

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

HIWCAM Basic interface layout as the FIG. Menu 手动 参数 🖬 🖻 🄺 x -tinn. **CNC** status display À 全部导入 加工统计 打开 垂直孔 水平孔 水平槽 垂直槽 挖矩形槽 矩形角槽 隐形件 DXF导入 编辑视图 仿真视图 保存 NC生成 Nesting data operation area 数据目录 D:\六面钻BAN NewFile() $600 \times 400 \times 18$ X +00000.000 Y +00000.000 X +00404.000 -00321.750 NC目录 D:\HiWCAM_V2\NC 打开 Z +00089.500 U +00180.000 Z +00000.000 U +00000.000 文件类型 *(自动) v -00220.000 V +00000.000 扫码加工 *→* A -00425.00 Plate optimization 旋转 * 翻转 ÷ 1 更多 v CNC process program 屏蔽水平孔 ☑前端下料 ribbon 屏蔽顶孔 屏蔽底孔 目动忧化 屏蔽顶槽 □屏蔽底槽 抓哪打哪 ☑ 使用侧靠 NC程序段 添加加工 **CNC** operate 编码 名称 N100 G53 NewFile **Display area** Disassembly 自动单段 MDI 自动连续 order data 序号 类型 ▼1 垂直 深度 刀径 备注 面 坐标 手轮模拟关 X550 Y350 Z18 垂直孔 顶面 10 import list 启动 停止 急停 复位 进给速度 实际速度 预设速度 0 Processing item list area 倍率-120% 倍率+ 文件列表 加工列表

2.1 HIWCAM interface layout

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;

					NewFi	le - HiWCAM 2.0.2001			Lines	- 8 ×	
Proce	ess	Manual	Parameter								?
• New	Open	Save Doc	Import Statistics	Vertical Horizontal Hole Hole	Horizontal Slot *	Chamfer Rectangular Slot * Edit	Rectangular Invisible Channel + +	DXFImport	Edit View View	NC NC Generate Loading CNC	

• 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

					New	File - HiWCAM 2.0.200	1.1601			Literes	- @ ×
Pro	cess	Manual	Parameter							n ng en	?
•		8	 → + +		677 66						
New	Open *	Save Doc	Import Statistics	Vertical Horizontal Hole Hole	Horizontal Vertic Slot Slot	al Chamfer • Rectangular Slot • Edit	Rectangular Invisible Channel • •	DXFImport	Edit Simulation View View View	NC NC Generate Loading CNC	

1. New processing file

New 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.

. ⊕

	21ate 500	Plate	400	
Plate 18	Plate 18			

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.



3. save

(1) Click the button	to sav	e the current editing	g file.		
②Click the button	• Save	drop-down menu	8	Save as Save Matlist	, 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.

	L 4390	4			8	195841974	- HIWCAM 2.0.1912.290	1				Hi	ger	- 8 >
加⊥ 于 ● 新建 打开		▶】 郡导入 1	►, ▲ 〔统计 垂	了了。 直孔 水平	孔 水平槽 雪		■■ ▲ 6 矩形槽 矩形角槽 隐开	DV E件 DXF系		日本 日本 日本 日本 日本 日本 日本 日本 日本 日本 日本 日本 日本 日	▶ JN 视图 NC生	】 ↓ ↓ NC加載 CNC		
已连接	[PLC]()						11.11.11.11.12.11.	自动连续	模式	D:\HIW	CAM_V2\cfg\n	illinc	00:00	00
数据目录 D: 水日录 D: 文件类型 *(13码加工 歴幹 * 优化板材 ジ自动优化 、 切卿打哪 (添加加工)	\六面钻BA \HWCAM_ 自动) 副转]屏蔽水平]屏蔽顶指]使用侧靠	N _V2\NC ↓ 「更 孔 ②前 『屏		B195 己加	841974(<u>0</u> (<u>†</u> 0.6	Ope	esting data eration area		0. 6	_	編程坐 X +0000 Z +0000 U +0000 V +0000 N +0000 A +0000	标 00.000 00.000 00.000 00.000 00.000 00.000 00.000	東京会社 X +000 Y +000 Z +000 U +000 V +000 W +000 A +000	径)00.000)00.000)00.000)00.000)00.000)00.000)00.000
☑ 自动加工 [编码 B195841974]加工完册 名称 背板	ll除 □ 状态 待加工	循环 计数 0/1		-1		0.6	1	-		N100 M30)		
B195841975	层板	待加工	0/1								P			
B195841976	层板	待加工	0/1								自动连续	自義	力单段	MDI
B195841977 B195841978 B195841979	层板 层板 层板	待加工 待加工 待加工	0/1 0/1 0/1	序号 ▼ 1	类型 垂直孔	面顶面	坐标 X33.5 Y351 Z18	深度 12.5	刀径 15	备注入	手轮模拟	ę		
B195841980 B195841982	层板 底板	待加工 待加工	0/1 0/1	 ✓ 2 ✓ 3 ✓ 4 	 垂直孔 垂直孔 垂直孔 	顶面 顶面	X33.5 Y63 Z18 X454.5 Y63 Z18 X454.5 Y351 Z18	12.5 12.5	15 15		启动	停止	急停	复位
B195841983 B195841984	底部	待加工 待加工	0/1 0/1	▼ 5 ▼ 6 ▼ 7	 垂直孔 垂直孔 垂直孔 	项面 顶面 顶面	X416 Y381.5 Z18 X64 Y381.5 Z18 X64 Y381.5 Z18	12.5 12.5 12.5	15 15 15		进给速度 预设速度	0	实际速度	0
文件列表 加	工列表			<	1.22.22.9	*/				>	倍率-	10	00%	倍率+

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.

Encoding	Name	^	
B195841974	背板		Seek
B195841975	层板		New
B195841976	层板		Open
B195841977	层板		
B195841978	层板		Save
B195841979	层板		Save as
B195841980	层板		Save cur
B195841982	底板		close
B195841983	底部加强条		all closed
B195841984	底部加强条		Add current task to processing
B195841985	地脚线	~	Add all task to processing
¢		>	Double Plate processing
File list Proce	ss		Modify thickness

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

5. Processing statistics

					NewFile	- HiWCAM 2.0.2001	.1601			Linese	- 8 ×
Proc	cess	Manual	Parameter							ANA SI SA	0
÷		8				-	4 🚥	×-)			
New	Open *	Save	Import Statistics	Vertical Horizontal Hole Hole	Horizontal Vertical Slot Slot •	Chamfer Rectangular Slot •	Rectangular Invisible Channel • •	DXFImport	Edit Simulation View View	NC NC Generate Loading	
		Doc				Edit			View	CNC	

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.

纪治的问问	: 2019-12-31 💌	结束时间:	2019-12-	31 💙	按时间查	[词]			按编码	丹查询	重置数据库	学出
板件数: 拉槽数:	: 8件 : 8.800米		总面积: 挖槽数:	2.343 0.000	平米 平米	-	孔个数:	115 个)	(垂直孔	67个,	▲ 水平孔 48 个	空列表
序号	编码	板长	板宽	板厚	面积	面数	垂百孔.	水平孔	拉槽	挖槽	开始时间	耗时
1	B195841983	540	81.8	18	0.044	3	4	4	0	0	19-12-31 13:52:02	17秒
2	B195841982	1194	580	18	0.693	4	17	6	2.388	0	19-12-31 13:50:24	1分20秒
3	B195841980	761	580	18	0.441	4	6	6	3.06	0	19-12-31 13:47:31	1分4秒
1	B195841975	580	415	18	0.241	4	8	6	0.838	0	19-12-31 13:45:59	56秒
5	B195841975	580	415	18	0.241	4	8	6	0.838	0	19-12-31 13:09:17	55秒
5	B195841975	580	415	18	0.241	4	8	6	0.838	0	19-12-31 12:47:12	55秒
7	B195841975	580	415	18	0.241	4	8	6	0.838	0	19-12-31 12:46:08	55秒
3	B195841974	488	415	18	0.203	5	8	8	0	0	19-12-31 12:45:12	46秒

3.2 Edit

1. Plate settings

Click the drop-down bo	ox of "New" →,	click , set the length	n, width, and t	thickness of the
sheet in the pop-up dialog be	ox 🥌 Modify Size	, and click OK.		
Plate set	ting		×	
Pl	ate 500 ate 18 OK	Plate 400 Cancel		

2. Vertical hole

ertical hole set editing		×
	Plane Top OBottom	
	Offset @ LB O RB O RV O LV	
	х 20 у 30	
	R 8.000	
X_d_	depth 10.000	
Y	D 32.000 num 1	
X	dir ⊙X dir ○Y dir	
	Mir 🗌 X mir 🗌 Y mir 🗌 XY mir	

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.

Horizontal hole editing	_			×
	Plane offset	⊙Left ○ ⊙Front ○	Right () Fr Back	ont OBack
	OffsetY	30,000	Distance	9.000
	Aperture	8.000	depth	33.000
d d	dir	32.000	Num	1
	R	Samemir	Oppmir depth	
Tool (auto)			OK	Cancel

Side: According need add side

Y X	d T T T	Y L X d	Y↓ X→
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.

Horizontal Slot and set in the pop-up dialog box.

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

4. Horizontal slot

Click the icon added by "Horizontal Slot"

orSedit		>
	Plane Top Bottom Offset LB RB RU LU	
	SX 20.000	
1910	SY 20.000	
X	Length 80.000 width 8.000	
Y	depth 10.000	
Y L	1	
^		
Tool (auto)	OK Cancel	

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" Vertical Slot" and set it in the pop-up dialog box.

VerSedit	ŝ	×
	Plane Top OBottom Offset LB RB RU UU	
	SX 20,000	
	SY 20.000	
X	Length 0.000 width 8.000	
	depth 10,000	
^		
Tool (auto)	OK Cancel	

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

	Plane Offset	⊙ Top ⊙ LB	⊖Bottom ●RB ○RU	. ⊖rn
οV	SX	20,000	EX	100.000
en a	SY	20.000	EY	20.000
eY			width	8.000
sX sy	depth	10,000		
Y				
X				

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" *Arc* Groove and set in the pop-up dialog box.

	Plane	Top ОВ	lottom	
100	Offset	⊙ LB ○ F	B ORU	⊖ rŋ
eX	SX	30,000	EX	20.000
sX	SY	20.000	EY	30.000
	R	10.000	width	8.000
sY R eY	depth	10,000		
Y	Dir	⊙Cwise ⊙	CCwise	
Х	Arc	⊛ Minor ○	Major	

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

	Plane Top OBottom
	Offset @ LB O RB O RU O LU
	CX 50.000
X	CY 50.000
- A	R 10.000 width 8.000
· Gy	depth 10.000
Y	Dir @ Cwise 🔿 Ccwise
Х	

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.

Rectangular slotting editing	Plane Offset EditM	 Top LB Rcenter 	Bottom RB ()Rl ()Redge	ı Ora	×
x w)ffset (X) Length (L) depth	60.000 20.000 10.000)ffset(Y) Width(W)	60.000 16.000	
X Tool (auto)			OK	Cancel	

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"

Edit and set it in the pop-up dialog box.

	Plane Offset EditM	 Top LB Rcenter 	Bottom RB 🔿 Rl 💿 Redge	ı ⊖rn	
)))))))))))))))))))	60.000)ffset(Y)	60.000	
- X - W	Length (L)	20.000	Width(W)	16.000	
Y	depth	10,000			
x					
-					-

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" Chamfer Circular Slot and set it in the pop-up dialog box.

Plane Top Bottom Plane Plane Top Bottom Offset B CX 50.000 CY 50.000 R 20.000 Dir CKwise CCkwise	×
CX 50.000 CY 50.000 R 20.000 Dir • Ckwise • CCkwise	
R 20.000 Dir OCkwise OCCkwise	
Dir 💿 Ckwise 🔿 CCkwise	
Y depth 10,000	
X	
	-
Tool(auto) OK Cancel	

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" Channel and set in the pop-up dialog box.



	Location LE RB RU LU
Y Y	Pstatus O Unknown O Proce @ Unproce
Х	

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"	-	Triangular Channel	and set in the pop-up
dialog box.			

Triangle angle milling editing	Location Size	● LB 10,000	O RB) RV Ruler	O LU 10.000	
Y	Pstatus	() Vnknow	n () Pr	oce) Unproce	
Tool (auto)			0	ĸ	Cancel	_

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

Convex arc angle milling editing	×
Y X B	Location © LB KB KO LD Size 10.000 Ruler 10.000 R 10.000 Pstatus Unknown Proce

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"	Concave CircuGroove in the pop-up dialog box.
Concave arc notched milling editing	×
	Location LB RB RU LV
	Size 10.000 Ruler 10.000
x	R 10.000
	Arc 💿 Minor 🔿 Major
Y	Pstatus 🔿 Unknown 🔿 Proce 🛞 Unproce
Y R	
X	
-	
Tool (auto)	OK Cancel

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" 📨 U-Shaped Groove and set in the pop-up dialog
U-notch milling editing	×
	Location Left Right @ Front Be eference Right @ Left Offset 20.000 Size 10.000 Ruler 10.000 status Unknown Proce @ Unproce

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

OK

Cancel

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

x

Tool (auto)

① Click the Add icon "invisible piece" in the pop-up dialog box set, Lockdowel invisible pieces. invisible editing(LK).

	Plana	0 	Rattan	
	Refer	⊚LB C	RB ORT	Olt
W2	Direction	⊚ XP ⊖ YP	○ XM ○ YM	
	Offset(X)	300	Offset(Y)	200
¥ w1 v	Lengthi	40	Length2	40
	Width1	6	Width2	3
	Depthi	3	Depth	6
Tool (auto)			Ok	Cancel

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 Invisible2, Set in popup dialog, invisible editing(MDY).



Owning face: Add face 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.

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.

Process Manual Paramet	er		HiWCA	M 2.0,2001.160	L			11	Hi	geri	- @ ×
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Connected [PLC]()				The machine is	ready Automatic	continuous m	D:\HiW	CAM_V2\WC\B1	95841974.N	IC 00:00:0)7
Data dir D:\六面钻BAN NC dir D:\六面钻BAN NC dir D:\HHWCAM_V2\NC File type DXF(自定义) Scan Froc Optimize No H-Hole Ø Øptimize No H-Hole Ø Øtab Øv Use BackPan Add	View View Front-Out No B-Kole No B-Slot							Program X +0062 Y -0036 Z +0013 U +0037 V -0022 W -0006 A -0042	0,000 8,000 8,000 7,000 0,000 0,000 0,000	RemainP X +0000 Y +0000 Z +0000 U +0000 Y +0000 X +0000 A +0000	ath 00.000 00.000 00.000 00.000 00.000 00.000 00.000
	ID	Туре	Plane	Coordinates	Depth	DF	lemark	Auto-Cont	Auto	Single	MDI
								nandwneel	*		
								Start	Stop	Emergency	Reset
								Feed speed Preset Feed -	0	Actual 1	D Feed +
Free rear because we	DXFImport										

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!)

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	文件类型(T):	DXF文件(.DXF)			-	取消
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The conventions of the layers and their contents in the DXF file are as follows:

AutoCAD 2008 - [C	:\Users\Administrate	or\Desktop\21	3\100.dxf]										<u> </u>	
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• 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.



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Color	□ ByLayer
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• A layer, which means top surface processing

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•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 :	Thickness	5			
Cutter diamete	r bio small:		Diameter	10	

•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

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•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:	Thickr	ness	5			
Tool diameter	size.	Dia	mete	1 5:	10	

•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:

Elevation	10	
12 C		

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

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•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.

Process Manual Parameter Image: Constant of the statistic of the statis of the statistic of the statistic of the s	ation w 181958 ram
Image: Connected Connect	>) ation w \B1958 ram
Connected PLC10 The machine is ready Automatic continuous m D: HWCAM_V2VMC Data dir D:\大面钻BAN NC dir D:\HWVCAM_V2\NC View File type BAN Scan Froc Rotate Flap More Optimize No H-Hole Pront-Out Mato-Opt No T-Slot No B-Slot Add Vise BackFan NCBlock	\B1954
Data dir D:\六面钻BAN NC dir D:\HNWCAM_V2\NC View File type BAN Scan Froc Rotate Flap More Optimize No H-Hole Pront-Out Optimize No T-Hole No B-Hole Grab Vuse BackPan NCBlock	ram
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B195841979 层板 ID Type Plane Coordinates Depth D Rem 🛆 Handwhee	
B195841980 层板 I Vertical hole Top plane X33.5 Y351 Z18 12.5 15	
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3.5 CNC operation

1. NC Generated



Click the "NC Generate" converted into a processing file.

2. NC loading

H	-
UI	

Click "N C Load" ^{Loading} 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.

icon in the figure below to indicate that the file has been

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.

Progra	Ti i	Rem	ainPath
X +006 Y -003 Z +001 U +003 V -002 W -000 A -004	20,000 58,000 38,000 77,000 20,000 50,000 20,000	X +(Y +(Z +(U +(V +(W +(A +(00000.000 00000.000 00000.000 00000.000 00000.000 00000.000
NCBlock			
N100 G5	3		
Auto-Cont	Auto	-Single	MDI
Handwheel .			
Start	Stop	Emergen	cy Reset
Feed speed	1		
Preset	0	Actual	0
Feed -	1	20%	Feed +

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 (default state) with the mouse , and the "button" becomes No. 1 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. x抓手 X-Tongs Function button: mouse click on the "X gripper button" (default state), the "button" , indicating that the X gripper will be clamped, click again to restore the default becomes 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" Manual-Manualthe "manual continuous button" becomes and then click the axial buttons of each axis. χ+ the X axis will move in the positive direction. Click and For example, χ-X axis will move in the negative direction. The operation of other manual moving the χ+ axes is the same. When the XU coupling is checked and the mouse clicks the X axis and U axis will move in the positive direction at the same time, and the or the X axis and U axis will move in the negative direction at the mouse clicks same time. HW-Mode HW-Mode 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. Homing Homing Click "Return to zero" "Return to zero button" becomes click Start "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

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5 🥥 手轮B轴	5 🔘 . ALARM2_AX7	5 🥥 . ALARM2_AX2	5 🖉 程序启动-X04				
6 🥥 手轮X10	6 🥥 . ALARM2_AX1	6 🖉 . ALARM2_AX6	6 🖉 复位-X05				
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B 🙆	8 🥥 . ALARM2_AX3	8 🖉	8 🖉 脚踏开关-X07	X+	∀ x/∪	X-	A+
IX68	IX70	IX71		U+		U-	A-
l 🙆 气压报警X08	1 🕜 X抓手松开-X10	1 🥥 A轴原点-X18	1 🕐	¥+	У-	Z+	W+
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	6 🕐 Y轴原点-X15	6 🖉 下主轴上升到位-X1D	6 🖉	Start	Stop	Emergency	Rese
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A state of IO input points can be monitored in this area .

4.3 IO Output

Process Manual Parar	neter	HiWCAM.exe - HiWCA	M2				
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0	2 🔘 . SEV_ON_AX5	2 🔘 . SEV_ON_AX2	2 🖉 上钻包启动-Y01	U +00	000.000	U +0000	0.000
QX_HW_X10	3 🔘 . SEV_ON_AX7	3 🔘 . SEV_ON_AX1	3 🖉 鼓风机/浮动台-YO2	V +00 W +00)000.000)000.000	V +0000 W +0000	00.000
QX_HW_X100	4 🔘 . SEV_ON_AX4	4 🕥	4 🞱 上主轴变频器-YO3	A +00	0000.000	A +0000	00.000
0	5 🕥	5 🕥	5 🖉 输送台传送Y04				
0	6 🔘	6 🕥	6 🕥				
0	7 🕥	7 🕥	7 🕜 托板下-Y06				
0	8 🕥	8 🕥	8 🔘 夹手X夹紧-Y07	X+	✓ x/∪	X-	A+
QX185	QX186	QX187	QX188	U+		U-	A-
❷ 夹手∪夹紧-YO8	1 🕘 T1-Y10	1 🕜 T9-Y18	1 🕜 进料定位气缸上升-Y20	¥+	¥-	Z+	W+
Ø 夹手X开-Y09	2 🖉 T2-Y11	2 🖉 T10-Y19	2 🖉 上电主轴下降气缸-Y21	V+	v-	Z-	W-
🔵 夹手U开-YOA	3 🕐 тз-т12	3 🕐 T11-Y1A	3 🖉 上钻包吸尘-Y22				
0	4 🕘 T4-Y13	4 🥥 T12-Y1B	4 🥥 上钻包压板A气缸-Y23				
0	5 🕐 T5-Y14	5 🥥 上钻包水平刀X1-Y1C	5 🕘 上钻包压板B气缸-Y24	Manual	HW-Mode	Drill b	Homi
🥥 侧靠气缸-YOD	6 🖉 те-т15	6 🕜 上钻包水平刀X2-Y1D	6 🖉 右压轮气缸压板-Y25	Start	Stop	Emergency	Rese
⊘ 下主轴变频器-YOE	7 🥥 T7-Y16	7 🕘 上钻包水平刀Y1-Y1E	7 🖉 左压轮气缸压板-Y26	Feed spe	ed	100 M2 - 10	
下电主轴下降气缸-YOC	8 🙆 T8-Y17	8 🙆 上钻包水平刀Y2-Y1F	8 🙆 后压轮气缸压板-Y27	Freset	0	Actual	U

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.

Proces	s Manual Parameter		NewFile - HiWC	AM 2.0.2001.1601					- @ × ?
Perpheral Operate Operate	IO IO AXS Input Output IO Monitor			AXS mo	nitoring disp	olay ar	ea		
Connect	ted (PLC10)		Th	ne machine is re	D: HiW	CAM_V2\cfg	\null.nc	00:00:)7
	Mechanical	Feedback	Absolute	a point	compensation	Mecha	anical	Relative	0.000
Х	620.000	0.000	620.000	620.000	0.000	X +00 Y -00	0368.000	¥ -0036	58.000
Y	-368.000	-0.000	-368.000	-368.000	0.000	Z +00 U +00	0138.000 0377.000	Z +0013 U +0037	38.000 7.000
Z	138.000	0.000	138.000	138.000	0.000	V -00 W -00	0220.000 0060.000	V -0022 ₩ -0006	20.000 50.000
U	377.000	0.000	377.000	377.000	0.000	A -00	0420.000	A -0042	20.000
V	-220.000	0.000	-220.000	-220.000	0.000				
W	-60.000	-0.000	-60.000	-60.000	0.000				
А	-420.000	0.000	-420.000	-420.000	0.000	X+		Х-	A+
Th	e output voltage	Follow error	Position loop KV	Feed speed	Load rate (%)	U+		υ-	A-
Х	0.0000	0.000	0.0000	0.000		¥+	ұ-	Z+	W+
Y	0.0000	0.000	0.0000	0.000		∇+	V-	Z-	W-
Ζ	0.0000	0.000	0.0000	0.000					
U	0.0000	0.000	0.0000	0.000		JOG	MPG	Dr-Hot off	Homing
V	0.0000	0.000	0.0000	0.000		Start	Stop	Emergency	Reset
W	0.0000	0.000	0.0000	0.000		Feed spe Preset	ed O	Actual	D
A	0.0000	0.000	0.0000	0.000		Feed -	1	20%	Feed +

5. parameter

Display all tool parameters and modifiable parameters.

				P	arame	eter int	erface	menu			
		Newl	File - HiWCAM 2.0.2001	1601						co e est	- & ×
Process Manual Parameter											?
Operate Save Tool Platen Universa	al Advanc	ed Credit	Machine CNCMemory	ThreadPitch	Absolute			e Clear			
Authority Parameter Parameter Parameter	er Setup	P P	'arameter 🔻 🛝	Compensate	Value	Pro	gram Da Fil	ta NC e Manage			
Comparing Direl()		17	The available is a	andu Ma	nicici	and Dat	LENALTIANA UT	c Hunuge		00-00-07	
connected Proj			the mountle is i	eauy Ma	iuai comunu	ious mour off	FILVE ANY_VZ	ALE A ICHINIC		00:00:07	
	Index	Name	Type	Diameter	Shank	X-Offset	Y-Offset	Z-Offset	Length	MaxDepth	Speed
	4 上钻包										
	1	UT1	Top Drill	8	0	0	0	0	50	25	2000
	2	012	lop Drill Tra Duill	10	0	0	-32	0	50	25	2000
	4	1015	Top Drill	15	0	0	-96	0	50	25	1000
	5	UT5	Top Drill 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
a contract of the second se	16	UT16	Right Drill	8	32	0	-32	-0.3	50	50	3000
	10	0117	Front Drill	5	32	0	104.6	-0.1	50	50	3000
	10	10110	Exont Drill	8	32	32	104.6	-0.3	50	50	3000
	20	10115	Back Drill	8	32	32	0	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	L main and Service and									
	铣刀										
			(1		
					Param	neter d	isplay :	area			
	4										•
	sid.										المتشا

1

5.1 Operation authority

N Process Manual Parameter	lewFile - HiWCAM 2.0.2001. 1601	- @ × ?
Operate Authority Authority	Machine CNCMemory ThreadPitch Absolute Log Parameter Compensate Value Machine Parameter Value	
Click "Operation Authority"	and a dialog box for entering the pass	word will pop up .
Enter password	x	
Г		
	1	
	OK Cancel	

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

Proces	ss Manua	al Param	eter			N	lewFile - HiW	CAM 2.0,200	1.1601					ĒH	lige	rmå	× ?
Operate Authority Authority	Save Parameter	Tool Parameter •	Platen Parameter CAM Para	Universal Parameter meter	Advanced Setup	Credit	Machine Parameter	CNCMemory	ThreadPitch Compensate Machine Para	Absolute Value meter	Log	PLC Program	Wipe Data File M	Clear NC NC			
Cli	ck "Sa	ive Pa	rame	ters"	Save Parameter	, ar	nd the	modifi	ed pa	rame	ters	will b	e au	toma	tically s	aved.	

5.3 Tool settings



Click "Tool Settings"



Parameter , you can see the tool parameters.

				Ne	wFile - HiWCAM 2.0,2001.	1601							
Process N	Manual Parame	eter											?
Operate Authority Authority	re eter Parameter •	Platen Univ Parameter Para CAM Parameter	rersal Advand meter Setu	eed Credit	Machine Parameter	ThreadPitch Compensate lachine Para	Absolute Value meter	Log P Pro	LC Wip gram Dat	e Manage			
Connected	[PLC]()				The machine is r	ready Mar	nual continu	ous modi D:\	HIWCAM_V2	cfg\null.nc		00:00:07	
			Index	Name	Туре	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	VT9	Top Drill	10	0	96	0	0	50	25	1500
			- 10	VT10	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
	0 0		- 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
	0000		- 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



			New	File - HiWCAM	2.0.2001.1	601				
Proce	ss Manual Parameter									?
Operate Authority Authority	Save Parameter Parameter Parameter CAM Para	Universal Parameter Monter	nced Credit	Machine CN Parameter	CMemory T CMemory T C Ma	hreadPitch Absolu ompensate Value	ute Log PLC Program	Wipe Clear Data NC File Manage		
Connec	ted [PLC]()			The n	hachine is re	ady Manual co	ntinuous modi: D:\HiW(CAM_V2\cfg\null.nc	00:	00:07
		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
]=		I								
	ěěčě TT									

5.5 General/Universal parameters





Process Manual	Parameter	NewFile - HiWC/	AM 2.0.2001.1601		- 8 ×
Operate Authority Connected	ool Platen Universal neter Parameter Parameter Setup	edit Machine (Parameter	CNCMemory ThreadPitch Absolute Compensate Value Machine Parameter	PLC Program Data File Mar	NC Clear NC hage
Td Name	•	Value	Description	A	
E Professional Anno	e	Aarde	bescription	-	
P Dasic parameters (10x)	x) 11mm)				
Jenchmark parameter (ling diverting	1	上料宝商 0 - 古何上料、1 - 岩甸		
1101 Feet	ing urrection	1	1		
1103 1051	itioning rod cope	0	0.按照拆案比例,1.按照设定店,用于		
1104 1051	tioning rod positioning 1/v position	0 450	它们这些成为GGUPF111X是这次通行用。 完估样完估V位置桥案比,用于完估样		
1105 1051	itioning rod positioning I position	-700.000	定位杆定位时企业或3266,用于完位样跟随上		
1100 1031	itioning rod positioning 7 position	89,500	完位杆定位7位置,用于完位杆跟随上		
1108 Pagi	itioning rod positioning Z position	138 000	完价样完价?完全位置,用于完价样跟		
1100 Pori	tioning rod positioning L safety	-400.000	定位杆定位收至位置,用于定位杆腿		
1110 Pori	itioning rod Y-divertion offect volve	135,000	y向偏移值,完位样的y向偏移		
1110 1011	itioning rod V to the minimum	53,000	Y向最小位署,防止擁抓主		
1112 Pori	itioning rod 7 position compensati	0.000	当场原大于该设定值时,对完价样7位		
1112 1031	itioning rod 7 position compensati	0.000	当板厚大于设定值时, 对定位杆位置	No.	
Processing speed (12)	w)	0.000	S KAY () K K B I) / / K K I I I K K		
Broken skin treatmen	4 (13vv)				
b Advance and retraction	on nlane(14vv)				· · · ·
D Side plate parameter:	s (15vv)				
D Baiting parameters (1)	fire (count)				
Pressing limit (17yy)	unit,				
Milling parameters (1)	8xx]				
D Pull slot parameter(1988)				/
D Grin structure (20xx)					/
> Hand safety threshol	d (21xx)				
D Hand miscellaneous no	arameters(22xx)				
D Double gripper long	plate clamping(23xx)				
D Double gripper common	n plate clamping(24xx)				
D Double gripper short	plate clamping(25xx)				
D Double grab slot (26x)	x)				
Single gripper param	eter (27xx)				
> Hand miscellaneous p	arameters (28xx)				
> Rear workbench (29xx)	\				
	s			-	
			•		

5.6 Advanced settings



Click "Advanced Settings" Advanced 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.

				HiWCAM.exe - HiWCAM2	
Process Manua	al Parameter				
berate thority	Tool Pla Parameter + Para CAM	aten Universal meter Parameter	Advanced Setup	Machine CNCMemory C Parameter • C	ThreadPitch Absolute Compensate Value Active Parameter
Connected	LC]()			The machine is r	eady AUTO
General		- abrolute wel	10 opgodor ol orm	verdaft ov tost honoheaul	alibration/component
Start		X axis	U axis	Referenc	mm
Stop		Y axis	V axis	Compensa	mm
Emergenc	Mach ReCnt	Z axis	W axis	Reference plate this	kness
Reset	CNC ReCnt	A axis			mm
Language sett	ing	Backup/restor	re		
○ Chinese					
		Backup	Restore		

5.7 Credit Investigation Authorization



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

征信授权工具		
Physical Addre Public Key: 81 USR Authority USR Authority USR Available OEM Authority OEM Authority OEM Available Locked State:	ess: 70B3D5D9066 D8516592D1FF8A5 Days: 999 Days: 999 Code: [0] Days: 0 Days: 0 0x00 2019/12/31 15:46	6 0C836FB5 [9150]
当前状态	序列号	随机码
-it h	1609260	- 9119
1	XXXX-XXXX-	XXXX-XXXX
请输入授权码(等待授权时请勿关	闭)
*		刃换随机码(F5)
× –		授权(ENTER)
*		退出(ESC)

5.8 Machine parameters

			lewFile - HiWCAM 2.0.2001.1601	EHigermål
Process Manua	Parameter	* *	8888	* *
Operate Save Authority Parameter	Tool Platen Univer Parameter • Parameter Parame	al Advanced Credit ter Setup	Machine CNCMemory ThreadPitch Absolute Log Parameter Compensate Value	PLC Wipe Clear Program Data NC
Authority	CAM Parameter		Machine Parameter	File Manage

machine parameters.

*
Machine
Parameter

E	Setup	Tool - (CNC\PIL_E	the	rCaT191	008. mpf					- 7 🛛
轴	(X):	轴参数(P)	参考点	ÌÌ	轴(S)	BCD(B)	倍率(D)	所有参	参数(A)		
										输入模式(I): 公制 🔽 🍙	打开机床参
	应用	名称	轴类型		数字位数	小数位数	符号	仅输入	其它设置		致 又件
1		X	✔ 线性轴	*	8	3	3 🗹			打开机床参数文件	
2		Y	✓ 线性轴	~	8	3	3 🗹				保存机床参
3		Z	✓ 线性轴	~	ε	3	3 🗹				数文件
4		U	✓ 线性轴	~	8	3	3 🗹				
5		V	✓ 线性轴	~	E	3	3				
6		W	✓ 线性轴	~	8	3	3 🗹				比较
7		A	✓ 线性轴	~	8	3	3 🗹				
>		自定义	✔ 线性轴	~							
			1						0.040		· 带 单
											米半
											准备主轴
											向上
											HT.
											1 61
	*										
388									a		1
								PLC F	Range 0)-23	」退出
_											
1	开机	8 6	18 -	HiWC	AM 2.0	. 🛛 🧰 c	:\Docum	ents and.	🗀 C:	:\Documents and 🧱 Setup Tool - CNC 💼 😵	11:18
											and the second second

5.9 HMI/CNC Memory



Process Manual Parameter		NewFil	e - HiWCAM 2.0.200	1.1601				
rate Save ority Parameter Dity Parameter CAM Parameter	versal meter	ed Credit M Par	achine CNCMemory	ThreadPitch Abs Compensate Va Machine Paramete	olute Log F nue r	DLC ogram Vipe Data File Mar	NC Clear NC hage	00.00.00
G53	B195	5841974.NC	The machine is	s ready Automat	N000000	000 auto c	ontinuous ie m	achine is rea
Mechanical	wcs	X	Y	Z	U	v	w	A
X 0.000	EXT	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y 0.000	G54	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Z 0.000	G55	0.000	0.000	0.000	0.000	0.000	0.000	0.000
U 0.000	G56	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V 0.000	G57	0.000	0.000	0.000	0.000	0.000	0.000	0.000
W 0.000	G58	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A 0.000	G59	0.000	0.000	0.000	0.000	0 000	0.000	0.000
X 0.000	G501	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y 0.000	G502	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Z 0.000	G503	0 000	0 000	0 000	0 000	0 000	0.000	0 000
U 0.000								
V 0.000								
W 0.000								
A 0.000		自动分中		刀径:	D = 0.000		修正・	0



Click "CNC Memory "

🔅 G54

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

Process Manual Para	meter							: Hige	erma
rate ority Parameter Parameter	Platen Univ Parameter Param CAM Parameter	ersal Adva neter Set	nced Credit M up	achine CNCMemory	ThreadPitch Abs Compensate Va Machine Paramete	iolute Log Pro	DLC ogram File Man	NC Clear NC lage	
nnected [PLC]()				The machine is	sready Automa	tic continuous m D:	HIWCAM_V2/NC/B	195841974.NC	00:00:00
G53	,	B1	95841974.NC			N000000	000 auto co	ontinuous le m	achine is re
X	0 000	WCS	X	Y	Z	U	V	W	A
Y	0.000	EXT	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	G54	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	G55	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V	0.000	G56	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V	0.000	G57	0.000	0.000	0.000	0.000	0.000	0.000	0.000
vv	0.000	G58	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A	0.000	G59	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X	0.000	G501	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	0.000	G502	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	G503	0.000	0.000	0.000	0.000	0.000	0.000	0.000
U	0.000	0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V	0.000								
W	0.000								
A	0.000		自动分中		刀径:	D = 0.000		修正:() 🕅

5.10 Pitch compensation



Click "Pitch Compensation" ThreadPitch Compensate to pop up this page, you can turn on the pitch compensation, write and read the catalog.

螺距补偿	
CNC内存(0)	螺距补偿开启状态:关闭 开启 关闭 螺距补偿值写入文件目录: 浏览 螺距补偿值读出目录: 浏览 该出选中 读出所有 删除选中 写入
	刷新 退出

5.11 Absolute value

						N	lewFile - HiWi	CAM 2.0.200	1.1601					ĒH	lige	e e roi	₽×
Proces	s Manu	a Param	leter														0
	B				Advanced		A Machine		threadPitch	Absolute			Wipe				
Authority	Parameter	Parameter *	Parameter	Parameter	Setup	Great	Parameter	*	Compensate	Value	Log	Program	Data	NC			
Authority			CAM Para	meter					Machine Para	meter			File M	anage			
														-			

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

	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	٥	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	(
轴通道09	0	0	0	0	1	2500	
轴通道10	0	0	0	0	1	2500	
轴通道11	0	0	0	0	1	2500	
轴通道12	0	0	0	0	1	2500	1
轴通道13	0	0	0	0	1	2500	
轴通道14	0	0	0	0	1	2500	1
轴通道15	0	0	0	0	1	2500	
轴通道16	0	0	0	0	1	2500	
轴通道17	0	0	0	0	1	2500	
轴通道18	0	0	0	0	1	2500)
轴通道19	0	0	0	0	1	2500	
th:#:#:	0	0	0	0	1	2500	

*

Absolute Value

5.12 Alarm information/Log



加工	手动	参数		78 - Hiwcam	2.0.2006.1601			E	Higer	- @ × ?
操作权限	保存参数	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	数 通用参数 高级设置 行	正信授权 机床参数	HMI 报警信息	➡ ◆ → →	PLC编程 清空			
已连接	[PL	c]0	113-98X	s se	急停止	—————————————————————————————————————	null.nc	ZITEZ	80:00	0:07
错误	号	错误源	优先级	时间	J			内容		
20	01	pic	6	2020-09-25	10:31:52	A铀伺服驱动者	器出错			
20	01	plc	6	2020-09-25	09:31:49	A轴伺服驱动器	器出错			
20	01	plc	6	2020-09-25	09:22:54	A轴伺服驱动器	器出错			
20	01	plc	6	2020-09-24	14:44:03	A轴伺服驱动器	器出错			
20	01	plc	6	2020-09-24	10:26:50	A轴伺服驱动器	器出错			
86	02	plc	6	2020-09-24	10:21:01	鼓风机过载报	警,请首先解	除报警		
20	01	plc	6	2020-09-24	10:07:05	A轴伺服驱动器	器出错			
48	1	nc1	5	2020-09-24	08:55:54	静止状态下从	编码器反馈	检测到U轴	由伺服有异常动	昨
85	01	plc	3	2020-09-23	15:41:53	V轴碰撞预警,	请将下钻仓	回往中间移	动!	
85	01	plc	3	2020-09-23	15:41:53	V轴碰撞预警,	请将下钻仓	可往中间移	动!	
85	01	plc	3	2020-09-23	15:41:53	V轴碰撞预警,	请将下钻仓	可往中间移	动!	
85	01	plc	3	2020-09-23	15:41:53	V轴碰撞预警,	请将下钻仓	过往中间移	动!	
85	01	plc	3	2020-09-23	15:41:52	V轴碰撞预警,	请将下钻仓	过往中间移	动!	
85	01	plc	3	2020-09-23	15:41:52	V轴碰撞预警,	请将下钻仓	过往中间移	动!	
85	01	plc	3	2020-09-23	15:41:52	V轴碰撞预警,	请将下钻仓	回往中间移	动!	~
A轴伺	「服驱动	器出错								
🛃 开刻	(🔀 78 - HiWCA	M 2.0 🔁 C:\Doc	ruments and 🕻	C:\Documents	and 📔 HMI	V4. 0, 0, 0			🐌 🌉 11:20

5.13 PLC programming



PLC

Click "PLC Programming" Program

, this interface pops up, you can open and load PLC , note \mathbf{E}).



5.14 Clear data





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

HiWCAM2		×
?	Are you clearing BAN\" files in th	g all \".D:\六面钻 e BAN directory?
[确定	取消

5.15 Clear NC

Proces	s Manua	al Param	eter			N	lewFile - HiW(CAM 2.0.200	1.1601					ĒH	lige	erm	8 × ?
Operate Authority Authority	Save Parameter	Tool Parameter •	Platen Parameter CAM Para	Universal Parameter meter	Advanced Setup	Credit	Machine Parameter	CNCMemory	ThreadPitch Compensate Machine Para	Absolute Value meter	Log	PLC Program	Wipe Data File Ma	Clear NC anage			
			NC														

Click "Clear NC " 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.

HiWCAM2	×
?	Do you confirm clearing all \".D:\HiWCAM_V2\NC\" files in the NC directory?
	确定 取消

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.



D:\HiWCAL_V2				
文件(F) 编辑(E) 查看(V) 收藏	(A) 工具(T) 帮助(H)			. 🥂 .
🔇 后退 🔹 🕥 · 🎓 🎾 搜索 🚺	▷ 文件夹 🛛 📆 -			
地址 (D) 🛅 D: \HiWCAM_V2				💙 ラ 转到
文件和文件夹任务	cfg	ing ing	Lng	
₩eb Web	nc NC	bin bin		
₩ 共享此文件夹			查看 (V)	F
其它位置			排列图标 (I) 刷新 (I)	H
→ 本地磁盘 (D:)			自定义文件夹 (F)	
→ 我的文档 → 共享文档			粘贴(P)	
3 我的电脑9 网上邻居			粘贴快建方式(S) 撤销复制(U) Ctrl+Z 打开小新阅读器	-
			新建(W)	P2
详细信息			属性(R)	
X:TCAM_Y2 文件夹 修改日期:2020年2月10日, 15:44				_

🔁 D : \HiWCAM_W2		
文件 (P) 编辑 (E) 查看 (V) 收藏 (A) 工具 (T) 帮助 (H)		<u></u>
③ 后退 ▼ ③ ▼ 参 2 提案 ※ 文件夹 □□ ▼		
地址 (D) 🛅 D: \HiWCAM_V2		💉 🄁 转到
文件和文件夹任务 ◆ ② 创建一个新文件夹 ● ○ cfg □ ing ③ 約建一个新文件夹 ● ● ○ bin ● 新文个文件夹发布到 ● ● ● ● ● 共享此文件夹 ● <td>Ð</td> <td>Ing</td>	Ð	Ing
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5 个对象	0 字节	🚽 我的电脑

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

Alarm reason and treatment measures

Alarm code and name	the reason	Treatment measures
Err.001 : System parameter abnormal	 The control power supply voltage drops instantly; 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. 	 Ensure that the power supply voltage is within the specification range and restore factory parameters (P20.06 is set to 1); If the software is upgraded, please restore the factory parameters first.
Err.002 : Product model selection failure	 The encoder cable is damaged or the connection is loose; Invalid motor model or driver model . 	 Check whether the encoder wiring is normal and make sure the wiring is firm; Replace with a valid motor model or drive model .
Err.003 : Fault in parameter storage	 Parameter reading and writing are too frequent; The parameter storage device fails; The control power supply is unstable; The drive is faulty . 	 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 ; 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;	 Check whether the encoder wiring is good; Replace products that do not

	 Use unsupported external interfaces such as encoders, etc.; The power of the motor model and the drive model does not match; 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	 Abnormal system parameters; 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 . 	 Check whether the cable UVW is short-circuited to ground, if so, replace the cable; Check whether the motor wire resistance and ground resistance are normal, and replace the motor if it is abnormal.

		1 Check the sequence of command
		input the serve is turned on "rdy"
		input, the servo is turned on Tay
		Then enter the instruction;
Err.010 : Overcurrent	 The command input is synchronized with the servo on or the command input is too fast The external braking resistor is too small or short-circuited Poor contact of the motor cable Ground the motor cable 	 Measure whether the resistance of the braking resistor meets the specifications, and select a reasonable braking resistor according to the requirements of the manual; Check whether the cable connector is loose and make sure the connector is tight; Check the insulation resistance between the motor's UVW wire and the motor grounding wire. Replace the motor when the insulation is poor;
	5. Short circuit of motor UVW cable6. The motor burns out:	5. Check if the motor cable connection UVW is short-circuited,
	 The motor burns out; The software detects the overcurrent of the power transistor . 	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	Incremental encoder: . 1 , Z signal reception abnormality, Z and signal wiring failure causes poor or an encoder Z signal loss;	 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;
or the number of turns of absolute	Absolute encoder: 2. Absolute encoder battery power supply is insufficient;	2. It is necessary to determine whether the battery is normal , if the battery voltage
abnormal	3. Parameter P06.47=1 (set to	Insufficient, please replace the battery;
	absolute system) , the encoder	3. Set P20.06=7 to initialize the

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

Err.014 : Encoder data is abnormal	 The serial encoder is disconnected or has poor contact; 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.	 the P06.45 set value increased; Extend the acceleration and deceleration time of the internal position command, Or adjust the gain to improve the response of the system; 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.	 Increase the setting time of parameter P06.46 ; Check whether the UVW is disconnected .
Err.020 : Overvoltage	 The power supply voltage exceeds the allowable range, AC280V ; The braking resistor is 	 Input the correct voltage range; 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;	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
	4. The drive is damaged .	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 .
	1. The power supply voltage drops;	
	2. Instantaneous power failure occurs;	1. Increase the power supply voltage capacity to ensure the stability of the power supply voltage:
Err.021 : Undervoltage	3. The undervoltage protection threshold (P06.36) is set too high;	2. After confirming that the power supply voltage is normal, check the
	4. The drive is damaged (Note: This fault does not store records by default, it can be set whether to store through P07.19).	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 :	1, AI wiring error;	Connect the AI input correctly and set
Al sampling voltage is too large	2. The external input voltage is too high .	the input voltage to Within ±10V .
	1. The speed command exceeds	1. Reduce the speed command;
Overspeed	2. the UVW phase sequence error	2. Check whether the UVW phase sequence is correct:
	3. The speed response is seriously	3. Adjust the speed loop gain to

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

Err.026 : Inertia identification failure failure	 The load or inertia is too large, and the motor cannot run according to the specified curve; The identification is terminated due to other failures during the identification process. 	 Reduce the load or increase the current loop gain; Ensure that the identification process is normal.
Err.027 : DI terminal parameter setting failure	 Different physical DI terminals are repeatedly assigned the same DI function; 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.
		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.
	1. UVW wiring of the servo motor;	High gain
	 The servo driver gain is low; The frequency of position 	3. Try to reduce the instruction frequency before running the lower 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). 	Set command frequency, command acceleration or adjust electronic gear
		Wheel ratio
Err.043 : Excessive position deviation fault		4. Reduce the command acceleration before running to join the position
	The set value is too small; 6. Servo drive / motor failure;	Smooth functions such as command acceleration and deceleration time parameters;
	7. The brake is released abnormally, the motor is blocked or driven by external forces, such as mechanical jamming collision	5 , confirm the value of the position deviation fault (P00.19) is appropriate, correctly set (P00.19) value;
	dragging by gravity or other external forces.	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;	1. Check whether the three-phase power input cable is connected
	2 , phase fault , i.e., the main power ON state , R $\$ S $\$ T a	Stable (pay attention to safety, do not operate with electricity);

phase voltage phase of the low	2. Measure the voltage of each phase
state continues for 1 sec or more .	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 :	1. The motor UVW wiring is bad;	1. Check the UVW wiring;
Driver output phase loss	2. The motor is damaged and there is an open circuit .	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 . 	 Confirm whether there is a problem with the wiring of the motor UVW line and the encoder; Confirm that the motor is not blocked or driven by external force, and confirm that the mechanical brake (brake) has been opened; 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; Extend the acceleration and deceleration time, and re-select the appropriate driver or motor; Check whether the UVW output by the motor is connected wrongly or short-circuited to the ground; Replace the driver or motor .
Err.047 :	ine load running exceeds the inverse time curve of the drive for	1. Confirm whether the wiring of
Motor overload	the following reasons:	the motor UVW line and the encoder
---	--	---
	1. The motor UVW wire or encoder wire is bad or the connection is loose;	There is a problem 2. Confirm that the motor is not
	 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 . 	 Confirm that the motor is not blocked or driven by external force, confirm Confirm that the mechanical brake (holding brake) has been opened; 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; Extend the acceleration and deceleration time and reselect the appropriate driver or motor; Check whether the UVW output by the motor is connected wrongly, yes No short circuit to ground; 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 .

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

	4. The installation direction of the comic drive	and increation and the service drives
	4. The installation direction of the servo drive	cooling of the servo drive
	and other servos	Cooling conditions lower the
	Unreasonable interval between service drives	ambient temperature:
	5. Servo drive failure;	3. Check the fault record,
	6. The driver or motor is damaged .	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 .
		1. Change the allowablemaximum frequency, parameter P06.38 ;
Err.050 : Pulse input	 The input frequency is greater than the pulse input maximum frequency setting value; The input pulse is disturbed . 	2. The background software checks whether the instruction is abnormal and checks the line
abnormal		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 .
		1. Confirm whether the external encoder cable is connected correctly, and change
Err.051 : Full		Change the external encoder;
closed loop	1. The external encoder is abnormal;	2. The deviation of the fully
deviation is too large	2. The relevant settings are too conservative .	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 :		Normal DI function
User forced fault	Forced to enter the fault state through DI function 32 (FORCE_ERR) .	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	Power failure or abnormal main power line. (Note: this reason	Check whether the input main power supply has instantaneous
supply is cut off	By default, the record is not stored, and you can set whether to store it through P07.19).	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 :	The membre statue is such to buy the t	1. Check whether the input
Undervoltage warning	voltage is low .	 main power supply is normal ; 2. Lower
		the undervoltage detection point

	parameter P06.36 .

	 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; 	 Confirm whether the wiring of the motor UVW line and the encoder There is a problem Confirm that the motor is not blocked or driven by external force,
AL.081 :	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 ;	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
Drive overload warning	 When wiring multiple drives, mistakenly connect the UVW wires and encoder wires of the same motor to different drives; The load is too large, and the driver or motor selection is too small; There may be missing phase or wrong phase sequence connection; The driver or motor is damaged. 	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, 	 Confirm whether the wiring of the motor UVW line and the encoder There is a problem Confirm that the motor is not blocked or driven by external force, Confirm that the mechanical brake (holding brake) has been opened; 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 domesed 	 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 .

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

		warning .
AL.087 : Negative overtravel warning prompt	 Pot and Not while effective , generally do not appear in the table at the same time; 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	 The electronic gear ratio is set too large; The pulse frequency is too high . 	 Reduce the set electronic gear ratio; 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;	 Check whether the wiring of the braking resistor is normal; Check whether the built-in resistance wiring is normal; Increase the braking resistor capacity; Reduce the resistance of the braking resistor; Reduce the input voltage value; Set appropriate parameters according to specifications; Replace the servo driver .

	7. The servo drive is faulty .	
AL.094 : External regenerative bleeder resistance is too small	 The external regenerative bleeder resistance is less than the minimum required by the driver; The parameter setting is wrong . 	 Configure the power of the external regenerative bleeder resistor according to the specifications; 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	 The time to search the origin exceeds the set value of P08_95; , P08.90 parameter is set to 3 , 4 or 5 , and against the stopper; When the limit is not the origin, the limit is encountered twice 	 increase P08.95 set value; 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 .