CNC boring machine manual ver20.09.19

First of all, thank you for choosing our products!

This operation manual describes in detail the installation and use of the six-sided boring machine, precautions and maintenance, common failure analysis, and simple processing skills. Please read this manual carefully before operation. If you have any questions, please contact the local dealer to solve them. Do not use the disassembly equipment without authorization. Please keep this manual for a long time for future maintenance and repairs.

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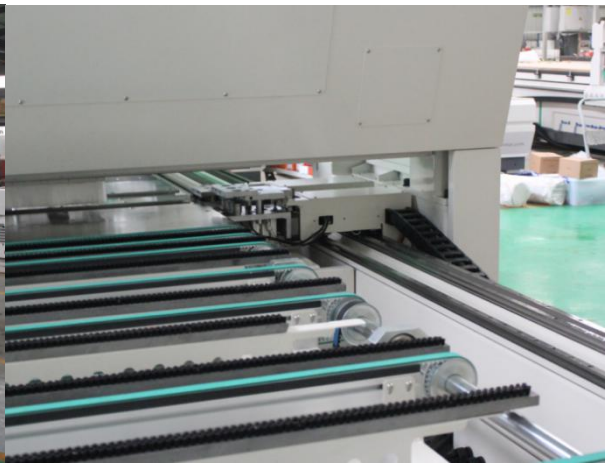
1. Machine placement and installation

1.1 Machine placement

The machine is placed as shown in the figure below, and a leveling pad is placed under each foot to adjust the machine level.

Placement diagram

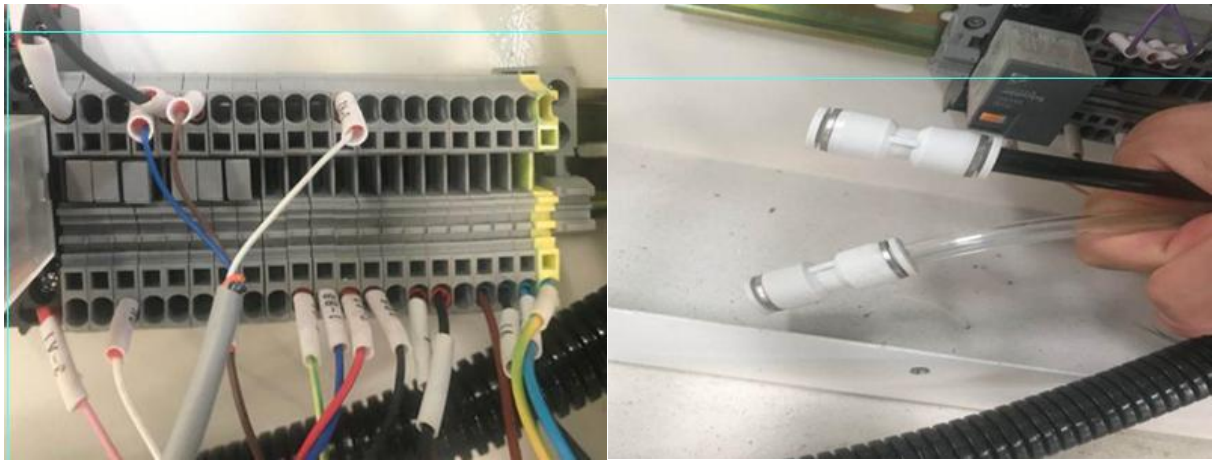
The through-type hexahedral drill is divided into two parts: the front-end machine, the back-end blanking platform, and the blanking platform is placed at the rear end of the hexahedral drill. The placement is as shown in the figure. Adjust the height of the cutting platform, the height of the cutting platform is the same as the height of the six-sided drilling platform or about 5mm lower than the six-sided drilling platform.After the adjustment is completed, the placement of the machine is completed.



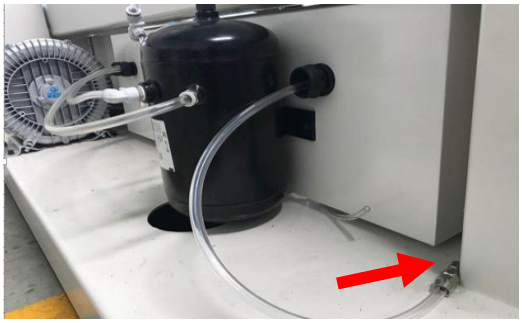
1.2 Machine installation

After the machine is placed, turn on the power of the machine, and the machine is connected to the back of the machine. The wiring method is shown in the figure below. L1, L2, and L3 are live wires, and N is the neutral wire. Be sure to pay attention to the live wire when wiring, and the neutral wire cannot be reversed.

The wiring method of the unloading platform is to connect the wires of the unloading platform to the small chassis in the six-sided drill green PVC . The wire numbers are connected according to the wire numbers on the wiring terminals in the above figure. On the two air pipes in the chassis. After connecting, the unloading platform wiring is completed.



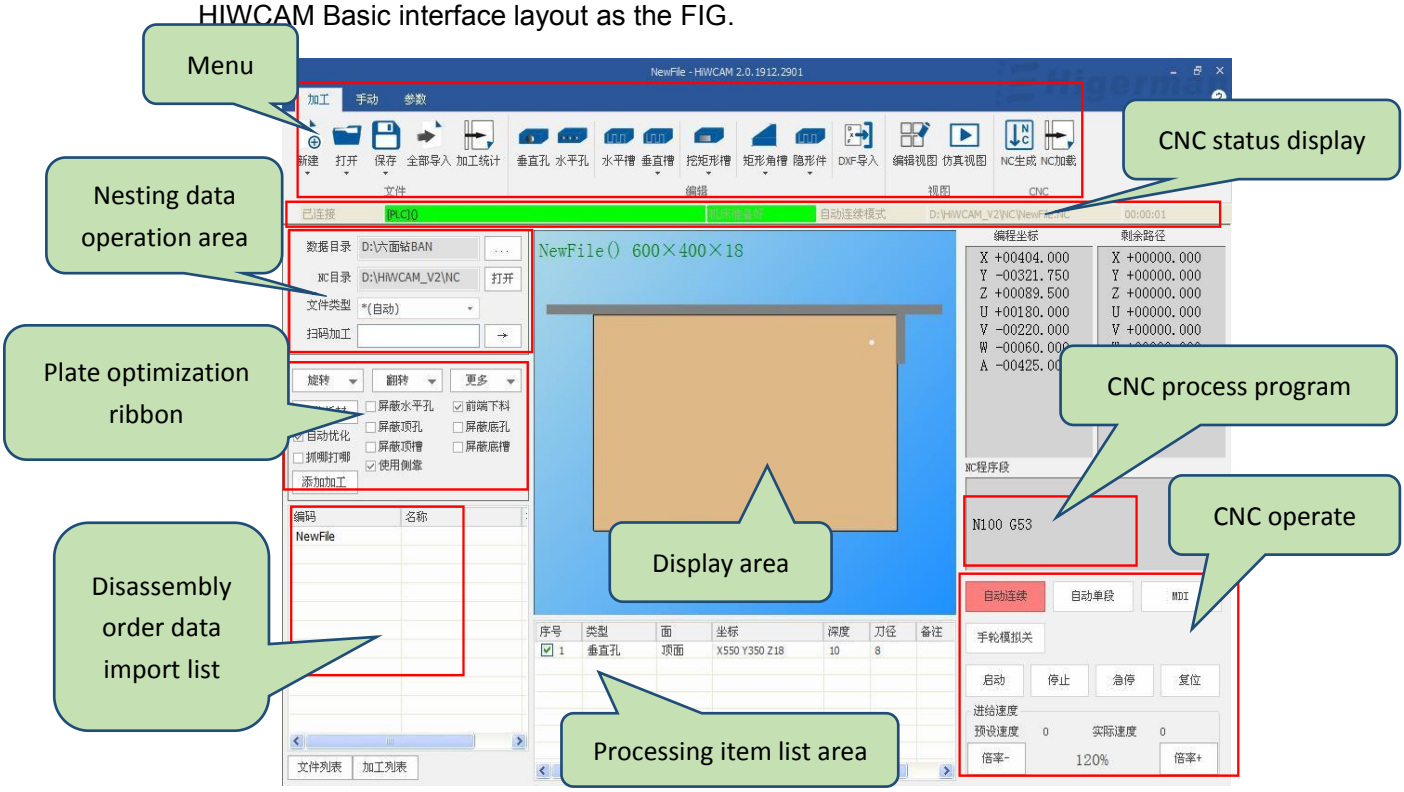
Pneumatic connection: After the line is connected, connect the gas path. The gas path is on the other side of the terminal. The gas pipe uses a 10mm or 12mm diameter pipe. The air pressure requires more than 6 stable air pressure. The connection method uses pneumatic fast Connector connection.



2. Introduction to HIWCAM

2.1 HIWCAM interface layout

HIWCAM Basic interface layout as the FIG.



The main interface of HIWCAM is divided into the following areas:

● Menu bar: Located at the top left of the interface, it mainly provides CAM tools classified and used, including processing, manual, and parameters;

● Operation area for splitting data: import the splitting data directory; NC directory; file type; scanning code processing ;

● Plate optimization function area: used for plate processing optimization and processing function selection;

● Split data import list: display the actual processed plate information;

● Display area: display the size information of the plate, and the graph shows the actual processing style of the plate;

● Processing list area: display the actual processing primitives of the plate, and edit the primitives;

● CNC operating area: CNC mode can be selected, processing speed can be adjusted;

● CNC status bar: It can display the status of CNC.

2.2 HIWCAM function overview

◆ HIWCAM supports five-sided drilling processing center, six-sided drilling processing center, six-sided drilling double-drilling package processing center, six-sided drilling connection processing center, etc. for panel furniture.

◆ According to different types of machine tools, the software data of order splitting is automatically recognized and processing is automatically completed.

◆ CAM software supports importing and dismantling software hole position data to automatically convert into processing items, and also supports manual creation and editing of drilling, grooving, grooving, milling, invisible parts and other processing items.

◆ Graphic display of the size of the plate and the position and size of each processing item.

◆ Support the data docking of commonly used dismantling software (MPR , XML , BAN , BD , PDX , FMC, etc.).

◆ Support for re-editing, adding and deleting the processing items in the imported data.

◆ Automatically check the interference of the tool / gripper / fixture, and intelligently optimize the fixture action, that is, the gripper hand change action.

◆ Automatic tool path optimization, reduce idle stroke, submit processing efficiency.

◆ Provide different processing schemes according to different hole and groove characteristics.

◆ Provide graphical processing simulation function, according to the final processing program to simulate the action logic of the drill, fixture and gripper.

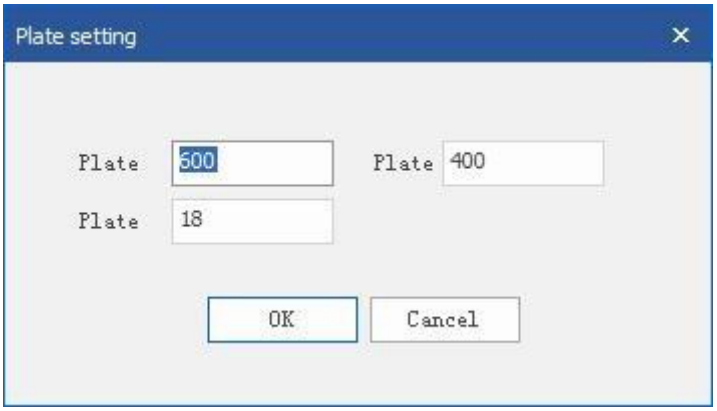
3. Actual processing

3.1 Processing files

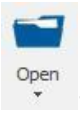
1. New processing file

In the status bar, select New under the processing function

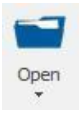
, set the length, width, and thickness of the plate in the pop-up dialog box, and click OK.



2. Open processing file

①Click the button 

to pop up the file loading dialog box, you can manually find the file from the disk and load it for processing.

②You can click the button 

drop-down menu

to choose to open the material list or open the recent material list. The open recent material list is the state of the processing list automatically saved by the system before closing the software.

3. save

① Click the button

to save the current editing file.

②Click the button

drop-down menu

, you can save as, and save the material list to save the status information of the current processing list.

4. Batch Import

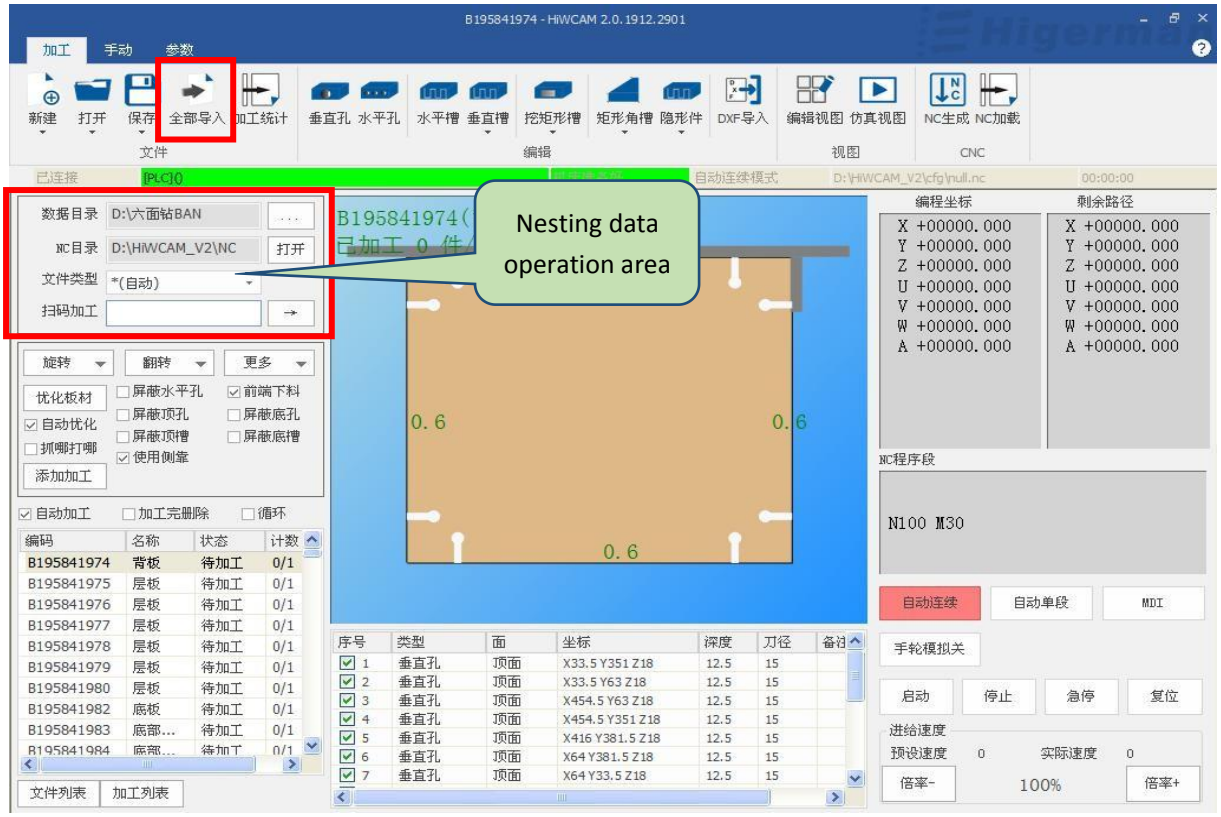
①Select the path and file type of the data directory in the data operation area of the order dismantling (dismantling software data format).

②Click the "import all" icon as shown in the figure below, the files under this path will be added to the list of split data import, which can be viewed by clicking the mouse and scrolling the wheel, and the information of the plate will be displayed in the display area.

③Scan code processing: "Scan code processing" mode. After scanning the code, the file is directly added to the CNC system.

After that, press the "Start" or "Foot Switch" button to start automatic processing.

④ Plate optimization function area: used for plate processing optimization and processing function selection, which can be selected and used according to actual conditions.



⑤ In the file list in the split order data import list, select a file and right-click it to search, create, and open.

Save, save as, save as current, close, close all, add current to processing, add all to processing, bilateral processing, modify plate thickness and other operations, as shown in the figure below.

(For automatic machining, refer to section 2.5 CNC machining operations)

5. Processing statistics

Click "Processing Statistics" to open the processing statistics list, in which you can view the relevant information of the processed plates and the processing

The number of boards, the number of areas. The number of grooves, the number of grooves, the number of holes, and the related processed information can also be queried by time and plate code.

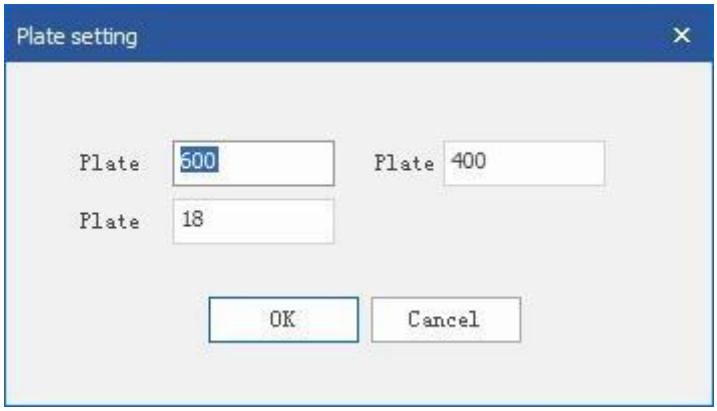
3.2 Edit

1. Plate settings

Click the drop-down box of "New"

, click , set the length, width, and thickness of the sheet in the pop-up dialog box

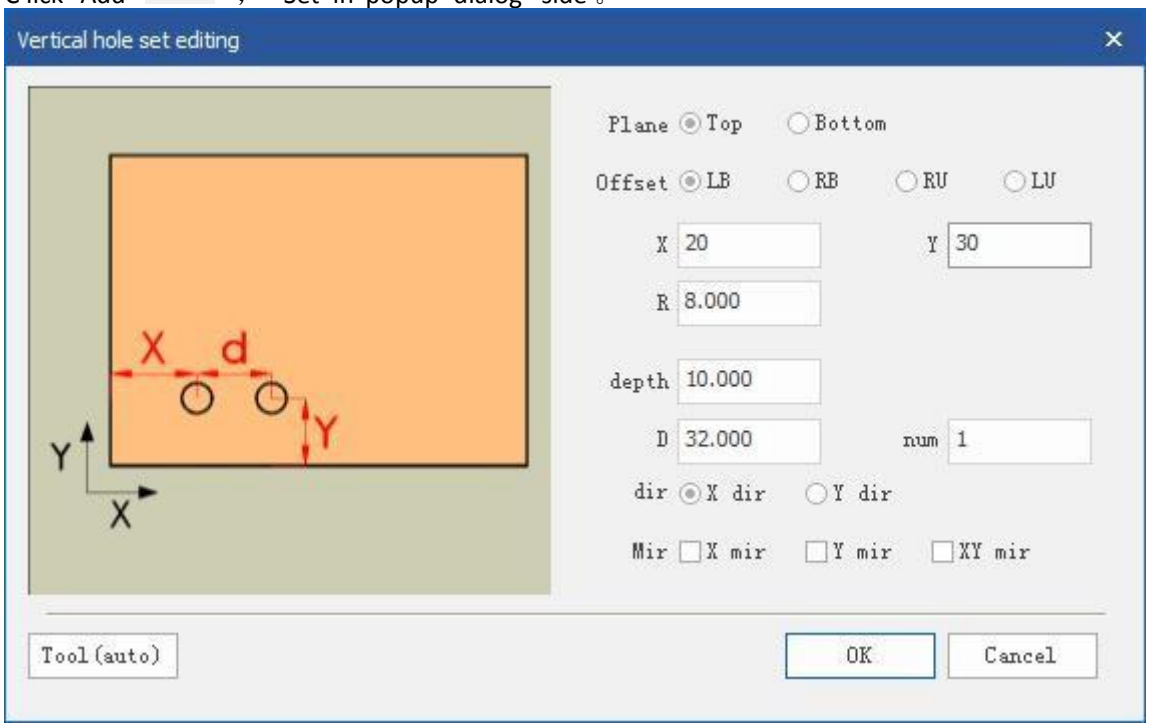
, and click OK.



2. Vertical hole

C lick Add “

”， Set in popup dialog side 。



Partial opposite Reference: In order to facilitate location of the sizing orifice, the flexibility to choose different reference points, select the lower left corner, lower right corner, the upper right corner or upper left corner position as a reference point editing hole.

Offset value X: the X coordinate of the hole position, fill in a positive number.

Offset value Y: the Y coordinate of the hole position, fill in a positive number.

Hole diameter: the diameter of the hole, fill in a positive number. Processing depth: the depth of the hole position, fill in a positive number.

Array spacing: the offset value of the next hole from the hole position. Number of arrays: Number of holes.

Arrangement direction: the direction of multiple hole arrays, you can choose X direction or Y direction.

Mirror image: The hole can be mirrored symmetrically in X, Y or XY directions.

3. Horizontal hole

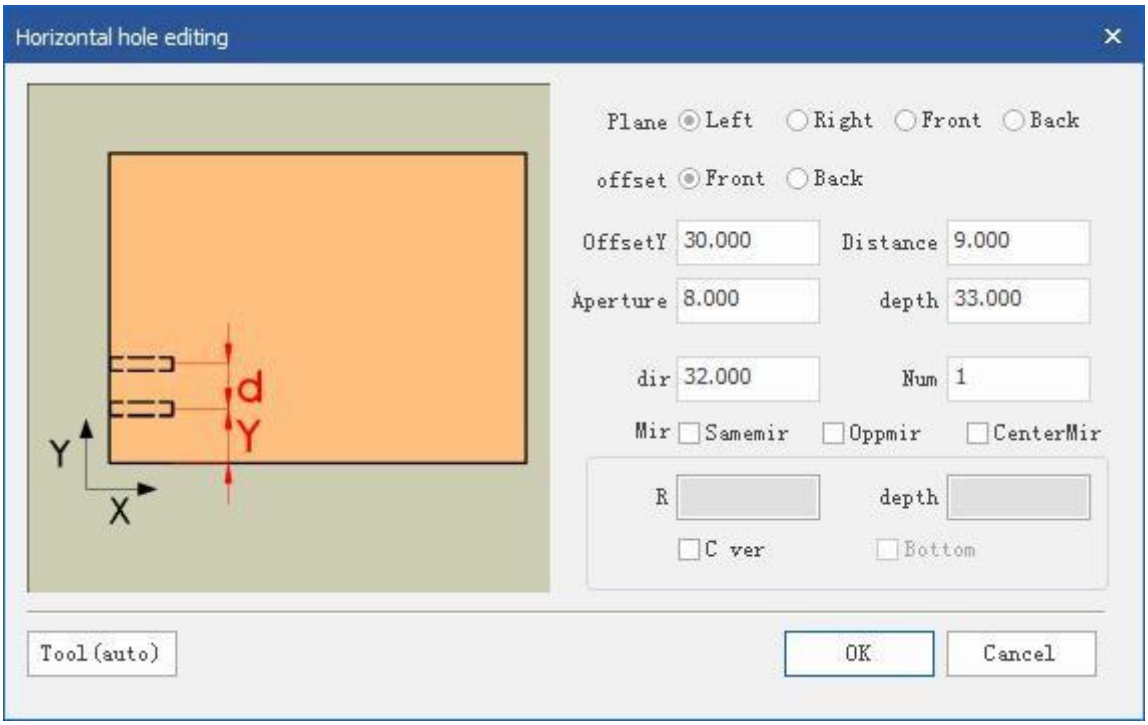
Click the icon to add "horizontal hole"

and set it in the pop-up dialog box.

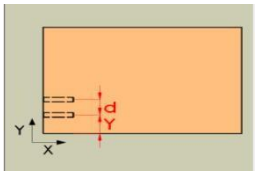
First select the added surface, you can add the front side, rear door, left side, and right side.

When selecting the offset reference, in order to facilitate the calculation of the size and set the position and size of the hole, different reference planes can be flexibly selected.

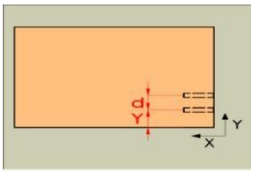
Set the offset value X/Y/Z, set the aperture and depth parameters, and click OK.



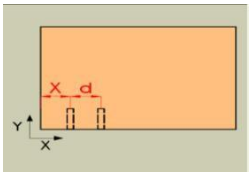
Side：According need add side



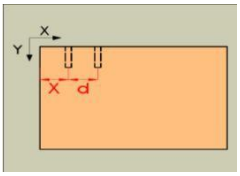
Left side



Right side



Front side



Back side

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Offset value X: the X coordinate of the hole position, fill in a positive number.

Offset value Y: the Y coordinate of the hole position, fill in a positive number.

Distance from bottom surface: the height of the bottom surface of the horizontal hole (for example, if the current plate thickness is 18, if you fill in 9, the hole will be opened in the middle of the plate thickness), and fill in a positive number.

Aperture: The diameter of the hole, fill in a positive number.

Processing depth: the depth of the hole position, fill in a positive number.

Array spacing: the offset value of the next hole from the hole position.

Number of arrays: Number of holes.

Arrangement direction: the direction of multiple hole arrays, you can choose X direction or Y direction.

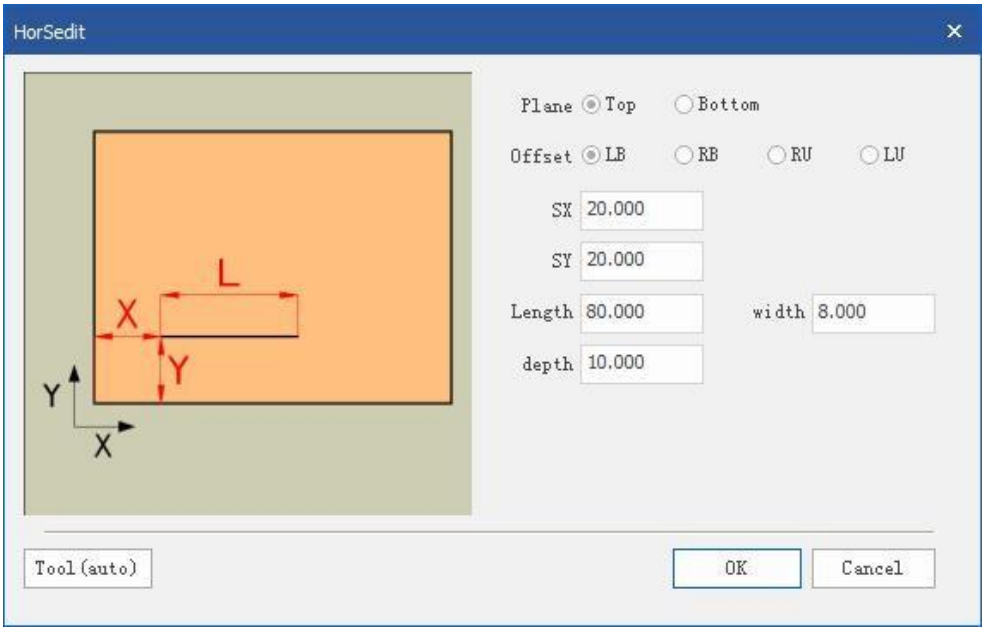
Mirroring: The hole can be mirrored symmetrically according to the X direction, Y direction or XY direction.

Create vertical hole: You can create three and one hole by checking.

4. Horizontal slot

Click the icon added by "Horizontal Slot"

and set in the pop-up dialog box.



Owned surface: add to the top or bottom surface as needed;

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Starting point X: the X coordinate of the starting point of the horizontal slot, set to 0 for the pull-through slot.

Starting point Y: the Y coordinate of the distance between the center of the horizontal groove and the edge of the board.

Length: The length of the horizontal slot, fill in a positive number.

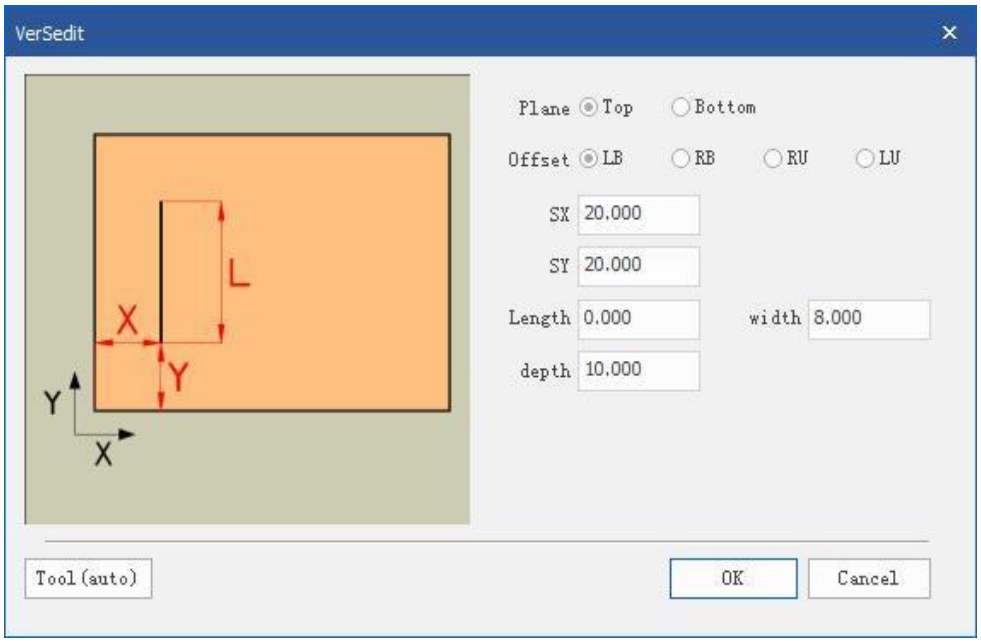
Slot width: the width of the slot, fill in a positive number.

Processing depth: the depth of the groove, fill in a positive number.

5. Vertical slot

Click the icon to add "Vertical Slot"

and set it in the pop-up dialog box.



Owning surface: Add to the top or bottom surface as needed.

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Starting point X: the X coordinate of the distance between the center of the vertical slot and the edge of the board.

Starting point Y: It is the Y coordinate of the starting point of the vertical slot, and the pull-through slot is set to 0.

Length: The length of the horizontal slot, fill in a positive number.

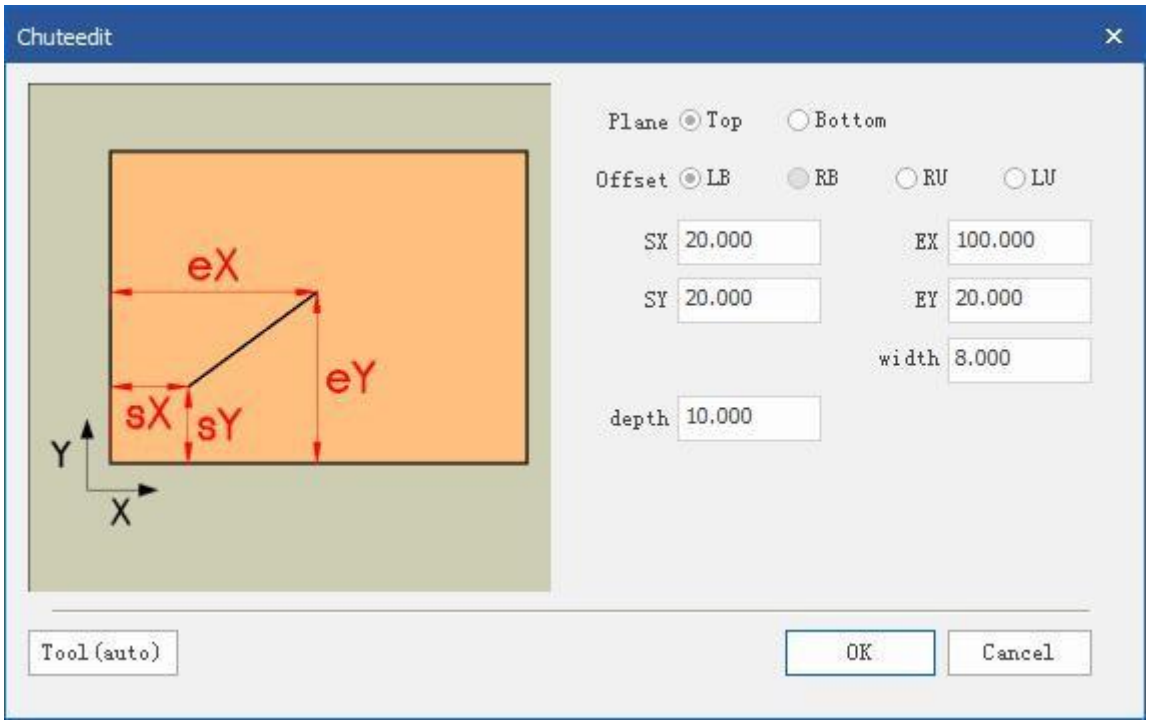
Slot width: the width of the slot, fill in a positive number.

Processing depth: the depth of the groove, fill in a positive number.

6. Chute

Click the icon to add "Chute"

and set it in the pop-up dialog box.



Owning surface: Add to the top or bottom surface as needed.

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Starting point X: X coordinate of the starting point of the chute,

Starting point Y: Y coordinate of the starting point of the chute.

End point X: X coordinate of the end point of the chute,

End point Y: Y coordinate of the end point of the chute.

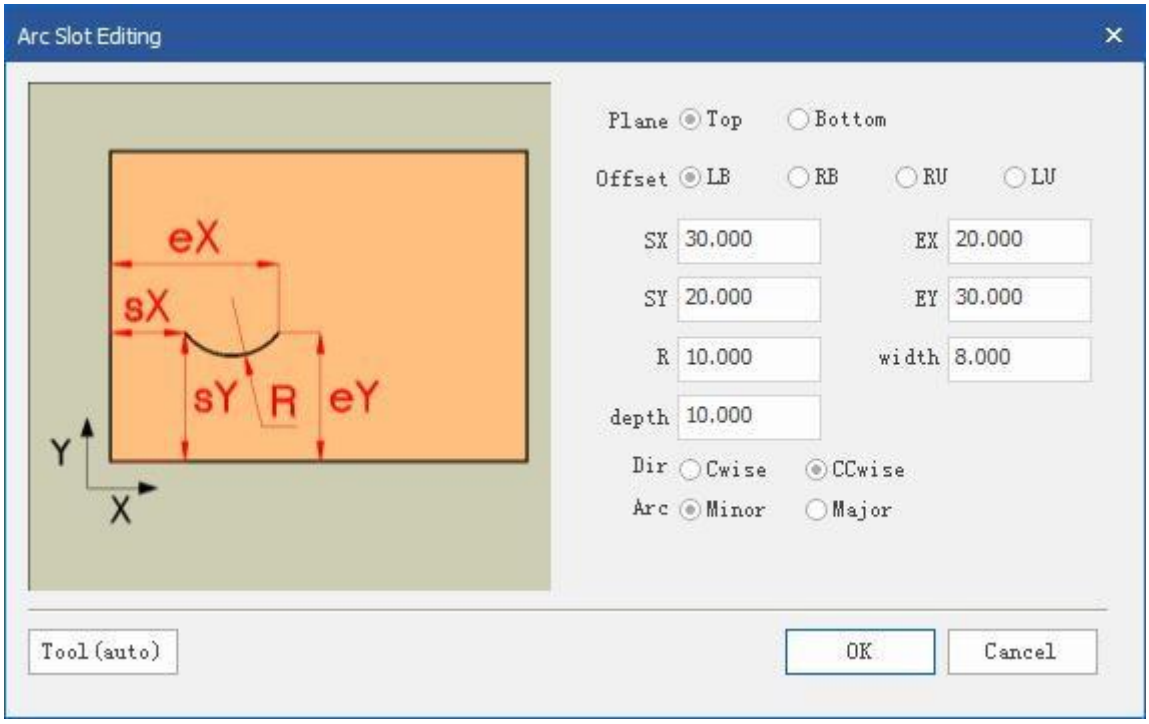
Slot width: the width of the slot, fill in a positive number.

Processing depth: the depth of the groove, fill in a positive number.

7. Arc slot

Click the icon to add "arc groove"

and set in the pop-up dialog box.



Owning surface: Add to the top or bottom surface as needed.

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Starting point X: X coordinate of the starting point of the arc groove, Starting point Y: Y coordinate of the starting point of the arc groove.

End point X: X coordinate of the end point of the arc slot , end point Y: Y coordinate of the end point of the arc slot.

Arc: The arc with the center angle less than 180 degrees is selected as the inferior arc, and the arc with the center angle greater than 180 degrees is the best.

Direction: Choose clockwise and counterclockwise as needed.

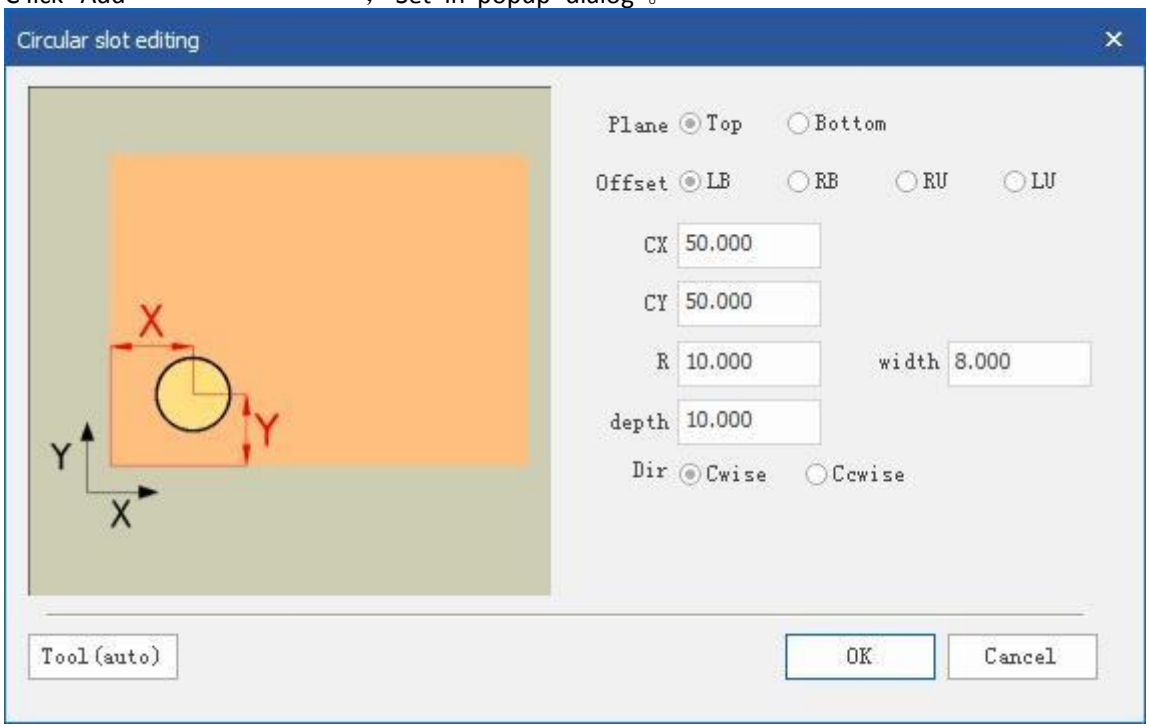
Slot width: the width of the slot, fill in a positive number.

Processing depth: the depth of the groove, fill in a positive number.

8. Round groove

C lick Add

, Set in popup dialog 。



Owning surface: Add to the top or bottom surface as needed.

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Center X: X coordinate of the center of the slot,

Center Y: The Y coordinate of the center of the groove.

Direction: Choose clockwise and counterclockwise as needed.

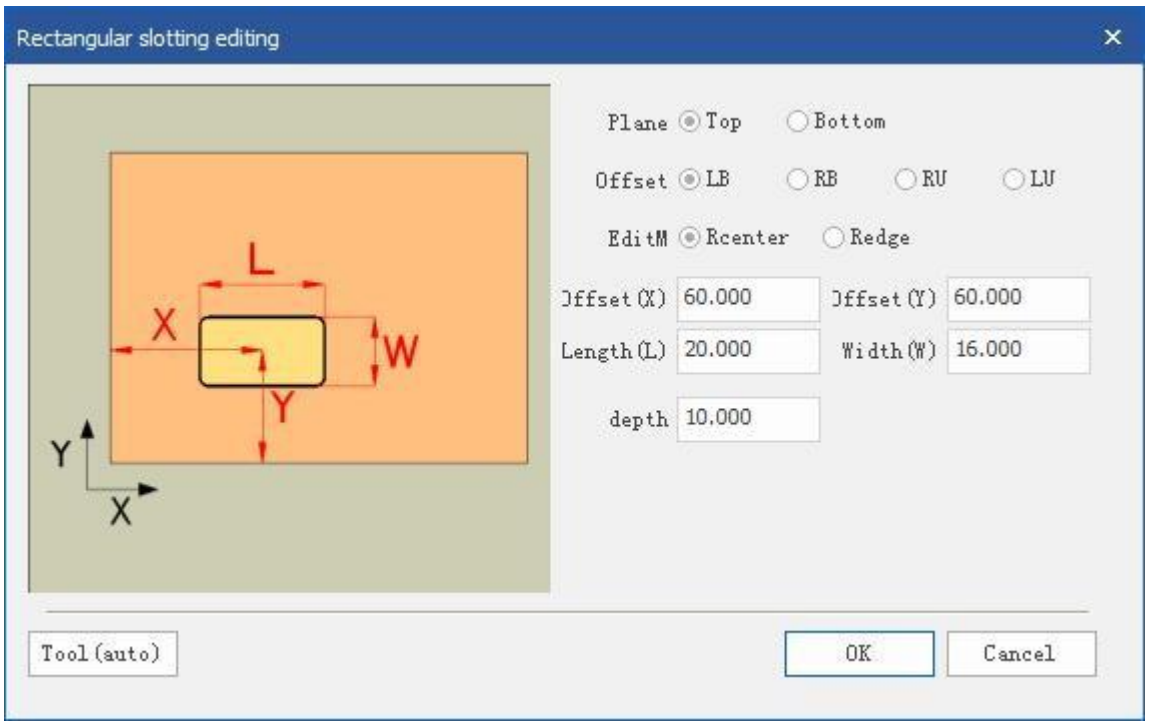
Slot width: the width of the slot, fill in a positive number.

Processing depth: the depth of the groove, fill in a positive number.

9. Rectangular slot

Click the icon to add a "rectangular slot"

and set in the pop-up dialog box.



Owned surface: add to the top or bottom surface as needed;

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Rectangle center X: X coordinate of the rectangle center,

Rectangle center Y: Y coordinate of the center of the rectangle.

Length (X): The length of the rectangle in the X direction,

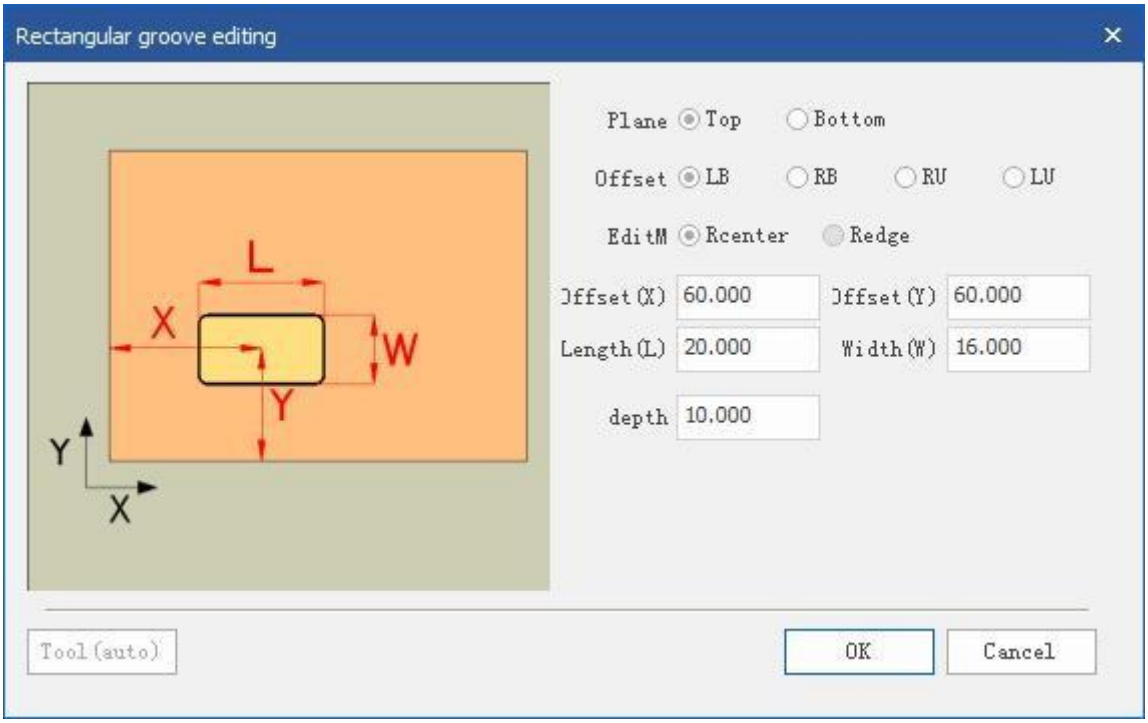
Width (Y): The width of the rectangle in the Y direction.

Processing depth: the depth of the groove, fill in a positive number.

10. Dig a circular groove

Click the icon to add the "dig circular groove"

and set it in the pop-up dialog box.



Owned surface: add to the top or bottom surface as needed;

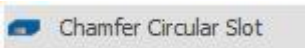
Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Rectangle center X: X coordinate of the center of the rectangle,Rectangle center Y: Y coordinate of the center of the rectangle.

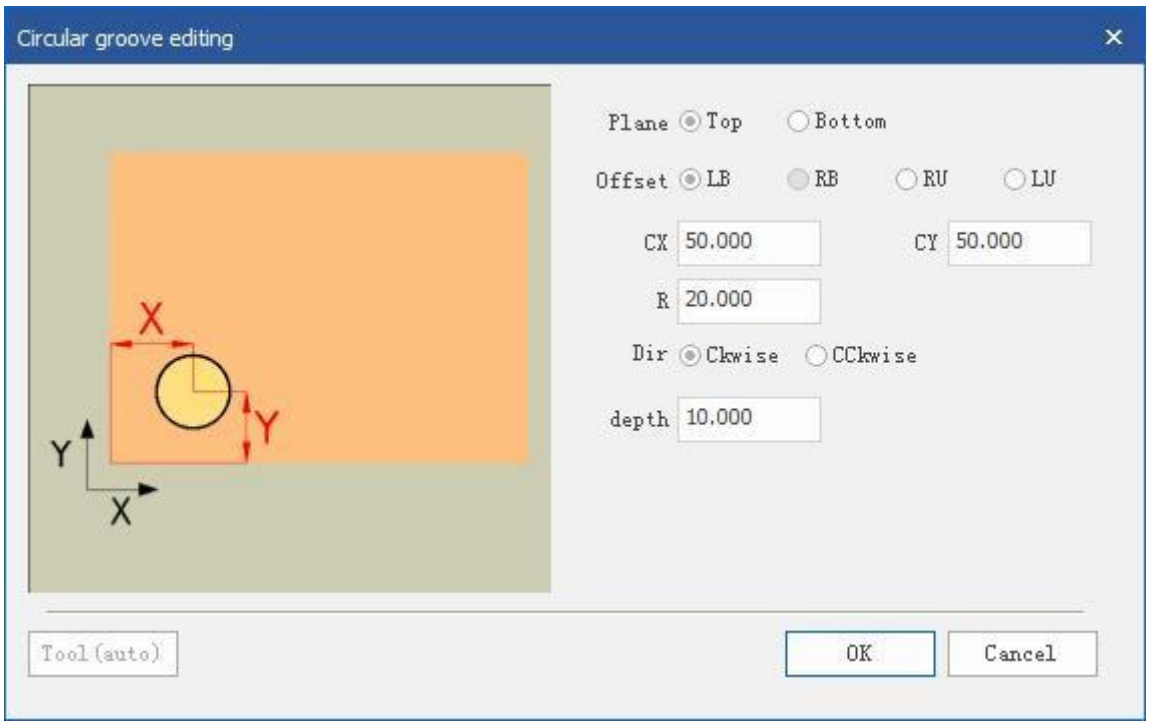
Length (X): the length of the rectangle in the X direction, width (Y): the width of the rectangle in the Y direction.

Processing depth: the depth of the groove, fill in a positive number.

11. Dig a circular groove

Click the icon to add the "dig circular groove" 

and set it in the pop-up dialog box.



Owning surface: Add to the top or bottom surface as needed.

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Center X: X coordinate of the center of the circular groove, Center Y: Y coordinate of the center of the circular groove.

Radius: The radius of the circular groove.

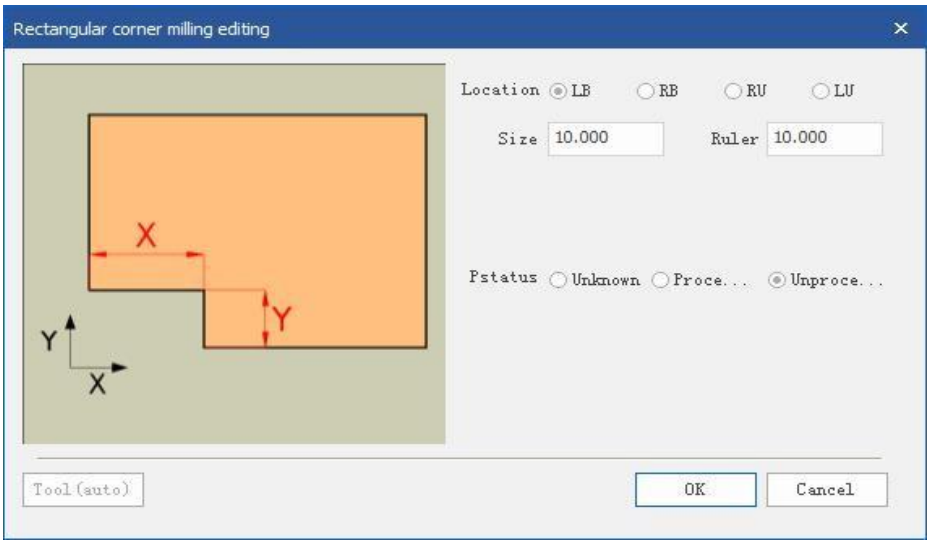
Direction: Choose clockwise and counterclockwise as needed.

Processing depth: the depth of the groove, fill in a positive number.

12. Rectangle missing corner milling type

Click the icon to add "rectangular corner slot"

and set in the pop-up dialog box.



Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

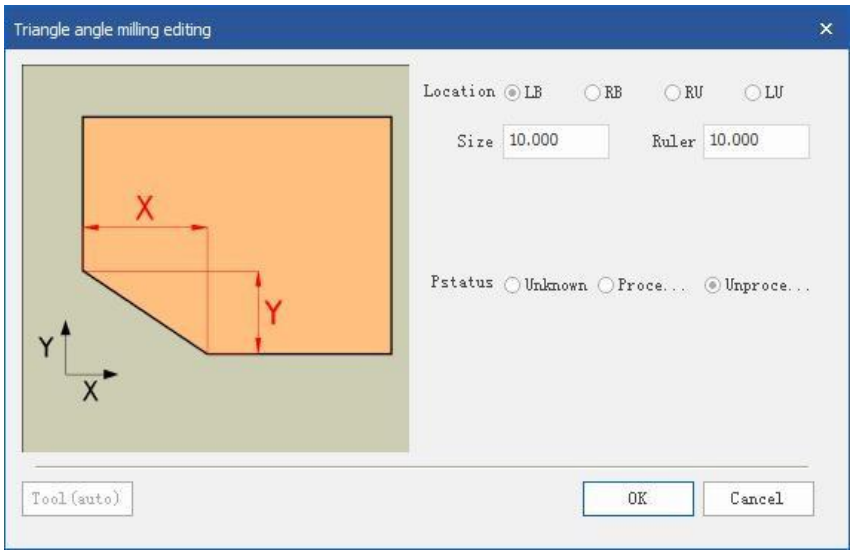
Dimension X: Rectangle length X value,

Dimension Y: Rectangle width Y value.

13. Triangular missing corner milling type

Click the icon to add "triangular corner slot"

and set in the pop-up dialog box.



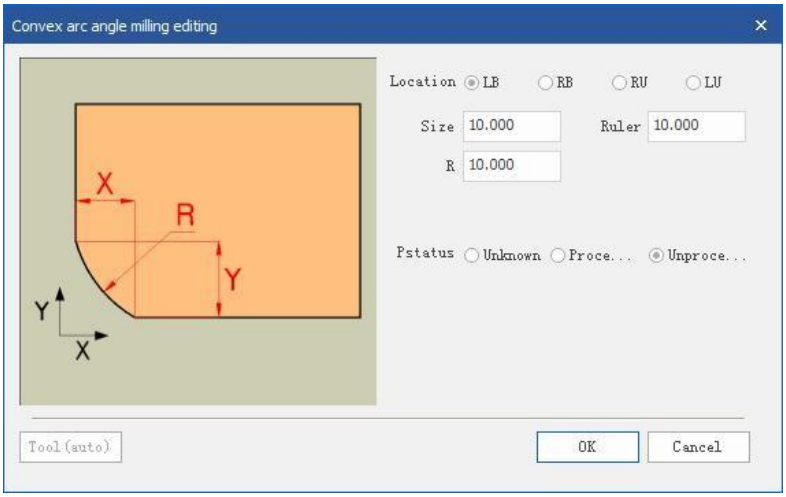
Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Size X: triangle length X value, size Y: triangle height Y value.

14. Convex arc missing corner milling type

Click Add "convex corners groove Icons"

in the pop-up dialog box.



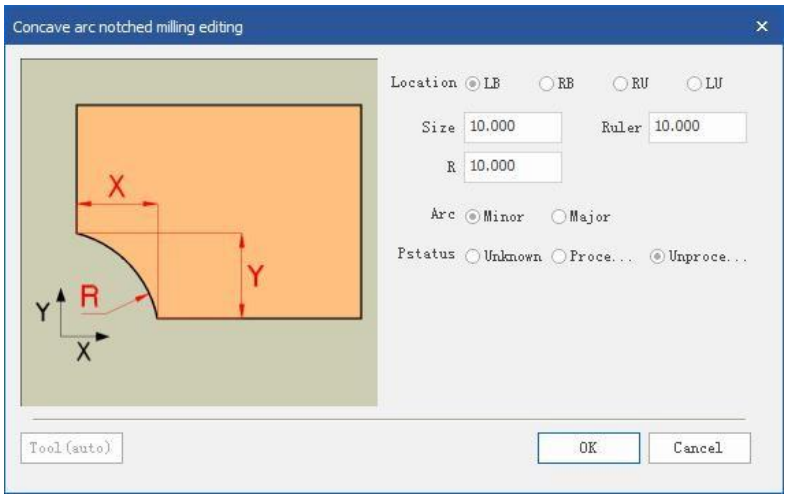
Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Dimension X: arc X coordinate value, dimension Y: arc Y coordinate value.

15. Concave arc missing corner milling type

Click Add "cove corner groove Icons"

in the pop-up dialog box.



Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

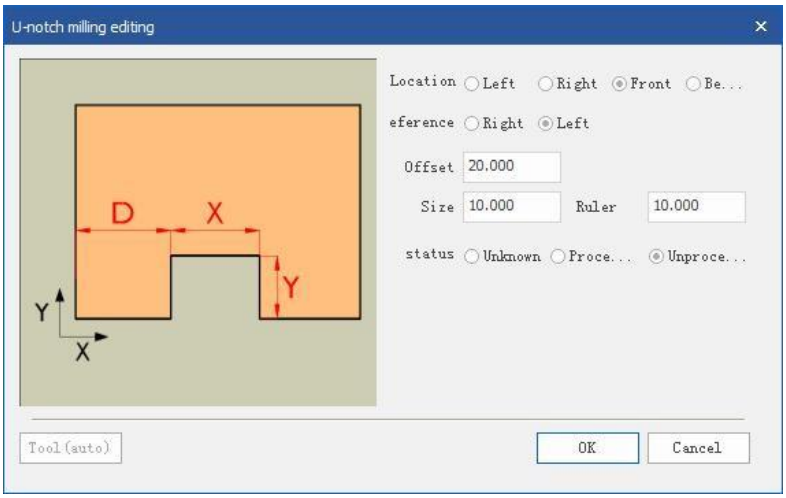
Size X: arc X coordinate value, size Y: arc Y coordinate value.

Arc: If the arc is less than 180, select the minor arc, and if the arc is greater than 180 degrees, select the superior arc.

16. U-shaped groove missing angle milling type

Click the icon to add "U -shaped groove"

and set in the pop-up dialog box.



Position: Select the location of the U-shaped groove, you can choose the left, right, front, and back.

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be selected flexibly, and left and right reference points can be selected.

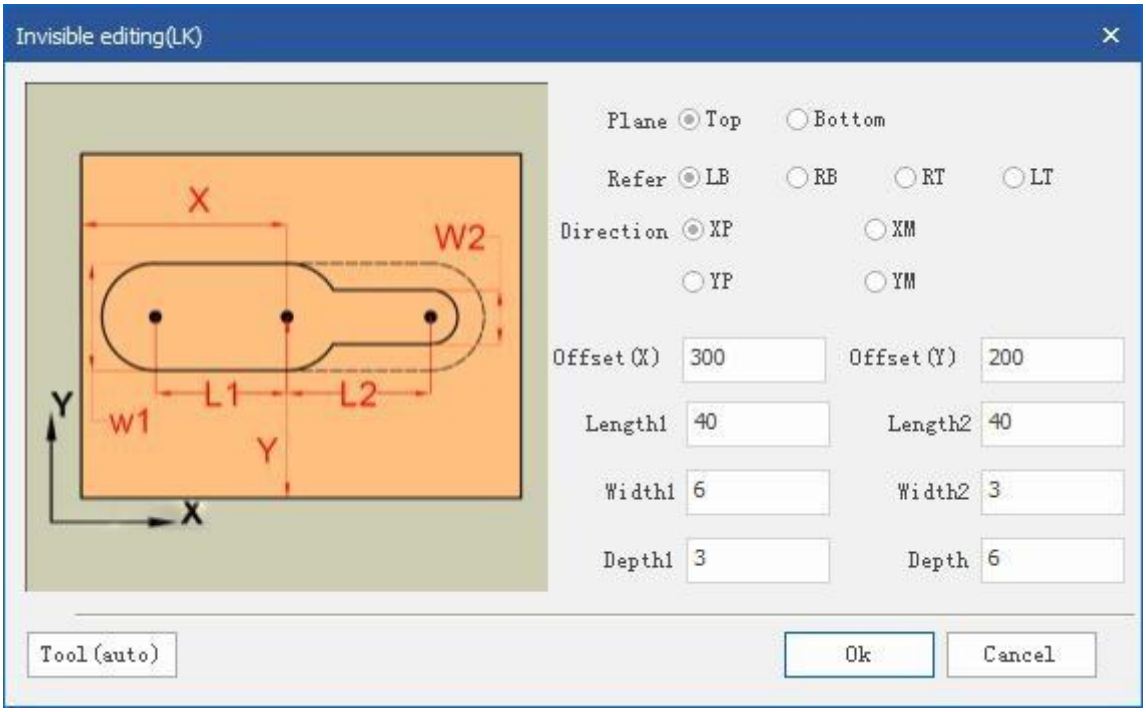
Offset position: the distance from the reference point.

Dimension X: Rectangle length X value, Dimension Y: Rectangle width Y value.

17. Invisible

① Click the Add icon "invisible piece"

in the pop-up dialog box set, **Lockdowel** invisible pieces. invisible editing(LK).



Owning surface: Add to the top or bottom surface as needed.

Offset reference: In order to conveniently set the position and size of the slot, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the slot position.

Processing direction: X positive direction, X negative direction, Y positive direction, Y negative direction can be selected according to the selection.

Offset value X: the X coordinate of the slot, fill in a positive number, and offset Y: the Y coordinate of the slot, fill in a positive number.

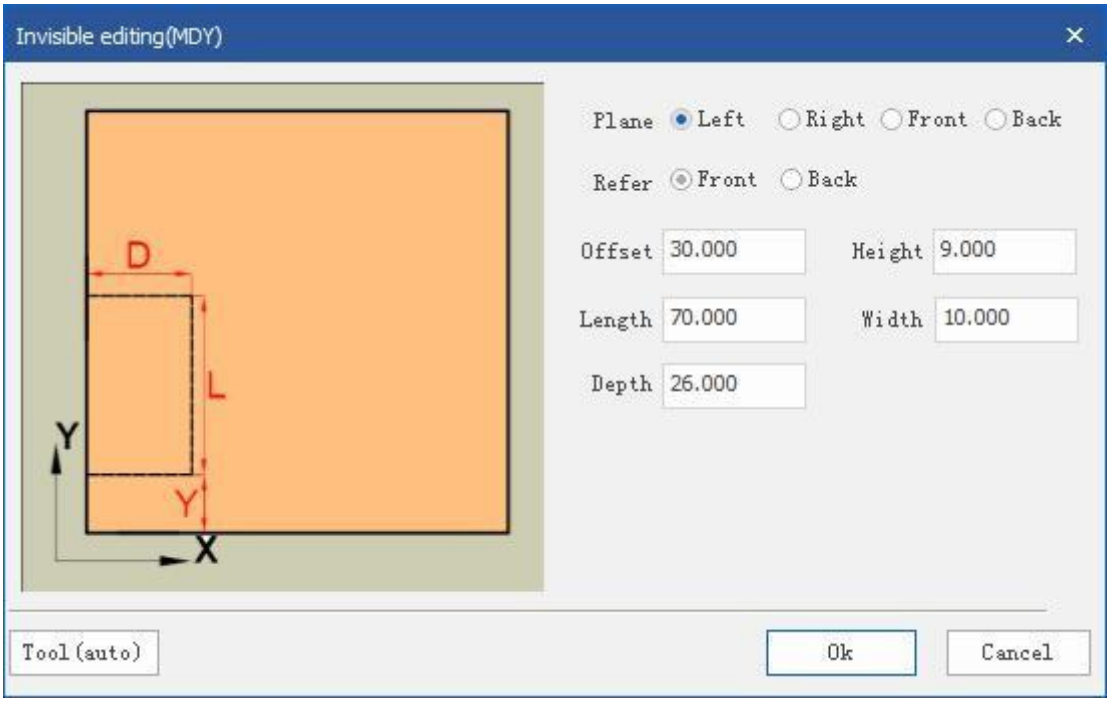
Length L1: The length of the slot, fill in a positive number, Length L2: The length of the slot, fill in a positive number.

Width W1: The width of the slot, fill in a positive number, Width W2: The width of the slot, fill in a positive number.

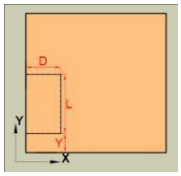
Processing depth D1: the depth of the groove, fill in a positive number. Processing depth D2: the depth of the groove, fill in a positive number.

② Click Add

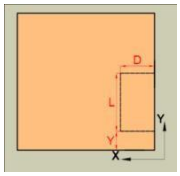
， Set in popup dialog, invisible editing(MDY).



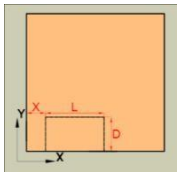
Owning face: Add face as needed.



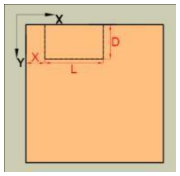
Left side



Right side



Front side



Back side

Offset reference: In order to conveniently set the position and size of the hole, different reference points can be flexibly selected, and the lower left corner, lower right corner, upper left corner or upper right corner can be selected as the reference point for editing the hole position.

Offset value X: the X coordinate of the slot, fill in a positive number,

Offset value Y: the Y coordinate of the slot, fill in a positive number.

Distance from the bottom: the height of the slot from the bottom (for example, if the current plate thickness is 18, if you fill in 9, a hole will be made in the middle of the plate thickness), and fill in a positive number.

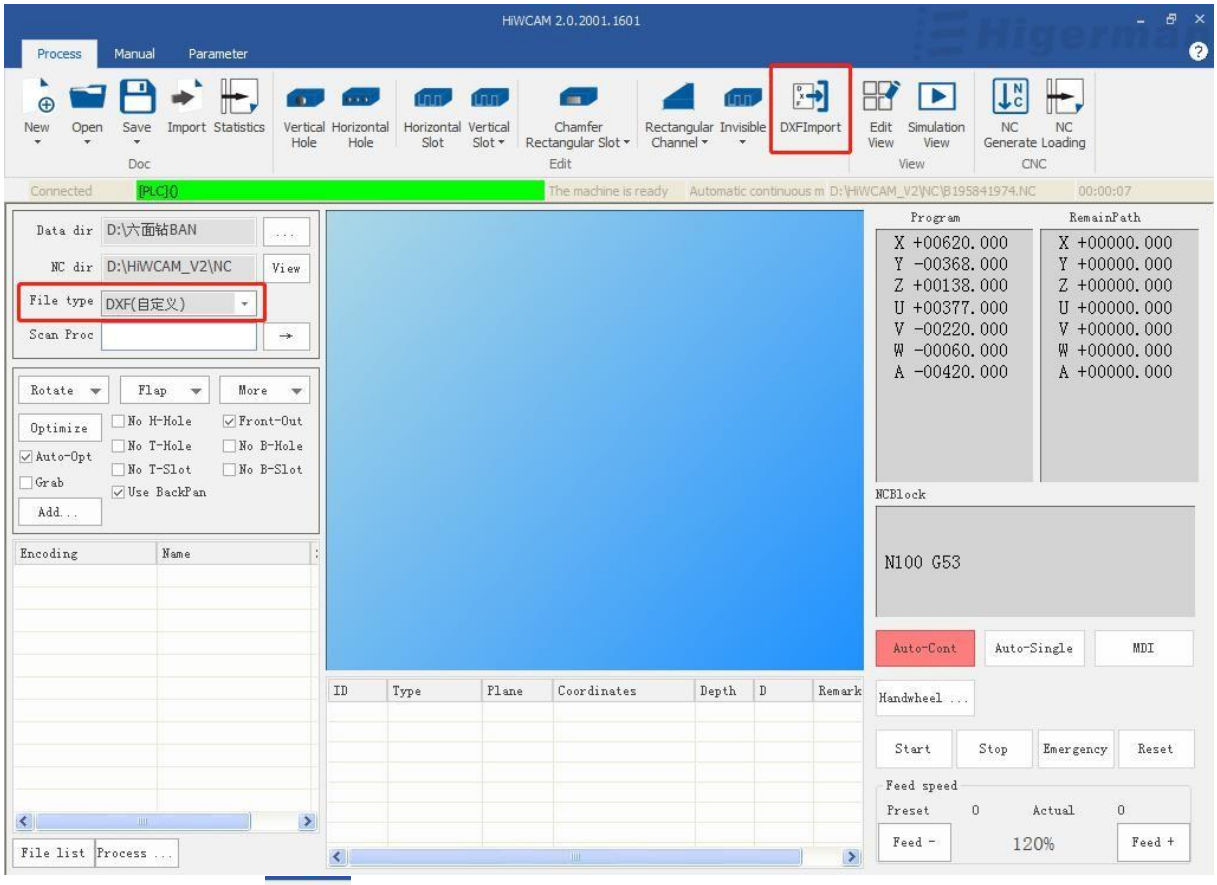
Length: The length of the slot, fill in a positive number.

Slot width: the width of the slot, fill in a positive number.

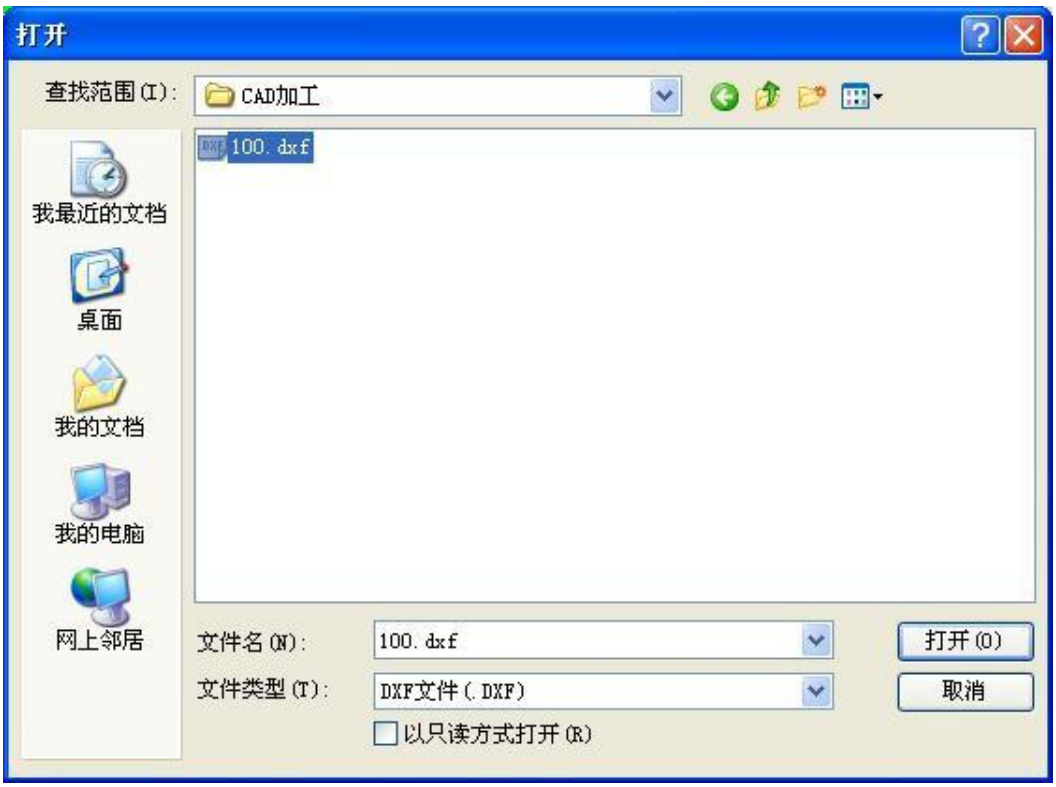
Processing depth: the depth of the hole position, fill in a positive number.

3.3 DXF import

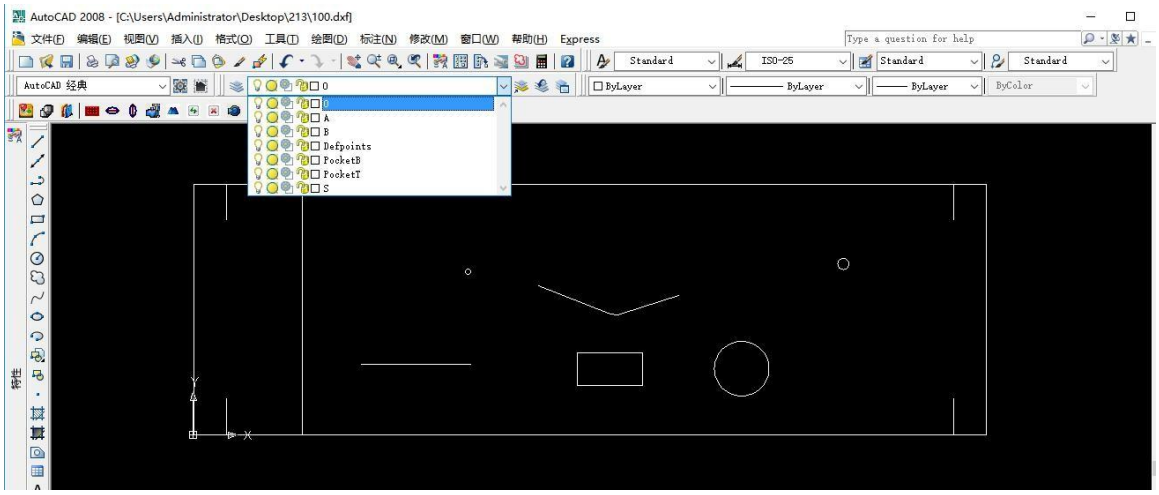
First select DXF (custom) in the file type option bar.



Click "DXF import" ,a dialog box pops up, select the DXF file in the corresponding directory, you can choose to import, and draw the CAD drawing according to the DXF definition format of Higerman . **(Note: the drawing can only be imported successfully according to the content agreement!)**

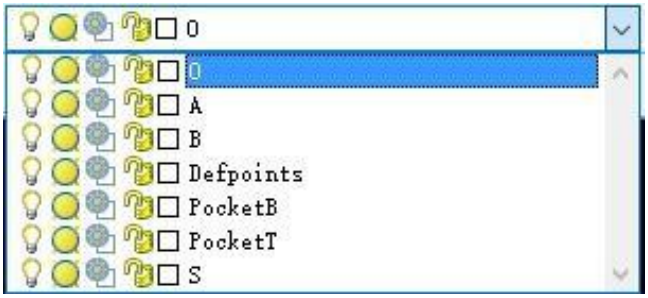

打开
查找范围(I):
CAD加工
100.dxf
我最近的文档
桌面
我的文档
我的电脑
网上邻居
文件名(N):
100.dxf
打开(O)
文件类型(T):
DXF文件(.DXF)
取消
以只读方式打开(R)

The conventions of the layers and their contents in the DXF file are as follows:

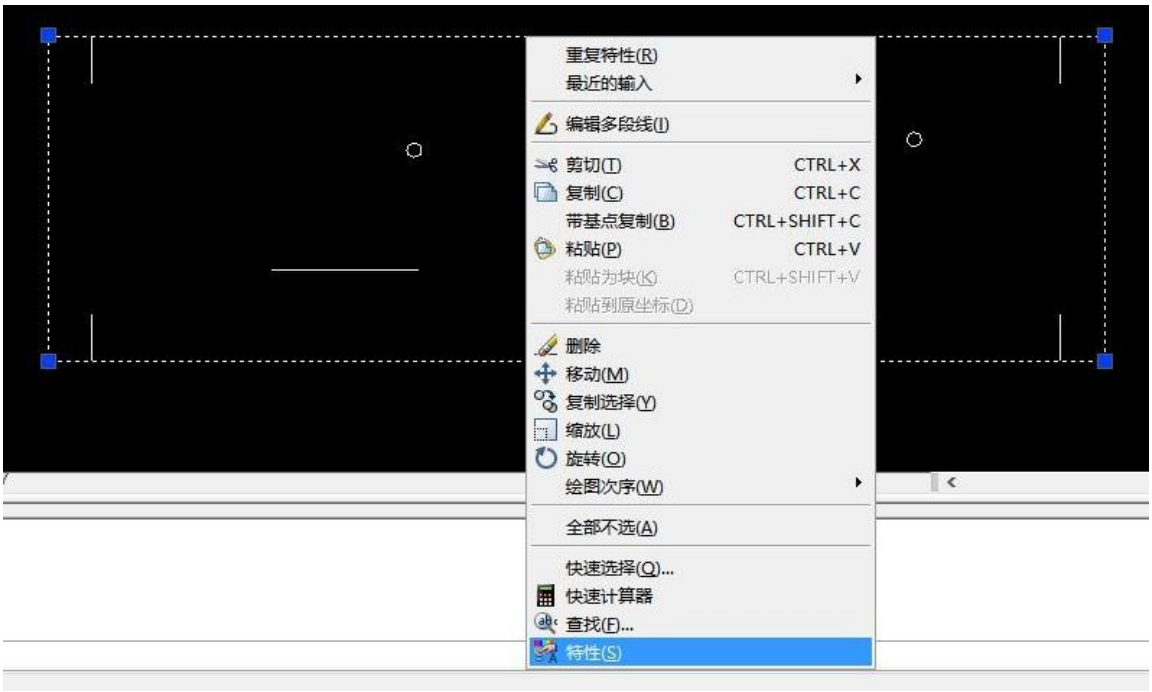


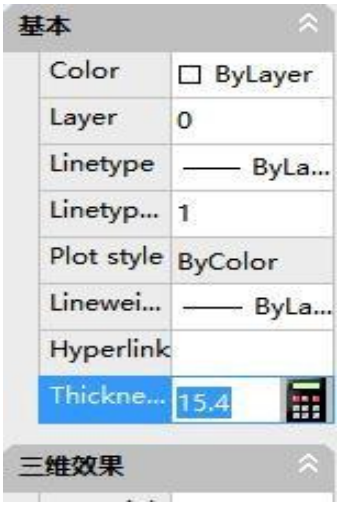
◆ Level 0 , profile information of the board

●Use the polyline to provide the size information of the outer rectangle, and the thickness parameter of the polyline to provide the sheet thickness information.

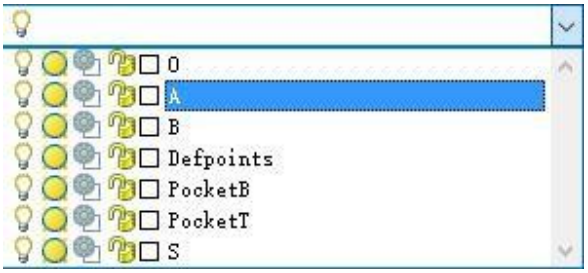


Select the outer contour with the mouse, right-click the mouse, open the feature, find Thickness, and modify the value to modify the information of the sheet thickness.





◆ **A layer, which means top surface processing**



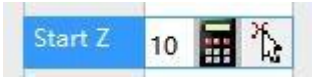
●**Circle is a hole** , the thickness parameter of the circular element indicates the depth of the hole, and the size of the circle indicates the size of the tool diameter used.

Hole depth :

Cutter diameter big small:

●**Polyline, straight line and arc indicate represent slotting processing** . The Z- direction value parameter of **straight line and arc is slot** width, and the elevation parameter of polyline is slot width. The thickness parameters of straight line, arc, and polyline indicate depth.

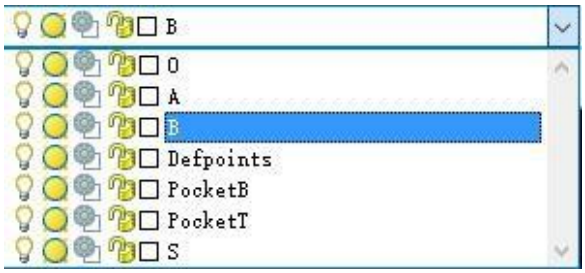
The Z- direction value parameter of straight line and arc is the slot width:



The elevation parameter of the polyline is the slot width:

The thickness parameters of straight lines, arcs, and polylines indicate depth:

◆ **B layer, a bottom surface of the processing**



●**Circle is a hole** , the thickness parameter of the circular element indicates the depth of the hole, and the size of the circle indicates the size of the tool diameter used.

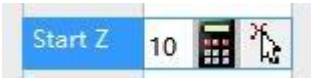
Hole depth：

Tool diameter size:

●**Polyline, straight line and arc indicate represent grooving processing** . The Z value parameter of the straight arc is the slot width, and the elevation parameter of the polyline is the slot width.

The thickness parameters of straight line, arc, and polyline indicate depth.

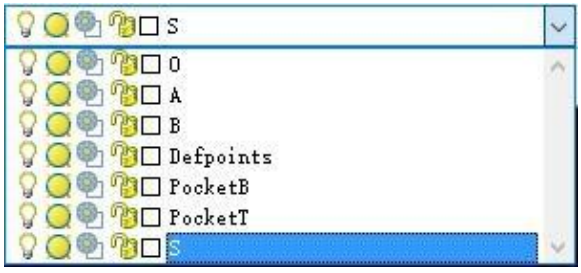
The Z- direction value parameter of straight line and arc is the slot width：



The elevation parameter of the polyline is the slot width:

The thickness parameters of straight lines, arcs, and polylines indicate depth:

◆ **S layer, representing side processing, the straight line perpendicular to the contour line is horizontal hole processing**



●The thickness parameter of the straight line element represents the aperture, the length of the straight line represents the depth, and the Z- direction value parameter represents the height

(the default is 0 means that the height of the horizontal hole is centered on the thickness of the sheet).

The thickness parameter of the linear primitive indicates the aperture:

The Z- value parameter represents the height：

◆ PocketT and PocketB layers provide support for top and bottom grooving

●Use circles and polylines as grooving contours. The grooving processing parameters are set by the main CAM program.

PocketT layer: top surface grooving

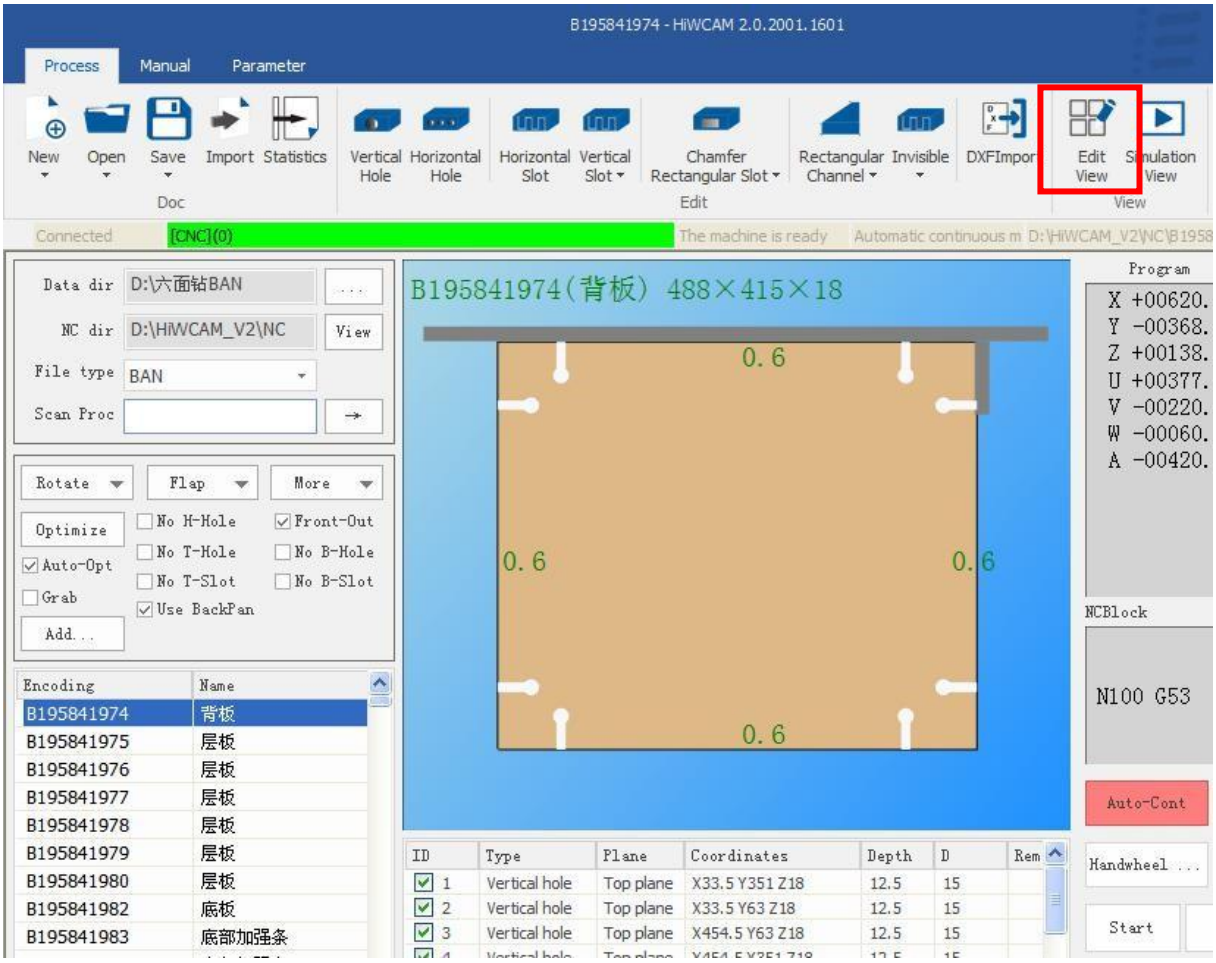
PocketB layer: bottom groove processing

The circle and polyline thickness parameters indicate the depth of the trench

:

3.4 View

1. Edit view

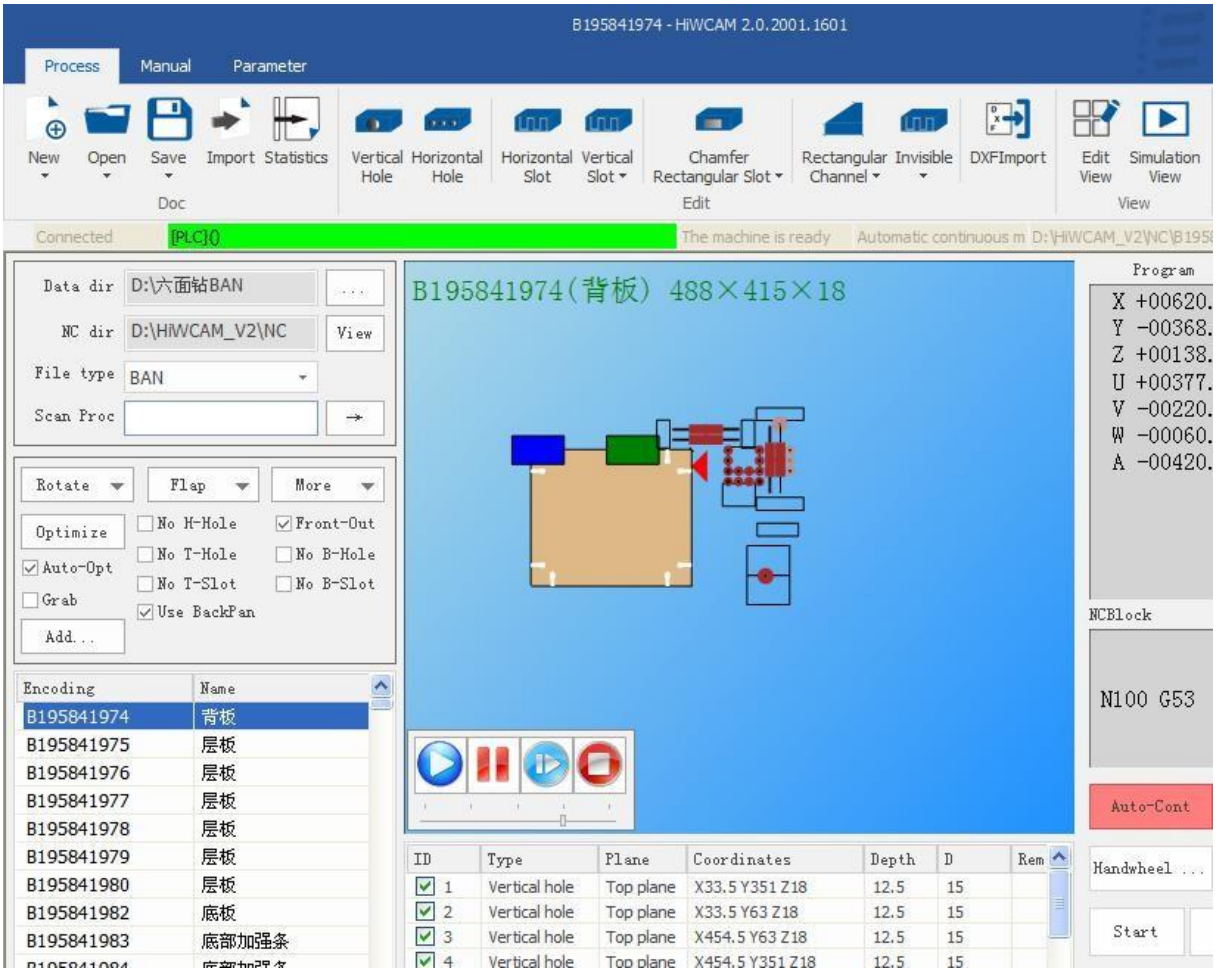


2. Simulation view

After the NC program is generated , the machining program can be simulated. Click the "simulation view" icon to switch to the simulation interface, as shown below.

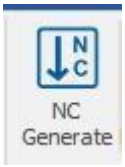
Click the button in the green control bar to control the simulation start, pause, fast forward, stop, and also control the simulation processing speed.

Click to start the simulation, you can see the actual processing, the movement path of the plate and the tool, the tool selection and other information in this interface.


B195841974 - HiWCAM 2.0.2001.1601
Process
Manual
Parameter
New
Open
Save
Import
Statistics
Doc
Vertical Hole
Horizontal Hole
Horizontal Slot
Vertical Slot
Chamfer Rectangular Slot
Rectangular Channel
Invisible
DXFImport
Edit
Edit View
Simulation View
View
Connected
[PLC]()
The machine is ready
Automatic continuous m
D:\HiWCAM_V2\NC\B195
Data dir
D:\六面钻BAN
NC dir
D:\HiWCAM_V2\NC
View
File type
BAN
Scan Proc
Rotate
Flap
More
Optimize
No H-Hole
Front-Out
Auto-Opt
No T-Hole
No B-Hole
Grab
No T-Slot
No B-Slot
Use BackPan
Add...
Encoding
Name
B195841974
背板
B195841975
层板
B195841976
层板
B195841977
层板
B195841978
层板
B195841979
层板
B195841980
层板
B195841982
底板
B195841983
底部加强条
B195841974(背板) 488×415×18
Program
X +00620.
Y -00368.
Z +00138.
U +00377.
V -00220.
W -00060.
A -00420.
NCBlock
N100 G53
Auto-Cont
Handwheel ...
Start
ID
Type
Plane
Coordinates
Depth
D
Rem
1 Vertical hole Top plane X33.5 Y351 Z18 12.5 15
2 Vertical hole Top plane X33.5 Y63 Z18 12.5 15
3 Vertical hole Top plane X454.5 Y63 Z18 12.5 15
4 Vertical hole Top plane X454.5 Y351 Z18 12.5 15

3.5 CNC operation

1. NC Generated

Click the "NC Generate" 

icon in the figure below to indicate that the file has been converted into a processing file.

2. NC loading

Click “N C Load”

icon will automatically load the program into the CNC , the right side of the CNC operating area, select a good machine models and suitable processing speed, you can press start to start the automatic execution of the program.

After the program is started, first the X- axis positioning will be lifted, and the fixture will move to the optimized position in the program, and then after the operator places the plate in the position, press "Start" or "Foot Switch" to automatically execute the program .

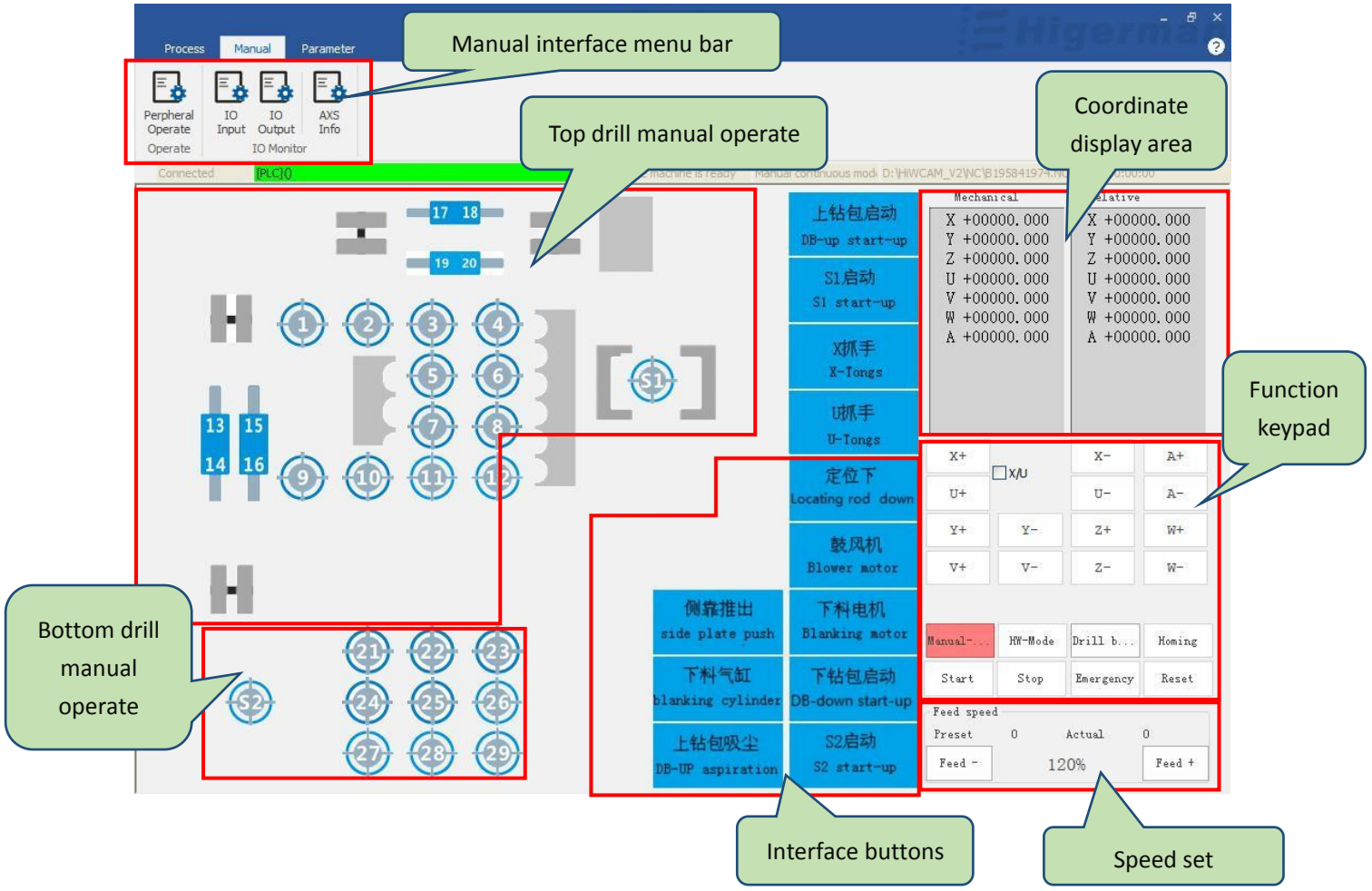
As shown in the figure below, the machine can be started, paused, emergency stopped, and machine reset.

In the NC block box, the current program processing line will be displayed in real time.

4. Manual

The manual interface includes peripheral operation, IO input, IO output, and AXS information.

4.1 Peripheral operation



◆ Manual operation area of the upper and lower drilling package: you can manually click the buttons of the tool, pressing plate, and spindle, the corresponding tool, pressing plate, and the spindle will be hit, and click again to retract it.

◆ Function button area: Click the button, the function described in the corresponding picture button will be output, click again to restore.

◆ Coordinate display area: It can display the coordinate values of machine coordinates and relative coordinates.

◆ Function key area: In the manual interface, you can switch the handwheel mode, return to zero, reset coordinates, and move each axis.

◆ Speed selection: adjustable speed magnification.

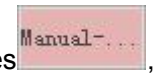
● Manual operation of the up and down drilling package: click the "button" of tool No. 1 (default state) with the mouse , and the "button" becomes , indicating that tool No. 1 has been extended, click again to restore the default state, the tool is retracted, and other pressing plate and spindle operations The same is true.

● Function button: mouse click on the "X gripper button"

(default state), the "button" becomes

, indicating that the X gripper will be clamped, click again to restore the default state, the gripper is released, the operation of other function buttons is the same.

● Manual continuous: When the machine tool is ready, click the "manual continuous"

, the "manual continuous button" becomes 

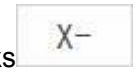
, and then click the axial buttons of each axis. For example,

， the X axis will move in the positive direction. Click and the

X axis will move in the negative direction. The operation of other manual moving axes is the same. When the XU coupling is checked

and the mouse clicks

or

, the X axis and U axis will move in the positive direction at the same time, and the mouse clicks 

or

, the X axis and U axis will move in the negative direction at the same time.

● Click "handwheel mode"

, the "handwheel mode button" becomes

, press the button on the interface, enter the handwheel operation mode, and then use the axis selection switch on the handwheel to choose between each axis, or through The override selection switch adjusts the step distance of the handwheel feed. When the axis and step distance are determined, the operation of each axis can be driven by shaking the hand wheel.

● Click "Return to zero"

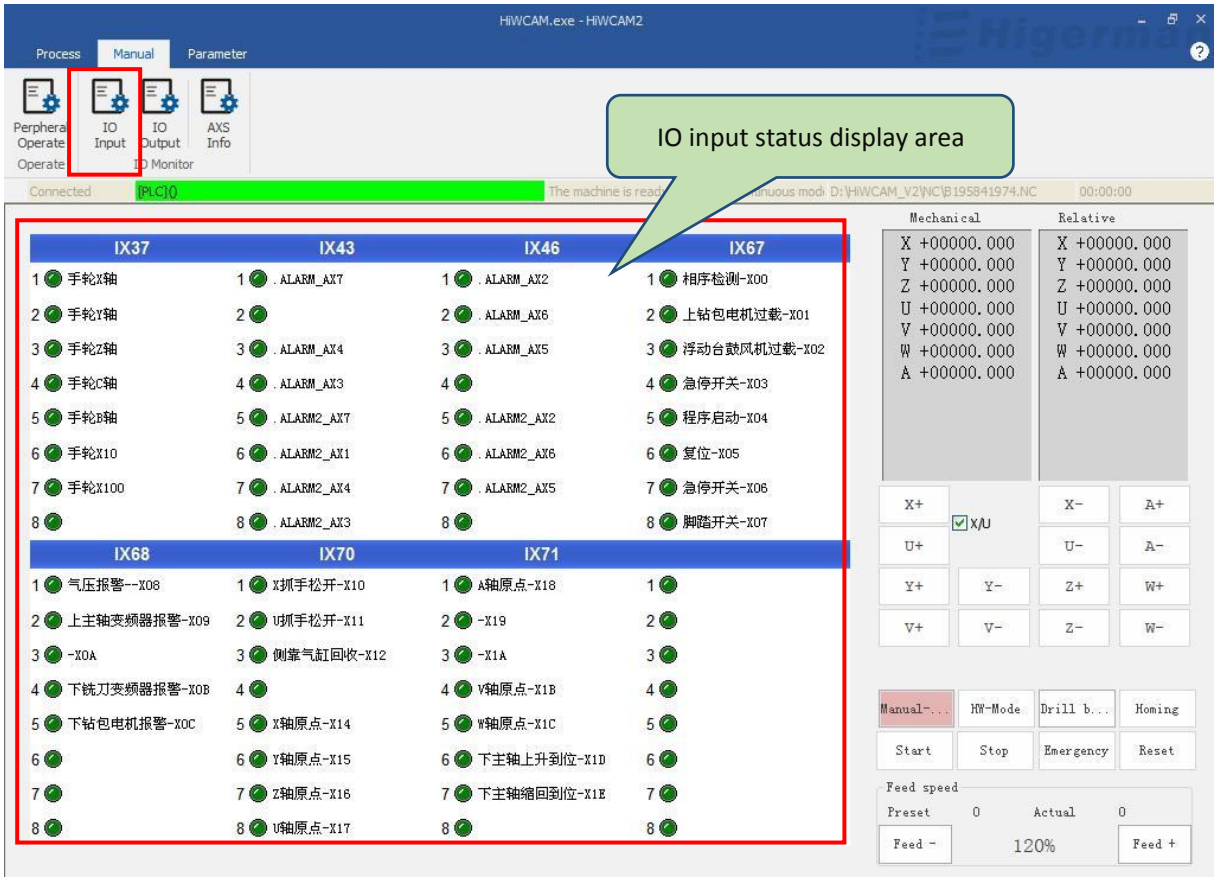
, "Return to zero button" becomes

, click "Start"

, the coordinate axis feeds at a fixed speed when returning to the machine origin, until it returns to the origin position (for incremental machine tools, absolute value machine tools do not Need to go back to origin).

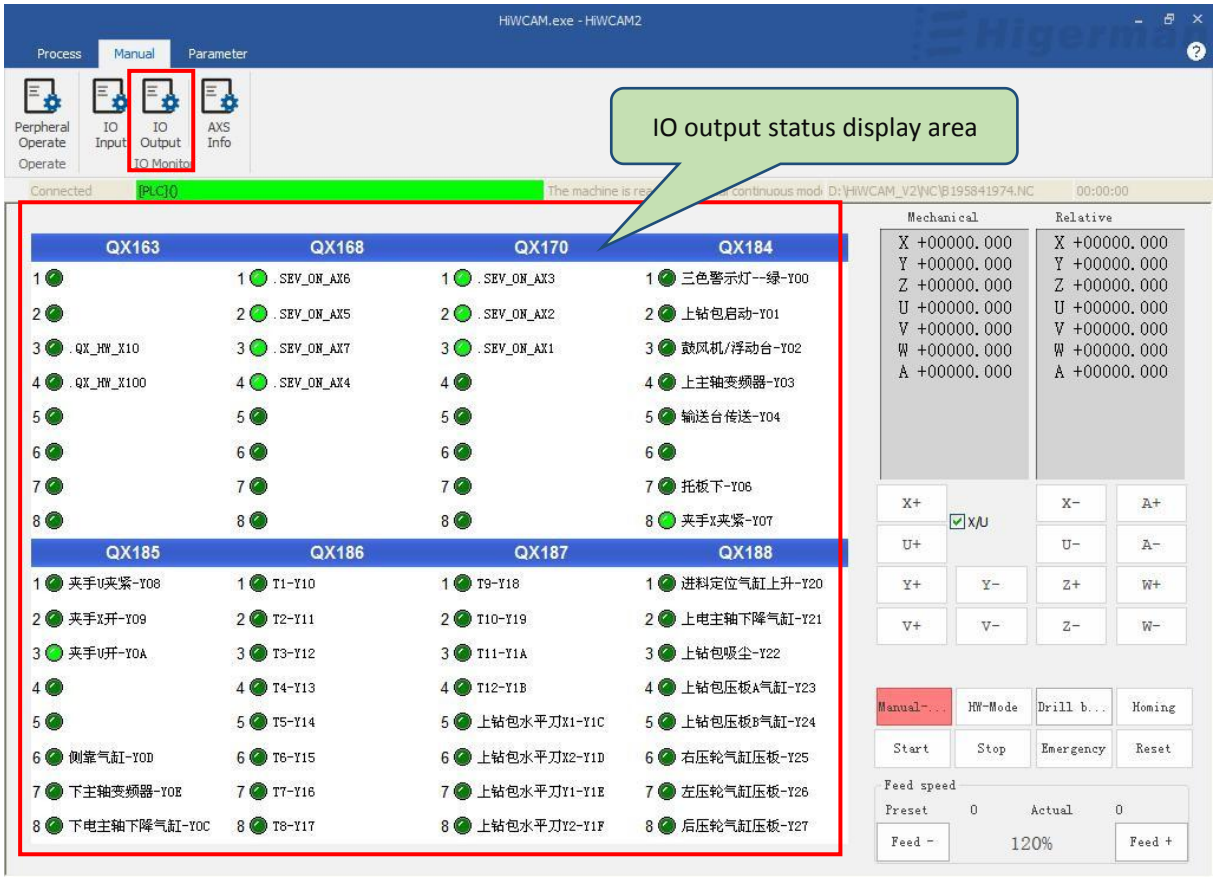
● speed selection: by "ratio + " and "magnification - " self-adjust the feed speed override, the maximum rate of 120% .

4.2 IO Input



A state of IO input points can be monitored in this area .

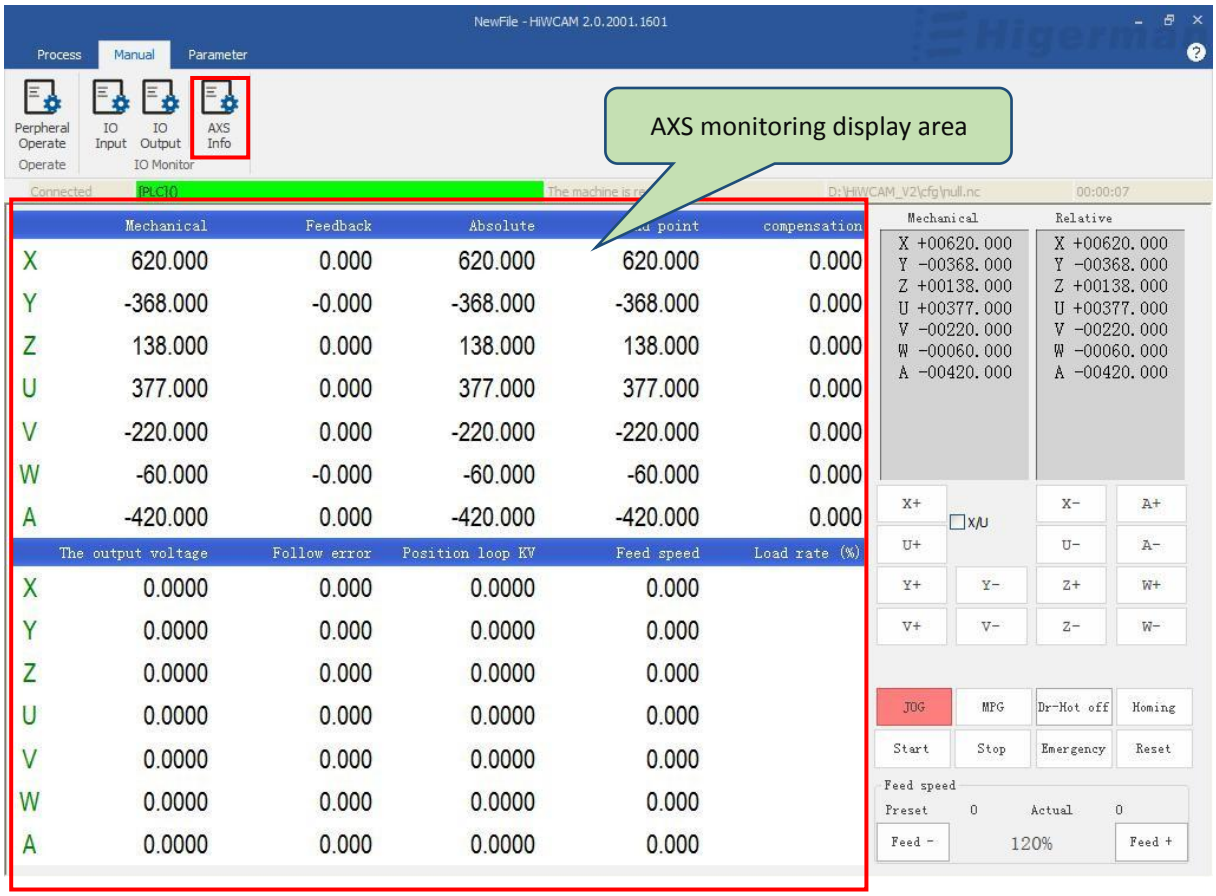
4.3 IO Output



A state of IO output points can be monitored in this area .

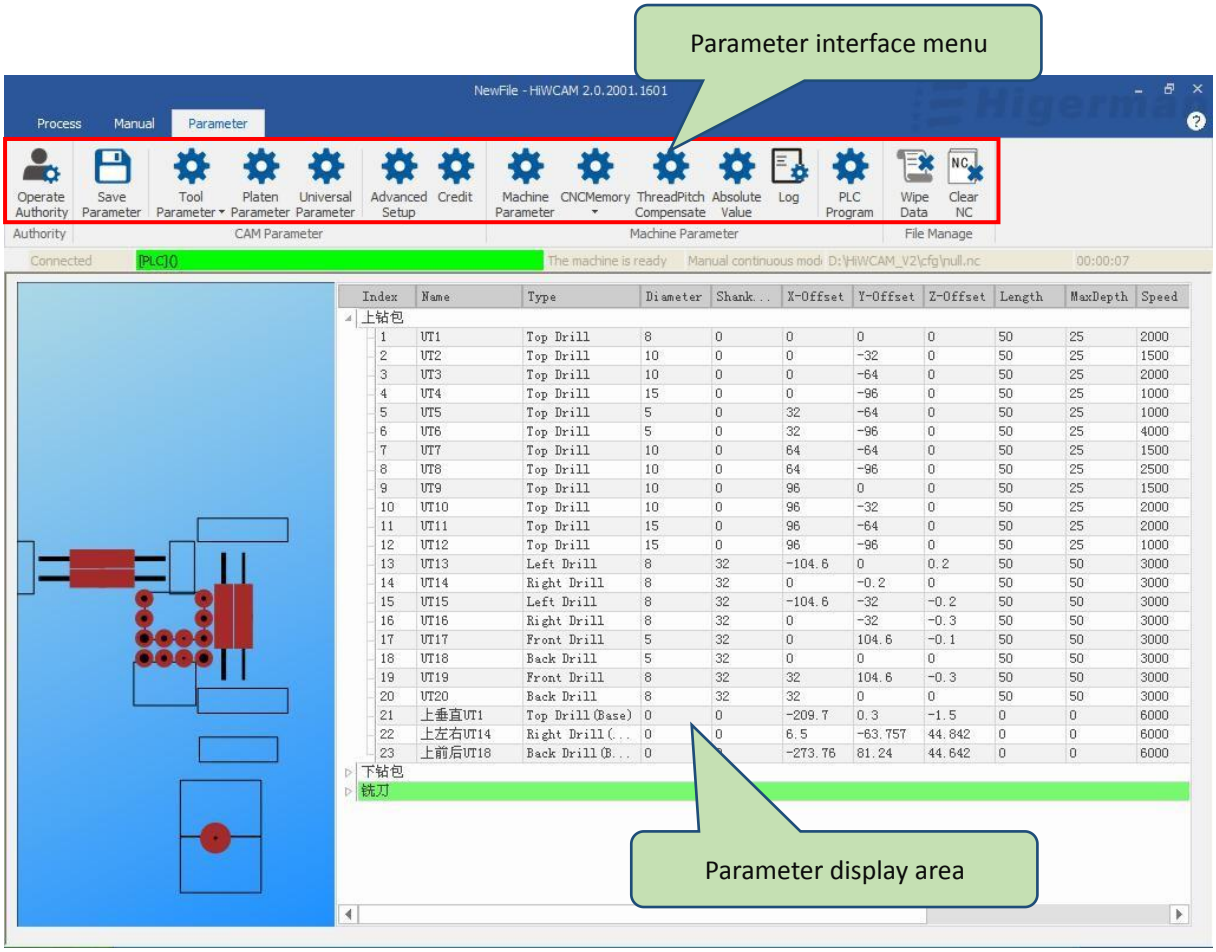
4.4 AXS information

This interface can monitor mechanical coordinates, feedback coordinates, absolute coordinates, end coordinates, coordinate compensation, output voltage, following error, position KV, feed speed, etc. We usually monitor the position KV , which is monitored when each axis moves The KV value should be the same as the KV of each axis set by the machine parameters . If it is not the same, an alarm will occur when the axis moves, for example, the axis lag value is too large.


NewFile - HiWCAM 2.0.2001.1601
Process
Manual
Parameter
Perpheral Operate
IO Input
IO Output
AXS Info
Operate
IO Monitor
AXS monitoring display area
Connected
[PLC]()
D:\HiWCAM_V2\cfg\null.nc
00:00:07
Mechanical
Feedback
Absolute
compensation
X 620.000 0.000 620.000 620.000 0.000
Y -368.000 -0.000 -368.000 -368.000 0.000
Z 138.000 0.000 138.000 138.000 0.000
U 377.000 0.000 377.000 377.000 0.000
V -220.000 0.000 -220.000 -220.000 0.000
W -60.000 -0.000 -60.000 -60.000 0.000
A -420.000 0.000 -420.000 -420.000 0.000
The output voltage
Follow error
Position loop KV
Feed speed
Load rate (%)
X 0.0000 0.000 0.0000 0.000
Y 0.0000 0.000 0.0000 0.000
Z 0.0000 0.000 0.0000 0.000
U 0.0000 0.000 0.0000 0.000
V 0.0000 0.000 0.0000 0.000
W 0.0000 0.000 0.0000 0.000
A 0.0000 0.000 0.0000 0.000
Mechanical
X +00620.000
Y -00368.000
Z +00138.000
U +00377.000
V -00220.000
W -00060.000
A -00420.000
Relative
X +00620.000
Y -00368.000
Z +00138.000
U +00377.000
V -00220.000
W -00060.000
A -00420.000
X+
X/U
X-
A+
U+
U-
A-
Y+
Y-
Z+
W+
V+
V-
Z-
W-
JOG
MPG
Dr-Hot off
Homing
Start
Stop
Emergency
Reset
Feed speed
Preset
0
Actual
0
Feed -
120%
Feed +

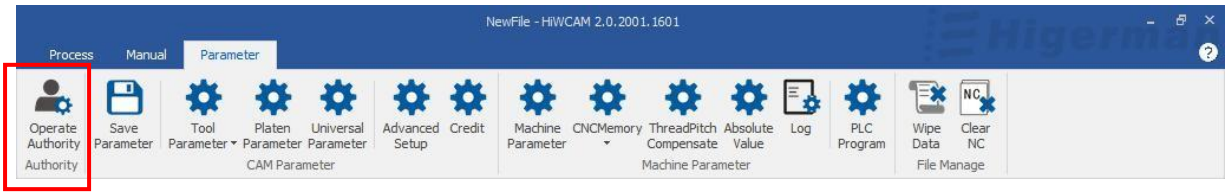
5. parameter

Display all tool parameters and modifiable parameters.



Index	Name	Type	Diameter	Shank...	X-Offset	Y-Offset	Z-Offset	Length	MaxDepth	Speed
上钻包										
1	UT1	Top Drill	8	0	0	0	0	50	25	2000
2	UT2	Top Drill	10	0	0	-32	0	50	25	1500
3	UT3	Top Drill	10	0	0	-64	0	50	25	2000
4	UT4	Top Drill	15	0	0	-96	0	50	25	1000
5	UT5	Top Drill	5	0	32	-64	0	50	25	1000
6	UT6	Top Drill	5	0	32	-96	0	50	25	4000
7	UT7	Top Drill	10	0	64	-64	0	50	25	1500
8	UT8	Top Drill	10	0	64	-96	0	50	25	2500
9	UT9	Top Drill	10	0	96	0	0	50	25	1500
10	UT10	Top Drill	10	0	96	-32	0	50	25	2000
11	UT11	Top Drill	15	0	96	-64	0	50	25	2000
12	UT12	Top Drill	15	0	96	-96	0	50	25	1000
13	UT13	Left Drill	8	32	-104.6	0	0.2	50	50	3000
14	UT14	Right Drill	8	32	0	-0.2	0	50	50	3000
15	UT15	Left Drill	8	32	-104.6	-32	-0.2	50	50	3000
16	UT16	Right Drill	8	32	0	-32	-0.3	50	50	3000
17	UT17	Front Drill	5	32	0	104.6	-0.1	50	50	3000
18	UT18	Back Drill	5	32	0	0	0	50	50	3000
19	UT19	Front Drill	8	32	32	104.6	-0.3	50	50	3000
20	UT20	Back Drill	8	32	32	0	0	50	50	3000
21	上垂直UT1	Top Drill(Base)	0	0	-209.7	0.3	-1.5	0	0	6000
22	上左右UT14	Right Drill(...	0	0	6.5	-63.757	44.842	0	0	6000
23	上前后UT18	Back Drill(B...	0		-273.76	81.24	44.642	0	0	6000
下钻包										
铣刀										

5.1 Operation authority

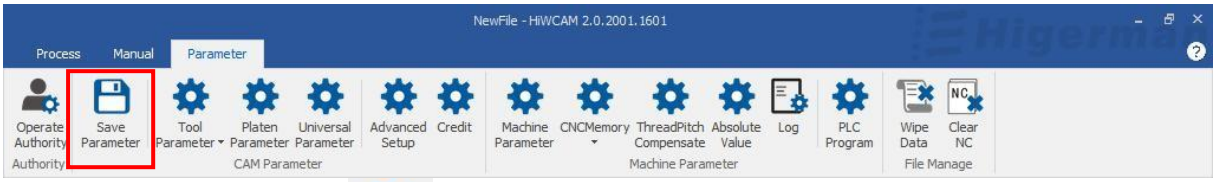


Click "Operation Authority"

and a dialog box for entering the password will pop up .

Enter the password: Level 1 password hi001, you can enter to view tool parameters and platen parameters; Level 2 password hi002 , you can operate to open machine parameters and PLC parameters; Level 3 password hi2003 can open and modify all parameters. Click "OK" to enter the corresponding level operation, generally our operation is to directly enter hi2003 .

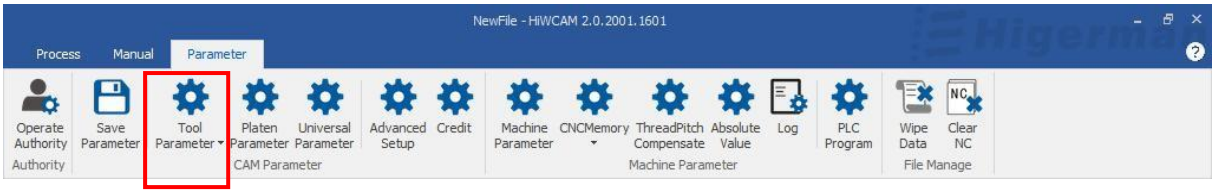
5.2 Save parameters



Click "Save Parameters"

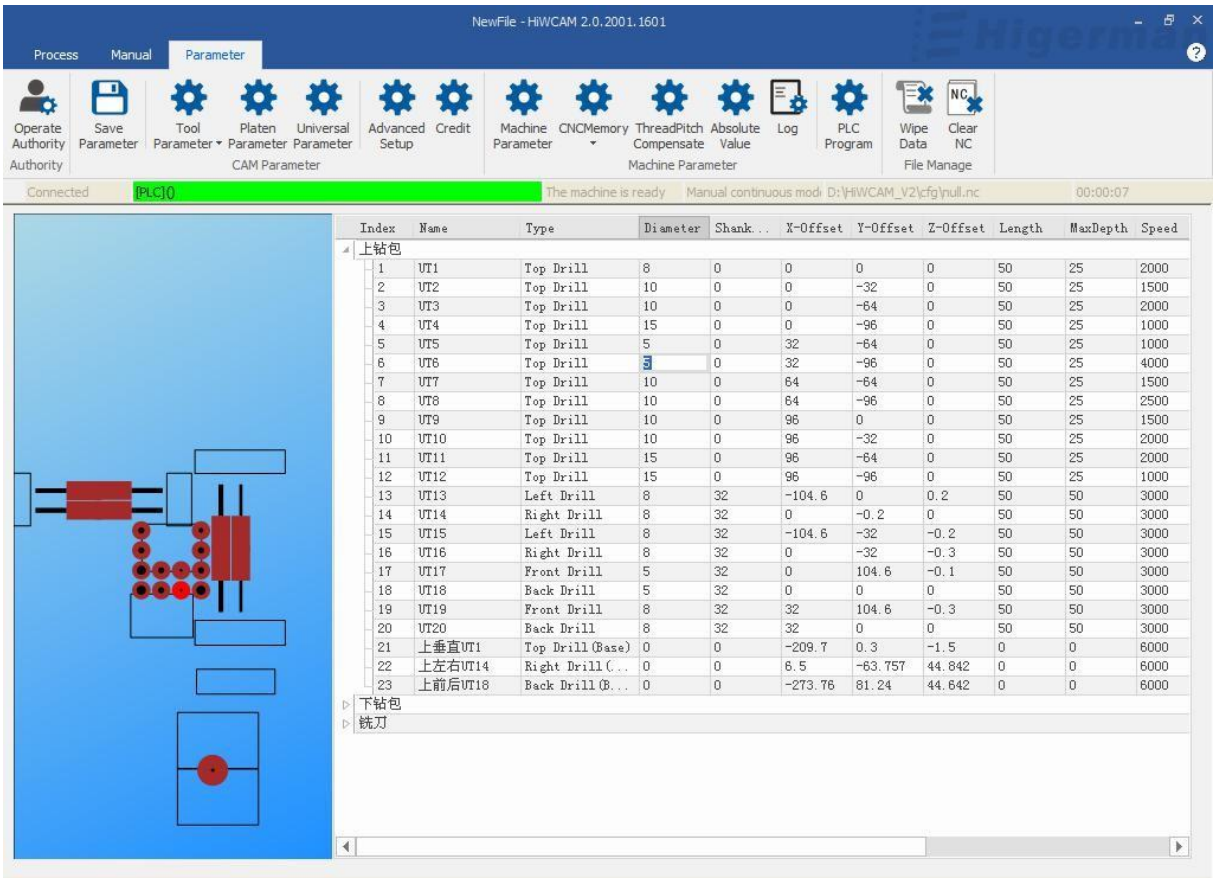
, and the modified parameters will be automatically saved.

5.3 Tool settings



Click "Tool Settings"

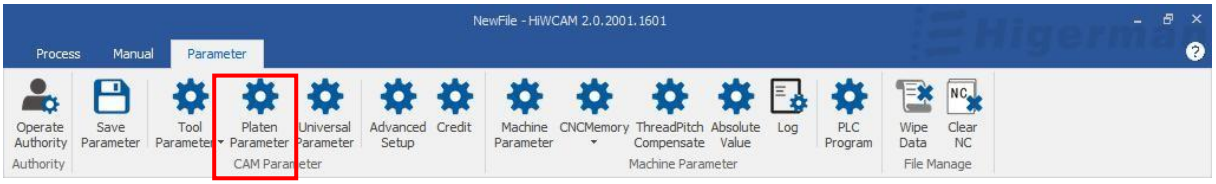
, you can see the tool parameters.



Index	Name	Type	Diameter	Shank..	X-Offset	Y-Offset	Z-Offset	Length	MaxDepth	Speed
上钻包										
1	UT1	Top Drill	8	0	0	0	0	50	25	2000
2	UT2	Top Drill	10	0	0	-32	0	50	25	1500
3	UT3	Top Drill	10	0	0	-64	0	50	25	2000
4	UT4	Top Drill	15	0	0	-96	0	50	25	1000
5	UT5	Top Drill	5	0	32	-64	0	50	25	1000
6	UT6	Top Drill	3	0	32	-96	0	50	25	4000
7	UT7	Top Drill	10	0	64	-64	0	50	25	1500
8	UT8	Top Drill	10	0	64	-96	0	50	25	2500
9	UT9	Top Drill	10	0	96	0	0	50	25	1500
10	UT10	Top Drill	10	0	96	-32	0	50	25	2000
11	UT11	Top Drill	15	0	96	-64	0	50	25	2000
12	UT12	Top Drill	15	0	96	-96	0	50	25	1000
13	UT13	Left Drill	8	32	-104.6	0	0.2	50	50	3000
14	UT14	Right Drill	8	32	0	-0.2	0	50	50	3000
15	UT15	Left Drill	8	32	-104.6	-32	-0.2	50	50	3000
16	UT16	Right Drill	8	32	0	-32	-0.3	50	50	3000
17	UT17	Front Drill	5	32	0	104.6	-0.1	50	50	3000
18	UT18	Back Drill	5	32	0	0	0	50	50	3000
19	UT19	Front Drill	8	32	32	104.6	-0.3	50	50	3000
20	UT20	Back Drill	8	32	32	0	0	50	50	3000
21	上垂直UT1	Top Drill (Base)	0	0	-209.7	0.3	-1.5	0	0	6000
22	上左右UT14	Right Drill (...	0	0	6.5	-63.757	44.842	0	0	6000
23	上前后UT18	Back Drill (B...	0	0	-273.76	81.24	44.642	0	0	6000
下钻包										
铣刀										

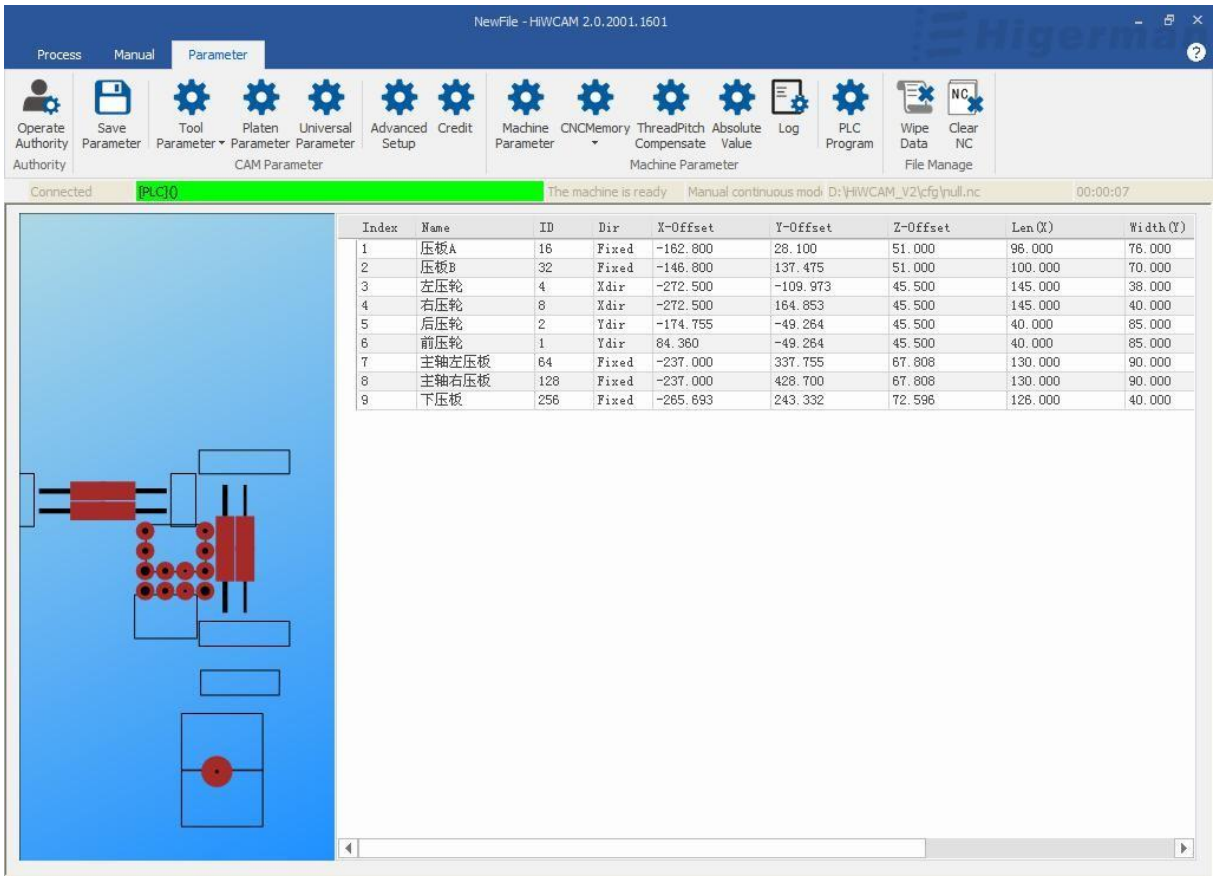
If you want to modify the corresponding parameters, double-clicking the parameters does not respond, you need to click "Operation authority" to enter the level password hi2003 , click OK, then modify the parameters and click "Save parameters", the setting of the platen parameters and general parameters is the same.

5.4 Pressure plate parameters



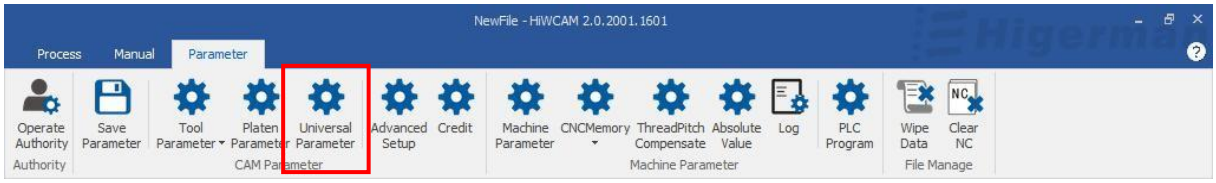
Click "Plate Parameters"

to see the press plate parameters, and you can set and modify the parameters.



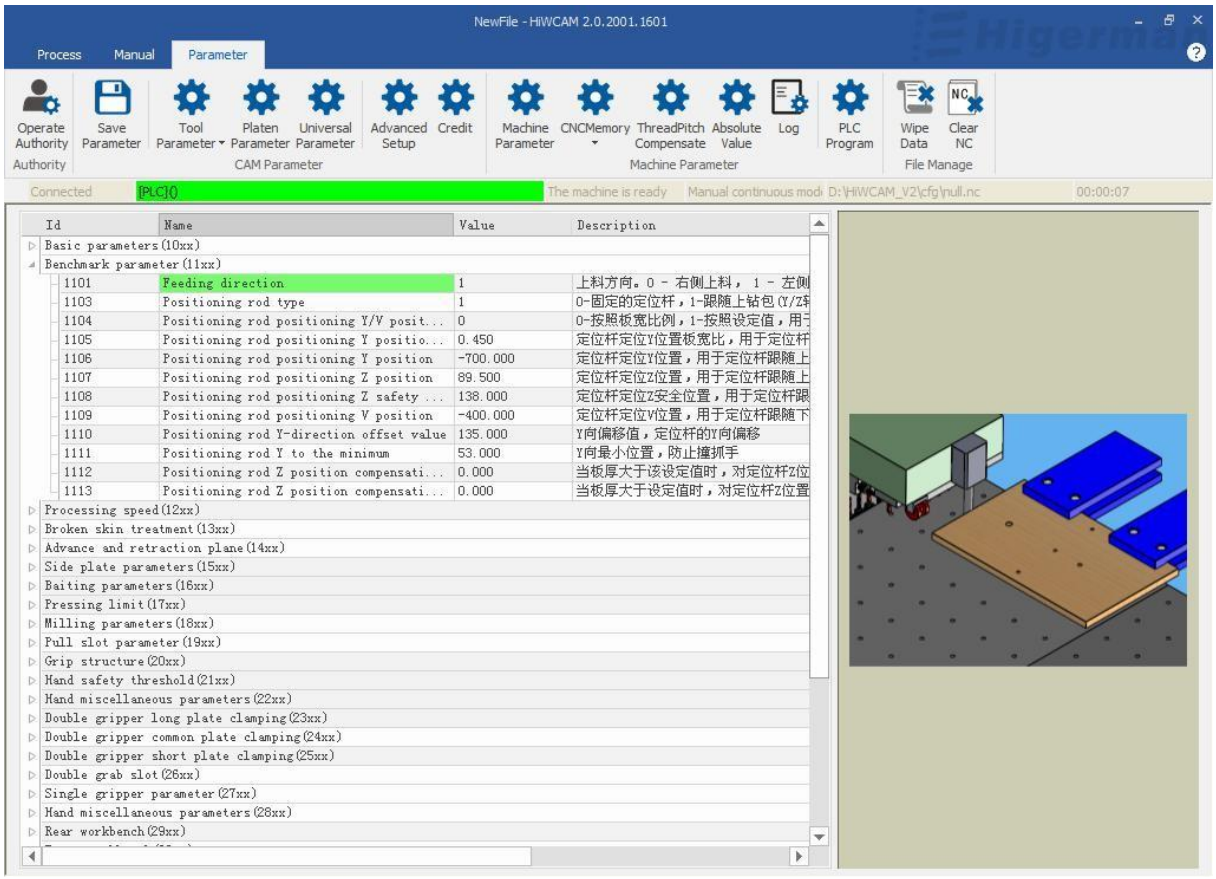
Index	Name	ID	Dir	X-Offset	Y-Offset	Z-Offset	Len(X)	Width(Y)
1	压板A	16	Fixed	-162.800	28.100	51.000	96.000	76.000
2	压板B	32	Fixed	-146.800	137.475	51.000	100.000	70.000
3	左压轮	4	Xdir	-272.500	-109.973	45.500	145.000	38.000
4	右压轮	8	Xdir	-272.500	164.853	45.500	145.000	40.000
5	后压轮	2	Ydir	-174.755	-49.264	45.500	40.000	85.000
6	前压轮	1	Ydir	84.360	-49.264	45.500	40.000	85.000
7	主轴左压板	64	Fixed	-237.000	337.755	67.808	130.000	90.000
8	主轴右压板	128	Fixed	-237.000	428.700	67.808	130.000	90.000
9	下压板	256	Fixed	-265.693	243.332	72.596	126.000	40.000

5.5 General/Universal parameters

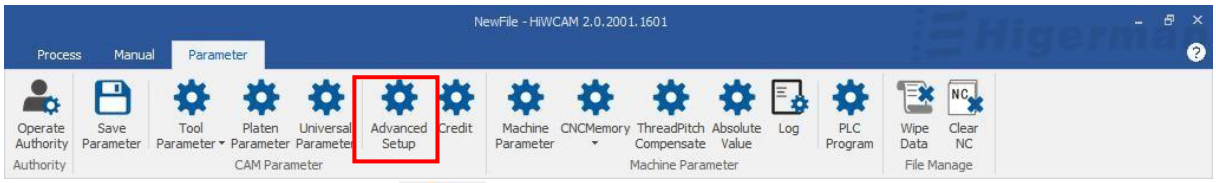


Click "General Parameters"

, you can see the general parameters, you can set and modify the parameters, and the grouping method is adopted inside.

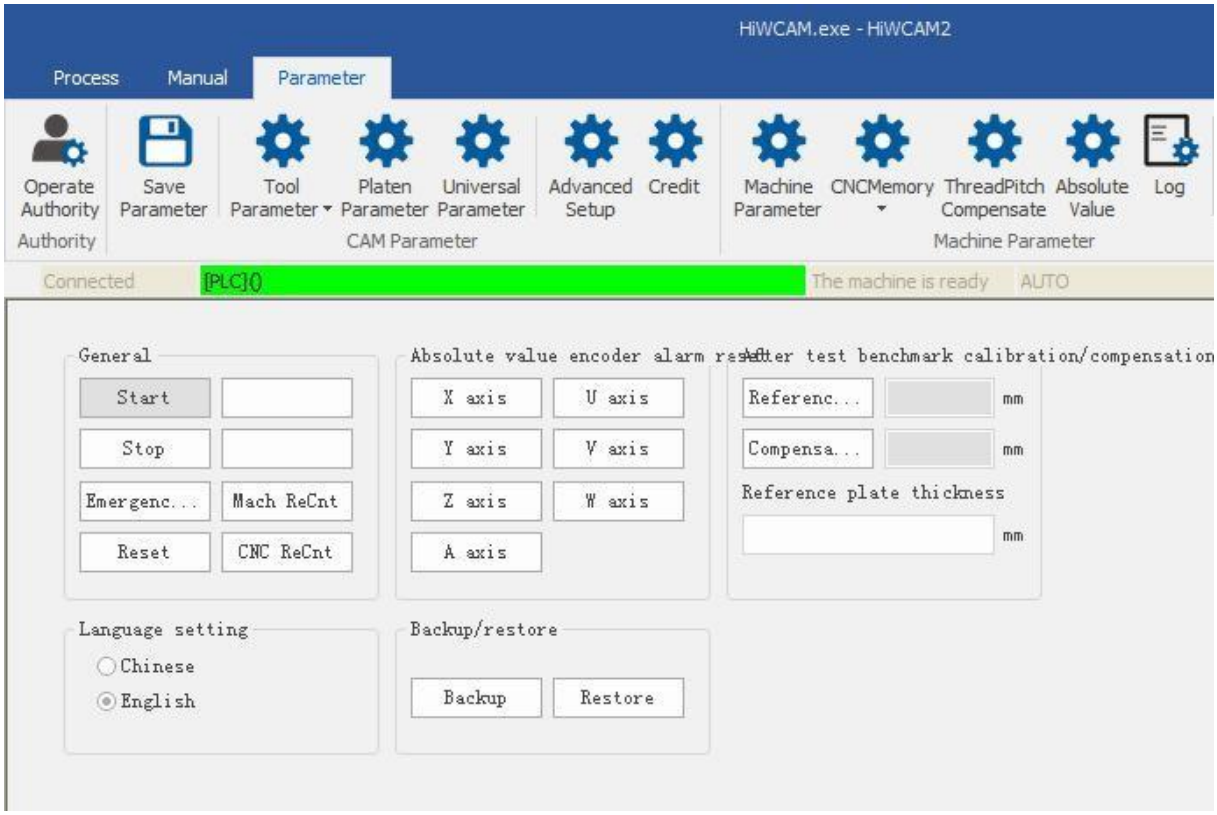

NewFile - HiWCAM 2.0.2001.1601
Process
Manual
Parameter
Operate Authority
Save Parameter
Tool Parameter
Platen Parameter
Universal Parameter
Advanced Setup
Credit
Machine Parameter
CNCMemory
ThreadPitch Compensate
Absolute Value
Log
PLC Program
Wipe Data
Clear NC
Authority
CAM Parameter
Machine Parameter
File Manage
Connected
[PLC]()
The machine is ready
Manual continuous mod
D:\HiWCAM_V2\cfg\null.nc
00:00:07
Id
Name
Value
Description
Basic parameters(10xx)
Benchmark parameter(11xx)
1101 Feeding direction 1 上料方向。0 - 右侧上料， 1 - 左侧
1103 Positioning rod type 1 0-固定的定位杆，1-跟随上钻包(Y/Z
1104 Positioning rod positioning Y/V posit... 0 0-按照板宽比例，1-按照设定值，用
1105 Positioning rod positioning Y positio... 0.450 定位杆定位Y位置板宽比，用于定位杆
1106 Positioning rod positioning Y position -700.000 定位杆定位Y位置，用于定位杆跟随上
1107 Positioning rod positioning Z position 89.500 定位杆定位Z位置，用于定位杆跟随上
1108 Positioning rod positioning Z safety ... 138.000 定位杆定位Z安全位置，用于定位杆跟
1109 Positioning rod positioning V position -400.000 定位杆定位V位置，用于定位杆跟随下
1110 Positioning rod Y-direction offset value 135.000 Y向偏移值，定位杆的Y向偏移
1111 Positioning rod Y to the minimum 53.000 Y向最小位置，防止撞抓手
1112 Positioning rod Z position compensati... 0.000 当板厚大于该设定值时，对定位杆Z位
1113 Positioning rod Z position compensati... 0.000 当板厚大于设定值时，对定位杆Z位置
Processing speed(12xx)
Broken skin treatment(13xx)
Advance and retraction plane(14xx)
Side plate parameters(15xx)
Baiting parameters(16xx)
Pressing limit(17xx)
Milling parameters(18xx)
Pull slot parameter(19xx)
Grip structure(20xx)
Hand safety threshold(21xx)
Hand miscellaneous parameters(22xx)
Double gripper long plate clamping(23xx)
Double gripper common plate clamping(24xx)
Double gripper short plate clamping(25xx)
Double grab slot(26xx)
Single gripper parameter(27xx)
Hand miscellaneous parameters(28xx)
Rear workbench(29xx)

5.6 Advanced settings

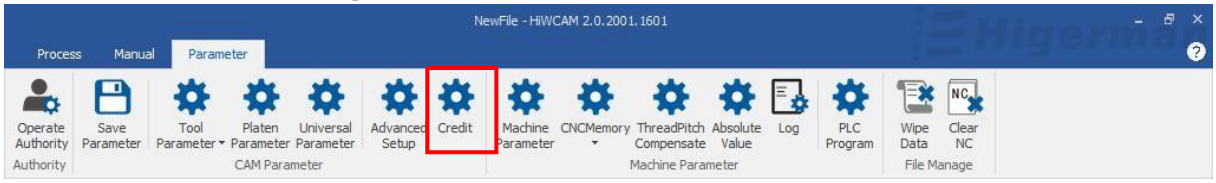


Click "Advanced Settings"

to see the advanced settings interface, you can perform some operations such as routine start and stop, absolute encoder alarm reset operations, thickness measurement reference/ compensation calibration, language settings, backup and recovery.



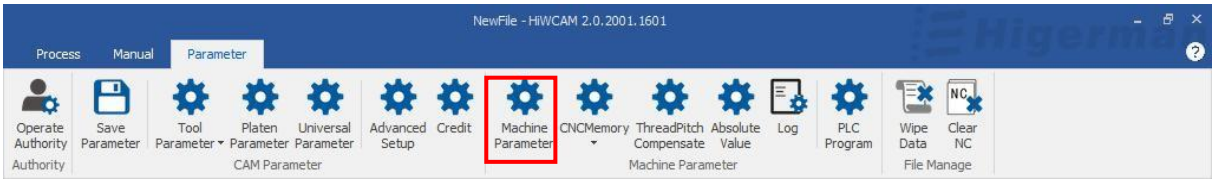
5.7 Credit Investigation Authorization



Click "Credit "

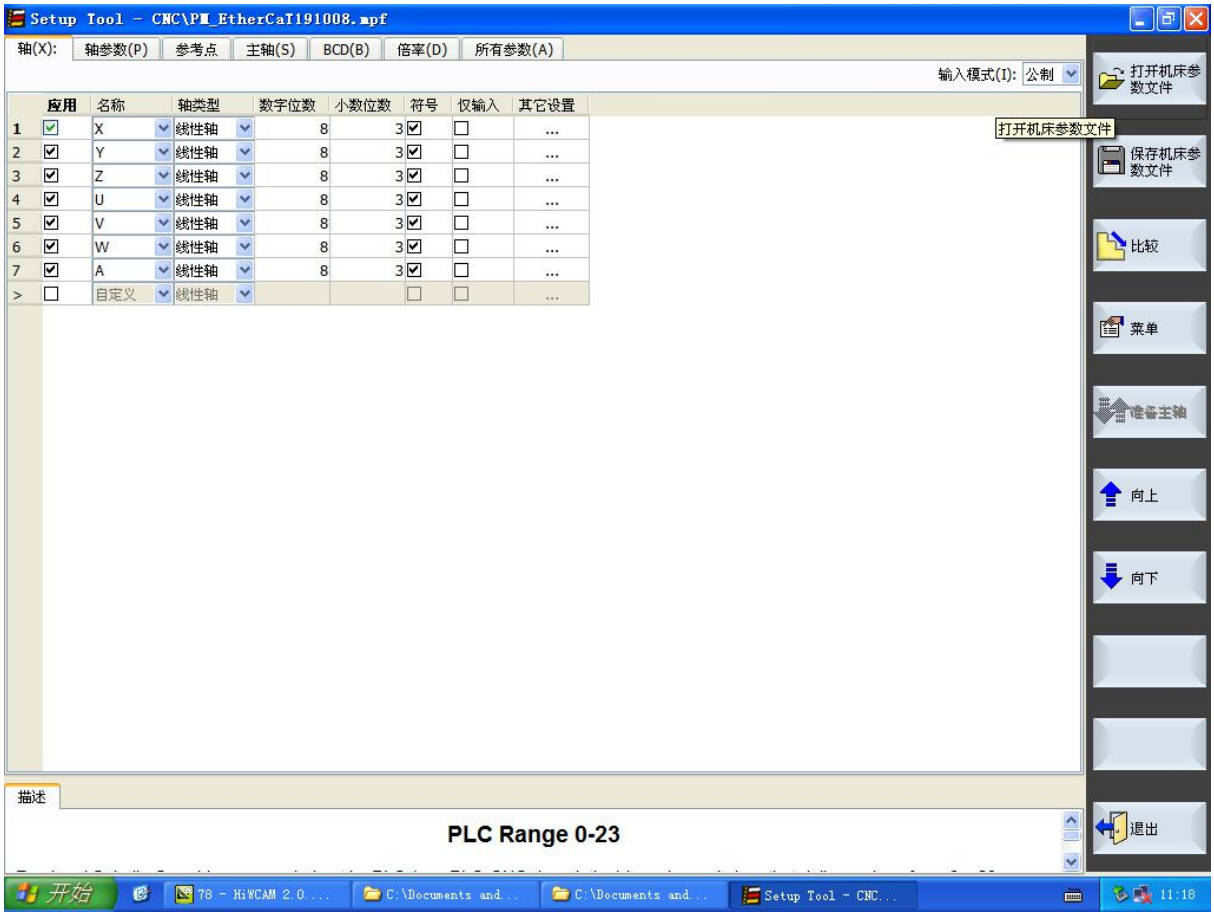
to open the credit investigation authorization, and you can set the system credit investigation time through the authorization code.

5.8 Machine parameters

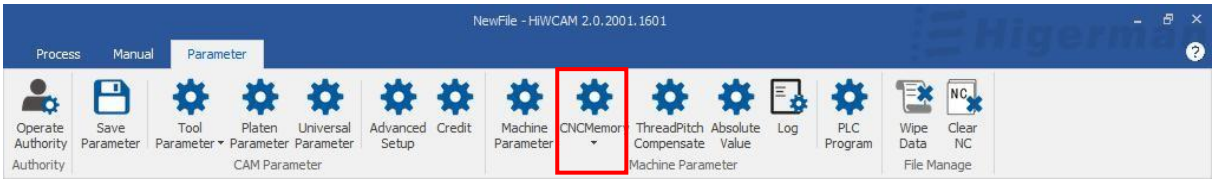


Click "Machine Parameters"

to jump to this page where you can set and modify machine parameters.

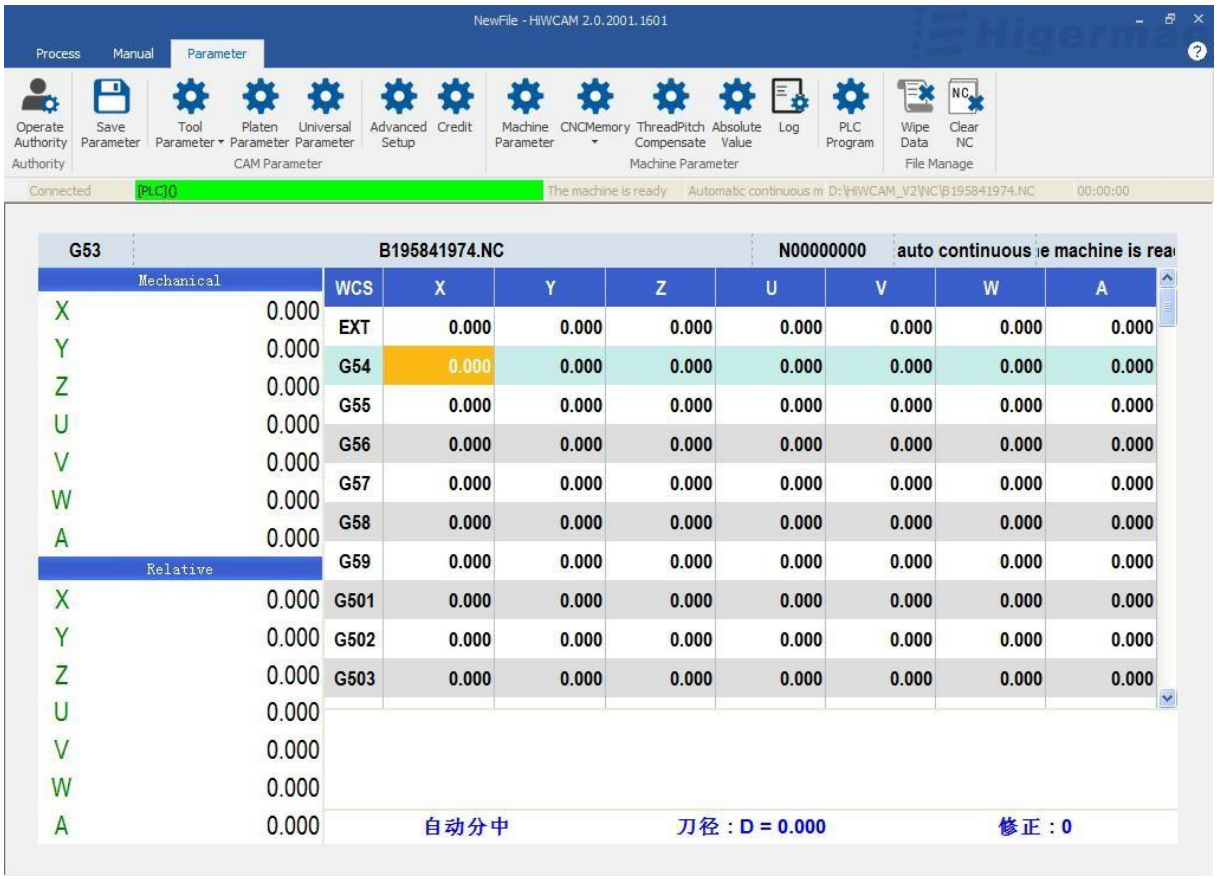

Setup Tool - CNC\PM_EtherCaT191008.mpf
轴(X):
轴参数(P)
参考点
主轴(S)
BCD(B)
倍率(D)
所有参数(A)
输入模式(I): 公制
应用
名称
轴类型
数字位数
小数位数
符号
仅输入
其它设置
1 X 线性轴 8 3
2 Y 线性轴 8 3
3 Z 线性轴 8 3
4 U 线性轴 8 3
5 V 线性轴 8 3
6 W 线性轴 8 3
7 A 线性轴 8 3
> 自定义 线性轴
打开机床参数文件
保存机床参数文件
比较
菜单
准备主轴
向上
向下
退出
描述
PLC Range 0-23
开始
78 - HiWCAM 2.0....
C:\Documents and...
C:\Documents and...
Setup Tool - CNC...
11:18

5.9 HMI/CNC Memory



Click "CNC Memory "

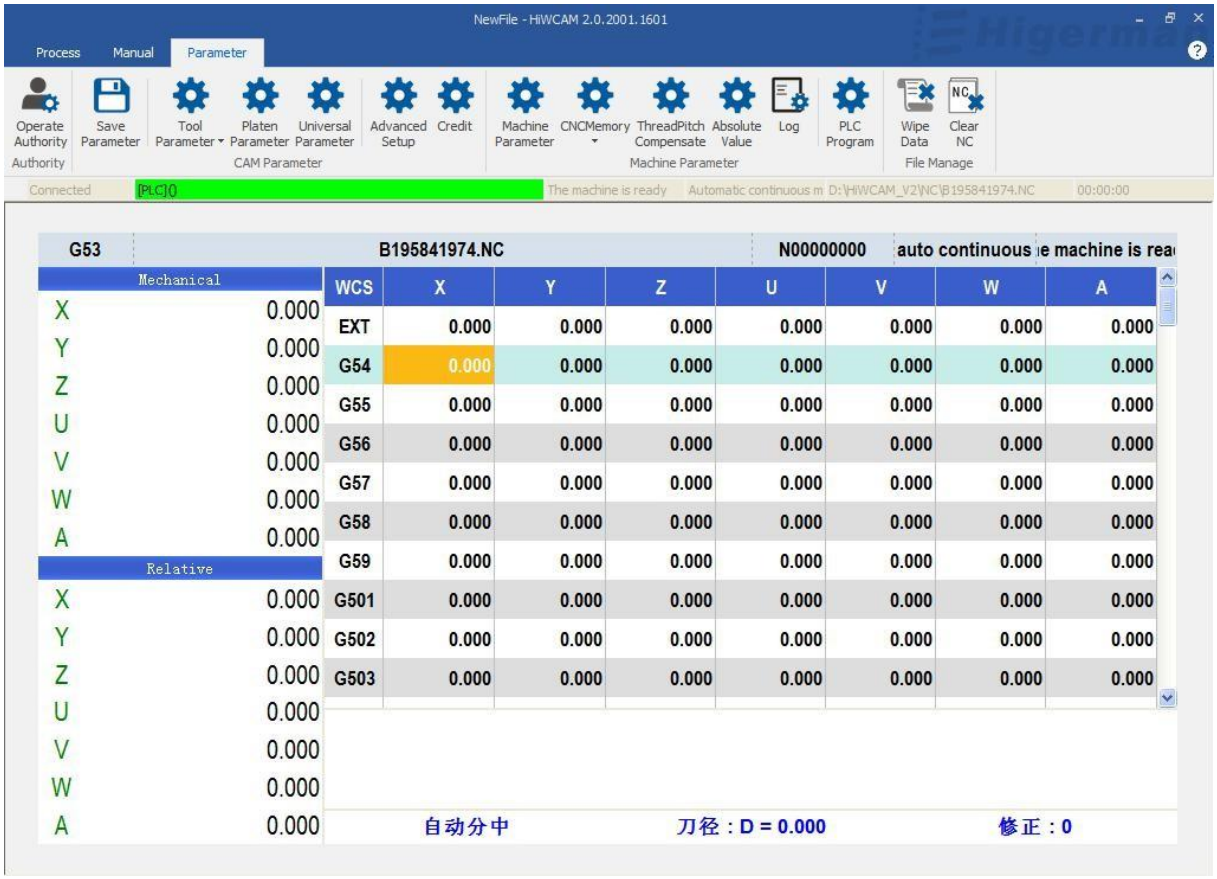
, it will jump to this page, you can set and modify P parameters.



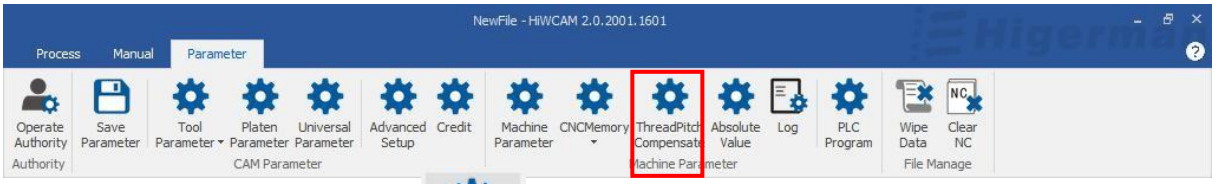
Click "CNC Memory "

, drop-down box button, select " G parameter "

, it will jump to this page, you can set and modify G parameters.



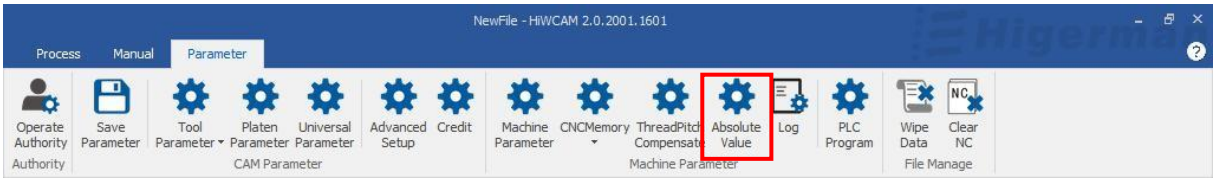
5.10 Pitch compensation



Click "Pitch Compensation"

to pop up this page, you can turn on the pitch compensation, write and read the catalog.

5.11 Absolute value

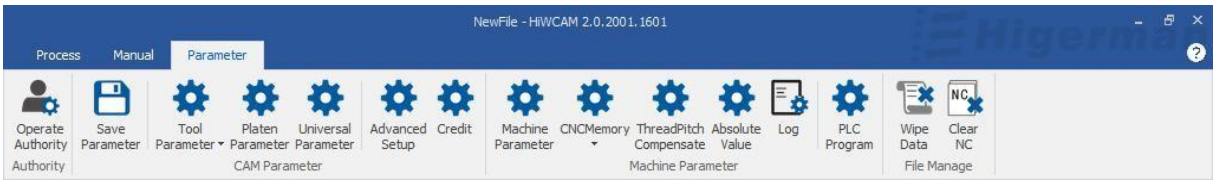


Click "absolute value"

to pop up this interface, you can set the absolute value, click "absolute value".

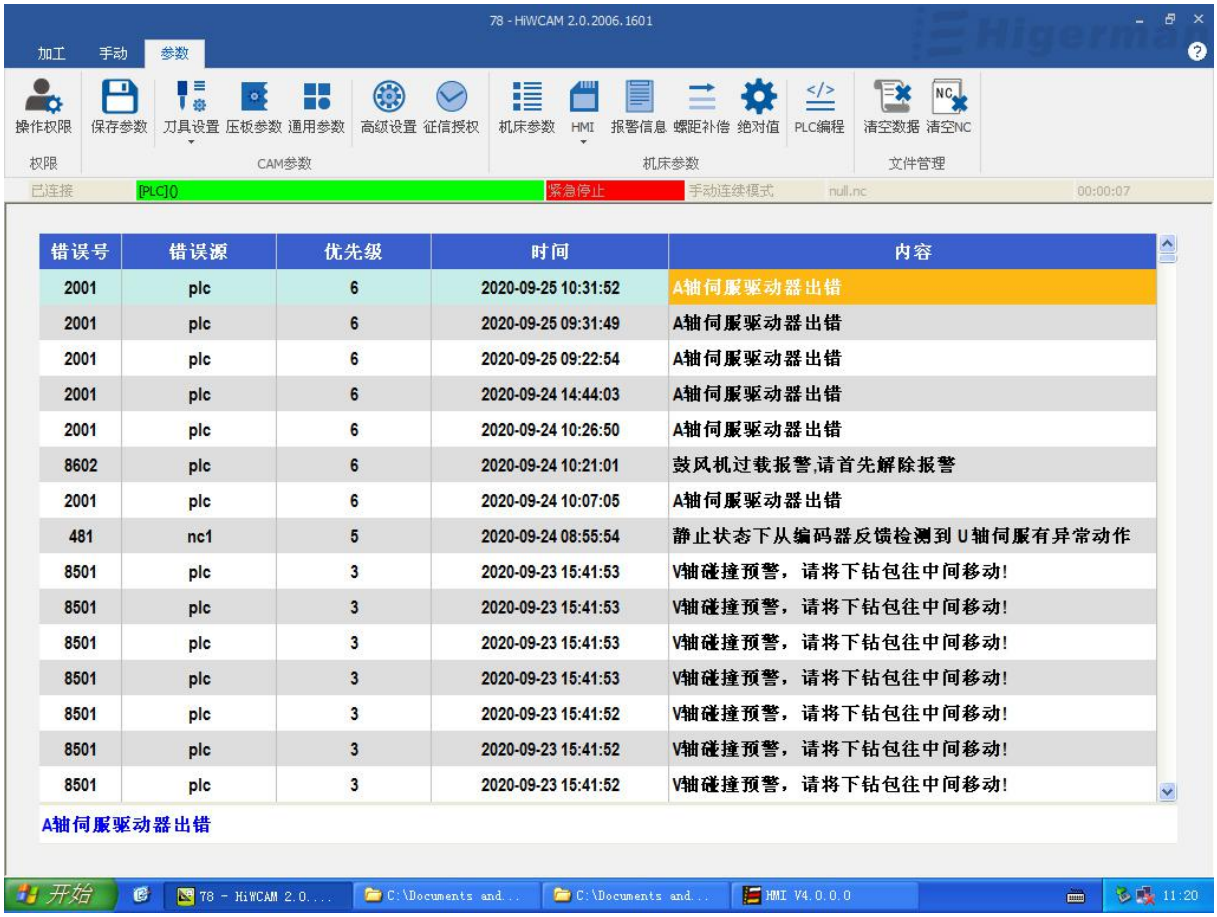
	绝对值使能	坐标重置	绝对坐标	接口类型	编码器方向	每转脉冲数	绝对脉冲数偏置
轴通道01	0	0	-366	1	1	2500	375644
轴通道02	0	0	0	1	1	2500	374298
轴通道03	0	0	0	1	1	2500	460782
轴通道04	0	0	137	1	1	2500	-109830
轴通道05	0	0	0	1	1	2500	-125303
轴通道06	0	0	-50	1	1	2500	-4734
轴通道07	0	0	0	1	1	2500	280302
轴通道08	0	0	0	0	1	2500	0
轴通道09	0	0	0	0	1	2500	0
轴通道10	0	0	0	0	1	2500	0
轴通道11	0	0	0	0	1	2500	0
轴通道12	0	0	0	0	1	2500	0
轴通道13	0	0	0	0	1	2500	0
轴通道14	0	0	0	0	1	2500	0
轴通道15	0	0	0	0	1	2500	0
轴通道16	0	0	0	0	1	2500	0
轴通道17	0	0	0	0	1	2500	0
轴通道18	0	0	0	0	1	2500	0
轴通道19	0	0	0	0	1	2500	0
轴通道20	0	0	0	0	1	2500	0

5.12 Alarm information/Log



Click "Log"

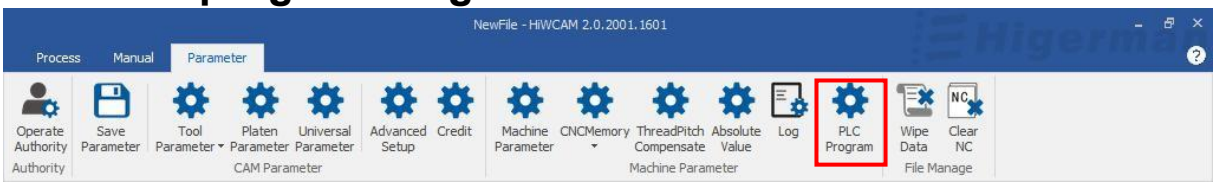
to query the alarm error information.



错误号	错误源	优先级	时间	内容
2001	plc	6	2020-09-25 10:31:52	A轴伺服驱动器出错
2001	plc	6	2020-09-25 09:31:49	A轴伺服驱动器出错
2001	plc	6	2020-09-25 09:22:54	A轴伺服驱动器出错
2001	plc	6	2020-09-24 14:44:03	A轴伺服驱动器出错
2001	plc	6	2020-09-24 10:26:50	A轴伺服驱动器出错
8602	plc	6	2020-09-24 10:21:01	鼓风机过载报警,请首先解除报警
2001	plc	6	2020-09-24 10:07:05	A轴伺服驱动器出错
481	nc1	5	2020-09-24 08:55:54	静止状态下从编码器反馈检测到U轴伺服有异常动作
8501	plc	3	2020-09-23 15:41:53	V轴碰撞预警，请将下钻包往中间移动!
8501	plc	3	2020-09-23 15:41:53	V轴碰撞预警，请将下钻包往中间移动!
8501	plc	3	2020-09-23 15:41:53	V轴碰撞预警，请将下钻包往中间移动!
8501	plc	3	2020-09-23 15:41:53	V轴碰撞预警，请将下钻包往中间移动!
8501	plc	3	2020-09-23 15:41:52	V轴碰撞预警，请将下钻包往中间移动!
8501	plc	3	2020-09-23 15:41:52	V轴碰撞预警，请将下钻包往中间移动!
8501	plc	3	2020-09-23 15:41:52	V轴碰撞预警，请将下钻包往中间移动!

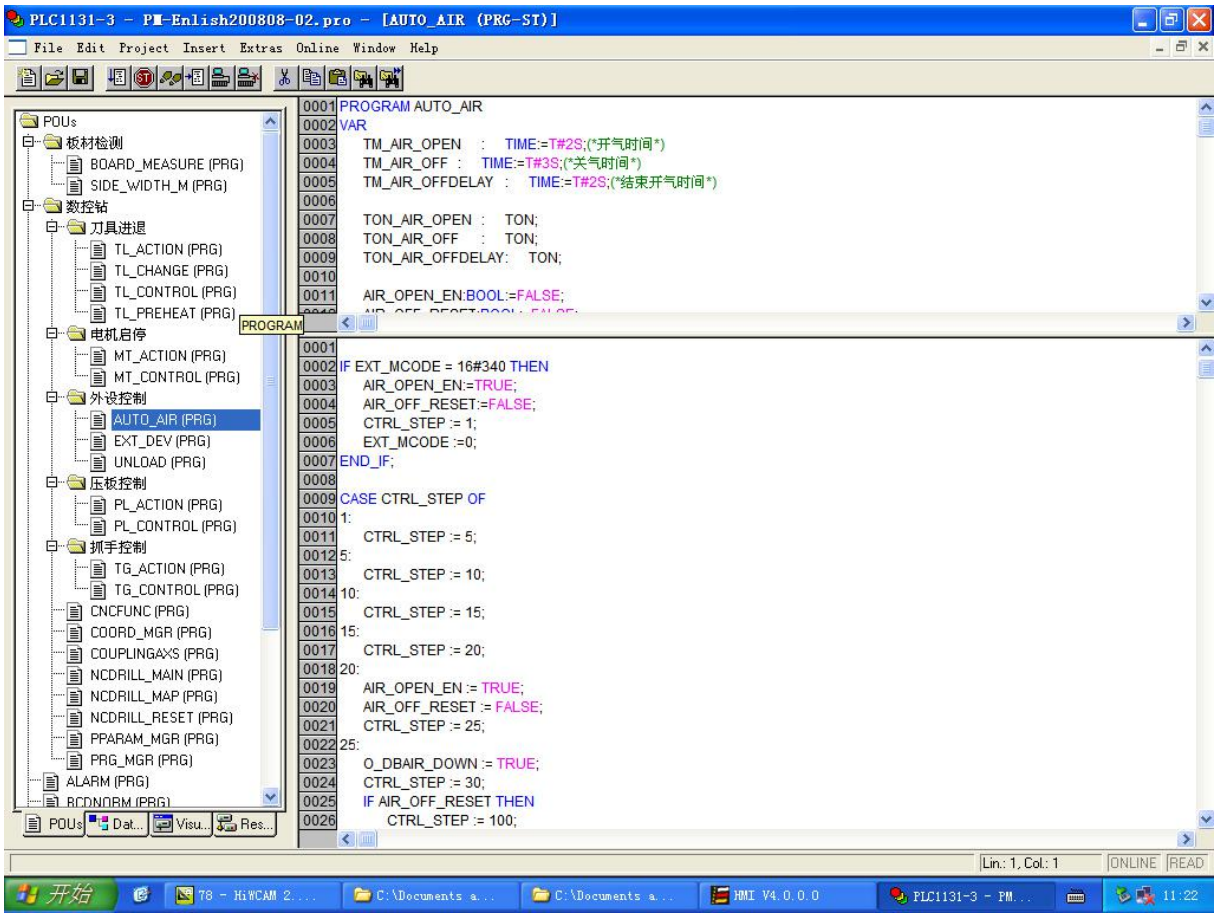
A轴伺服驱动器出错

5.13 PLC programming

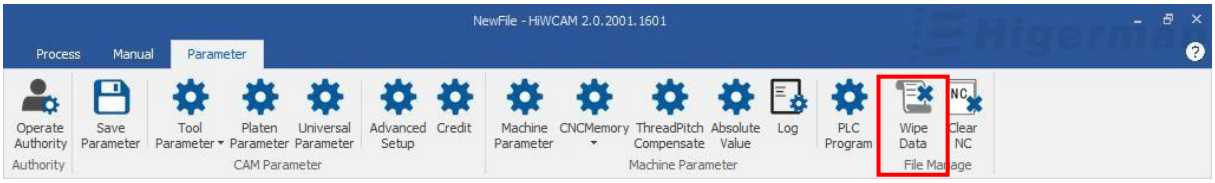


Click "PLC Programming"

, this interface pops up, you can open and load PLC , note (loading PLC needs to reopen HICAME).



5.14 Clear data

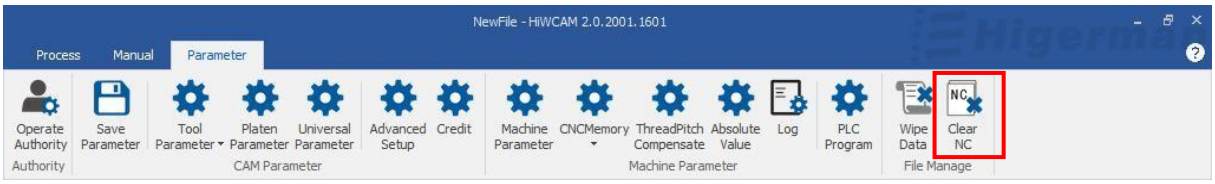


Click "Clear Data"

.

Click "Yes" to quickly delete files in the data directory. Please pay attention when deleting.

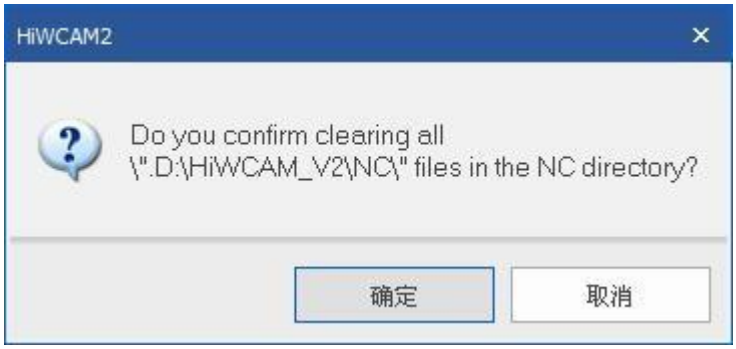
5.15 Clear NC



Click "Clear NC "

, a dialog box will pop up to confirm the deletion of the directory.

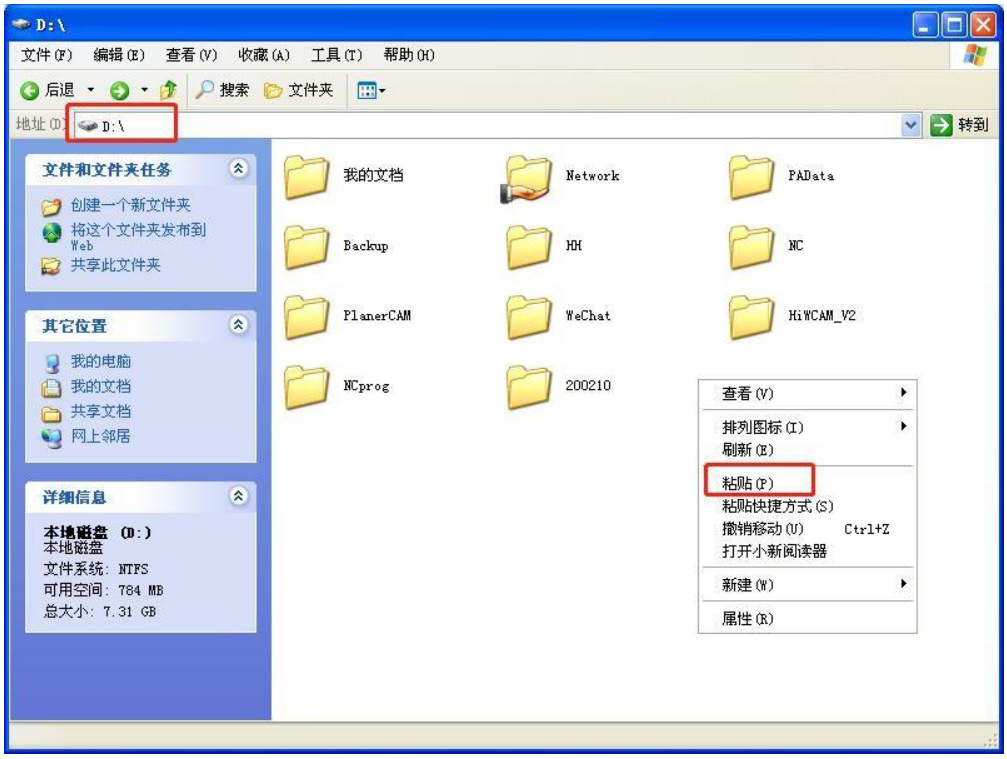
Click "Yes" to quickly delete the files in the data directory NC , please note when deleting.



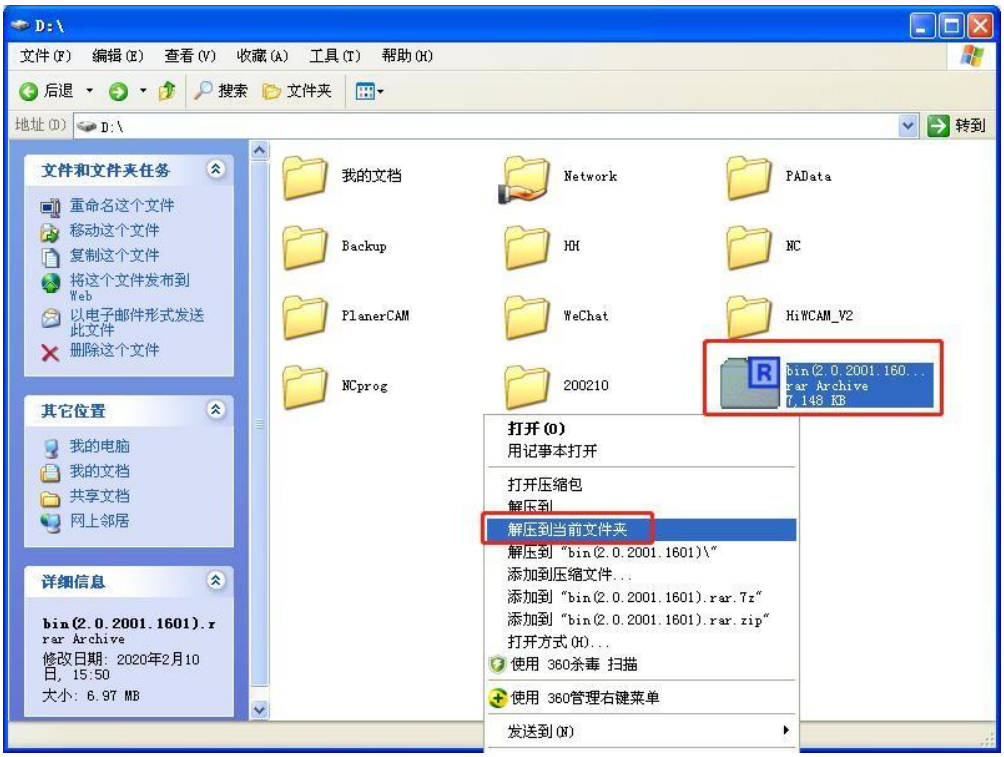
Attachment 1: Instructions for updating six-sided boring machine CAM

1. Exit the software before updating.

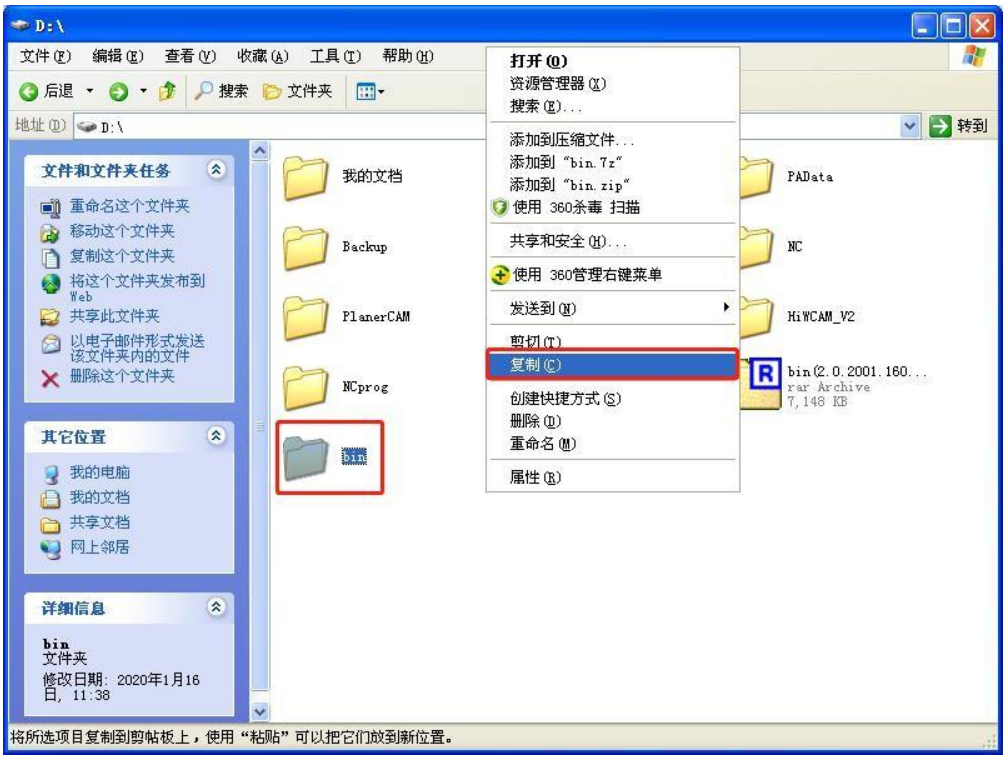
2. Copy the bin compressed file needed for the update and paste it into the system D drive.

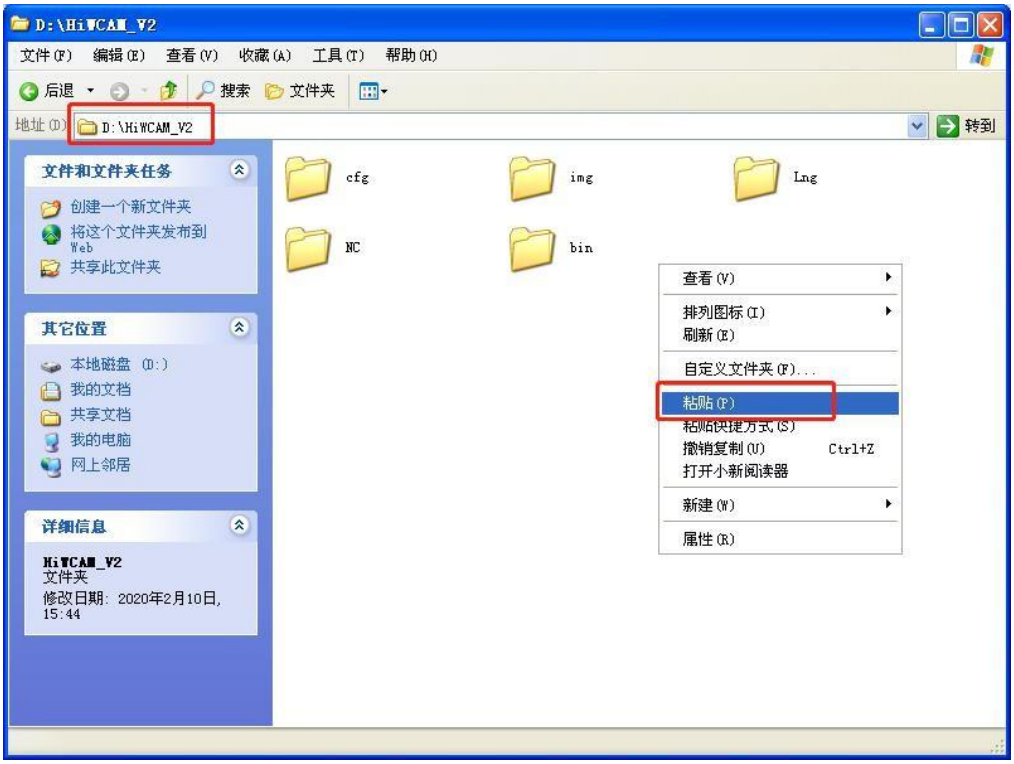


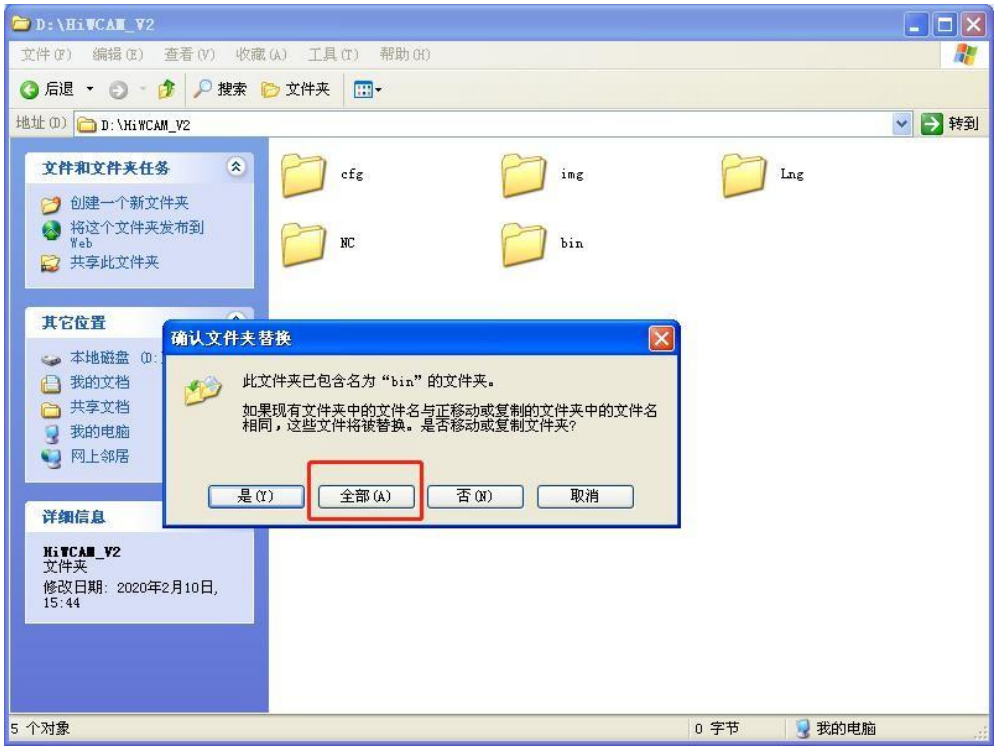
3. Decompress the bin compressed file required for the update , choose to unzip it to the current folder, and unzip it to a bin folder.



4. Copy and paste the decompressed entire bin folder into the D:\HiWCAM_V2 path, and overwrite the original bin folder directly.







5. After the replacement is successful, the update is completed.

Appendix 2: Servo alarm code

List of alarm codes

Alarm code	name	Stop method	Can reset	alarm record
Err.001	System parameter abnormal	Stop now	No record	Not resettable
Err.002	Product model selection failure	Stop now	No record	Not resettable
Err.003	Fault in parameter storage	Stop now	No record	Not resettable
Err.004	FPGA failure	Stop now	No record	Not resettable
Err.005	Product matching failure	Stop now	No record	Not resettable
Err.006	Program exception	Stop now	No record	Not resettable
Err.007	Incremental encoder UVW data is abnormal	Stop now	Store records	Not resettable
Err.008	Short-to-ground detection fault	Stop now	Store records	Not resettable
Err.009	Overcurrent fault A	Stop now	Store records	Not resettable
Err.010	Overcurrent fault B	Stop now	Store records	Resettable
Err.012	Incremental photoelectric encoder Z is disconnected or the number of turns of absolute encoder is abnormal	Stop now	Store records	Resettable
Err.013	Encoder communication abnormal	Stop now	Store records	Resettable

Err.014	Encoder data is abnormal	Stop now	Store records	Resettable
Err.015	Encoder battery voltage is too low abnormal	Stop now	Store records	Not resettable
Err.016	Speed deviation is too large	Can be set	Store records	Resettable
Err.017	Torque saturation timeout	Can be set	Store records	Resettable
Err.020	Overvoltage	Stop now	Store records	Resettable
Err.021	Undervoltage	Decelerate to stop	Not stored by default, optional	Resettable
Err.022	Current sampling failure	Stop now	Store records	Resettable
Err.023	AI sampling voltage is too large	Stop now	Store records	Resettable
Err.024	Overspeed	Stop now	Store records	Resettable
Err.025	Electric angle recognition failed	Stop now	No record	Resettable
Err.026	Inertia identification failure failure	Stop now	No record	Resettable
Err.027	DI terminal parameter setting failure	Stop now	No record	Resettable
Err.028	DO terminal parameter setting failure	Stop now	No record	Resettable
Err.040	Servo ON command invalid fault	Can be set	No record	Resettable
Err.042	Frequency division pulse output overspeed	Can be set	Store records	Resettable
Err.043	Excessive position deviation fault	Can be set	Store records	Resettable
Err.044	Main circuit input phase loss	Can be set	Store records	Resettable
Err.045	Driver output phase loss	Can be set	Store records	Resettable
Err.046	Drive overload	Can be set	Store records	Resettable
Err.047	Motor overload	Can be set	Store records	Resettable

Err.048	Electronic gear setting error	Can be set	No record	Resettable
Err.049	Radiator overheated	Can be set	Store records	Resettable
Err.050	Pulse input abnormal	Can be set	Store records	Resettable
Err.051	Full closed loop position deviation is too large	Can be set	Store records	Resettable
Err.054	User forced fault	Can be set	Store records	Resettable
Err.055	Absolute position reset fault	Can be set	Store records	Resettable
Err.056	Mains power failure	Decelerate to stop	Not stored by default, optional	Resettable
Err.060	The first time after writing a customized version of the program start up	Stop now	No record	Not resettable
AL.080	Undervoltage warning	non-stop	No record	Resettable
AL.081	Drive overload warning	non-stop	Store records	Resettable
AL.082	Motor overload warning	non-stop	Store records	Resettable
AL.083	Parameter changes that need to be turned on again	non-stop	No record	Resettable
AL.084	Servo is not ready	non-stop	No record	Resettable
AL.085	Frequent operation warning when writing E2PROM	non-stop	No record	Resettable
AL.086	Forward overtravel warning prompt	non-stop	No record	Resettable
AL.087	Negative overtravel warning prompt	non-stop	No record	Resettable
AL.088	Position command overspeed	non-stop	No record	Resettable
AL.090	Absolute encoder angle initialization warning	non-stop	Store records	Resettable
AL.093	Dynamic braking overload	non-stop	Store records	Resettable
AL.094	External regenerative	non-stop	No record	Resettable

	bleeder resistance is too small			
AL.095	emergency stop	stop	No record	Resettable
AL.096	Return to origin error	Decelerate to stop	No record	Resettable
AL.097	Encoder battery undervoltage	non-stop	No record	Resettable

Alarm reason and treatment measures

Alarm code and name	the reason	Treatment measures
Err.001 : System parameter abnormal	1. The control power supply voltage drops instantly; 2. After upgrading the driver software, the range of some parameters has been changed, causing the previously stored parameters to exceed the upper and lower limits .	1. Ensure that the power supply voltage is within the specification range and restore factory parameters (P20.06 is set to 1); 2. If the software is upgraded, please restore the factory parameters first .
Err.002 : Product model selection failure	1. The encoder cable is damaged or the connection is loose; 2. Invalid motor model or driver model .	1. Check whether the encoder wiring is normal and make sure the wiring is firm; 2. Replace with a valid motor model or drive model .
Err.003 : Fault in parameter storage	1. Parameter reading and writing are too frequent; 2. The parameter storage device fails; 3. The control power supply is unstable; 4. The drive is faulty .	1. The upper device uses communication to modify the parameters and write EEPROM operation is too frequent , please check whether there is an instruction to frequently modify parameters and write to EEPROM in the communication program ; 2. Check the control electrical wiring and at the same time ensure that the control power supply voltage is within the specification range .
Err.004 : FPGA failure	The software version is abnormal .	Check whether the software version number is normal .
Err.005 : Product matching failure	1. The encoder cable is damaged or the connection is loose;	1. Check whether the encoder wiring is good; 2. Replace products that do not

	2. Use unsupported external interfaces such as encoders, etc.; 3. The power of the motor model and the drive model does not match; 4. Product model code that does not exist .	match; 3. Select the correct encoder type or replace other types of drivers; for example, the power level of the set motor model is greater than the power level of the drive, or the power level of the set motor model is two levels worse than the power level of the drive, it will be reported This malfunction .
Err.006 : Program exception	1. Abnormal system parameters; 2. Internal failure of the drive .	EEPROM failure, restore factory parameters (P20.06 Set to 1), power on again .
Err.007 : Incremental encoder is UVW data abnormality	Encoder signal abnormality was detected at power-on .	Check the encoder wiring or replace the encoder cable .
Err.008 : Short-to-ground detection fault	1 , UVW wiring error; 2. The motor is damaged; 3. The drive is faulty .	1. Check whether the cable UVW is short-circuited to ground, if so, replace the cable; 2. Check whether the motor wire resistance and ground resistance are normal, and replace the motor if it is abnormal .

Err.009 : Overcurrent fault A	1. The command input is synchronized with the servo on or the command input is too fast; 2. The external braking resistor is too small or short-circuited; 3. Poor contact of the motor cable; 4. The motor cable is grounded; 5. Short circuit of motor UVW cable; 6. The motor burns out; 7. The software detects the overcurrent of the power transistor .	1. Check the sequence of command input, the servo is turned on "rdy" Then enter the instruction; 2. Measure whether the resistance of the braking resistor meets the specifications, and select a reasonable braking resistor according to the requirements of the manual; 3. Check whether the cable connector is loose and make sure the connector is tight; 4. Check the insulation resistance between the motor's UVW wire and the motor grounding wire. Replace the motor when the insulation is poor; 5. Check whether the motor cable connection UVW is short-circuited, and connect the motor cable correctly; 6. Check whether the resistance value of each cable of the motor is the same, if it is different, replace the motor; 7. Reduce the load. Increase drive and motor capacity, Extend the acceleration and deceleration time .

Err.010 : Overcurrent fault B	1. The command input is synchronized with the servo on or the command input is too fast 2. The external braking resistor is too small or short-circuited 3. Poor contact of the motor cable 4. Ground the motor cable 5. Short circuit of motor UVW cable 6. The motor burns out; 7. The software detects the overcurrent of the power transistor .	1. Check the sequence of command input, the servo is turned on "rdy" Then enter the instruction; 2. Measure whether the resistance of the braking resistor meets the specifications, and select a reasonable braking resistor according to the requirements of the manual; 3. Check whether the cable connector is loose and make sure the connector is tight; 4. Check the insulation resistance between the motor's UVW wire and the motor grounding wire. Replace the motor when the insulation is poor; 5. Check if the motor cable connection UVW is short-circuited, Connect the motor cable correctly; 6. Check whether the resistance between the cables of the motor is phase-to-phase Same, but different, replace the motor; 7. Reduce the load. Increase the capacity of the drive and motor, and extend the acceleration and deceleration time .
Err.012 : Incremental photoelectric encoder Z is disconnected or the number of turns of absolute encoder is abnormal	Incremental encoder: . 1 , Z signal reception abnormality, Z and signal wiring failure causes poor or an encoder Z signal loss; Absolute encoder: 2. Absolute encoder battery power supply is insufficient; 3. Parameter P06.47=1 (set to absolute system) , the encoder	1. Manually rotate the motor shaft, if it still reports a fault, Then check the encoder wiring, re-wire or replace the cable, or replace the encoder, and re-power on; 2. It is necessary to determine whether the battery is normal , if the battery voltage Insufficient, please replace the battery; 3. Set P20.06=7 to initialize the

	initialization operation is not carried out; 4. When the drive is powered off, the encoder motor terminal wiring is unplugged .	number of turns and power on again; 4. Set P20.06=7 to initialize the number of turns, and power on again .

Err.014 : Encoder data is abnormal	1. The serial encoder is disconnected or has poor contact; 2. The reading and writing of data stored in the serial encoder is abnormal .	Check the wiring or replace the encoder cable .
Err.015 : Encoder battery voltage is too low	The encoder battery voltage is lower than the threshold set by P06.48 , and the tens place of P06.47 is set to 1 .	Replace the encoder battery .
Err.016 : Speed deviation is too large	The absolute difference between the speed command and the actual measured speed exceeds the threshold set by P06.45 .	1 , the P06.45 set value increased; 2. Extend the acceleration and deceleration time of the internal position command, Or adjust the gain to improve the response of the system; 3. Disable the function of excessive speed deviation threshold, That is, P06.45=0 .
Err.017 : Torque saturation timeout	The torque is saturated for a long time, and the duration exceeds the threshold set by P06.46 .	1. Increase the setting time of parameter P06.46 ; 2. Check whether the UVW is disconnected .
Err.020 : Overvoltage	1. The power supply voltage exceeds the allowable range, AC280V ; 2. The braking resistor is	1. Input the correct voltage range; 2. Check whether the external resistor is connected. Measurement external

	disconnected and the braking resistor is not matched, which makes it impossible to absorb regenerative energy; 3. The load inertia exceeds the allowable range; 4. The drive is damaged .	Whether the resistance of the resistor has been disconnected, make sure the wiring is correct Indeed, if the resistor has been burned, it is recommended to replace the External resistance with higher rate (contact the manufacturer to obtain the phase Off recommendations); 3. Extend the acceleration and deceleration time, or reselect the appropriate driver and motor according to the load inertia .
Err.021 : Undervoltage	1. The power supply voltage drops; 2. Instantaneous power failure occurs; 3. The undervoltage protection threshold (P06.36) is set too high; 4. The drive is damaged (Note: This fault does not store records by default, it can be set whether to store through P07.19) .	1. Increase the power supply voltage capacity to ensure the stability of the power supply voltage; 2. After confirming that the power supply voltage is normal, check the Whether the voltage protection threshold (P06.36) is set too high .
Err.022 : Current sampling failure	The internal current sampling of the drive is faulty .	Replace the servo drive .
Err.023 : AI sampling voltage is too large	1 , AI wiring error; 2. The external input voltage is too high .	Connect the AI input correctly and set the input voltage to Within ±10V .
Err.024 : Overspeed	1. The speed command exceeds the maximum speed setting value; 2 , the UVW phase sequence error; 3. The speed response is seriously	1. Reduce the speed command; 2. Check whether the UVW phase sequence is correct; 3. Adjust the speed loop gain to

	overshooting; 4. The drive is faulty .	reduce overshoot; 4. Replace the driver .
Err.025 : Electric angle recognition failed	1. The load or inertia is too large; 2. The encoder wiring is wrong .	1. Reduce the load or increase the current loop gain; 2. Replace the encoder cable .

Err.026 : Inertia identification failure failure	1. The load or inertia is too large, and the motor cannot run according to the specified curve; 2. The identification is terminated due to other failures during the identification process .	1. Reduce the load or increase the current loop gain; 2. Ensure that the identification process is normal .
Err.027 : DI terminal parameter setting failure	1. Different physical DI terminals are repeatedly assigned the same DI function; 2. The physical DI terminal and the DI function of communication control are allocated at the same time .	. 1 , P04.01 ~ P04.09 have the same functional configuration To multiple physical DI terminals; 2 , P04.01 ~ P04.09 assigned function, and P09.05 ~ P09.08 corresponding bits simultaneously To enable, please refer to the usage of P09.05 ~ P09.08 ; redistribute DI functions .
Err.028 : DO terminal parameter setting failure	Different DOs are assigned the same output repeatedly .	P a D 04O of .21 ~ a P case 04 case .2 , 9 heavy fraction with a new distribution function DO can be set to function with multiple energy .
Err.040 : Servo ON command invalid fault	After executing the auxiliary function of energizing the motor, the servo ON command is still input from the host computer .	Change improper operation method .
Err.042 : Frequency division pulse output	The upper limit of pulse output allowed by hardware is exceeded .	Change the function code of the frequency division output setting so that the Frequency division output pulse in the

overspeed		whole speed range of work The frequency will not exceed the limit .
Err.043 : Excessive position deviation fault	1. UVW wiring of the servo motor ; 2. The servo driver gain is low; 3. The frequency of position command pulse is relatively high; 4. The position command acceleration is too large; 5. The position deviation exceeds the fault value of excessive position deviation (P00.19). The set value is too small; 6. Servo drive / motor failure; 7. The brake is released abnormally, the motor is blocked or driven by external forces, such as mechanical jamming, collision, dragging by gravity or other external forces.	1. Confirm the wiring of the main circuit cable of the motor and re wiring; 2. Confirm whether the gain of the servo drive is too low. High gain 3. Try to reduce the instruction frequency before running the lower position Set command frequency, command acceleration or adjust electronic gear Wheel ratio 4. Reduce the command acceleration before running to join the position Smooth functions such as command acceleration and deceleration time parameters; 5 , confirm the value of the position deviation fault (P00.19) is appropriate, correctly set (P00.19) value; 6. Check the running graphics in the background. If there is no feedback, please replace the servo driver ; 7. Check wiring and brake power supply, confirm whether the brake is normal, and confirm that the motor is not blocked or driven by external force.
Err.044 : Main circuit input phase loss	1. The three-phase input cable is in poor contact; 2 , phase fault , i.e., the main power ON state , R \ S \ T a	1. Check whether the three-phase power input cable is connected Stable (pay attention to safety, do not operate with electricity);

	phase voltage phase of the low state continues for 1 sec or more .	2. Measure the voltage of each phase of the three-phase power supply to ensure the output Input power three-phase balance or ensure input power voltage Meet the specifications .

Err.045 : Driver output phase loss	1. The motor UVW wiring is bad; 2. The motor is damaged and there is an open circuit .	1. Check the UVW wiring; 2. Replace the servo motor .
Err.046 : Drive overload	The load operation exceeds the inverse time curve of the drive for the following reasons: 1. The motor UVW wire or encoder wire is bad or the connection is loose; 2. The motor is blocked or driven by external forces, such as mechanical jamming, collision, dragging by gravity or other external forces, or the mechanical brake (brake) is running without opening; 3. When wiring multiple drives, mistakenly connect others to the same The UVW line of the motor and the encoder line are connected to different drives; 4. The load is too large, and the driver or motor selection is too small; 5. There may be missing phase or wrong phase sequence connection; 6. The driver or motor is damaged .	1. Confirm whether there is a problem with the wiring of the motor UVW line and the encoder; 2. Confirm that the motor is not blocked or driven by external force, and confirm that the mechanical brake (brake) has been opened; 3. Confirm that there is no cross wiring of multiple drives and motors, that is, there is no UVW line and encoder line of a motor connected to different drives; 4. Extend the acceleration and deceleration time, and re-select the appropriate driver or motor; 5. Check whether the UVW output by the motor is connected wrongly or short-circuited to the ground; 6. Replace the driver or motor .
Err.047 :	The load running exceeds the inverse time curve of the drive for	1. Confirm whether the wiring of

Motor overload	the following reasons: 1. The motor UVW wire or encoder wire is bad or the connection is loose; 2. The motor is blocked or driven by external force, such as machinery Stuck, collision, drag by gravity or other external forces, or the mechanical brake (brake) is running without opening ; 3. When wiring multiple drives, mistakenly connect others to the same The UVW line of the motor and the encoder line are connected to different drives; 4. The load is too large, and the driver or motor selection is too small; 5. There may be missing phase or wrong phase sequence connection; 6. The driver or motor is damaged .	the motor UVW line and the encoder There is a problem 2. Confirm that the motor is not blocked or driven by external force, confirm Confirm that the mechanical brake (holding brake) has been opened; 3. Confirm that multiple drives and motors do not cross Wiring, that is, there is no connection between the UVW wire and encoder wire of a motor to different drives; 4. Extend the acceleration and deceleration time and reselect the appropriate driver or motor; 5. Check whether the UVW output by the motor is connected wrongly, yes No short circuit to ground; 6. Replace the driver or motor .
Err.048 : Electronic gear setting error error	The electronic gear ratio exceeds the specification range [0.001,4000] .	Set the correct gear ratio range .

Err.049 : Radiator overheated	1. The fan is damaged; 2. The ambient temperature is too high; 3. Reset the overload fault by turning off the power after overload, and continue for many times;	1. Whether the fan is running during operation, replace the fan or drive Actuator 2. Measure the ambient temperature to improve the

	4. The installation direction of the servo drive and other servos Unreasonable interval between service drives; 5. Servo drive failure; 6. The driver or motor is damaged .	cooling of the servo drive Cooling conditions, lower the ambient temperature; 3. Check the fault record, whether there is an overload fault reported, Change the fault reset method, wait 30s after overload Reset again. The selected power of the driver and motor is too small, increase the capacity of the driver and motor, increase the acceleration and deceleration time, and reduce the load; 4. Confirm the setting status of the servo drive, Install the service driver according to the installation standard; 5. Whether the fault is still reported after 5 minutes of power failure, If the fault is still reported after restarting, please replace the servo drive .
Err.050 : Pulse input abnormal	1. The input frequency is greater than the pulse input maximum frequency setting value; 2. The input pulse is disturbed .	1. Change the maximum allowable frequency, parameter P06.38 ; 2. The background software checks whether the instruction is abnormal and checks the line Circuit grounding, to ensure that the circuit is grounded reliably, and the signal Use twisted-pair shielded wire, separate input wire and power

		wire Wiring .
Err.051 : Full closed loop position deviation is too large	1. The external encoder is abnormal; 2. The relevant settings are too conservative .	1. Confirm whether the external encoder cable is connected correctly, and change Change the external encoder; 2. The deviation of the fully closed loop is too large, and the protection function is set incorrectly Confirm the settings of the relevant parameters and reset the relevant parameters .
Err.054 : User forced fault	Forced to enter the fault state through DI function 32 (FORCE_ERR) .	Normal DI function input, DI function 32 is configured and the input is valid. Disconnect the input to clear the fault .
Err.055 : Absolute position reset fault	Absolute position encoder absolute position reset failure .	Contact the manufacturer for technical support .
Err.056 : The main power supply is cut off	Power failure or abnormal main power line. (Note: this reason By default, the record is not stored, and you can set whether to store it through P07.19) .	Check whether the input main power supply has instantaneous power failure and increase the power supply voltage capacity .
Err.060 : First start after writing a customized version of the program	It is the first time to start after downloading the customized version of the driver that has the standard program .	Restore factory values to load custom parameters .
AL.080 : Undervoltage warning	The warning status is output when the bus voltage is low .	1. Check whether the input main power supply is normal ; 2. Lower the undervoltage detection point

		parameter P06.36 .

AL.081 : Drive overload warning	The load operation exceeds the inverse time curve of the drive for the following reasons: 1. The motor UVW wire or encoder wire is bad or the connection is loose; 2. The motor is blocked or driven by external forces, such as mechanical jamming, collision, dragging by gravity or other external forces, or the mechanical brake (brake) runs without opening ; 3. When wiring multiple drives, mistakenly connect the UVW wires and encoder wires of the same motor to different drives; 4. The load is too large, and the driver or motor selection is too small; 5. There may be missing phase or wrong phase sequence connection; 6. The driver or motor is damaged .	1. Confirm whether the wiring of the motor UVW line and the encoder There is a problem 2. Confirm that the motor is not blocked or driven by external force, Confirm that the mechanical brake (holding brake) has been opened; 3. Confirm that there is no crossover between multiple drives and motors. Cross wiring, that is, there is no UVW wire of a motor Connect the encoder cable to a different drive; 4. Extend the acceleration and deceleration time and reselect the appropriate one Drive or motor; 5. Check whether the UVW output by the motor is connected wrongly, yes No short circuit to ground; 6. Replace the driver or motor .
AL.082 : Motor overload warning	The load operation exceeds the inverse time curve of the drive for the following reasons: 1. The motor UVW wire or encoder wire is bad or the connection is loose; 2. The motor is blocked or driven by external forces,	1. Confirm whether the wiring of the motor UVW line and the encoder There is a problem 2. Confirm that the motor is not blocked or driven by external force, Confirm that the mechanical brake (holding brake) has been opened; 3. Confirm that there is no crossover

	such as mechanical jamming, collision, dragging by gravity or other external forces, or the mechanical brake (brake) runs without opening; 3. When wiring multiple drives, mistakenly connect the UVW wires and encoder wires of the same motor to different drives; 4. The load is too large, and the driver or motor selection is too small; 5. There may be missing phase or wrong phase sequence connection; 6. The driver or motor is damaged .	between multiple drives and motors. Fork wiring, that is, there is no connection between the UVW wire and encoder wire of a motor to different drives; 4. Extend the acceleration and deceleration time and reselect the appropriate drive Actuator or motor; 5. Check whether the UVW output by the motor is connected wrongly, yes No short circuit to ground; 6. Replace the driver or motor .
AL.083 : Parameter changes that need to be turned on again	The parameters that need to be turned on again to take effect are changed .	Power on again .
AL.084 : Servo is not ready	Servo Servo not ready ON .	It will be enabled when the servo READY is detected .
L.085 : Write E2PROM frequenc y Operation warning	The program operates E2PROM abnormall y frequently .	Reduction E an EPROM write -in operation frequency , can not be stored instead EEPROM communication writ e instruction .

AL.086 : Forward overtravel warning prompt	1 , Pot and Not while effective , generally do not appear in the table at the same time; 2. The overtravel state of the servo axis in a certain direction can be automatically released .	The positive limit switch is triggered, check the operating mode, Give a negative command or manually rotate the motor to leave the positive direction The limit will automatically clear the

		warning .
AL.087 : Negative overtravel warning prompt	1 , Pot and Not while effective , generally do not appear in the table at the same time; 2. The overtravel state of the servo axis in a certain direction can be automatically released .	The negative limit switch is triggered to check the operating mode, Give a positive command or manually rotate the motor to leave the negative direction The limit will automatically clear the warning .
AL.088 : Position command overspeed	1. The electronic gear ratio is set too large; 2. The pulse frequency is too high .	1. Reduce the set electronic gear ratio; 2. Reduce the input pulse frequency .
AL.090 : Absolute encoder angle initialization warning	When the encoder angle is reinitialized, the deviation is too large (more than 7.2 degrees in electrical angle) warning .	Replace the motor .
AL.093 : Dynamic braking overload	Energy consumption braking power overload 1. Wrong wiring or poor contact of braking resistor; 2. When using built-in resistors, the default short wiring may fall off; 3. The braking resistor capacity is insufficient; 4. Excessive resistance of the braking resistor leads to long-term braking move; 5. The input voltage exceeds the regulations; 6. Braking resistor resistance, capacity, or heating time Constant setting error;	1. Check whether the wiring of the braking resistor is normal; 2. Check whether the built-in resistance wiring is normal; 3. Increase the braking resistor capacity; 4. Reduce the resistance of the braking resistor; 5. Reduce the input voltage value; 6. Set appropriate parameters according to specifications; 7. Replace the servo driver .

	7. The servo drive is faulty .	
AL.094 : External regenerative bleeder resistance is too small	1. The external regenerative bleeder resistance is less than the minimum required by the driver; 2. The parameter setting is wrong .	1. Configure the power of the external regenerative bleeder resistor according to the specifications; 2. Check whether the parameters of P00.21 ～P00.24 are Correct .
AL.095 : emergency stop	An emergency stop was triggered .	Normal DI function input, configured with DI function 30 and the input is valid , disconnect the input to remove the warning.
AL.096 : Return to origin error	1. The time to search the origin exceeds the set value of P08_95 ; 2 , P08.90 parameter is set to 3 , 4 or 5 , and against the stopper; 3. When the limit is not the origin, the limit is encountered twice	1 , increase P08.95 set value; 2. The search speed of returning to the origin is too fast, so reduce the speed of returning to the origin search P08.92 and P08.93 .
AL.097 : Encoder battery undervoltage	The encoder battery voltage is lower than the threshold set by P06.48 .	Check and replace the encoder battery .