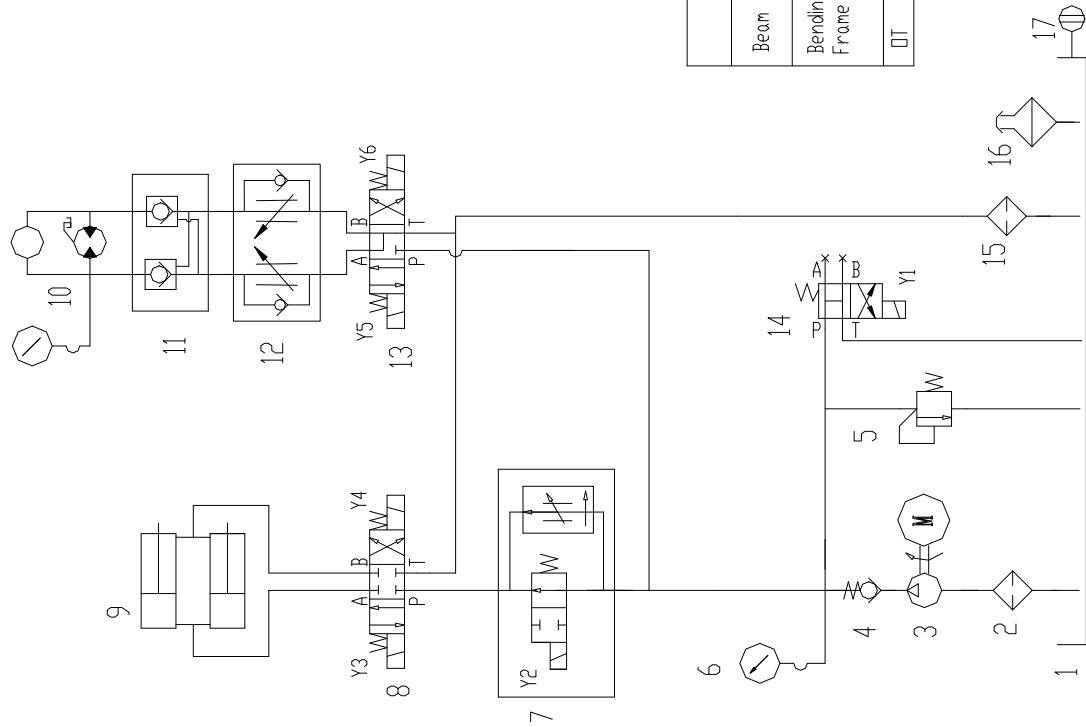


| | |
|-------------|----------------------|
| QRAWN | HW1830/2440/3050X3.5 |
| CHCKET | |
| DIAGRAM NO. | CIRCUIT DIADRAM 2 |

X. Hydraulic Diagram

Specification Request

- 1 Hydraulic Station Specification:
- 2 Voltage frequency requested by customer
- 3 Control Voltage for Reversing Valve: DC24V
- 4 Oil: Antiwear hydraulic Oil
- 5 System Temperature: 5-55°
- 6 Pressure: 8mpa

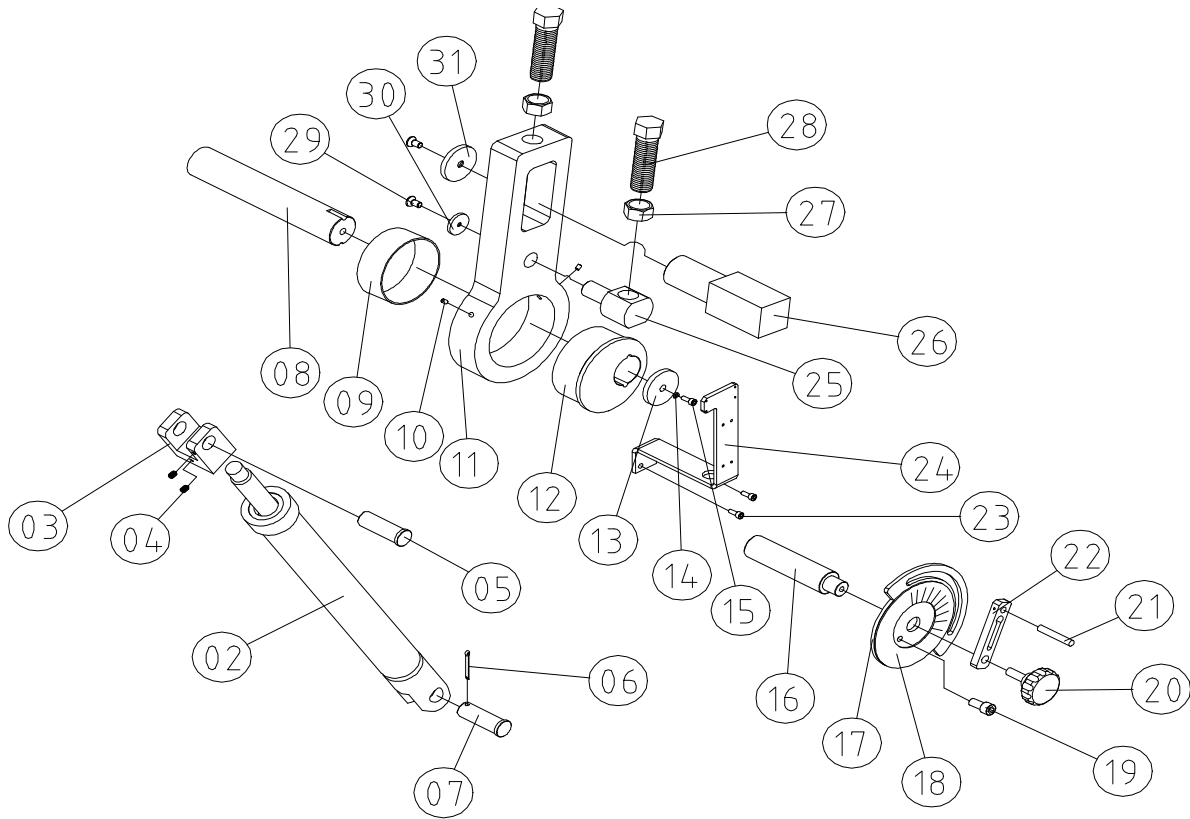


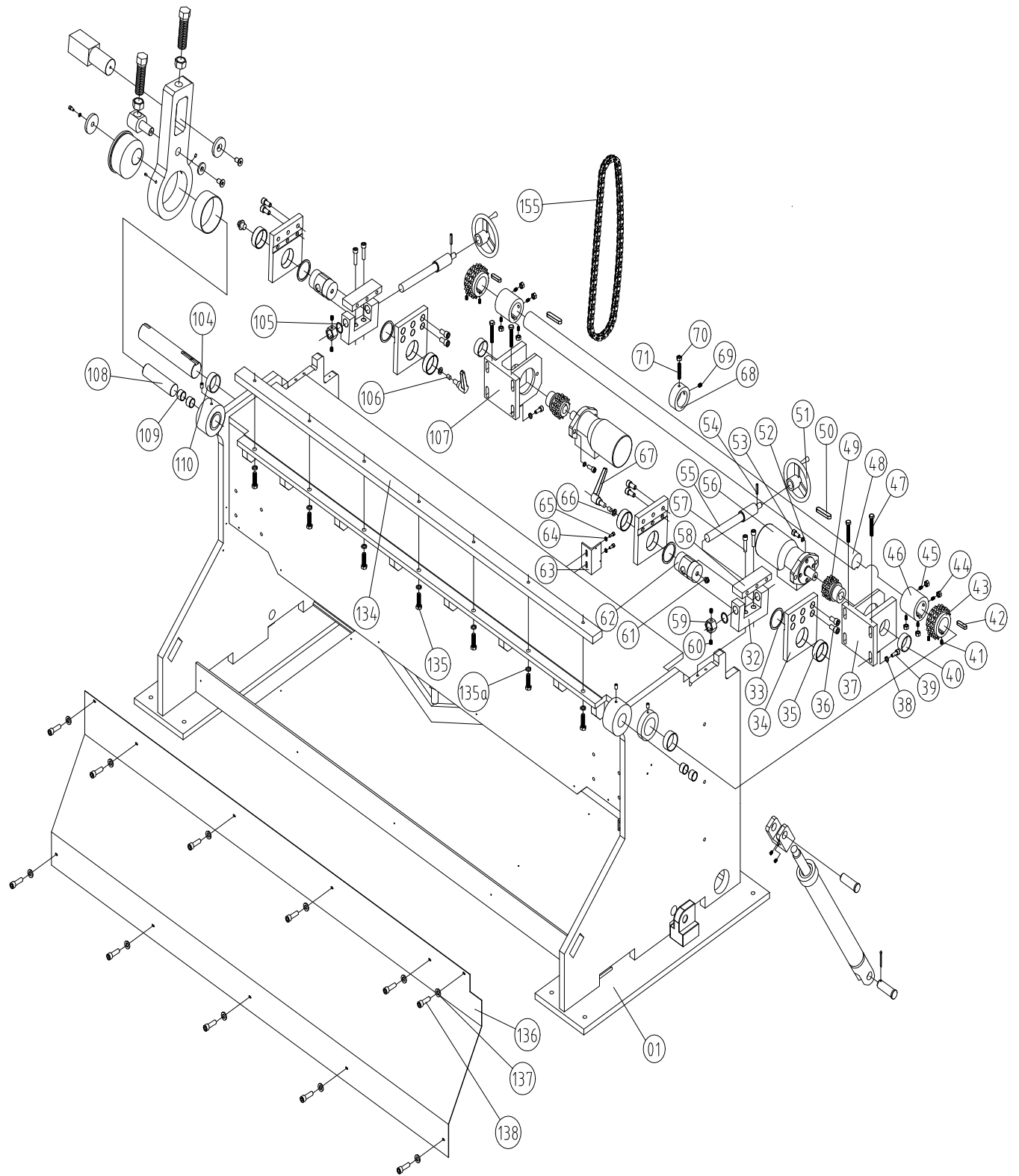
| | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 |
|---------------|----|----|----|----|----|----|
| Beam Down | + | | | | + | |
| Beam Up | + | | | | | + |
| Bending Frame | + | | + | | | |
| Return | + | | | + | | |
| Down Slowly | + | | | + | | |
| OT | | | | | | |

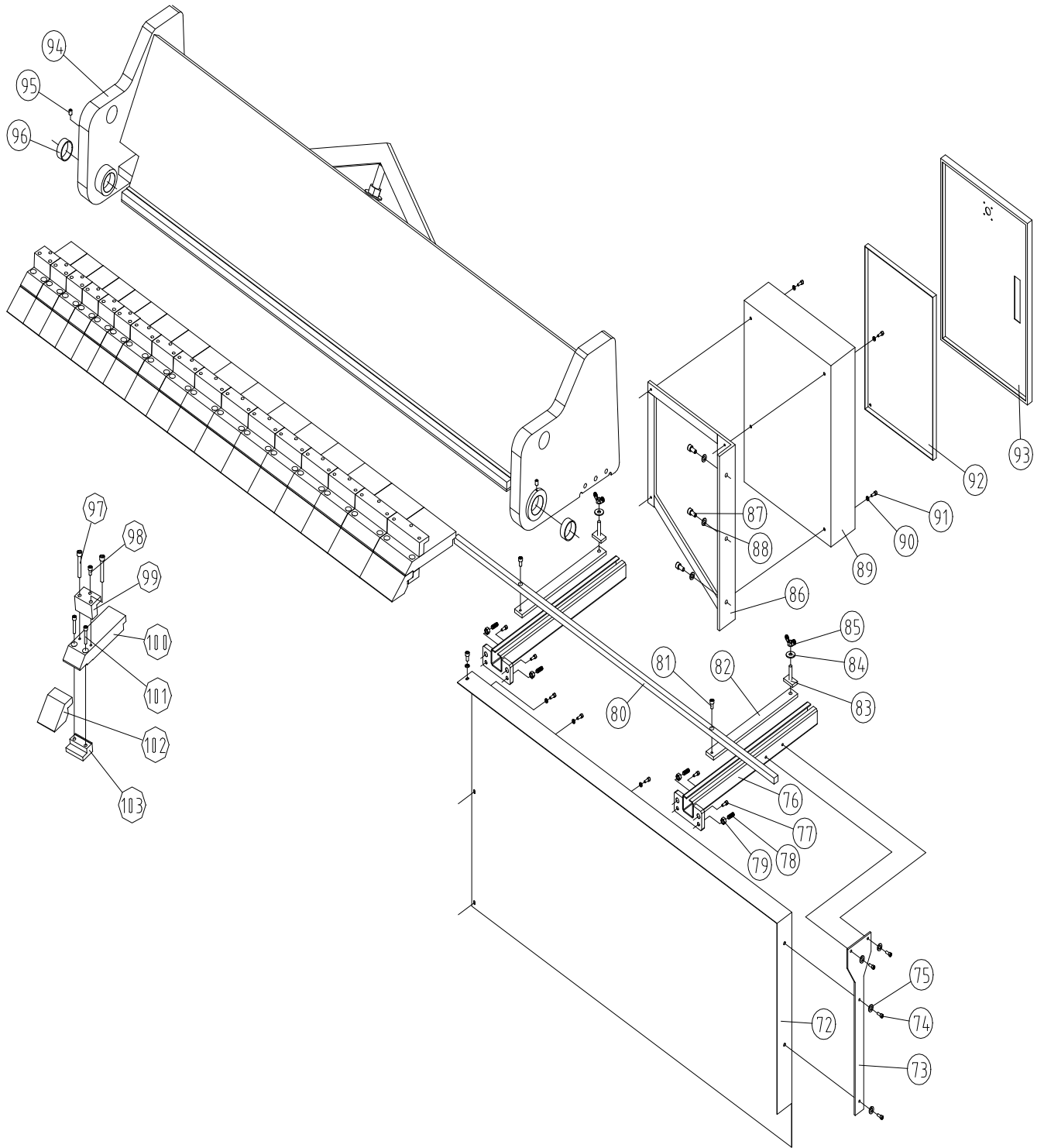
| No. | Name | Qty | Remark |
|-----|-----------------------------|-----|--------|
| 17 | Content Gage | 1 | |
| 16 | Air Filter | 1 | |
| 15 | Filter | 1 | |
| 14 | Reversing Valve | 1 | |
| 13 | Reversing Valve | 1 | |
| 12 | One-Way Throttle Valve | 1 | |
| 11 | Hydraulic one-way Valve | 1 | |
| 10 | Motor For Hydraulic Station | 2 | |
| 9 | Oil Cylinder | 2 | |
| 8 | Reversing Valve | 1 | |
| 7 | Speed Regulation Valve | 1 | |
| 6 | Pressure Gage | 1 | |
| 5 | Over-flow Valve | 1 | |
| 4 | One-Way Valve | 1 | |
| 3 | Pump | 1 | |
| 2 | Filter | 1 | |
| 1 | Hydraulic Station | 1 | |

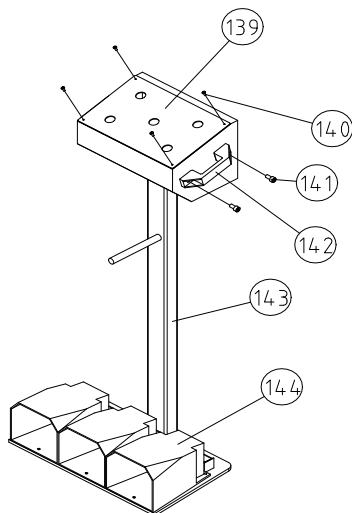
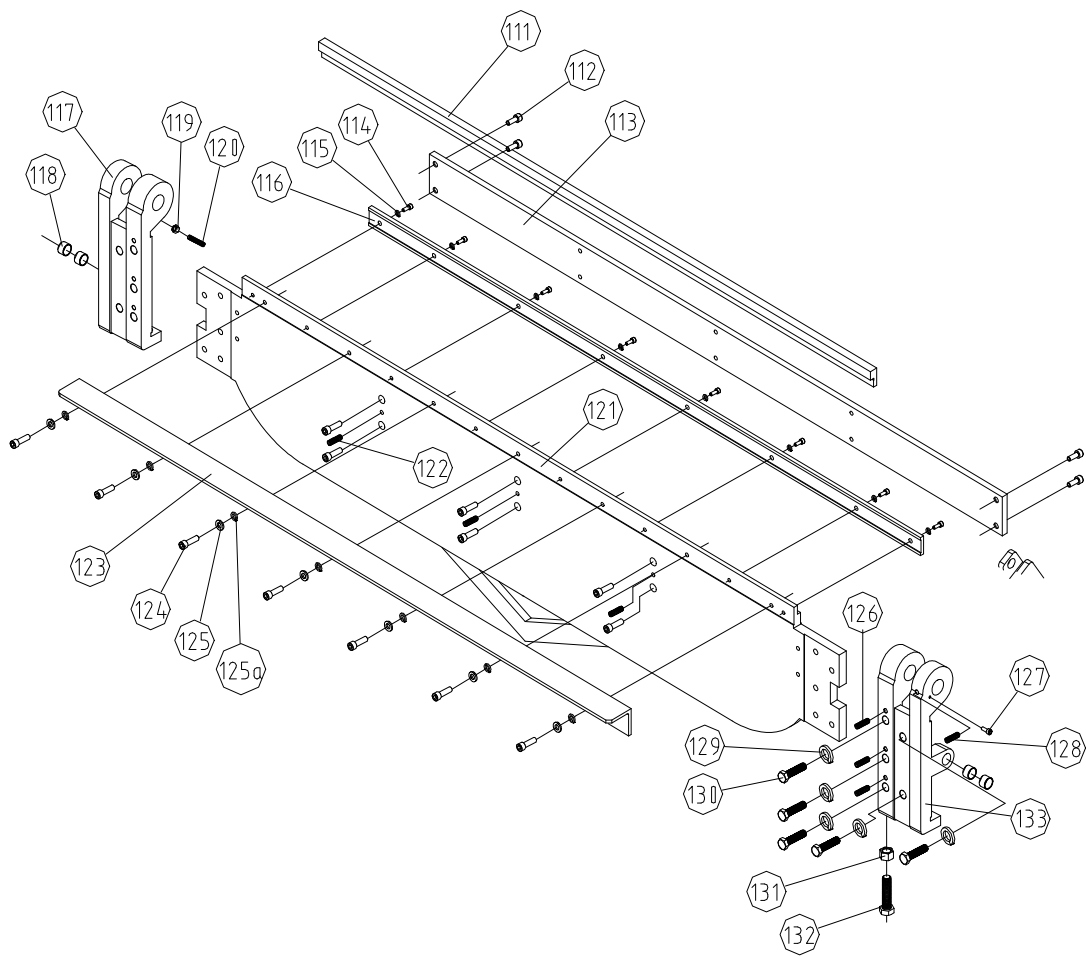
Hydraulic Diagram
Hydraulic Bending Machine
HW-Series

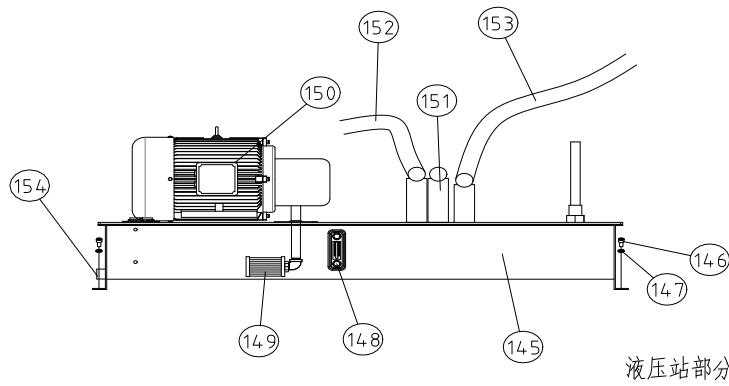
XI. Parts breakdown manual and parts list











| No. | Desc. | | Q'ty | Note |
|-----|---|--------|------|----------------|
| 1 | Body | | 1 | |
| 2 | Hydraulic Cylinder | | 2 | 2pcs different |
| 3 | Connecting plate on hydraulic cylinder | | 2 | |
| 4 | Six pyramid end screw set | M8X12 | 4 | |
| 5 | Fixed upper pole on hydraulic cylinder | | 2 | |
| 6 | cotter | 4X40 | 2 | |
| 7 | Fixed bottom pole on hydraulic cylinder | | 2 | |
| 8 | eccentric disk shaft | | 2 | |
| 9 | bush | 12050 | 2 | SF-1 |
| 10 | oil cup | 8 | 4 | |
| 11 | Eccentric disc holder | | 2 | |
| 12 | Eccentric disk | | 2 | |
| 13 | Eccentric disk fixed plate | | 2 | |
| 14 | Spring washer | 12 | 2 | |
| 15 | hexagon socket cap screws | M12X35 | 2 | |
| 16 | Leaf beam right rotation shaft | | 1 | |
| 17 | Angle plate | | 1 | |
| 18 | Angle plate | | 1 | |
| 19 | hexagon socket cap screws | M8X40 | 1 | |
| 20 | handle | M10X30 | 1 | |
| 21 | Round pin | 10X60 | 1 | |
| 22 | Angle rotation boards | | 1 | |
| 23 | hexagon socket cap screws | M6X16 | 2 | |
| 24 | Emergency stop stand | | 1 | |
| 25 | Bolt seat | | 2 | |
| 26 | Head frame shaft | | 2 | |

| | | | | |
|----|--|---------|----|------|
| 27 | Hex nut | | 4 | |
| 28 | Hex screw | | 4 | |
| 29 | Hexagon socket countersunk head screws | M10X25 | 4 | |
| 30 | cover | | 2 | |
| 31 | cover | | 2 | |
| 32 | U-block | | 2 | |
| 33 | Spacer | | 4 | |
| 34 | Side plate of U-block | | 4 | |
| 35 | Bush | 5520 | 4 | SF-1 |
| 36 | Hex cylinder head screw | M12X25 | 24 | |
| 37 | Right motor seat | | 1 | |
| 38 | Spring washer | 12 | 8 | |
| 39 | Hex cylinder head screw | M12X40 | 8 | |
| 40 | Bush | 4520 | 2 | SF-1 |
| 41 | Hexagon socket countersunk head screws | M8X12 | 4 | |
| 42 | key | 12X45 | 2 | |
| 43 | Large chain wheel | | 2 | |
| 44 | Screw | M10 | 8 | |
| 45 | Inner hexagon socket set screw | M10X20 | 8 | |
| 46 | Driven sleeve | | 2 | |
| 47 | Hex bolt | M10X65 | 4 | |
| 48 | Driven shaft | | 1 | |
| 49 | Small chain wheel | | 2 | |
| 50 | Key | 14X70 | 2 | |
| 51 | Handle wheel | Φ16X125 | 2 | |
| 52 | Spring washer | 12 | 4 | |
| 53 | Hex cylinder head screw | M12X40 | 4 | |
| 54 | Spring pin | 6X32 | 2 | |
| 55 | Lead screw | | 2 | |
| 56 | motor | | 2 | |
| 57 | Hex cylinder head screw | M10X40 | 4 | |
| 58 | Plate | | 2 | |
| 59 | Nut | | 2 | |
| 60 | Inner hexagon socket set screw | M10X40 | 4 | |
| 61 | Oil cup | M8X1 | 2 | |
| 62 | shaft | | 2 | |
| 63 | Emergency seat | | 2 | |
| 64 | Flat washer | 6 | 4 | |

| | | | | |
|-----|----------------------------------|--------|------|------|
| 65 | Hex cylinder head screw | M6X16 | 4 | |
| 66 | Flat washer | 12 | 2 | |
| 67 | Adjustable handle | M12X25 | 2 | |
| 68 | Touch off cover | | 1 | |
| 69 | Inner hexagon socket set screw | M10X12 | 1 | |
| 70 | Nut | M10 | 1 | |
| 71 | Hex.socker | M10X50 | 1 | |
| 72 | Back liner insert | | 1 | |
| 73 | tailgate stents | | 1 | |
| 74 | hexagon socket cap screws | M6X16 | 8 | |
| 75 | flat gasket | 6 | 8 | |
| 76 | Keep-off stents | | 2 | |
| 77 | hexagon socket cap screws | M12X25 | 4 | |
| 78 | Allen flat end set screws | M10X25 | 4 | |
| 79 | nut | M10 | 4 | |
| 80 | Keep-off square bar | | 1 | |
| 81 | hexagon socket cap screws | M8X16 | 2 | |
| 82 | striker plate | | 2 | |
| 83 | Keep-off square bar fixing parts | | 2 | |
| 84 | big washer | 10 | 2 | |
| 85 | butterfly nut | M10 | 2 | |
| 86 | Electric box connection frame | | 1 | |
| 87 | hexagon socket cap screws | M10X20 | 3 | |
| 88 | flat washer | 10 | 3 | |
| 89 | Electrical box | | 1 | |
| 90 | flat washer | 6 | 4 | |
| 91 | hexagon socket cap screws | M6X16 | 4 | |
| 92 | Electric plate | | 1 | |
| 93 | Electric box door | | 1 | |
| 94 | Top rack | | 1 | |
| 95 | Oil cup | M8X1 | 2 | |
| 96 | bush | 5020 | 4 | SF-1 |
| 97 | hexagon socket cap screws | M10X65 | 34 | |
| 98 | hexagon socket cap screws | M12X25 | 17 | |
| 99 | Upper blade pressure block | | 1set | |
| 100 | Lower blade | | 1set | |
| 101 | hexagon socket cap screws | M12X50 | 34 | |
| 102 | Upper blade | | 1set | |

| | | | | |
|------|--------------------------------|--------|------|------|
| 103 | Lower blade pressure block | | 1set | |
| 104 | Oil cup | M8X1 | 2 | |
| 105 | Copper dash | | 4 | |
| 106 | Nylon pressure block | | 2 | |
| 107 | Left motor seat | | 1 | |
| 108 | folding fan left shaft | | 1 | |
| 109 | bush | 3820 | 4 | |
| 110 | bush | 5020 | 2 | SF-1 |
| 111 | Bending plate banners | | 1 | |
| 112 | hexagon socket cap screws | M12X40 | 10 | |
| 113 | Bending boy reinforcing plate | | 1 | |
| 114 | Hex bolt thread | M10X25 | 8 | |
| 115 | standard spring washer | 10 | 8 | |
| 116 | Back bending plate | | 1 | |
| 117 | Left connecting | | 1 | |
| 118 | bush | 3820 | 4 | SF-1 |
| 119 | nut | M10 | 1 | |
| 120 | Hex bolt thread | M10X50 | 1 | |
| 121 | Bending body | | 1 | |
| 122 | Hex bolt thread | M12X40 | 3 | |
| 123 | knife edge angle iron | | 1 | |
| 124 | Hex bolt thread | M12X30 | 7 | |
| 125 | Flat washer | 12 | 7 | |
| 125a | standard spring washer | 12 | 7 | |
| 126 | flat end set screws | M12X40 | 6 | |
| 127 | hexagon socket cap screws | M8X40 | 1 | |
| 128 | Inner hexagon socket set screw | M12X35 | 2 | |
| 129 | standard spring washer | 16 | 10 | |
| 130 | Hex bolt thread | M16X65 | 10 | |
| 131 | nut | M20 | 2 | |
| 132 | Hex bolt thread | M20X75 | 2 | |
| 133 | Right connecting | | 1 | |
| 134 | Press block | | 1 | |
| 135 | Hex bolt thread | M12X40 | 7 | |
| 135a | standard spring washer | 12 | 7 | |
| 136 | Front guard | | 1 | |
| 137 | Flat washer | 6 | 11 | |
| 138 | hexagon socket cap screws | M6X16 | 11 | |

| | | | | |
|-----|---------------------------------|-------|---|-------------|
| 139 | plate | | 1 | |
| 140 | cross recess pan head screw | M4X8 | 4 | |
| 141 | hexagon socket cap screws | M8X16 | 4 | |
| 142 | carrying handle | | 2 | |
| 143 | Operations support | | 1 | |
| 144 | foot pedal | | 3 | |
| 145 | oil cylinder | | 1 | |
| 146 | hexagon socket cap screws | M6X16 | 4 | |
| 147 | Flat washer | 6 | 4 | |
| 148 | Oil temperature measure | | 1 | |
| 149 | oil absorption filter oil meter | | 1 | |
| 150 | motor | | 1 | |
| 151 | Hydraulic cylinder | | 1 | |
| 152 | Motor tube | | 2 | 进 2.4 出 1.6 |
| 153 | Hydraulic cylinder tube | | 2 | 进 2.6 出 1.8 |
| 154 | Drain mouth matching oil plug | | 1 | |
| 155 | double row roller chain | 10A | 2 | 各 40 节 |

WARRANTY & RETURNS

GMC Machine Tools Corp. warrants every product it sells for 1 year parts to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is GMC sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall GMC liability under this warranty exceed the purchase price paid for the product and any legal actions brought against GMC shall be tried in the State of California, County of S.B.

We GMC shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

Note: This manual is only for your reference. Any specification changes and improvement are subject to change without prior to notice. And please the power source voltage in your shop before wiring up this machine. Please be carefully and BE SAFE.