USER MANUAL

Bridge Saw Machine GQ-3220B

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Operating Instructions

[Pay attention]

1. Make sure that the motor and drive are properly installed, firmly fixed, and the power supply and voltage wiring are correct before powering on.

2. During debugging, the motor should be unloaded first, and after confirming that the parameters are correct, then carry out load debugging to prevent damage to the machine caused by incorrect operation.

3. Do not switch on and off the system frequently to prevent damage to the drive.

4. The drive and motor may heat up after running for a period of time. It is strictly forbidden to touch the drive radiator and motor during running and for a period of time after power off!

5. When an accident occurs or the motor does not operate normally, press the emergency stop button immediately, and the machine will immediately stop running!

[Danger]

Even after the drive is powered off, the high voltage will remain for a period of time. Do not disassemble the power cord within three minutes after the power is turned off, don't touch the terminal block.

It is strictly forbidden to disassemble the driver and motor with power on.

The personnel involved in disassembly and maintenance must have corresponding professional knowledge and working ability.

[Four Axis Bridge Saw operation precautions]

1. No matter what speed is required to cut the plate, you must first press the "Motor Start" button, wait until the main motor reaches the speed (hear the Motor sound stable), and then cut the plate, otherwise it may cause machine failure or damage to the saw blade!

2. If there is an error action on the machine, be sure to press 

, or restart the machine, do not disassemble the original parts at will.

3. When manually moving the position of the saw blade, try to maintain a certain time interval between the two operations, and do not operate too intensively, otherwise it may cause the PLC data transmission is not timely, and the driver out of tolerance alarm (ER 020) will occur. If the alarm occur, just power off and reboot the machine!
4. If the work is stopped due to a fault or power outage during the cutting process of the machine, the tool must be re-set after restarting the machine!

5. When the machine working table is flipped, the head must be at the right rear, otherwise it will hit the machine head!

6. When the machine arrives to install, the 4 overtravel-limit switch stoppers in Y direction should be installed on the outside.

7. Please don't forget to add hydraulic oil for the Bridge Cutter!

8. Before the machine is ready to cut, please check the state and various parameters of the Bridge Cutter to avoid unnecessary errors (e.g. damage to the saw blade), and then cut after confirming!

9. If the machine head does not return to position due to misoperation, enter the "System Settings" interface, open the "angle adjustment" function, and manually put the head back!

1. Instructions

(The screen displayed on the control panel when the machine is powered on)

1.1 Cut slab

When preparing for sheet cutting, select the function 

of the control panel, the control interface is as shown above.

The text displayed in the red box represents the current state of the machine.

After entering the 

:

: Blade thickness compensation can be added here (first the original thickness of the blade is entered before cutting, if the cut out size is bigger, minus the extra size on the basis of the blade thickness; if the cut of size is smaller, plus the extra size on the basis of the blade thickness.

1.1.1 When the function is shown as 

and the blade is in a state of 0 degree, the machine cuts forward (X).

When the blade is in a 90-degree state, the machine cuts to the right (Y).

1.1.2 When the function is shown as 

and the blade is in a state of 0 degree, the which cuts backward (x).

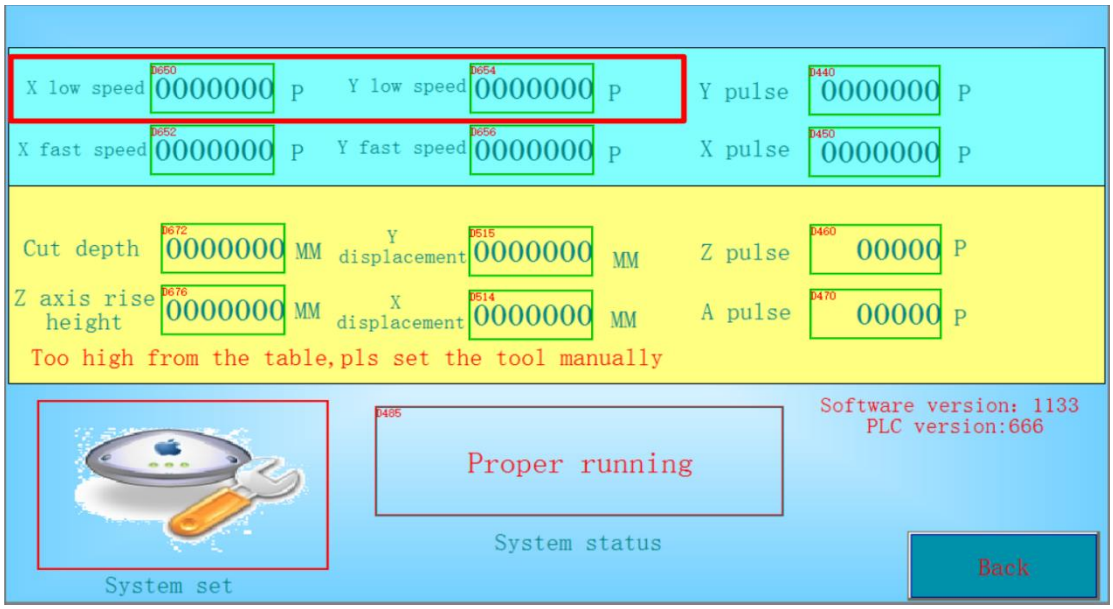
When the blade is in a 90-degree state, the machine cuts to the left (Y).

(The blade is close to your direction for the forward cut direction, away from your direction for the backward cut direction)

1.1.3 When the function is shown as 

, the X and Y axis of the machine is running the **slow speed** value set in 

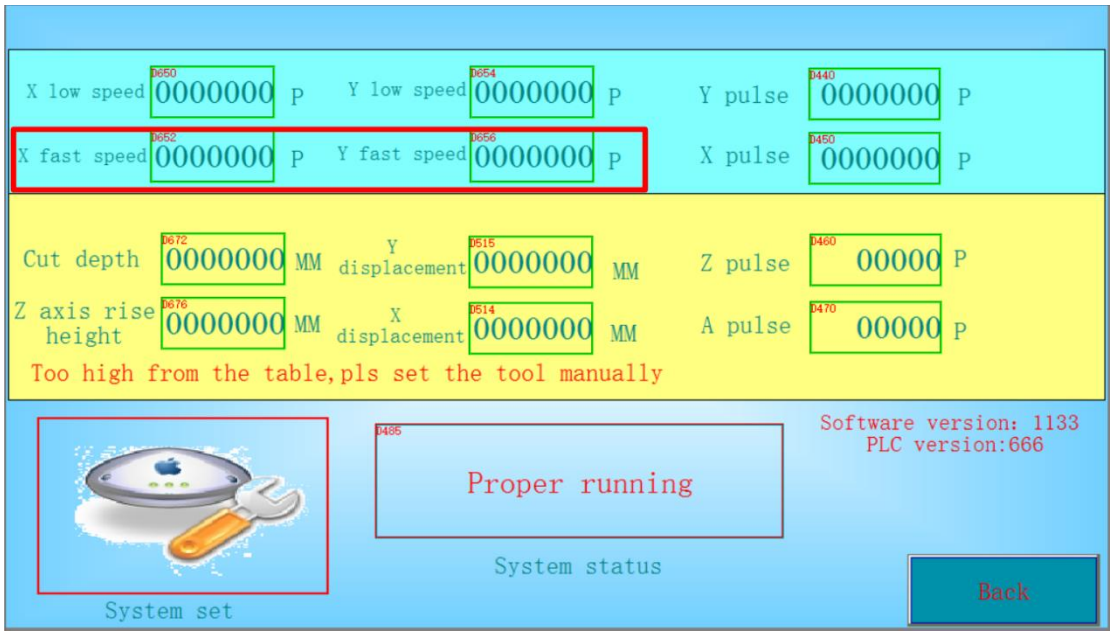
, as shown in the following image below.



1.1.4 The function is shown as 

, the X and Y axis of the machine is running the **slow speed** value set in 

, as shown in the following image below.

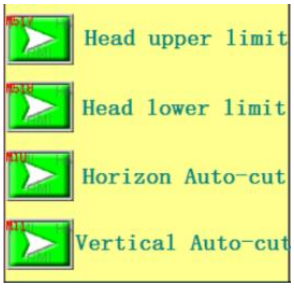


1.1.5 The interface of the 

, 

the higher the input speed of the x-axis and the y-axis when cutting the sheet, the higher the value entered, the faster the feed speed, adjust according to the hardness and thickness of the board. (The maximum limit is 40)

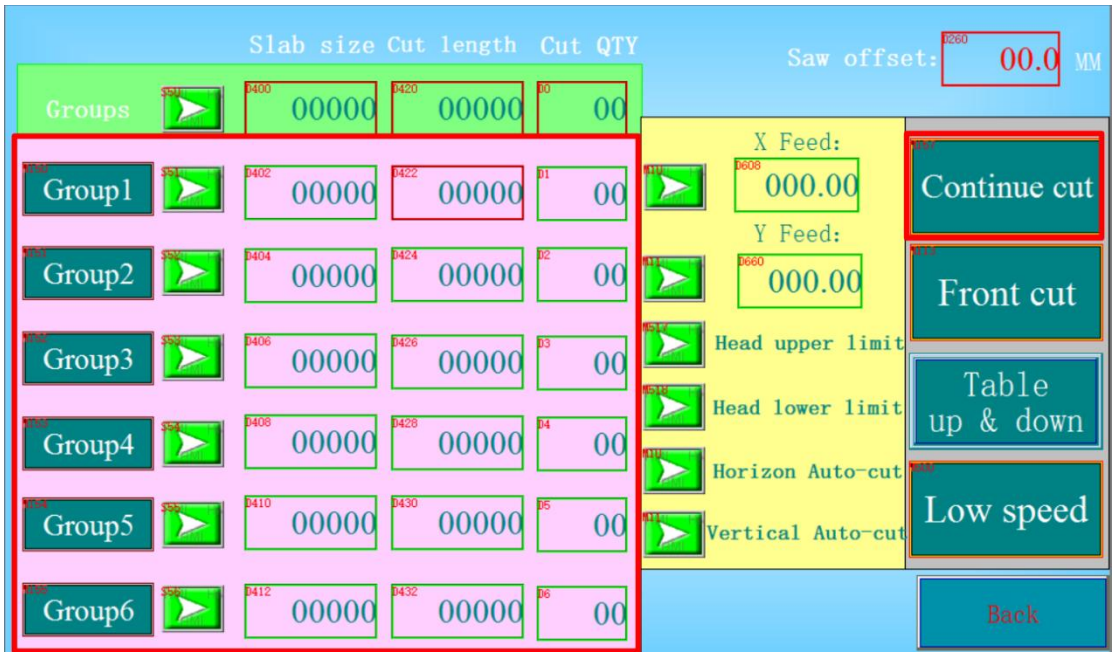
1.1.6 Interface of the 

, 

is the current state of the head, when 
change to 
, this indicates that the head is currently in its current state.

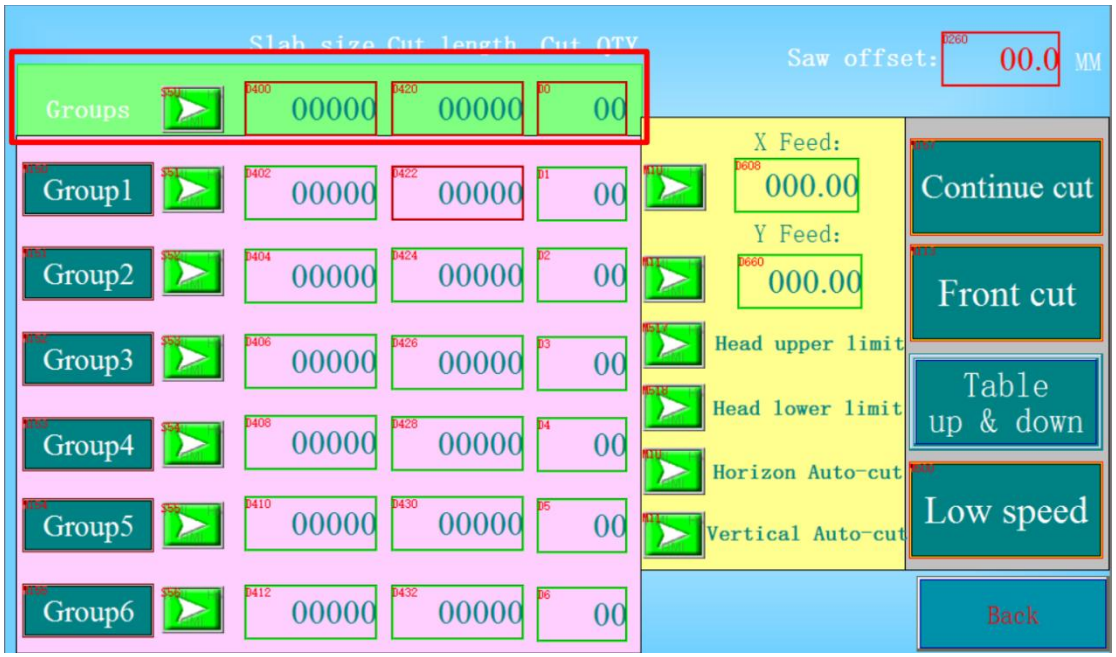
1.1.7 When function is shown as 

As shown in the following image:



In the state of continuous cutting, the machine only cuts the size displayed in the pink area. If the quantity of cut pieces is 0, the system will skip this group automatically.

1.1.8 When the function is shown as 



In the state of a single-group cutting, the machine only cuts the size displayed in the green area of the first row.

When single group cutting is needed, you can set the required data in the box of each group first, and then click on which group you need.

For example, we need the data of the second group, click, and the second group of data will be displayed in the red box in the first row, at this time, single group cutting will only cut the data of the second group.

Note: Slabs cannot be stacked.

1.2 45-degree chamfered cut usage

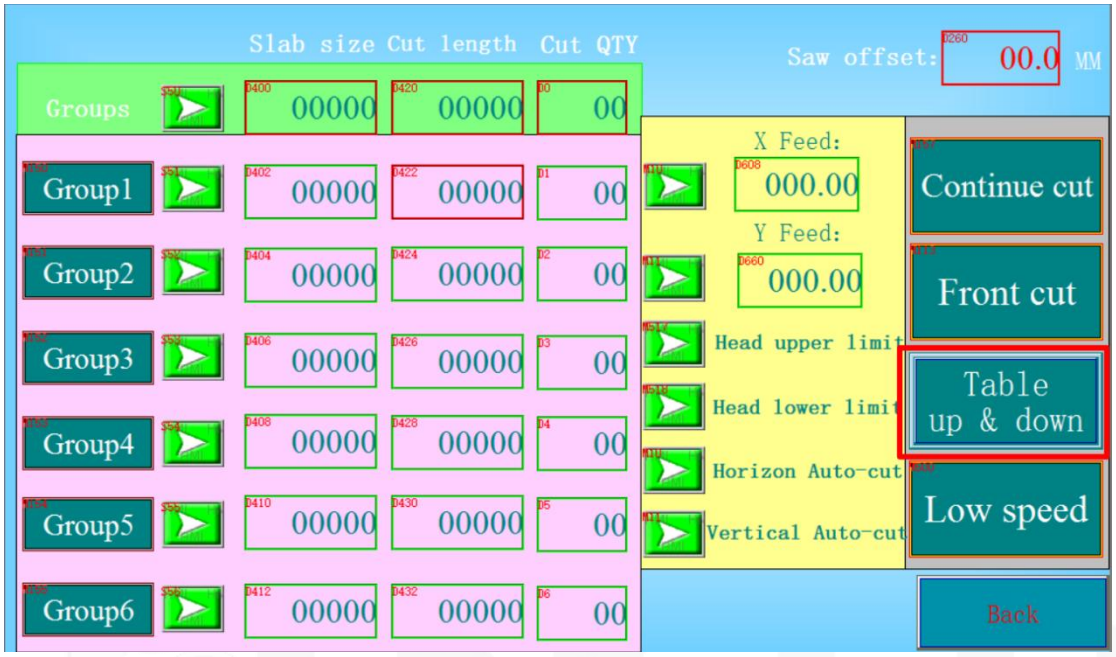
Raise the machine head to the highest position, turn the 0^0- 45^0 switch on the side of the control panel to the 45^0 direction, then the head of bridge cutter will go to 45^0.
Setting blade: click “Start”, enter “Cut Slab”----- “Table Up & Down” ------ “Down”, and then drop the head down to the position where it can cut the working table.

If you only need to cut one knife: “ 

”----- “single group cut”, the cutting length will be set a little longer, the naked eye to see the saw blade cut through slab, just press stop manually.

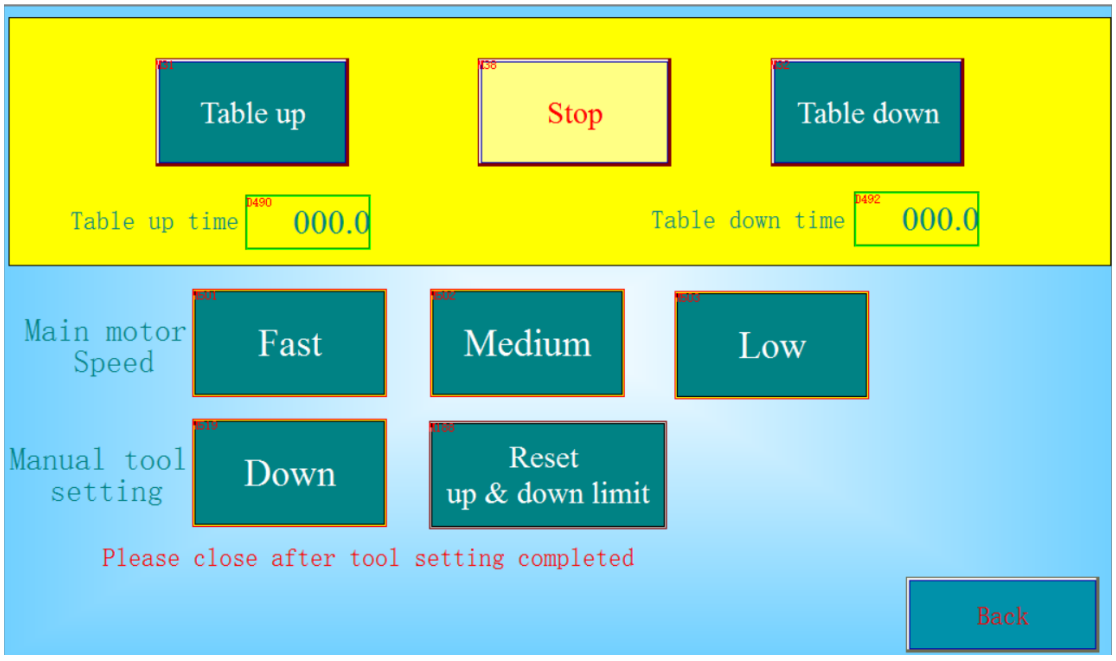
Attention: The 45^0 chamfering tool set should be distinguished from the straight-cut tool set.

1.3 Table Up & Down



When preparing to lift the working table, select " 

"--- 

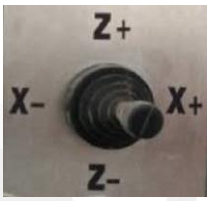


1.3.1 In the interface “Table Up & Down”, 

means three options of main motor speed, according to the thickness and hardness of different slabs, select different speeds (this function is only applicable to the machines with inverters; slow speed is 3000 rpm, medium speed is 3600 rpm, fast is 4500 rpm).

1.3.2 In the interface “Table Up & Down”, 

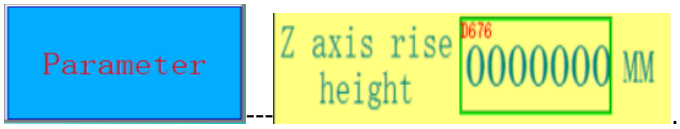
is mainly used for tool setting before cutting. Firstly, click 

, at this time, the Z axis of the machine can only move downward, then slowly click on the "Z-" lever 

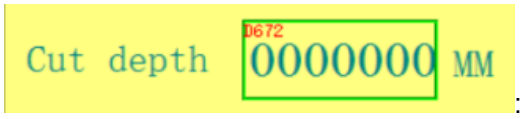
several times, lower the saw blade to the position just cut to the table, and the blade setting is completed, close 

.

Raise the head, the lifting distance is determined by



.



: This parameter is used to compensate for the wear of the saw blade. It is cleared before setting the parameters. Assuming that the depth of the cutting board is set to 1MM and the rising height of the Z axis is set to 20MM, the cutting depth of the Z axis is 21MM at this time. The depth of the lower cutting board is set to a few millimeters, and the depth of the Z-axis lower knife will drop a few millimeters from the original foundation. Therefore, when setting the parameters, make sure that there is no problem before cutting to prevent damage

to the saw blade!

1.3.3 In the interface “Table Up & Down”, 

means: If the machine has an error action, click 

then the lower limit of the Z-axis will be reset to zero, and the machine will be ready to normal operation.

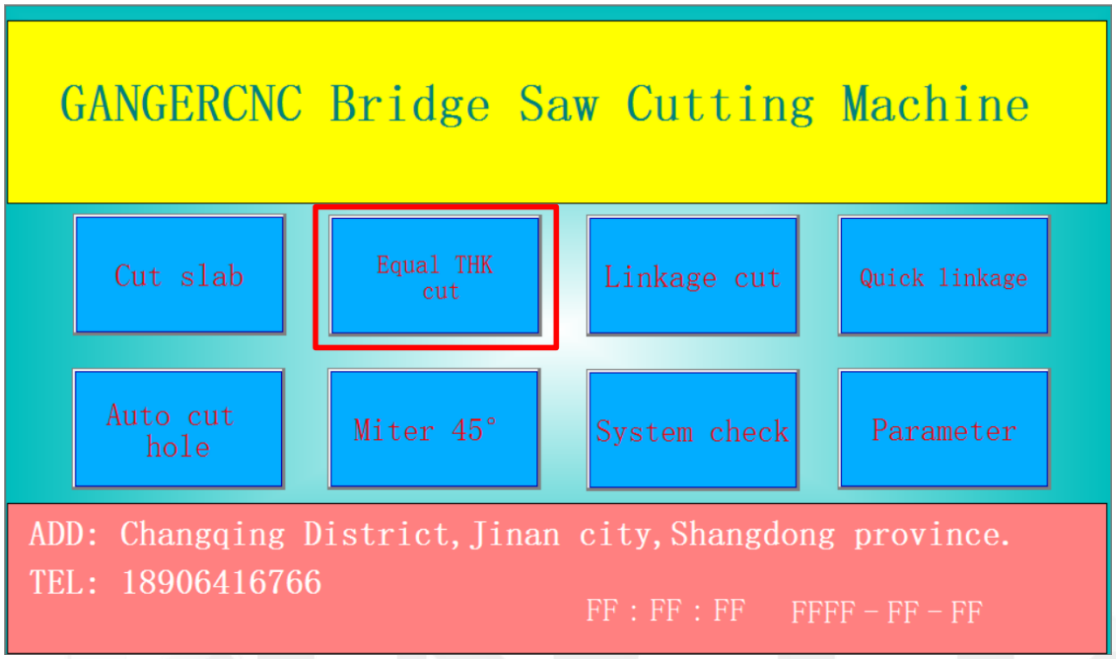
The use of “ 

” :

the platform to be raised, click 

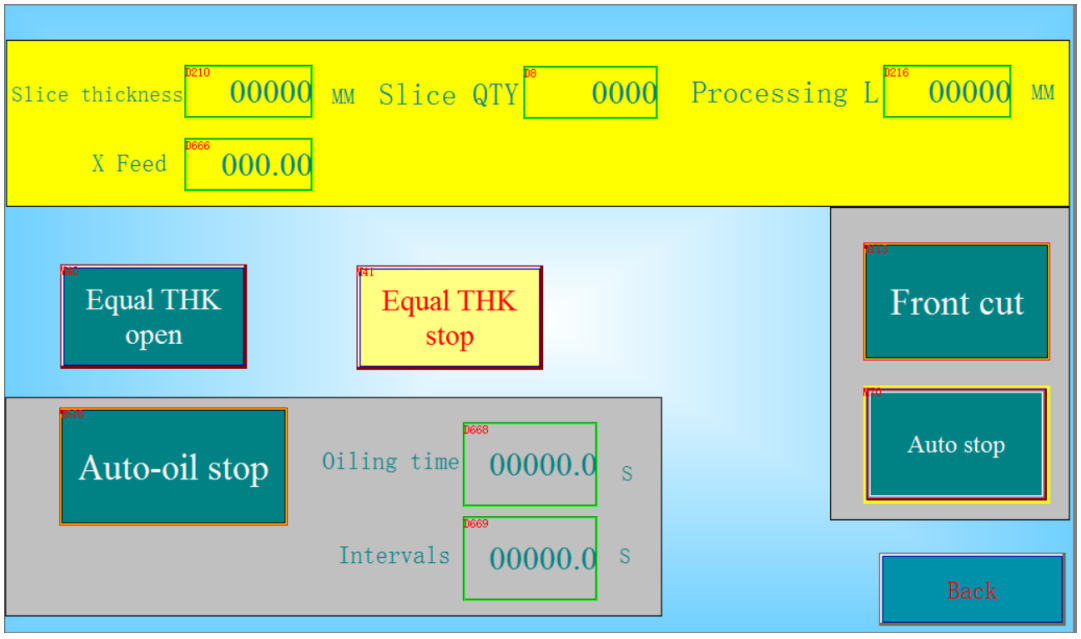
the platform to be lowered, click 

2. Equal thickness cut (Used for milling table)



Select 

from the main function interface, as shown in the above picture.

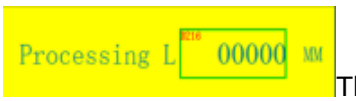


2.1 

means：At least ensure that the degree of coincidence is about 20%. For example: The thickness of the saw blade is 25mm, enter 20, and there will be a coincidence of 5mm for each cutting.

2.2 

The entered value indicates how many tools are milled in total. (Divide the width of the table by the thickness of the slice to get an approximate value)

2.3 

The entered value indicates the length for each milling tool.

2.4 

The entered value indicates the speed for milling.

2.5 When function shown as 

, and the blade on 0 degree, the machine will cut forward; when the blade on 90 degree, the machine will cut backward.

2.6 When function shown as 

, and the blade on 0 degree, the machine will cut backward; when the blade on 90 degree, the machine will cut left.

Instruction： After the tool setting is completed, move to the starting point. After input all data, click 

, the machine start milling table.

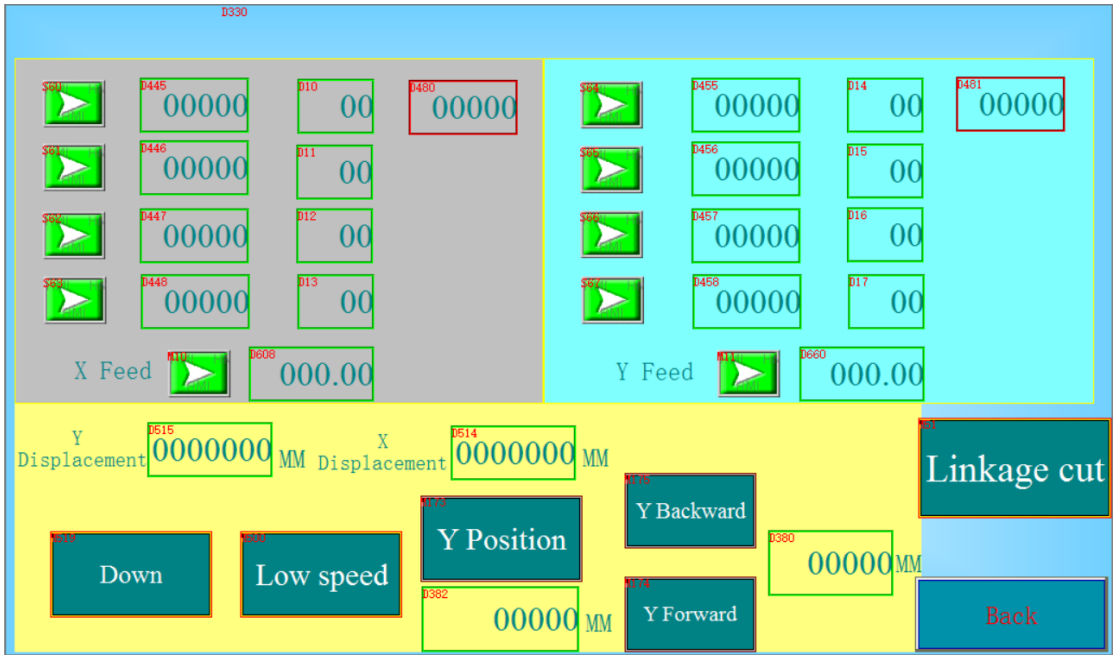
After milling completed, click 

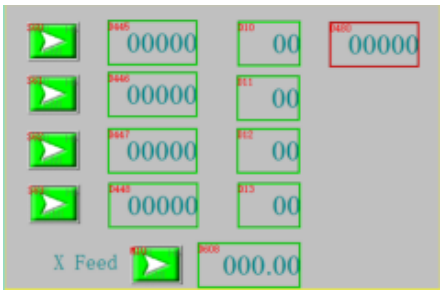
, machine stop.

3. Linkage cut

Select 

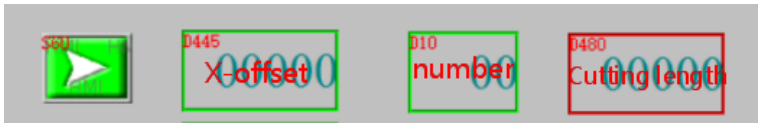
, as shown in the above picture.



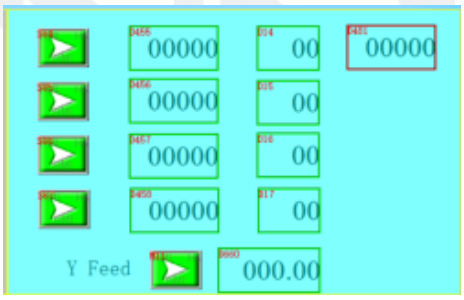
3.1 The interface of 

means: X-axis cutting parameter setting interface.

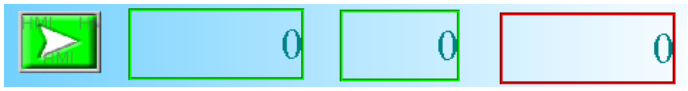
those three group data means:



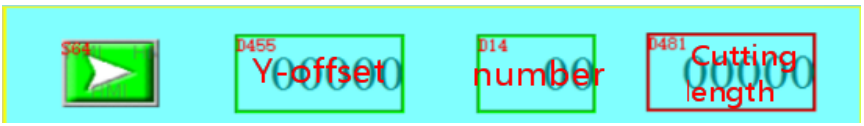
means: X axis cutting speed.



3.2 Linkage cut interface, the interface of means: Y axis cutting parameter setting interface.



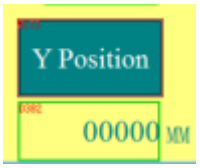
those three group data means:



means: Y axis cutting speed.

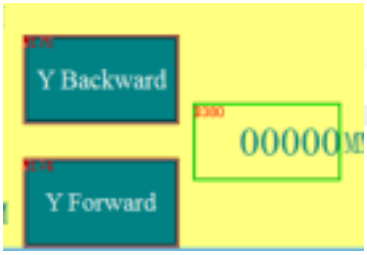
means: After slab is placed on the table, the distance between the saw blade and the edge of the board to be offset in X direction.

means: After slab is placed on the table, the distance between the saw blade and the edge of the board to be offset in Y direction.



After input the size in the box, click 

The X beam will automatically go to the specified position.



input the size in the box, click 

，The X beam will move back the specified distance, click 

,The beam will move forward the specified distance (The maximum value can be set to 200)

: Mainly used for tool setting before cutting; lower the saw blade to a position close to the table before cutting the slab, and then click 

, now the Z axis can only move downward. It is the same as the drop selection function in the platform lifting interface. Same as the function of 

in the interface of 

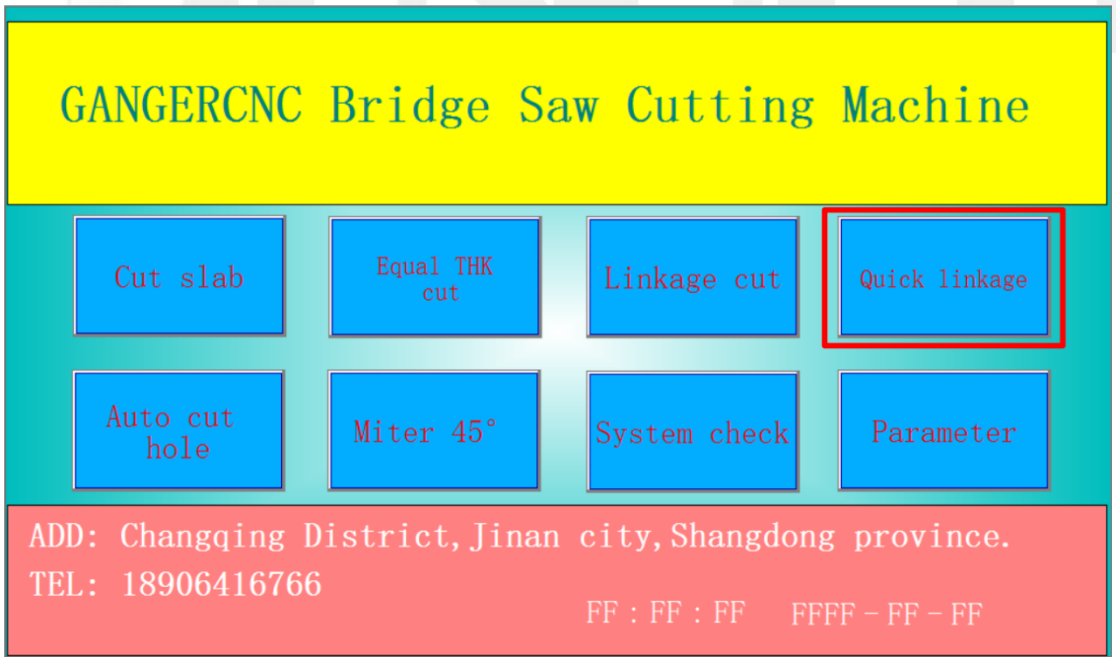
, so there is no need to switch the interface repeatedly.

Same function like the **low speed** in **Cut slab**，Put this function here for easy operation, no need to switch the interface repeatedly.

Instructions: After input all the cutting data of X axis and Y axis, click 

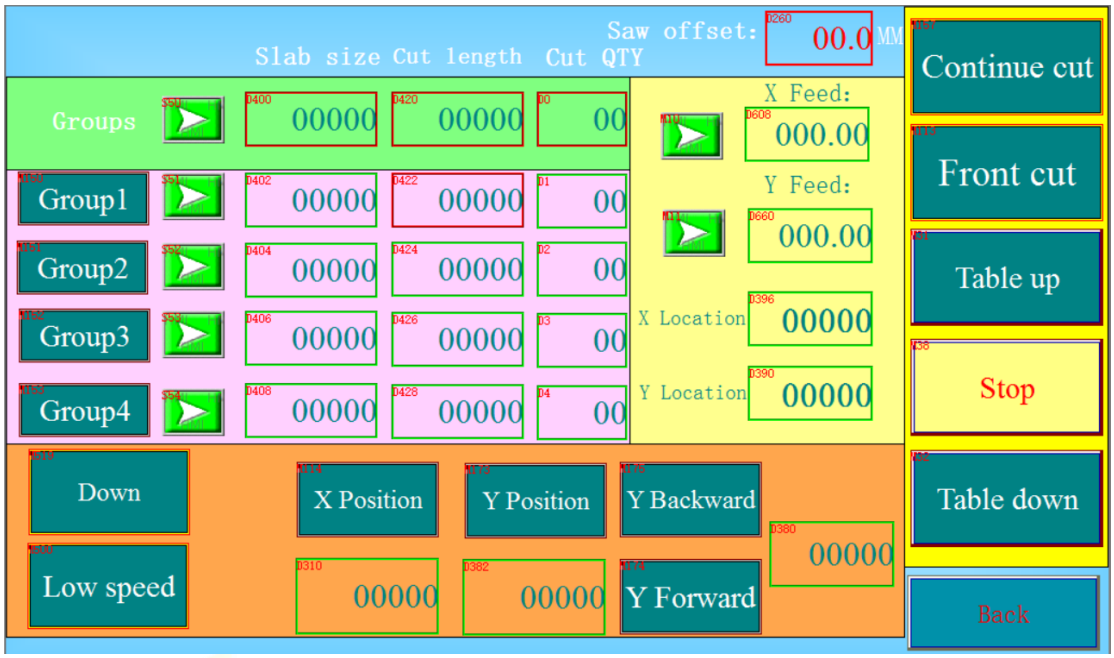
, The machine starts work automatically. After the cutting is completed, the head automatically raise.

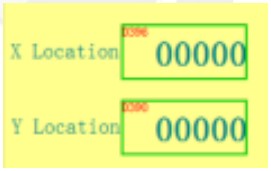
4. Quick linkage



Select 

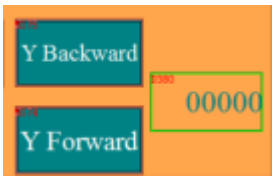
from the main interface, as shown in the above picture.





4.1 The current X-axis and Y-axis current positions are displayed in the box, which is for reference to

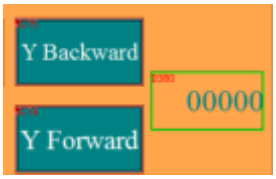
and



4.2 

Input size in box, and then click 

, The X beam will automatically go to the specified position.

4.3 

Input size in box, and then click 

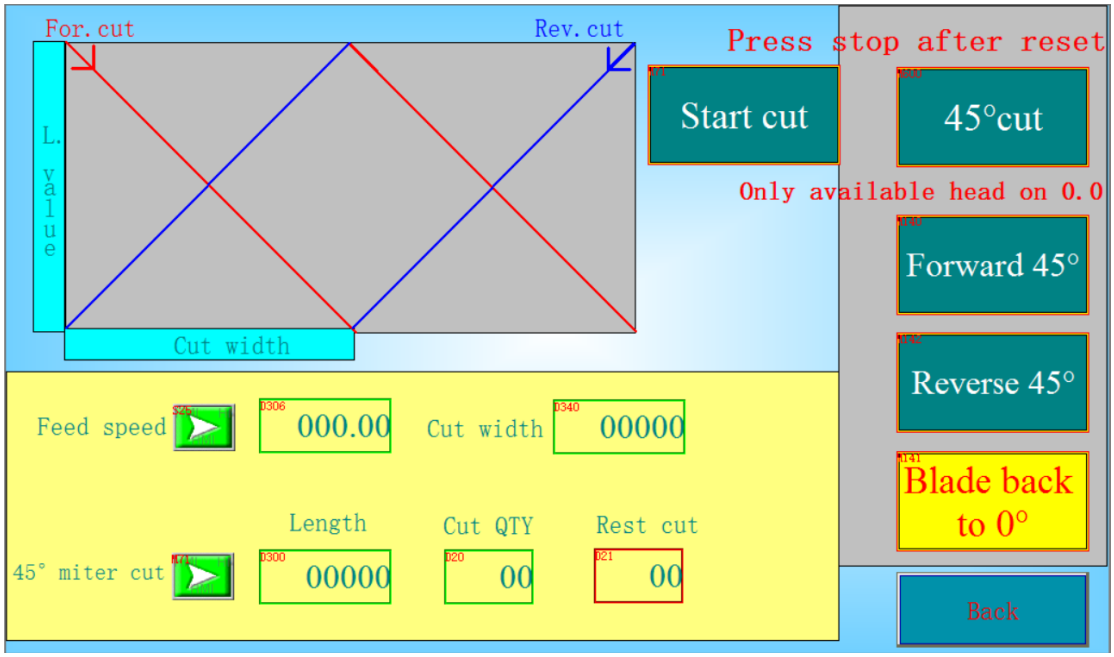
, The X beam will move back the specified distance, click 

, The X beam will move forward the specified distance, the maximum distance is 200.

5. Miter 45°

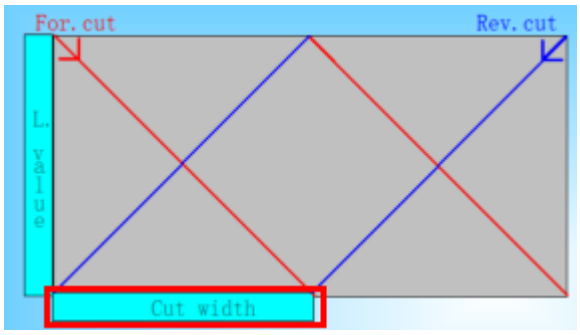
Select 

from the main interface, as shown in the above picture.



5.1 

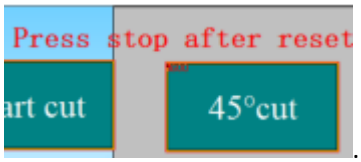
means the width of forward cutting and reverse cutting can be cut, as shown in the figure below.



5.2 

means: The length of the straight side of the slab, the input size can input little larger, to avoid can't cut through the slab.

Instruction:

Input all datas required for cutting, confirm that the machine head is at 0° position and click 

.

If need forward 45° cut, click 

. If need reverse 45° cutting and when the head at 45°position, you have to return the head to 0° first, click 

to make head back to 0° position.

After the head back to 0°, click 

, after cutting completed, click 

, and then click 

to closed this function.

All operations must be in 

shown 

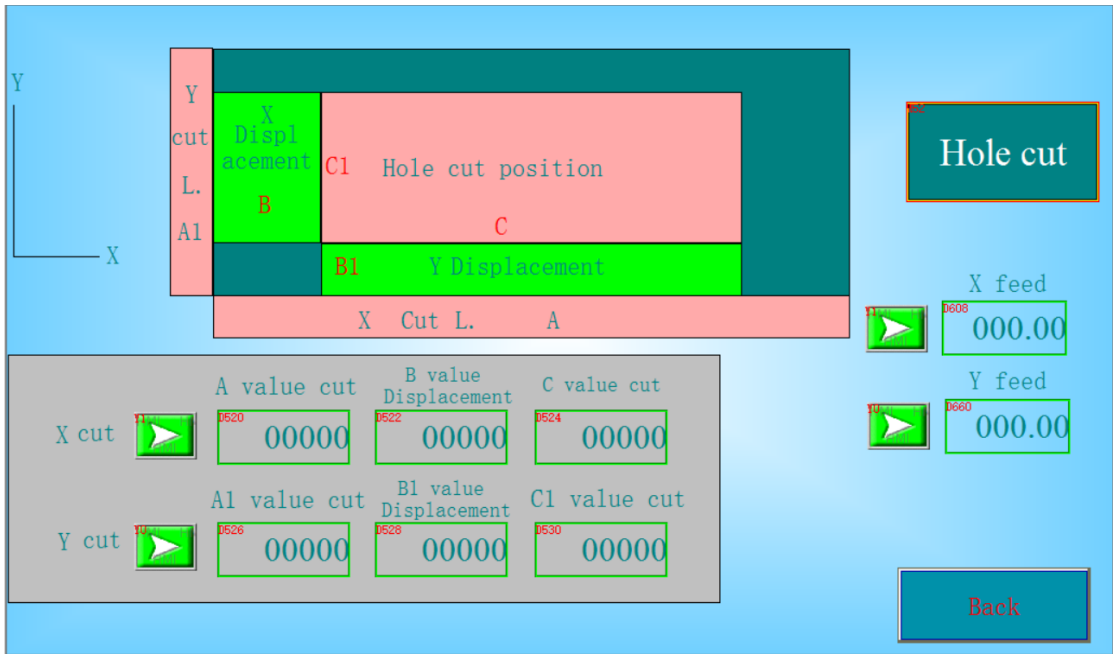
, If you directly turn the blade to 45° without first clicking 45° cut, then the blade will not be able to turn to 90 °, at this moment, you must first click 45° cut, when it shows Start, then back the blade to 45° position.

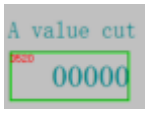
[Pay attention]

If the machine accidentally turns off the 45° cut when the blade is in the 45° position, the blade cannot be automatically returned to 0° position at this time, and the blade can only be manually return in the system setting interface.

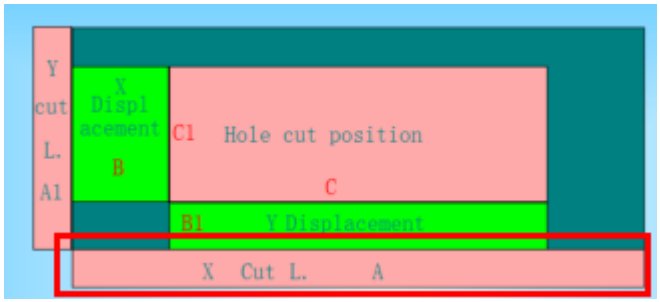
6. Auto Cut Hole (Under Developing)

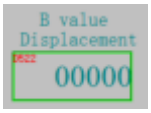
Select  in the main interface, as shown in the above picture.



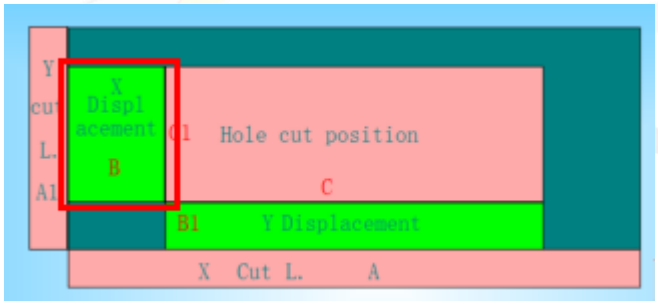
6.1 In the interface “Auto cut hole”, 

of the “X cut” means X axis cutting length A, as shown in the picture below:



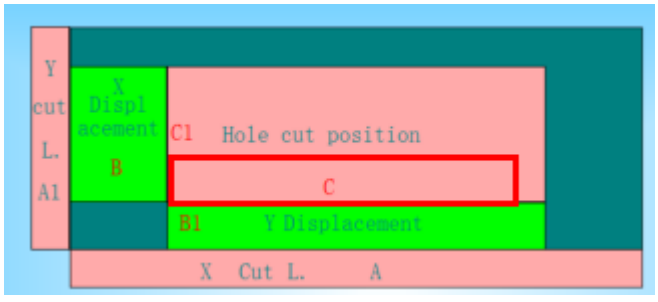
6.2 In the interface “Auto cut hole”, 

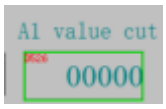
of the “X cut” means the X Displacement distance from A1 to C1, as shown in the picture below:



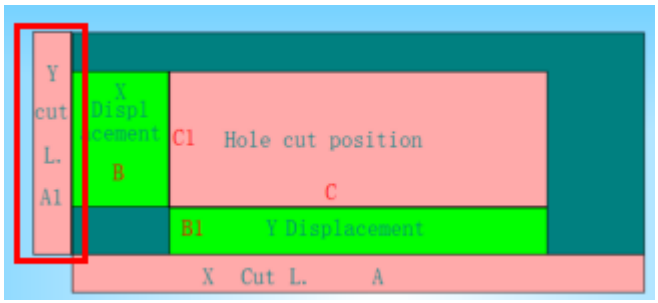
6.3 In the interface “Auto cut hole”, 

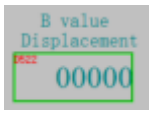
of the “X cut” means Cutting hole Length C, as shown in the picture below:



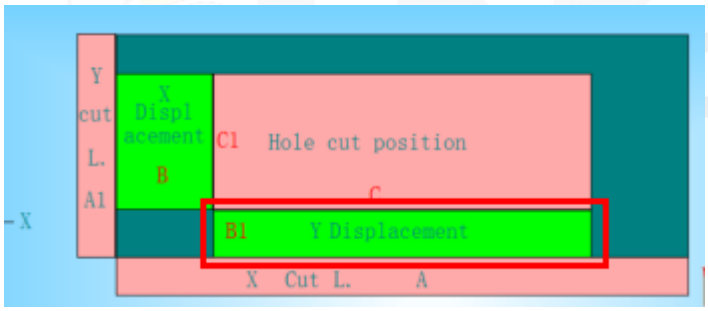
6.4 In the interface “Auto cut hole”, 

of the “Y cut” means Y axis cutting length A1, as shown in the picture below:



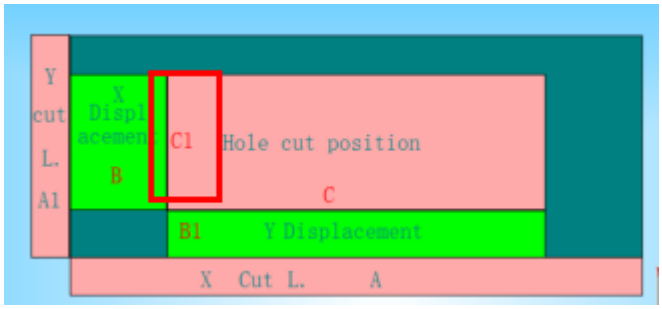
6.5 In the interface “Auto cut hole”, 

of the “Y cut” means the Y Displacement distance from A to C, as shown in the picture below:



6.6 In the interface “Auto cut hole”, 

of the “Y cut” means Cutting hole Length C1, as shown in the picture below:



The use of 

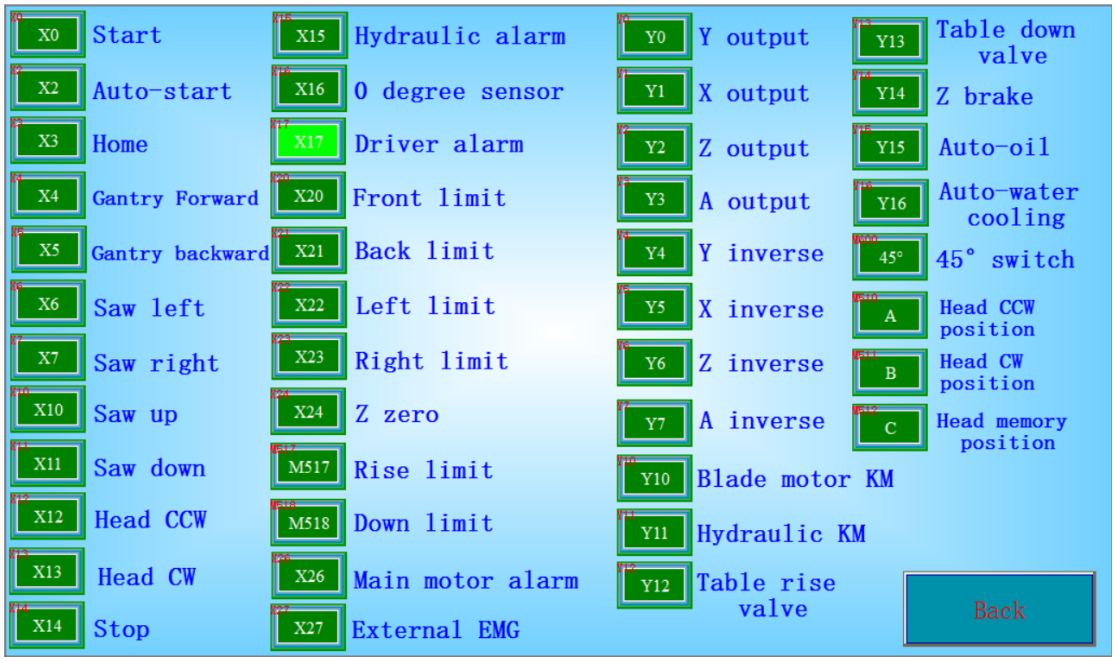
: after entering all the data required for Auto Cut Hole, click 

. Stop after the board is cut.

7. System Check

Select 

in the main interface, as shown in the above picture.

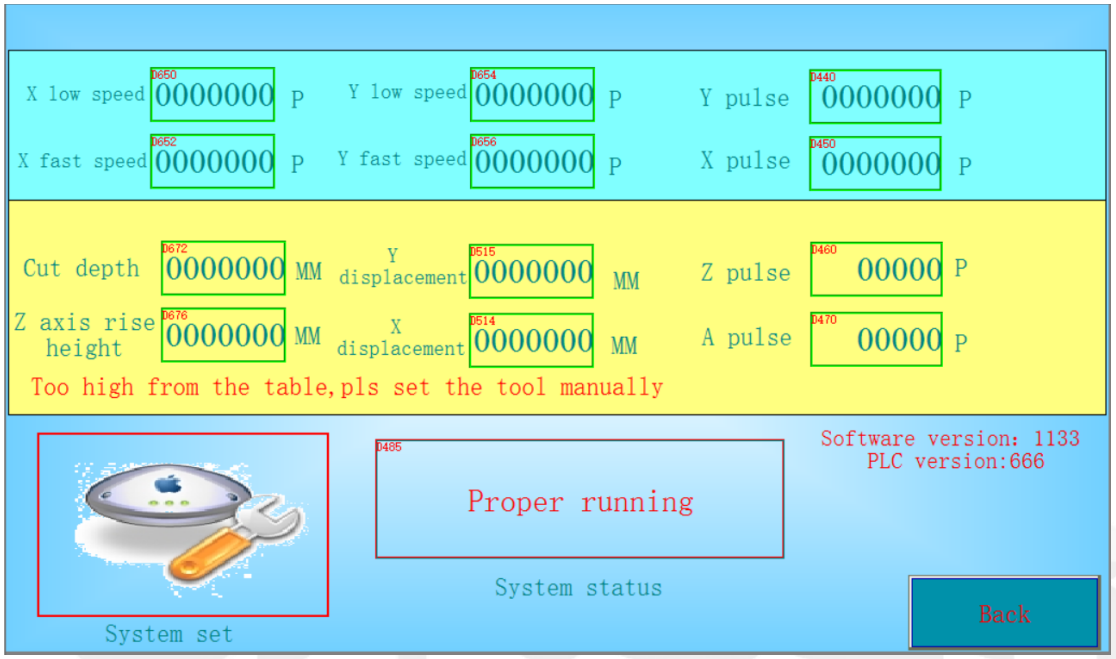


System check is mainly used to check the status of the machine. If the machine is faulty, you can check the machine based on the feedback of the system.

8. Parameter

Select 

in the main interface, as shown in the above picture.

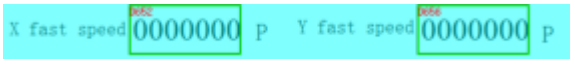


8.1 In the interface “Parameter”, 

means the moving speed of the machine at 

, please refer to the instruction of 

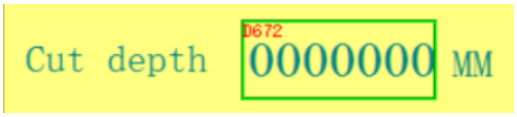
on page 4 for the details.

8.2 In the interface “Parameter”, 

means the speed of X axis and Y axis of Bridge Cutter at 

, please refer to the instruction of 

on page 5 for the details.

8.3 In the interface “Parameter”, 

means to compensate the offset of the saw blade wear, clear it to zero before tool setting each time. When the number in this box increases by 1mm, the cutting depth will increase by 1mm from the current depth.

8.4 In the interface “Parameter”, 

means: when the machine 

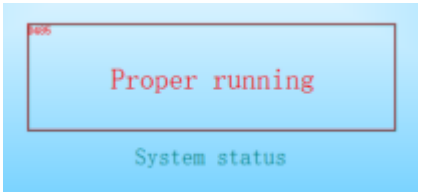
is closed, the distance of the machine head rising and falling each time.

8.5 In the interface “Parameter”, 

means after the slab is placed on the table, the distance between the saw blade and the edge of the board to be offset in X direction.

8.6 In the interface “Parameter”, 

means after the slab is placed on the table, the distance between the saw blade and the edge of the board to be offset in Y direction.

8.7 In the interface “Parameter”, 

the current status of the machine is displayed in the red box.

Problems that the Bridge Saw Machine may encounter in practical cutting

1. The elevation of the cut sheet is not vertical and has gaps.

Reasons:

(1) The speed maybe is too fast.
(2) The saw blade used is not suitable.
(3) The verticality of the machine head is deviated.
(4) The working table platform did not drop in position.
(5) The head did not reach the 0 degree limit.

Solution:

(1). Adjust the feed speed to 15 or so, preferably not exceed it, the best effect is 10 (processing speed).
(2). Make sure the working table platform is lowered into position and the machine head reaches the limit of 0^0.
(3). The machine head is used for metering to ensure 90 degrees, verticality detection and fine adjustment.
(4). Confirm that the machine head reaches the limit of 0 degrees, and there is no gap between the machine head and the hard limit.
The newly purchased saw blade should be polished several times with refractory bricks to remove the spikes.