

QZD-SK40 CNC re-bar threading machine

user's manual



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Precautions for safe operation of equipment

The following safety precautions should be noted during the operation of the rib stripping and threading machine:

1. Construction workers must carry out technical training, and they can be certified to work after passing the examination.
2. Equipment power supply must have leakage protection device; This machine must have reliable grounding protection to prevent leakage and injury; Power off the device after the device is deactivated.
3. The power should be cut off immediately after the rolling head is rolled to the front limit without stopping the machine, don't use your hands to stop the rolling head from turning.
4. Must not touch any rotating parts during operation, such as: rolling head, clamping pliers.
5. Equipment maintenance must be carried out by special personnel, and repairs and modifications must not be carried out in private.
6. Do not touch any live parts with your hands after turning on the power to prevent electric shock. Do not allow conductive substances such as water to enter the electrical box.
7. The equipment should be stable when moving, loading and unloading, so as not to tip over and hurt people.

一、 Application

Model QZD-SK40 CNC re-bar threading machine is a special equipment for rolling straight steel thread joints, it is mainly used for the processing of straight threaded joints of HRB335 and HRB400 ribbed steel bars of $\phi 16$ - $\phi 40$ mm in concrete structure.

二、 Main features

Model QZD-SK40 CNC re-bar threading machine, adopts digital display screen adjustment, pedal switch starting, servo motor clamping and feeding, rib stripping and threading completed at once. Full tooth shape and high precision. Positive thread and negative thread are available.

This machine is easy to operate, compact structure and reliable operation, with unique feeding and cutter automatic opening and closing mechanism.

三、 Structure

Model QZD-SK40 CNC re-bar threading machine is composed of body, clamping pliers, slide rod, cycloidal reducer, stripping rib rolling head, feeding institutions, automatic opening and closing mechanism, limit institutions, automatic return mechanism, cooling mechanism, electrical control box, control system and so on.

四、 Main technical parameters

1. Processing range: 16mm-40mm
2. Main motor power: 7.5kW
3. Supporting power: 3P 380V/50HZ
4. Spindle speed: 62-80r/min
5. Maximum machining length: 80mm
6. Weight: 500KG

五、 Method of use

(一) Preparation before processing

1. Connect the power cord, the power supply is three-phase 380V/50HZ. Before electricity, the machine box must be connected to the ground wire.
2. The coolant tank should be filled with enough water-soluble coolant (It is forbidden to add oily coolant). The ratio of coolant to water is 1:10, about 12-15 litre.
3. Check whether the moving parts are flexible and check whether the lubricating oil is sufficient.

(二) No-load test

1. Power on.
2. Operate button, check whether the electrical control system works normally, check whether the cooling water pump works normally.

(三) Adjustment of machine

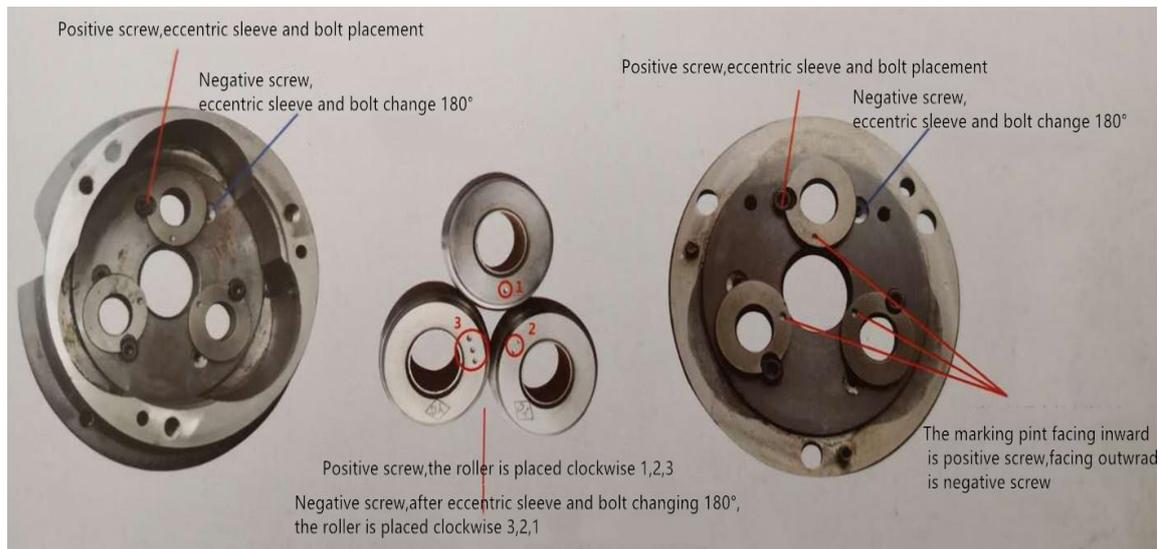
1. Before processing, according to the diameter of the processed steel bar, select and replace the threading roller which is suitable for the processing diameter.

The relationship between the threading roller and the diameter of steel bar is as follows,

OD of thread roller	φ78.3mm	φ70mm	φ64mm
Steel type	φ14mm-φ22mm	φ25mm-φ32mm	φ36mm-φ40mm
Thread pitch	2.5mm	3mm	3mm

(Note: the 75° angle and 60° angle are available)

2. Spiral Angle lifting head, eccentric sleeve and roller arrangement, the following is positive screw arrangement, if you need to process negative screw, the eccentric sleeve and bolt need to be changed 180°, and the rollers need to change to clockwise 3, 2, 1.



3. Tool setting: first loosen the three setscrews behind the rolling head, then loosen 6 positioning bolts, then insert the tool bar that matches the type of rebar to be processed into the center of the rolling head, Turn the eccentric adjustment gear, make the rolling wheel and the tool bar contact, pull out the tool bar, tighten the 6 positioning bolts, then tighten the 3 setscrews, press the ring gear so that it does not move.

4. Release the four positioning screws and rotates freely, the test bar is the the big head, put on the knife rod, rotate the positioning disc to tighten the knife rod, and firmly locate the plate 4 screws.

Introduction to thread rolling machine

The thread rolling machine contains 4 power mechanisms, head rotating motor, head translation motor, clamping motor, water pump, a touch screen, a pedal switch, an emergency stop switch, and an electronic control system.

The head rotating motor drives the three sets of threading rollers in the machine head to make a rotary motion, and the steel bars are stripped and threaded.

The head translation motor drives the threading head to advance and retreat.

The clamping motor drives the clamping mechanism to tighten and relax the steel bars.

The water pump delivers coolant to cool and lubricate when the steel bar is machined.

The touch screen sets parameters such as the length of the thread, and performs self-test and condition monitoring on the machine.

The pedal is a start switch in the automatic state of the machine.

Emergency stop switch, stop the machine in emergency.

The electronic control system inputs three-phase 380V+N (Neutral wire), control three power motors.

Note: The machine box should be reliably grounded.

Main features:

Compared with the traditional manual and pneumatic threading machine, this threading machine is a fully automatic CNC threading machine, removed external detection switch.

High precision, high efficiency, low failure and high reliability. It has a unique advantage for lengthening the thread and the assembly line.

Work flow:

Turn on the power, after the machine self-test, under the automatic interface:

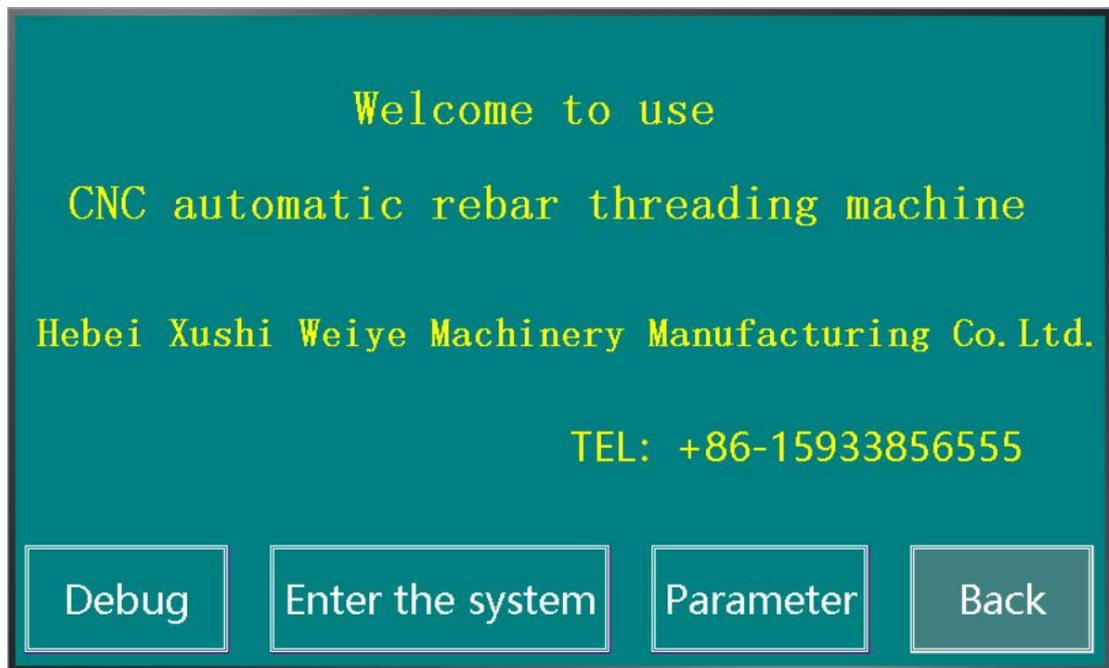
1. First, place the reinforcement bar to the right position.
2. Step on the pedal switch or tap the auto start button on the touch screen.
3. The machine first automatically tightens, then the head rotates and moves forward, stripping ribs and then threading. After the set length, the machine head stops rotating and stops moving forward.
4. The head is reversed and retracted to the origin.
5. When the clamp is opened, the steel bar can be taken out and the machine head automatically moves to the starting position. The process ends.
6. Put in the next rebar. Carry out the next processing.

The operation interface is as follows:

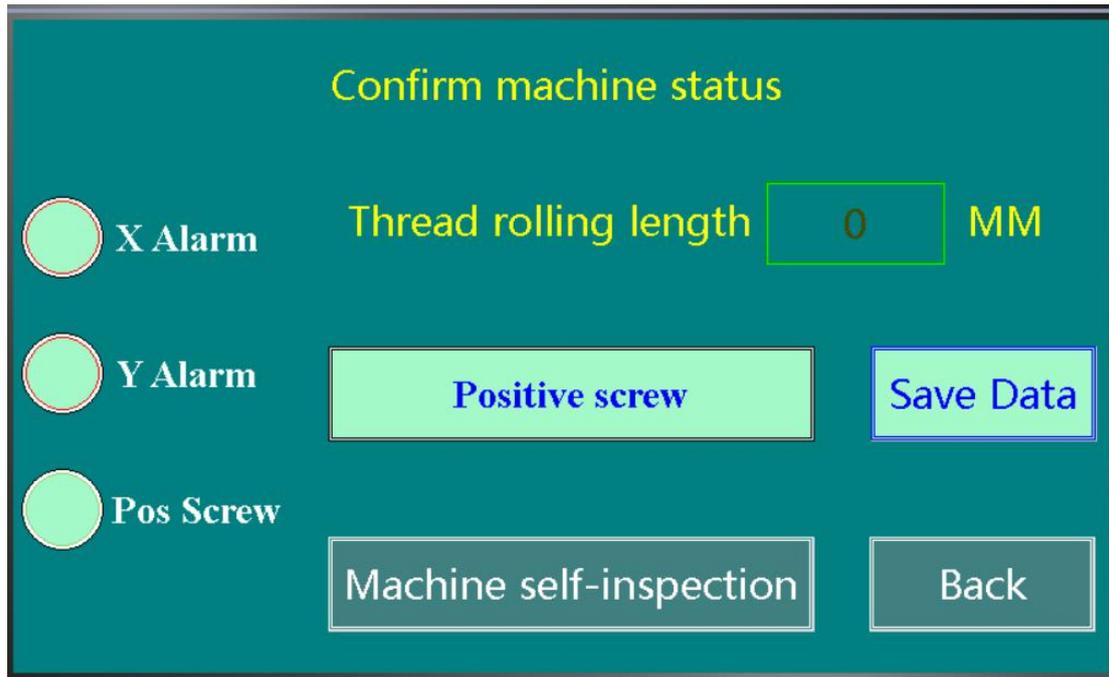
1. Choose “English system” after starting up.



Then you will see the following interface,

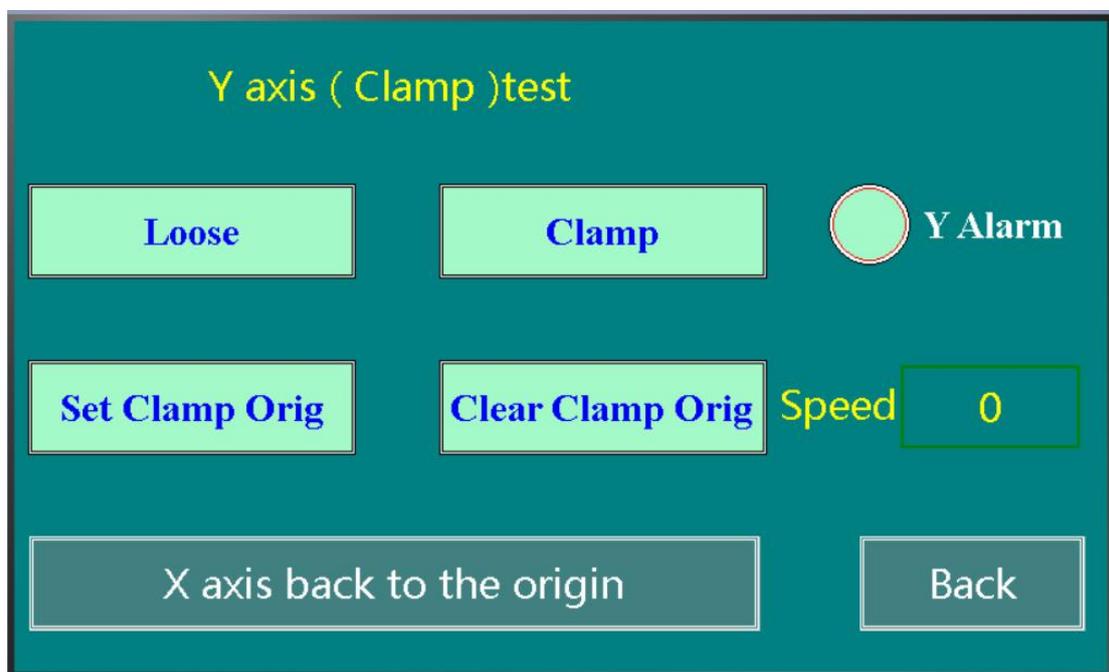


2. Click "Enter the system", enter into "Confirm machine status"



Set thread length in the space as your request, machine default positive screw, if you want change it to negative screw, click "Positive screw".

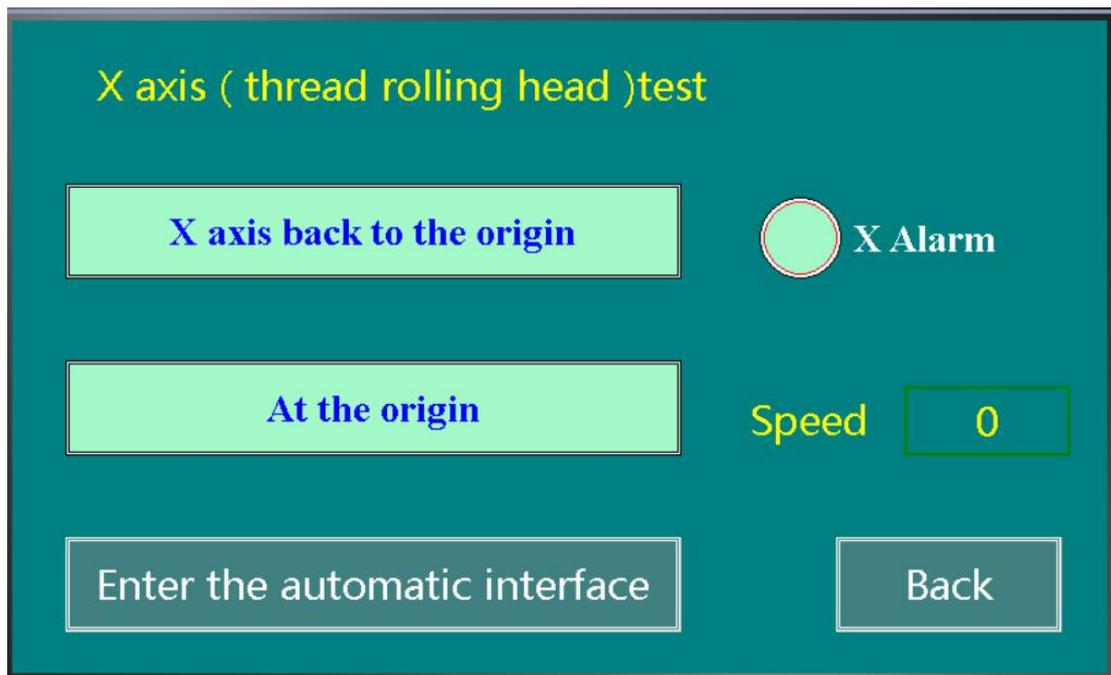
3. Click "Machine self-inspection", enter into "Y axis (clamp) test",



Click "Loose", and "Clamp", the clamping device will have the corresponding action. When the clamping device is at the appropriate opening, click "Set Clamp Orig", this position is the maximum open position you set, when opened to this location, it will automatically stop.

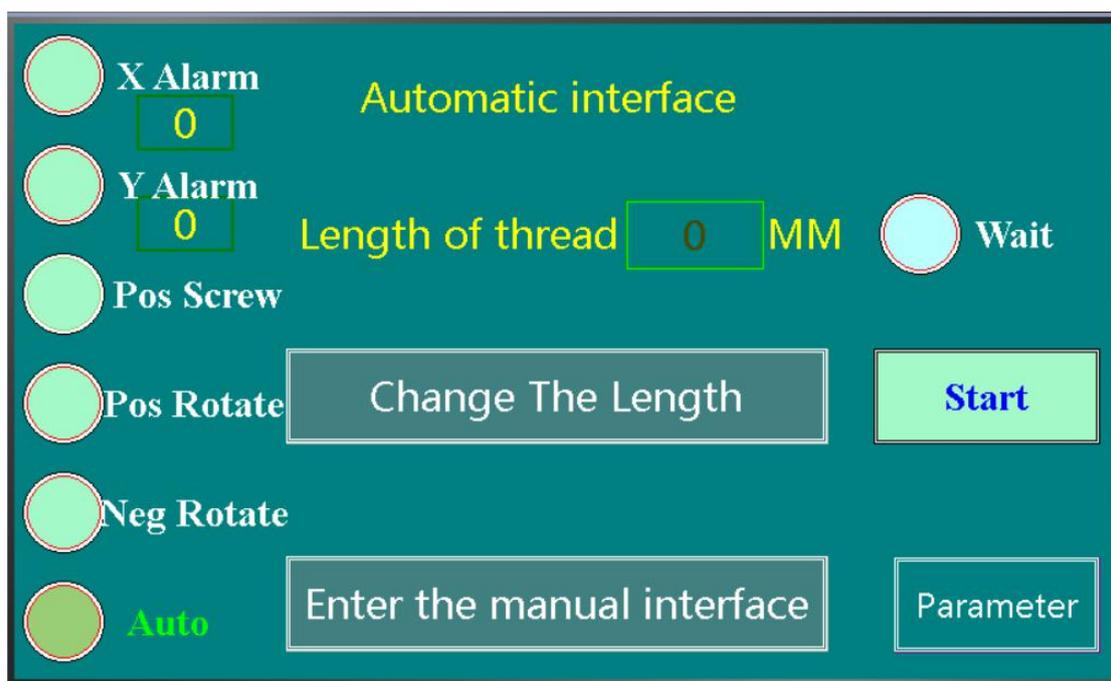
If you want to set the opening bigger, click "Clear Clamp Orig", then click "Loose" to the appropriate opening, click "Set Clamp Orig" again.

4. Click "X axis back to the origin", enter into "X axis (thread rolling head) test",



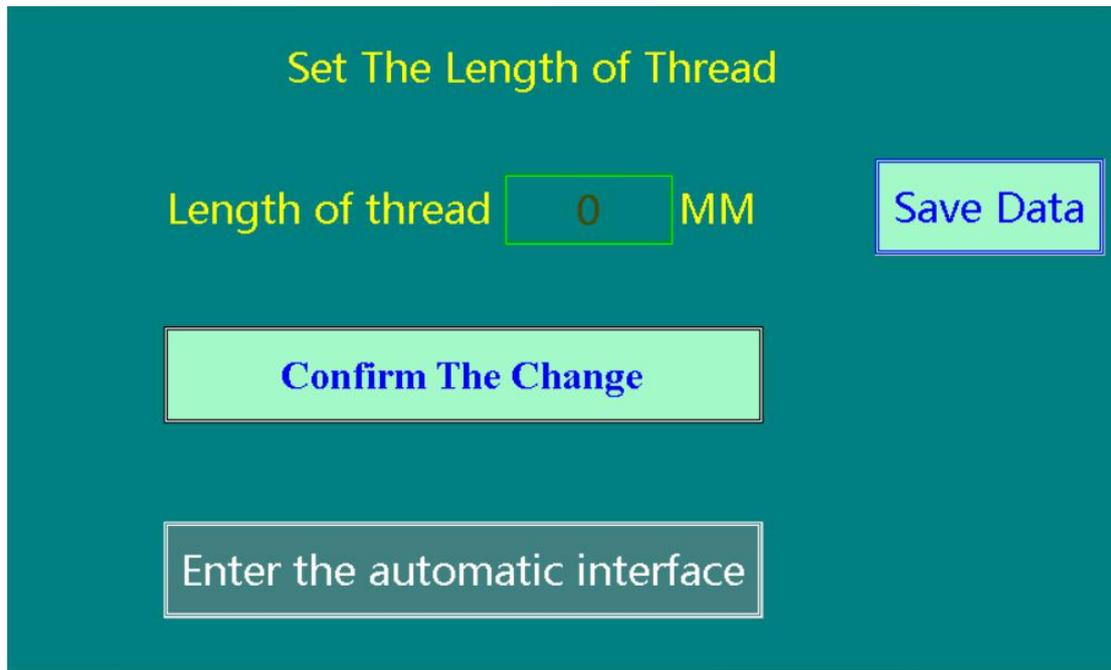
Click "X axis back to origin", the head will move towards the origin, making the head and casing close, after closing, the head will automatically stop moving. When the operator confirms that this action is normal, click "At the origin". If it is not normal, please cut off the power to check whether the machine is stuck by foreign bodies. Do not check the machine under the power on condition to avoid accidental injury.

5. After the machine is normal automatically, click "Enter the automatic interface", enter into "Automatic interface",



Click "Start" or pedal to start processing.

5.1.If the length needs to be modified after the processing,click “Change The Length”,enter into “Set The Length of Thread”,

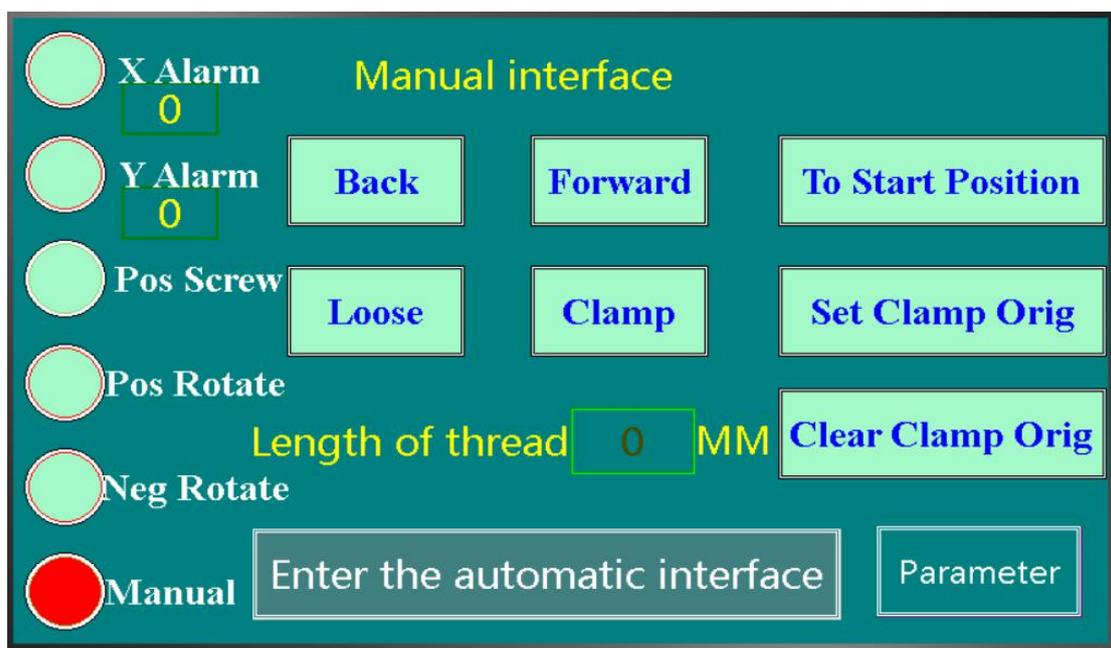


After modifying the length ,click “Save Data”. It will default to this value when it is powered on again.

Click “Confirm The Change”.The head will move to the origin and then to the starting position.

Return to the automatic interface, you can start processing.

5.2 After the processing, click “Enter the manual interface”, you can enter the manual interface.

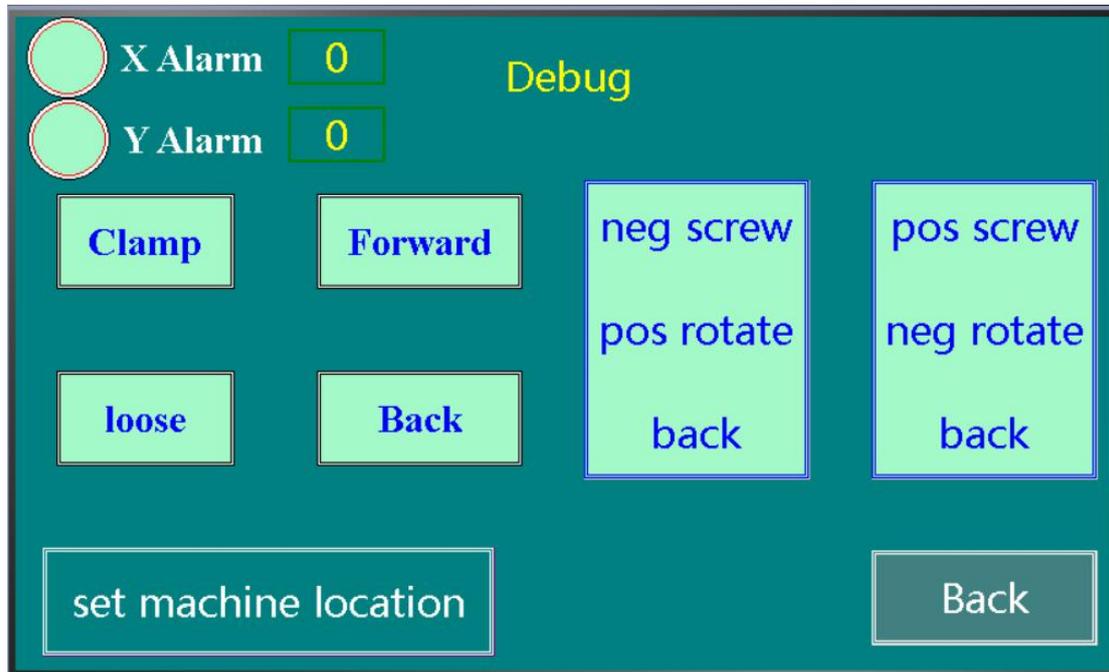


The manual interface can “Forward”,“Back”,,”Loose”,“Clamp”,“To Start Position”. Reset the opening and closing of the clamping device.

6.Factory debugging interface introduction:

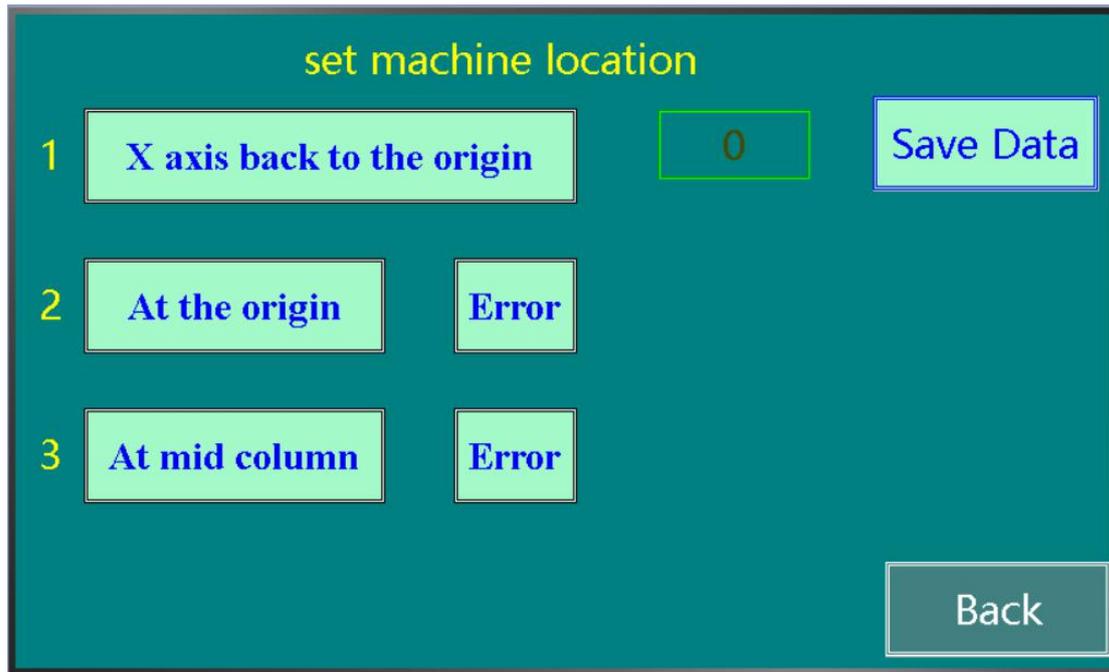
The following is the factory debugging interface, it can “Forward”, “Back”, “Clamp”, and “loose”.

When an accident occurs during the ferrule process, an emergency stop or power failure,this screen can also be accessed after power up.First clamp the steel bar, and clearly whether it is a positive or negative threads,then click the positive back or the negative back, then you can exit the thread.



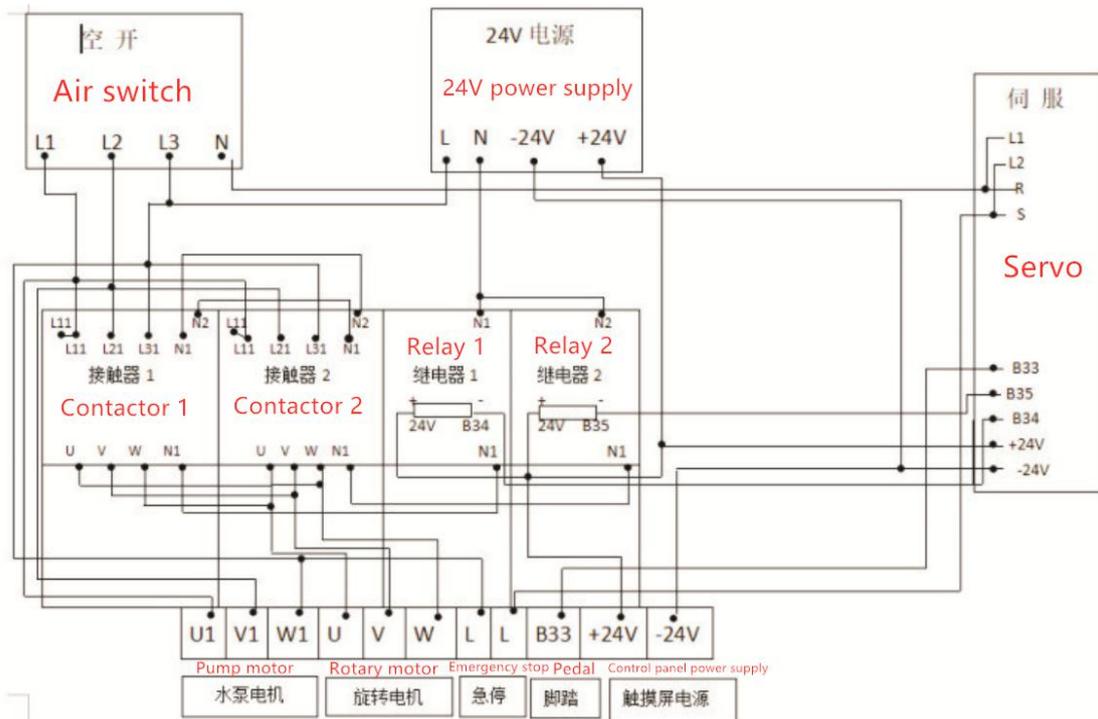
The new machine, or after a period of use, the mechanical positioning device moves, causing the length of the thread to be inaccurate, click “set machine location” to set machine location.

Note: Entering this interface requires a password.



- 1)press "X axis back to the origin"to move the head to the origin.
- 2)press "At the origin" when the head cover completely closes the cutter,
- 3)press "At mid column" when the head cover is just in contact with the middle column.(If steps 2 and 3 are not correct, click the "Error" button and the motor will stop immediately and restart from the first step.)

Wiring diagram



Note: 2 lines of pedal, connected to B33, -24V.

Note: The rotary motor can adjust the rotation direction by adjusting any two lines of U, V, W. The pump motor is similar.