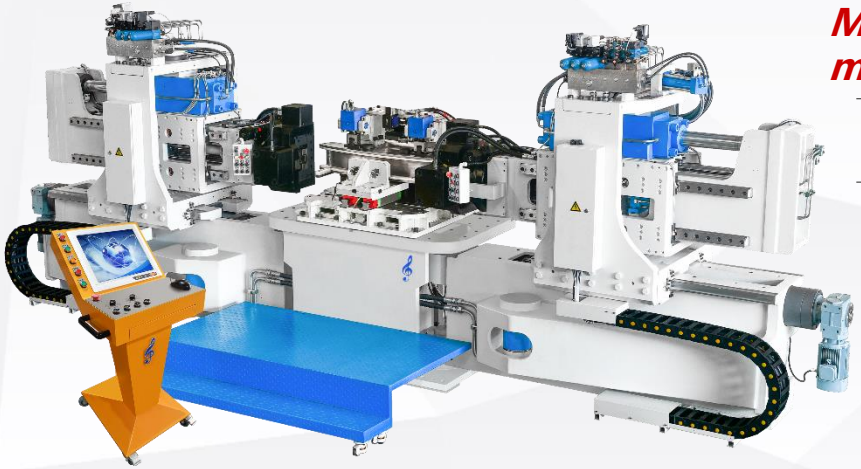
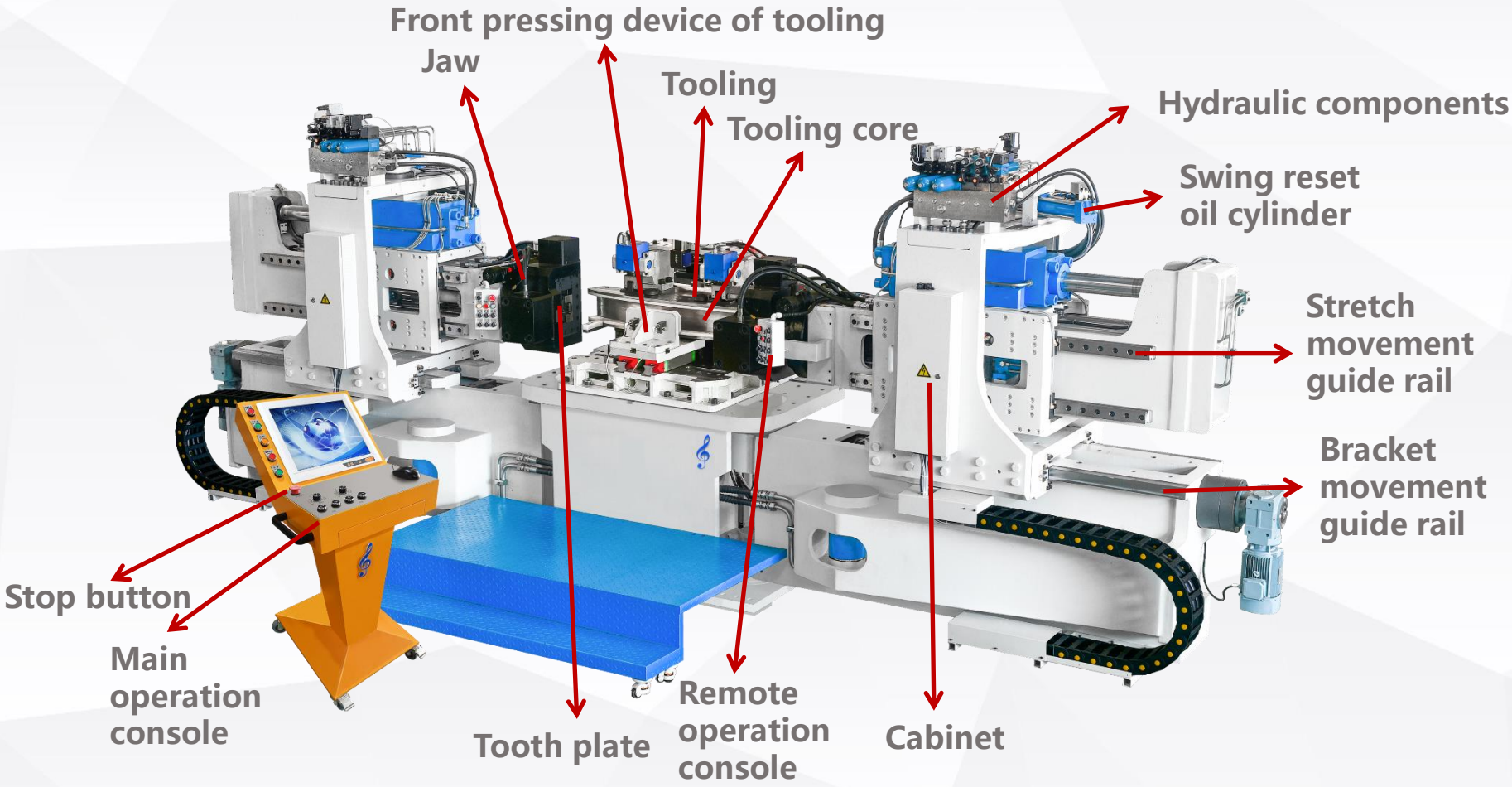


Mandrel-pulling stretch bending machine and its tooling maintenance list

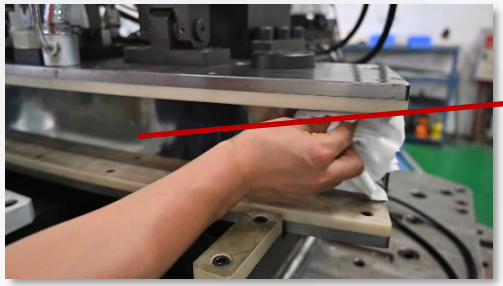
G Clef 55T CNC stretch bending machine

GUANGDONG G CLEF BENDING TECHNOLOGY CO., LTD.


Front pressing device of tooling
Jaw
Tooling
Tooling core
Hydraulic components
Swing reset oil cylinder
Stretch movement guide rail
Bracket movement guide rail
Stop button
Main operation console
Tooth plate
Remote operation console
Cabinet

Daily maintenance before power on

1. Check whether there is debris, aluminum powder or other foreign matters. Wipe them with a lint-free cleaning cloth.



Pay attention to the aluminum powder accumulation at the small radius

Tooling core

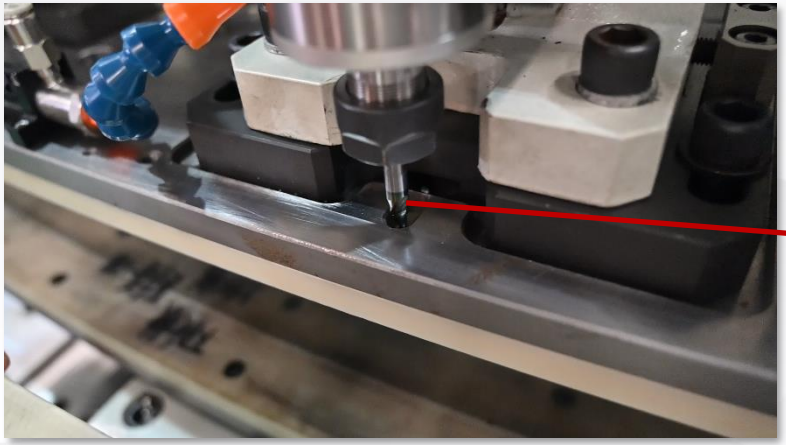
Tooth plate

Clean the aluminum powder on the mandrel and its connections , ensure its smoothness

Mandrel

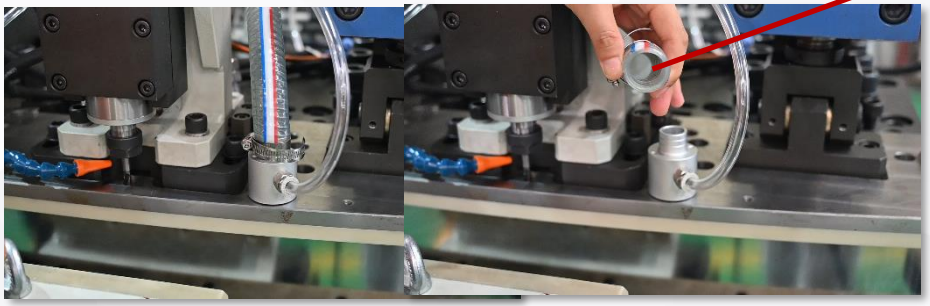
Daily maintenance before power on

2. Check whether the drill bit(pin) is broken or abnormal at least once per shift , if any, replace it intime. Tooling without drill bit or pin, ignore this item.



Daily maintenance before power on

3. Check whether the chip removal system is blocked and dredge it in time.



If any, dredge it timely

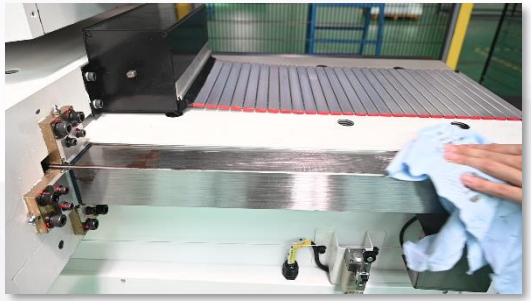
Daily maintenance before power on

4. Clean the aluminum chips and foreign matters on the tooling main guide rail surface every day

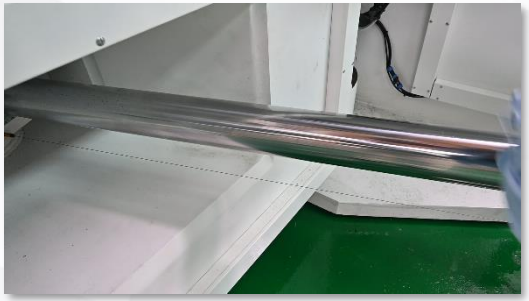
The main guide rail on the surface

Stretch movement guide rail

Use the vacuum cleaner to clean metal debris



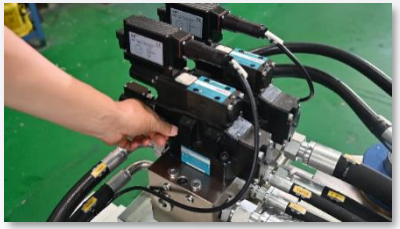
Bracket movement guide rail



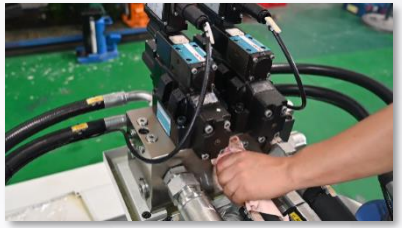
Piston rod of swing arm oil cylinder

Daily maintenance before power on

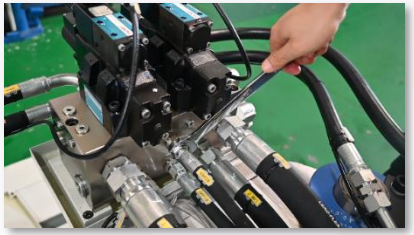
5. Check for oil leakage, that is, check whether there is leakage at all hydraulic components and hydraulic connections, and whether the hydraulic joints are loose. If the joint is loose, it must be tightened in time. The leakage location should be repaired in time and the leaked oil should be removed.



Check whether the connections are loose

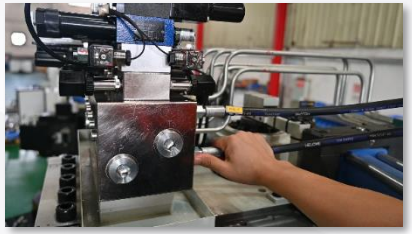


Clean leaked oil



Fasten

Hydraulic components behind tooling



Hydraulic components above swing arms of two sides

Leaked hydraulic oil poses a risk of slipping. Operators and maintenance personnel should be careful to avoid getting injured.

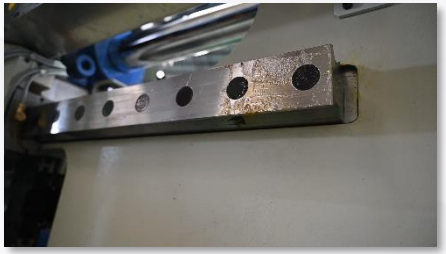
Daily maintenance before power on

6. Check whether the automatic lubrication system is operating normally.

*Under normal conditions, there is a visible oil film on the guide rail.

If there is any abnormality, the relevant person needs to be notified for maintenance.

*If there is no visible lubricating oil film on the guide rail, it may be that the automatic lubrication system is malfunctioning or the lubrication frequency is not enough.

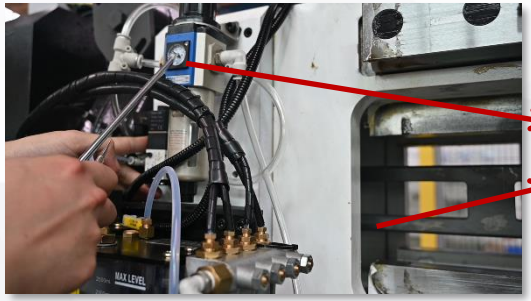


*If there is excessive grease, there may be excessive lubrication and the lubrication frequency needs to be reduced.

Daily maintenance before power on

7. Check whether the mandrel spray lubrication is normal, and check the level of the stretching oil in the mandrel lubricating oil tank to ensure that there is enough stretching oil.

Mandrel spray lubrication button

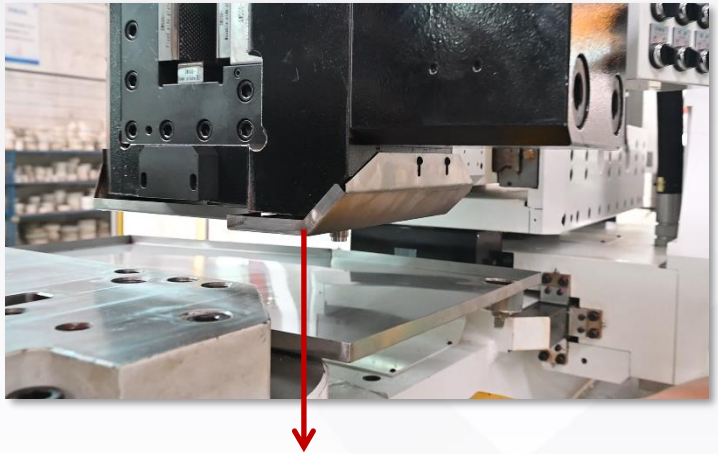


Check whether there is lubricating oil sprayed at the mandrel and whether the pressure gauge changes.

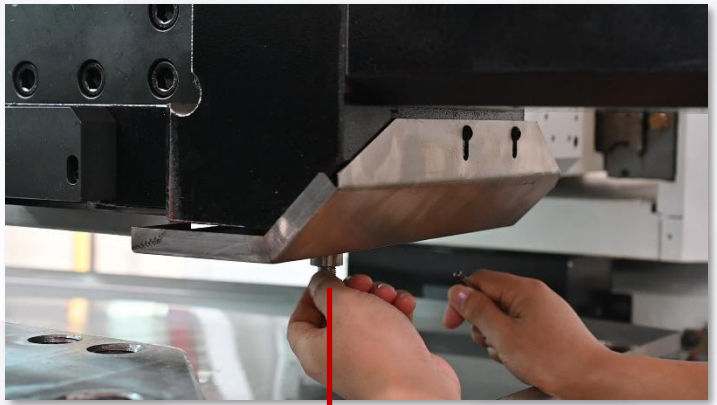
Check the liquid level of stretch oil in the oil tank
Note: Alarm when the level is less than 700ml
Use 18L/CUT309 stretching oil for replenishment.

Daily maintenance before power on

8. Empty the stretching oil in the oil drip pan of the jaw to avoid overflow of the stretching oil.



Oil drip pan of the jaw

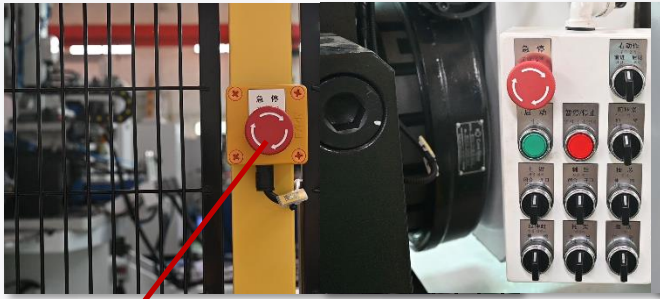


Unscrew the screws at the lower oil outlet

Daily maintenance before power on

9. Check the effectiveness of the stop button and the safety door after power-on.

After pressing the stop button, the equipment stops working and yellow warning text appears on the operation console.



Side of guardrail

Rotate clockwise for reset.

Left and right jaws

Main cabinet

After pressing the door opening request button, the safety door opens.

When the indicator light at the bottom is green, the safety door is in a closed state.

After the safety door opens, the indicator light at the bottom turns red.

Daily maintenance before power on

10. Inspect whether there is looseness at the screw fastening points of modules such as jaws, clamps, and toolings. If there is, it needs to be tightened; **Looseness at special positions needs to be reported to professionals for handling.**

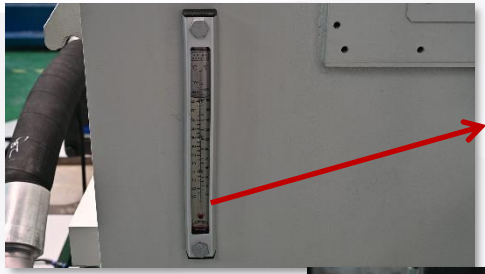
Screw fastening of each module of the tooling

Mark with lines again after tightening

Screws of modules such as jaws and clamps

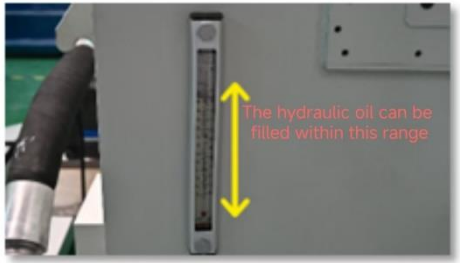
Key points of weekly maintenance

1. Check the hydraulic oil level once every week when the equipment is running. After a long period of shutdown, it also needs to be checked once and an appropriate amount of hydraulic oil should be added to meet the appropriate liquid level.



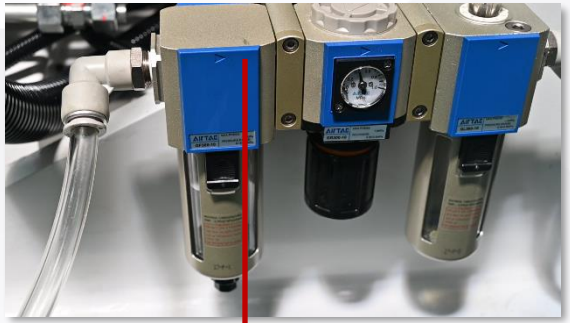
Check the hydraulic oil level. It must not be lower than 520 mm

Note: The hydraulic oil to be added must have the same viscosity and type as the hydraulic oil in the oil tank. The hydraulic oil needs to be filtered through a filter when adding. 46# anti-wear hydraulic oil is required.



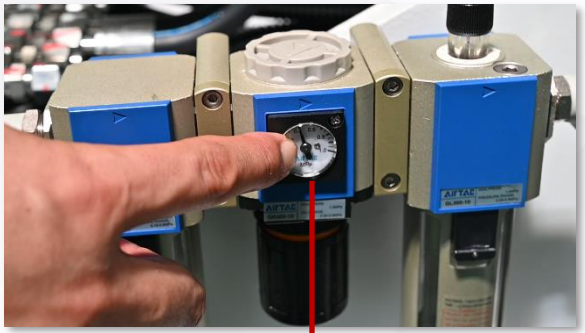
Key points of weekly maintenance

2. Check and maintain the pneumatic unit and see if all pneumatic components are working normally.



***Observe whether there is any abnormality in the pneumatic components**

***Touch with fingers to feel if there is any air leakage at the connection of the air pipe.**



***Observe whether the value of the pressure gauge is within the normal range (0.4).**

Key points of weekly maintenance

3. Check whether the bolts of each module are loose every week . If there is any looseness, tighten them immediately.

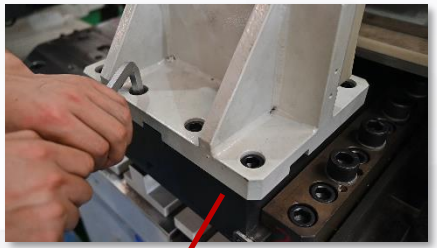
Check whether the tooth plate is loose

Check fixing screws of tooth plate

Jaw bottom

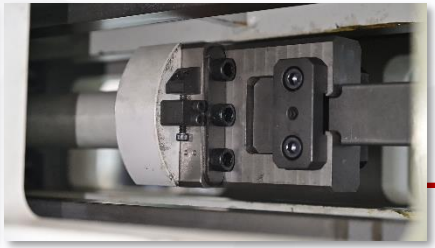
Mark with lines again after tightening

Check the fixing screws of the jaw cover plate

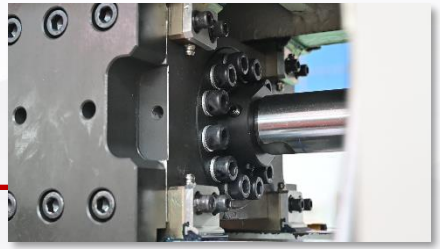


Check the fixing screws of the front pressing device on the tooling

Check the fixing screws of the front pressing and cutting device on the tooling



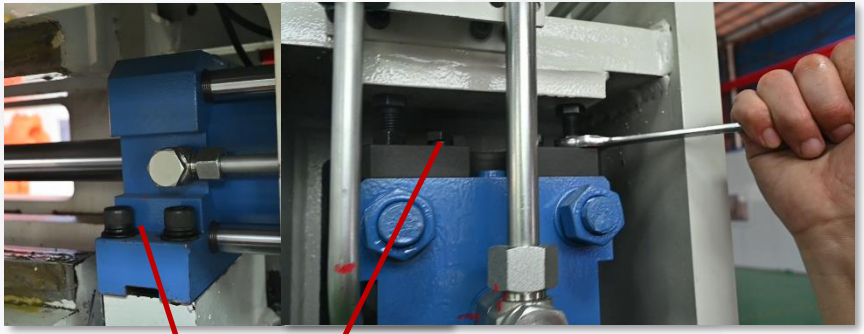
Check the fixing screws of the connecting part between the mandrel-pulling cylinder and the mandrel



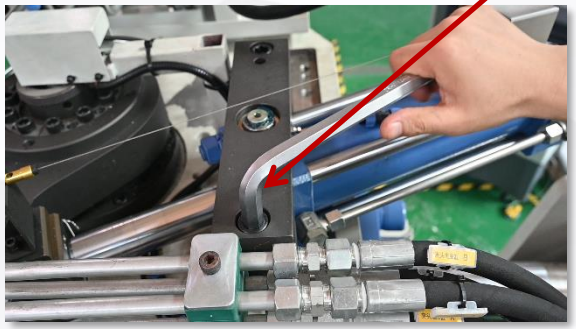
Check the fixing screws at the end of the piston of the stretching cylinder

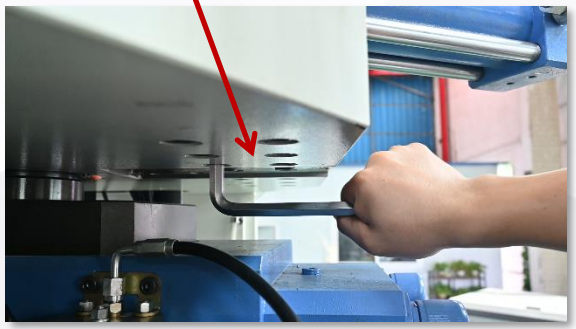
Key points of weekly maintenance

3. Check whether the bolts of each module are loose every week. If there is any looseness, tighten them immediately.



Check the fixing screws of the mandrel-pulling oil cylinder.





Check the fixing screws of the swing reset oil cylinder

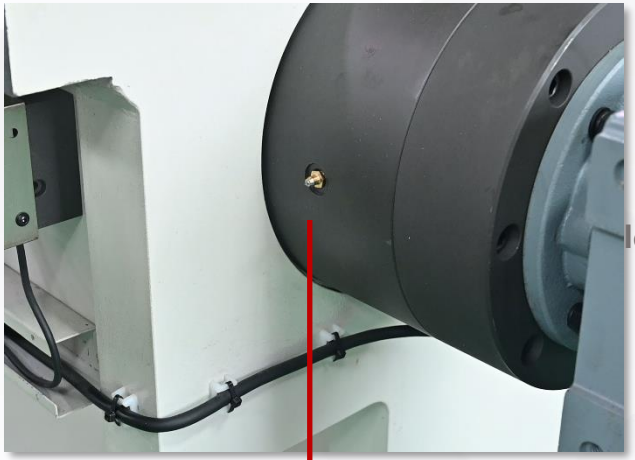
Key points of monthly maintenance

1. Check the grease level of the automatic lubricating oil pump every month to ensure that the oil pump has sufficient lubricating grease.

Note: Use 0# lithium-based grease. If the liquid level is less than 700 mL, an alarm will be triggered.

Key points of monthly maintenance

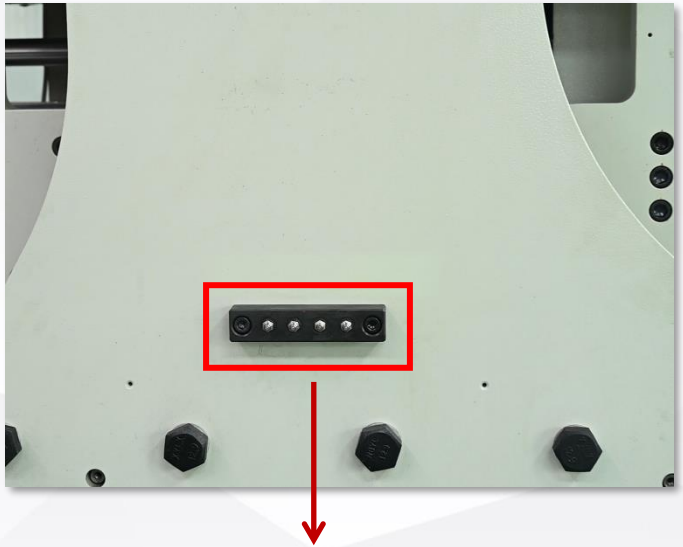
2. Manually add lubricating grease (at least once a month).



Oil injection point for lead screw bearing

Note: Use 0# lithium-based grease

Distributed in left-right mirror image

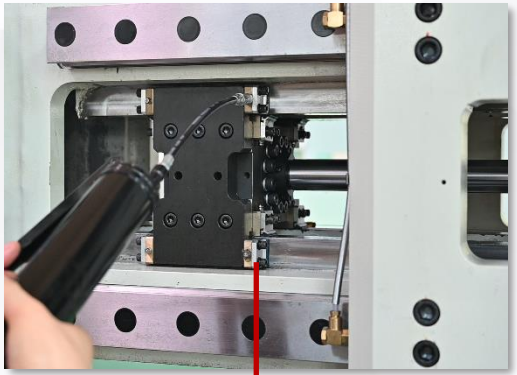


Lead screw nut,
Upper and lower bearings of the bracket,
Left and right swing pivot pin of the bracket,
centralized oil injection points

Note: Use Mobil high-temperature grease

Key points of monthly maintenance

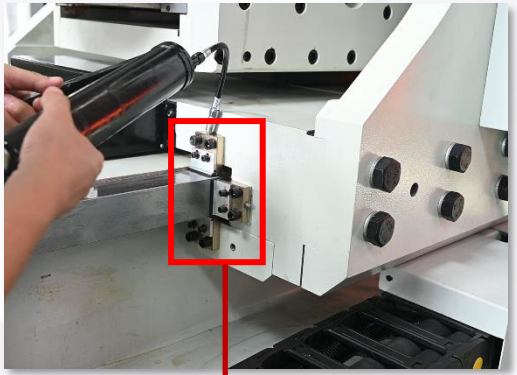
2. Manually add lubricating grease (at least once a month).



Oil injection point of the core-pulling cylinder slider

Distributed in left-right mirror image

Note: Use 0# lithium-based grease



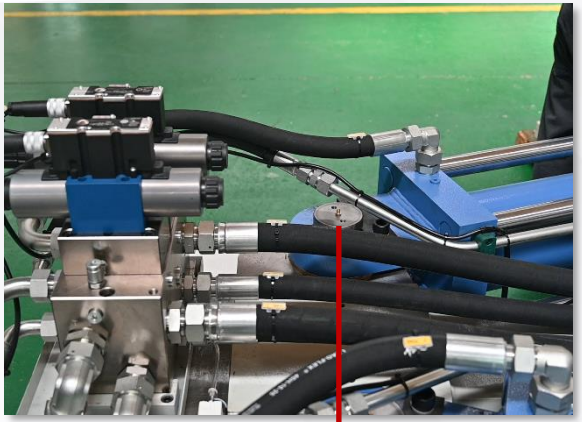
Oil injection point of the copper slide plate of the bracket

They are located around the brackets on both sides respectively

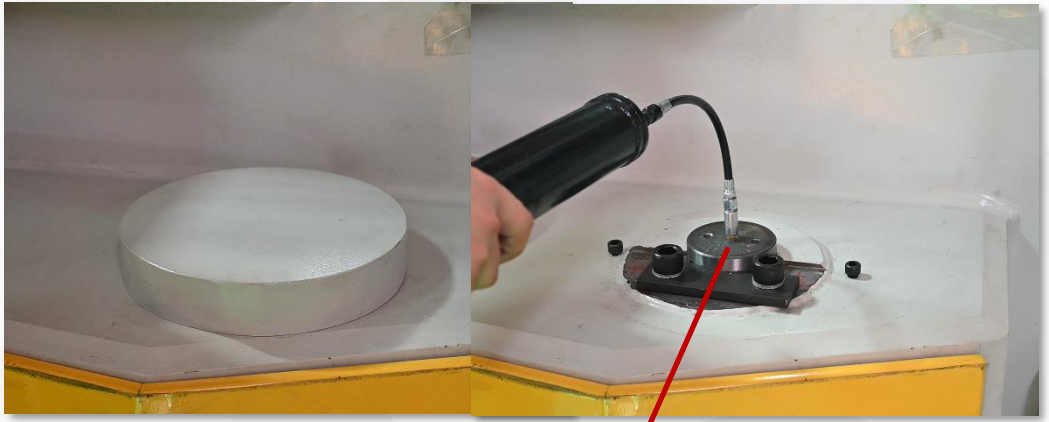
Note: Use 0# lithium-based grease

Key points of monthly maintenance

2. Manually add lubricating grease (at least once a month).



Oil injection point of the swing arm oil cylinder pin shaft (1)



Distributed in left-right mirror image

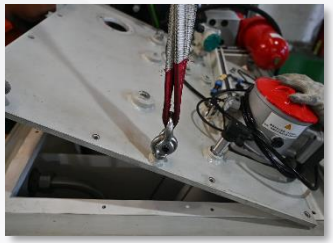
Oil injection point of the swing arm oil cylinder pin shaft (2)

Note: Use 0# lithium-based grease

Key points of annual maintenance

1. According to the usage frequency of the equipment, in principle, the hydraulic oil needs to be replaced at least once a year. If the usage frequency is not high, the service time of the hydraulic oil in the equipment cannot exceed two years.

(1)
Drain the hydraulic oil in the oil tank

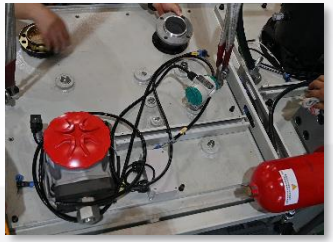


(2)
Remove the top of the oil tank

(3)
Use lint-free cleaning cloth to wipe the interior of the oil cylinder.

(4)
Use a flour dough to clean the dust, debris and other impurities in the corners of the oil cylinder

(5)
Install the top part

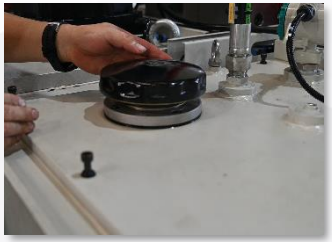


(6)
Install the filter element at the oil filling port

(7)
Fill in hydraulic oil

Note: Use 46 # anti-wear hydraulic oil

Fill to an appropriate position



(8)
Tighten all screws

Key points of annual maintenance

2. The filter element of the high-pressure filter installed on the oil tank (it can be opened by disassembling the red outer cylinder) shall be replaced at least once a year.

Note: Special filter element, which needs to be purchased separately

(1)
Remove the oil inlet pipe for motor cooling.

(2)
Remove the white cover plate

(3)
Unscrew 4 screws

(4)
Open red outer cylinder

(5)
Take out the filter element

(6)
Change the filter element

(7)
Install the superimposed oil circuit block

(8)
Reinstall the filter element

(9)
Install the white cover plate back

(10)
Install a new oil inlet pipe for motor cooling

Key points of annual maintenance

2. The filter element of the high-pressure filter installed on the oil tank (it can be opened by disassembling the red outer cylinder) shall be replaced at least once a year.

(1)
Unscrew the red nut

(2)
Take out the filter element

(3)
Remove the black top part

(4)
Check if there are debris inside

(5)
Reinstall it after cleaning

(6)
Take the filter element back

(7)
Tighten the red nut

Check and clean the filter element of the oil return filter

Key points of annual maintenance

3. The specified cycle for repeated testing of electrical equipment (fixed equipment) is generally once a year. The testing must be carried out in accordance with applicable electrical technical regulations. In addition, the testing period for all mobile electrical equipment is required to be reduced to once every six months (and records of testing time and date should be made).

Before equipment maintenance, first determine that the power supply circuit is cut off and set up warning signs at conspicuous locations

(1) Test whether there is any electricity with a test pen or multimeter

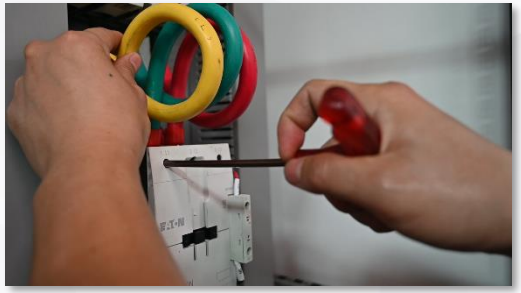
Only after confirming that there is no electricity can subsequent maintenance work be carried out

The operation must be carried out by professional electricians

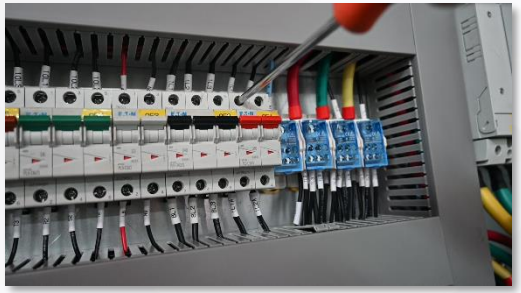
Key points of annual maintenance

3. Check whether the connections of various parts are loose and whether the cables are damaged. For loose connections, tighten them immediately and replace the damaged cables.

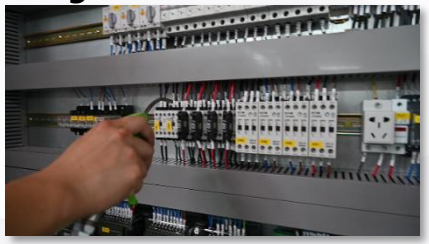
(2) Check whether there are traces of scorching and blackening on the wiring



(3) Check whether the circuit is loose. If there is any loose part, tighten it immediately



The circuits of other positions are checked by the same way



(4) Use air gun to remove the dusts of cabinet

Check to ensure that the air gun is in a dry state before use

(5) Use a vacuum cleaner to suck away the surface dust and impurities

(6) Wipe the inside of the electrical cabinet with a dry rag

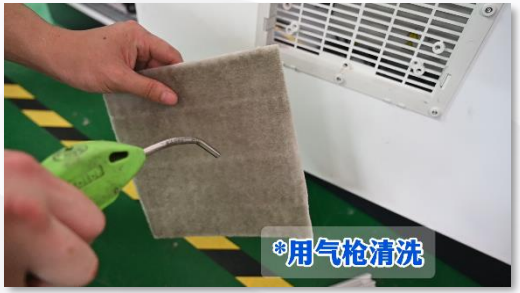
Pay special attention to cleaning the ventilation openings such as fans

Key points of annual maintenance

3. Check whether the connections of various parts are loose and whether the cables are damaged. For loose connections, tighten them immediately and replace the damaged cables.

(7) Observe whether the fan is operating normally during operation. After power off, clean or replace it.

(8) Clean or replace the dust-proof filter at the ventilation

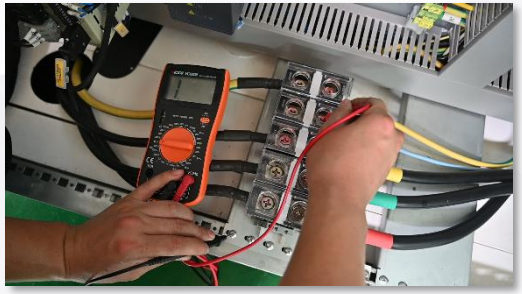


Use air gun to wash

***Replace it regularly**

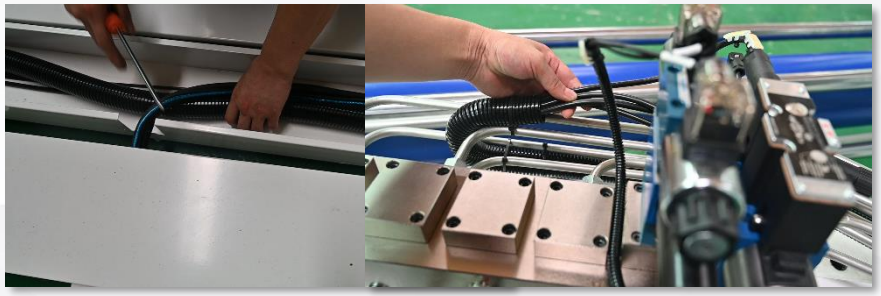
Key points of annual maintenance

3. Check whether the connections of various parts are loose and whether the cables are damaged. For loose connections, tighten them immediately and replace the damaged cables.



(9) After cleaning, use a multimeter to check whether it is grounded

Check and clean the electrical cabinets on both sides of the swing arm in the same way



(10) Check whether the circuit is damaged

Key points of annual maintenance

3. Check whether the connections of various parts are loose and whether the cables are damaged. For loose connections, tighten them immediately and replace the damaged cables.

(11) Clean the dust on the filter and fan of the oil cooler

Clean along the grain

(12) After completion, remove the warning sign and turn on the power

Key points of annual maintenance

4. The general specified period for repeated testing of electrical equipment (fixed equipment) is approximately once a year. The testing must be carried out in accordance with applicable electrical technical regulations. In addition, it is required to reduce the testing period for all mobile electrical equipment to once every six months (and make records of the testing time and date).

The operation must be carried out by professional electricians

5、Test whether there is friction in hydraulic and pneumatic pipelines and replace damaged pipelines. If necessary, eliminate the source of friction. In the absence of obvious safety defects, please follow the recommendations of hose manufacturers and the corresponding applicable standards to regularly replace existing hydraulic and pneumatic hoses.

6. After the machine is transported or handled, all mechanical connections need to be tightened, including all bolts and hydraulic joints.

Attentions

1. For metal debris and the like, please use a vacuum cleaner for cleaning. Do not use rough brushes and high mechanical pressure to clean the film surface.

2. Do not use water spray or high-pressure cleaning machine to clean the mandrel-pulling stretch bending machine.

3. Do not use compressed air to clean the core-pulling stretch bending machine. This may blow dust and other sediments onto the seals and sealing surfaces, thus causing damage.

4. Do not use metal objects such as scrapers or screwdrivers to clean machine tool parts such as piston rods or guide rails.

5. Do not use corrosive cleaning agents, solvents (these will damage seals) or sandpaper for cleaning.

For periodic maintenance or repair of equipment, it must be carried out by professionally trained or authorized professionals. For maintenance of electrical components, devices in the electrical cabinet, and circuits, it must be done by professional electricians.
In case of equipment failure, it is recommended to seek repair from the manufacturer.