

# **HK-6D-U301 Six-axis Dispenser Motion Control System User's Manual V1.3**



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## Chapter 1 Overview

The automatic dispensing motion control system of HengKong Technology has 6 motor control axes, which can support automatic dispensing motion control of gantry type 3-axis, 3-axis + single/double rotary axis, 3-axis + 2Y axis, etc. The used handheld programmer adopts a 16 million color true color 5" LCD display with 480 \* 272 pixels, which makes the programming menu more informative. The handheld programmer can store the dispensing process file and system configuration file, and can copy the dispensing process file or system configuration file to each other in multiple devices (also can use U disk to copy).

ARM + DSP control program, with strong computing power, speed refresh time is very small, motion control acceleration and deceleration performance is superior, can support high-precision high-speed three-dimensional linear, three-dimensional space circular arc movement. Motion control motherboard with 128M storage space, can store 100 dispensing processing files, each file can store 1700 dispensing processing programming points, can support the work in the absence of handheld programmer connection, dispensing processing files can be digital tube plus key way to select.

### 1.1 Hardware

1. Motor axis output: 6 axes output, respectively X/Y/Z 3D coordinate axes, A axis rotation axis, B axis rotation axis, 2Y extension axis to realize double Y axis function, can realize with rotation axis or double Y axis dispensing machine control.

2. Acceleration and deceleration characteristics: S-shaped curve acceleration and deceleration mode, acceleration and deceleration acceleration independent settings; 10K speed refresh frequency, so that the mechanical response performance is better, less noise.

3. Pulse output frequency: 4MHz linear interpolation, 2MHz circular interpolation (including 3-axis spatial circular interpolation), with 20,000 pulses per motor revolution, for example, it can reach 6,000 rpm, which is enough to meet the requirements of existing high-speed servo motors at 5,000 rpm.

4. Programmable input and output: 24 programmable inputs and 16 programmable outputs, all with optocoupler isolation, each output current up to 500mA.

5. Support 3-digit digital tube interface, can quickly choose to switch 100 dispensing files from 0-99.

6. small keyboard for needle, which can easily realize the correction of error caused by needle change even when there is no handheld programmer.

7. Function keys: 'run/pause', 'stop', 'return to home', 'glue out test', 'single step', 'single step' and 'glue out test', 'single step', 'automatic needle pair' six function keys with corresponding indicator control output; with 'emergency stop' button input.

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8. with RS-232, can be customized to customers with special needs special program.

9 U disk read and write function: the use of FAT32 file system, no longer subject to more than 2G U disk can not be formatted into the FAT format restrictions.

10. Storage space: 128MB for the motherboard, which can store 100 dispensing files, 2600 programming points per file; 16MB for the handheld programmer, which can store the start-up screen and dispensing files, especially useful for copying dispensing files to each other in multiple machines.

11. Handheld programmer screen: 480 \* 272 pixel, 16 million color true color 5" LCD screen, which makes the operation menu interface more informative.

12. Operating voltage: DC 24V ,5A current.

13. Working environment: temperature 0°C--45°C, humidity 40%--80%.

14. Storage environment: temperature -40°C--60°C, humidity 0%--95%.

## **1.2 Software**

1. 3D spatial linear interpolation, 3D spatial circular interpolation.

2. Double Y function, no need to do the action of returning to the origin when switching Y axis.

3. with A-axis, B-axis rotation axis, the rotation axis can follow the tangent line with XY path.

4. Corner processing can set the priority of speed and path coincidence to achieve a smooth transition of the corner.

5. DXF file conversion function, you can export the DXF file to the dispensing file from the CAD path diagram.

6. 16 times of "undo" and "redo" for programming point editing, which can effectively prevent misoperation.

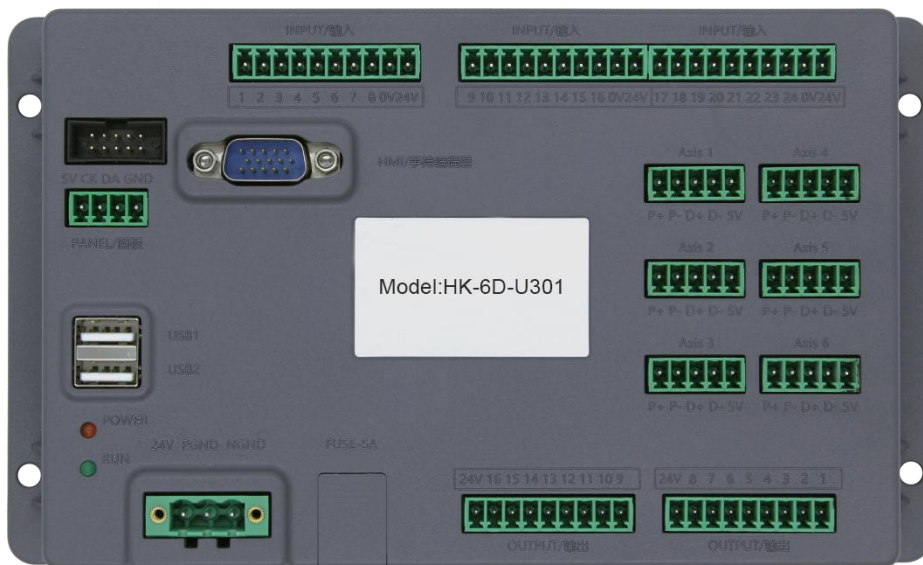
7. Dispensing parameters can be set in the way of programming points, so that different dispensing parameters can be set for different areas in the same dispensing process.

8. When returning to the home position, the X, Y and Z axes will be captured at the same time after each axis returns to the home position.

9. With full spelling Chinese input method.

### 1.3 Accessories

#### 1. Motherboard



HK-6D-U301 motherboard size (200\*mm X118\*mm X28\*mm)

#### 2. Handheld programmer size (261mm \* 141mm \* 24mm) :



3. Program group selection and needle calibration panel size (118mm\*44mm\*19mm)



4. Connection cable (length can be developed).

name	Quantity	Unit	Length (m)
DB15 extension cable	1	Article	1.5
USB extension cable	1	Article	0.75
DB15 Extension cord (elbow)	1	Article	0.75



DB15 extension cable

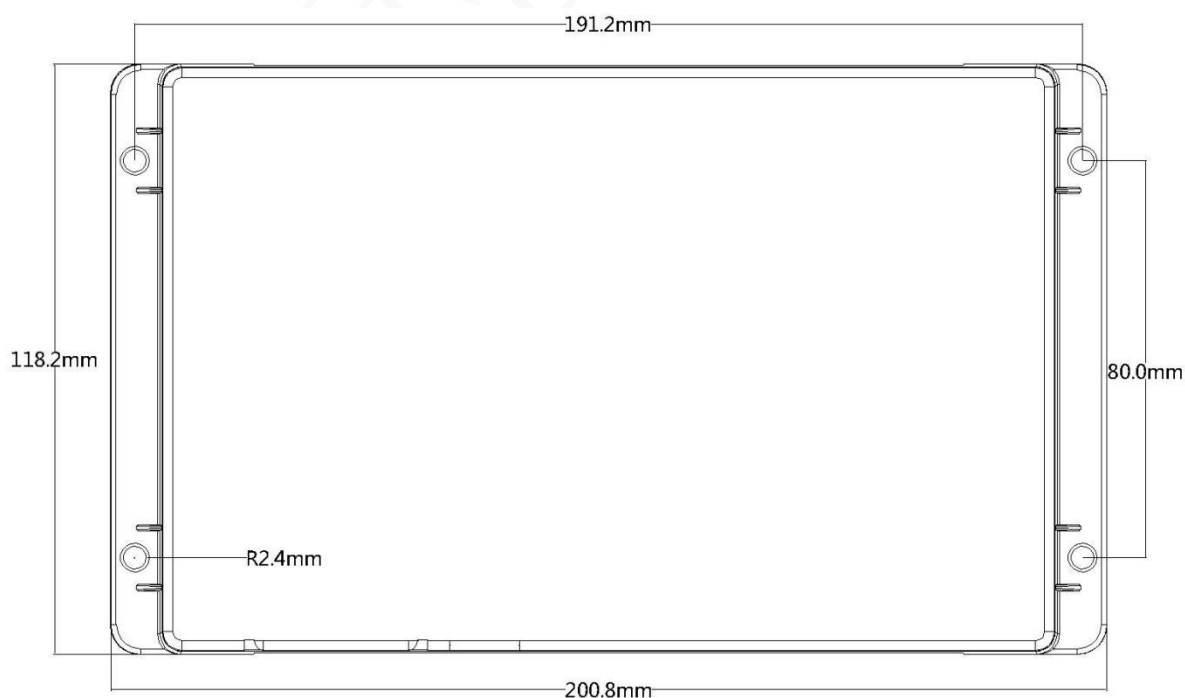


USB extension cable



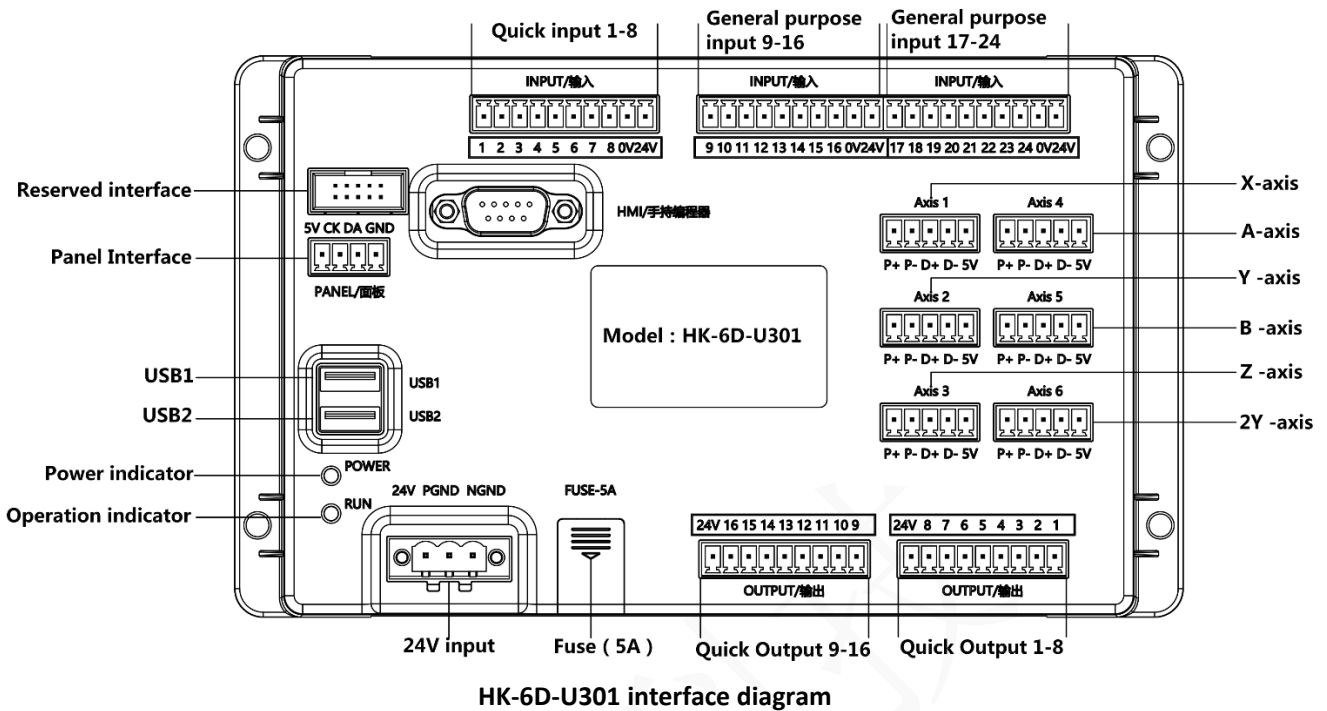
DB15 Extension cord (elbow)

### 1.4 Motherboard bottom plate installation dimension drawing



HK-6D-U301 Dimensions

## 1.5 System interface and wiring diagram



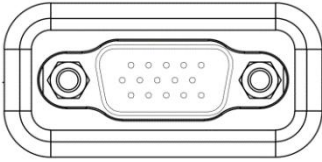
### Special interface definition and description:



PWRIN Definition and description of power input pin			
NO.	Name	Function	Wiring description
1	24V	24V Power input	Connect 24V switching power supply VCC(DC V+)
2	PGND	0V	Connect 24V switching power supply 0V (DC V-)
3	NGND	GND	Connect 24V switching power supply FG ( $\perp$ )



PANEL panel pin definition and description			
NO.	Name	Function	Wiring description
1	5V	5V power supply for pin panel	Connect program group and pin panel power VCC/5V
2	CK	Clock signal	Connect the program group and the clock cable to the needle panel CK
3	DA	Data signal	Connect program group and pin panel data cable DA
4	GND	To the needle panel ground	Connect the program group and the pin panel ground 0V/GND



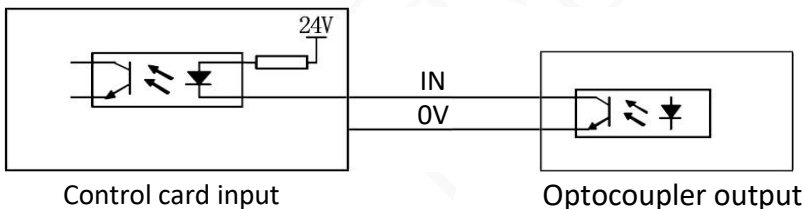
HMI/手持编程器

Connect the handheld programmer interface directly to the DB15 extension cable

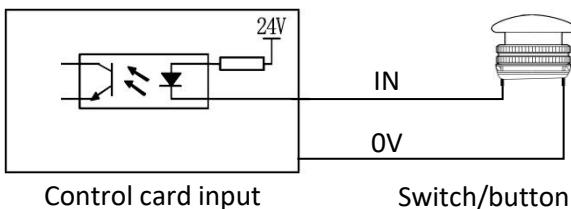
**Input port definition and description:**

Input / Input pin definition and function description			
NO	Name	Function	Wiring description
1	Input No. 1	X axis origin signal	X-axis home sensor signal foot OUT (black line)
2	Input No. 2	Y axis origin signal	Y-axis home sensor signal foot OUT (black line)
3	Input No. 3	Z axis origin signal	Z-axis home sensor signal foot OUT (black line)
4	Input No. 4	A axis origin signal	A-axis home sensor signal foot OUT (black line)
5	Input No. 5	B axis origin signal	B-axis home sensor signal foot OUT (black line)
6	Input No. 6	2Y axis origin signal	2Y-axis home sensor signal foot OUT (black line)
7-8	Input 7-8	Programmable fast input	Can be connected to buttons, pin signals, etc. (support capture)
9-24	Input 9-24	Programmable ordinary input	Can be connected to input signals such as buttons and sensors (capture not supported)

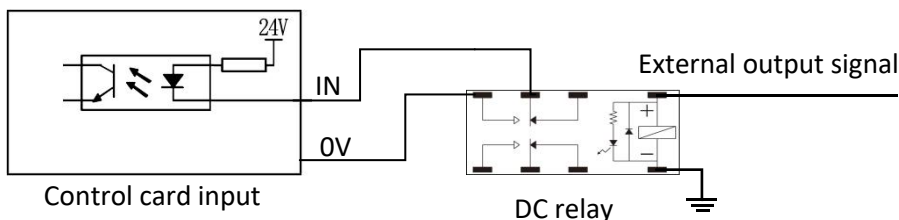
**Typical wiring of input port: Optocoupler**



**Typical input wiring: switch signal wiring**



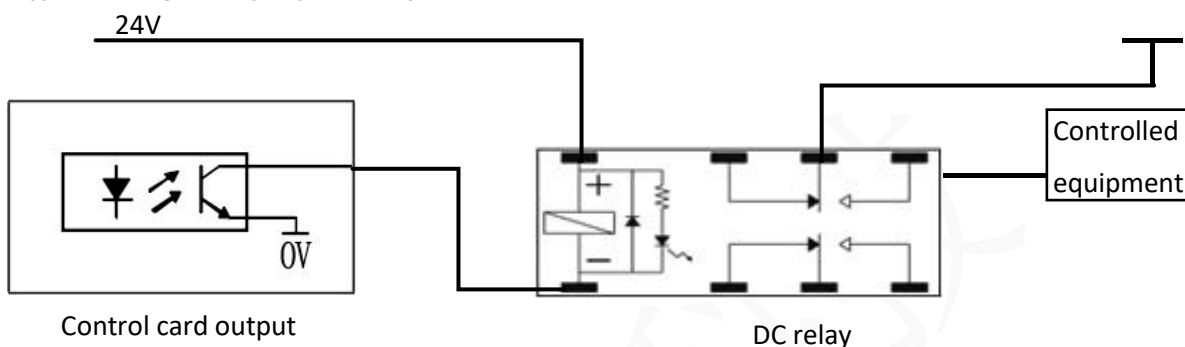
**Typical wiring of input port: relay transfer mode**



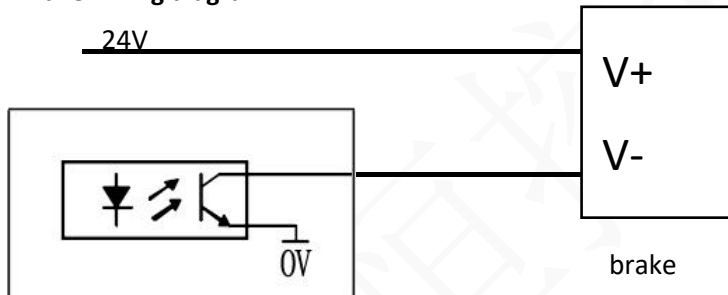
**Definition and description of output port:**

Output / output port pin definition and function description			
NO.	Name	Function	Wiring description
1-8	1-8 output	Quick output	Optocoupler output, can be used to control peripheral devices
8	Brake signal	Brake control signal	The default is the brake control signal, which can be configured as a common output port

**Typical wiring of output port: relay transfer mode**



**Brake wiring diagram:**

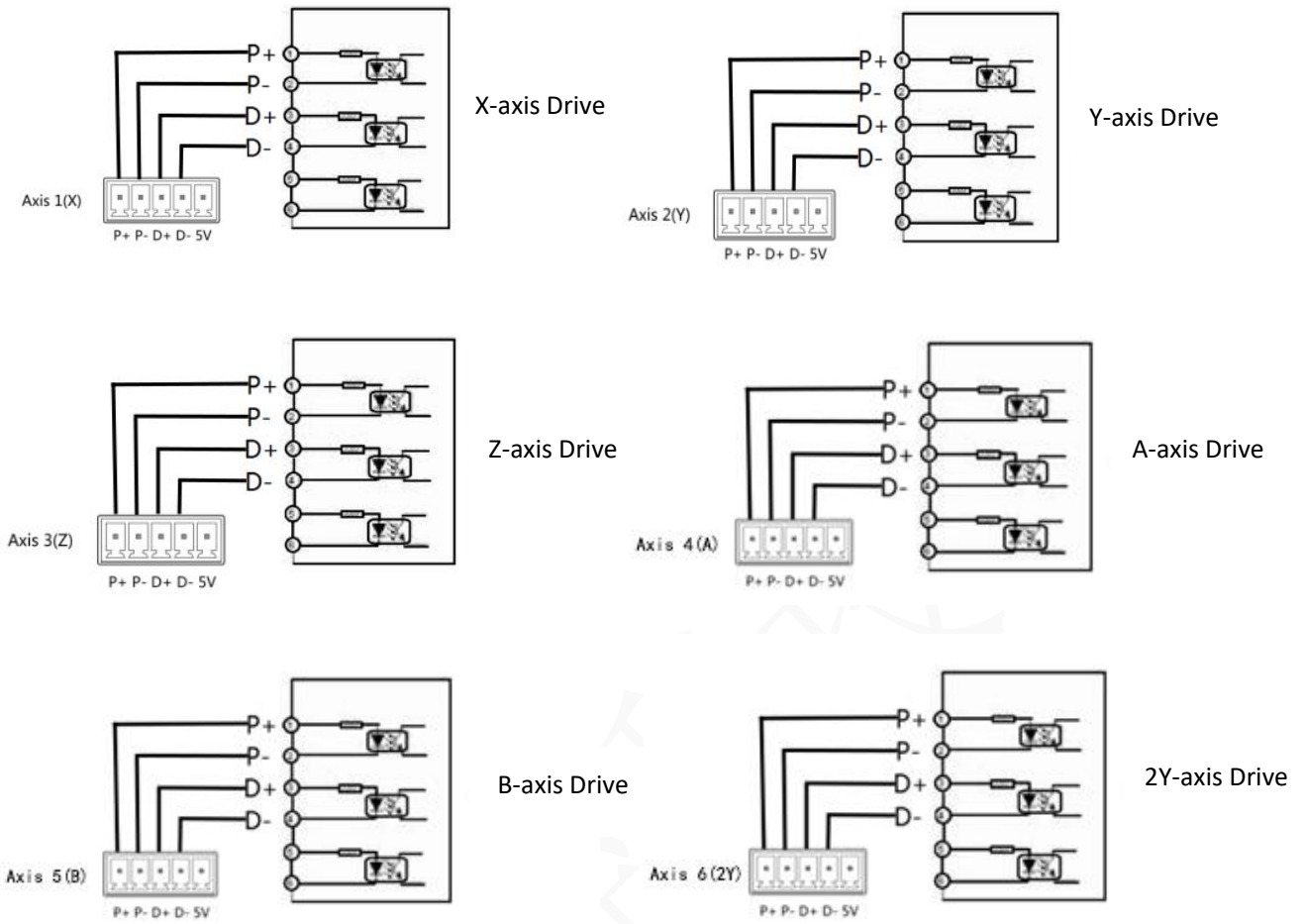


Control card brake signal port

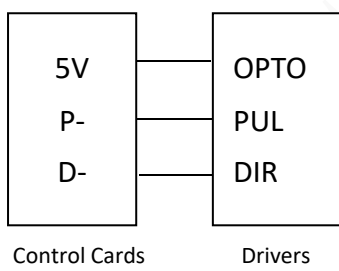
**Definition and description of motor port:**

Motor signal pin definition and function description			
NO.	Name	Function	Wiring description
1	P+	Pulse signal+	Motor pulse positive signal, differential signal type
2	P-	Pulse signal-	Motor pulse negative signal, differential signal type
3	D+	Direction signal+	Motor direction positive signal, differential signal type
4	D-	Direction signal-	Motor direction negative signal, differential signal type
5	5V	5V DC power	5V DC power

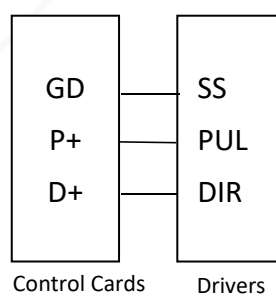
**Differential wiring diagram:**



**Common anode wiring diagram:**



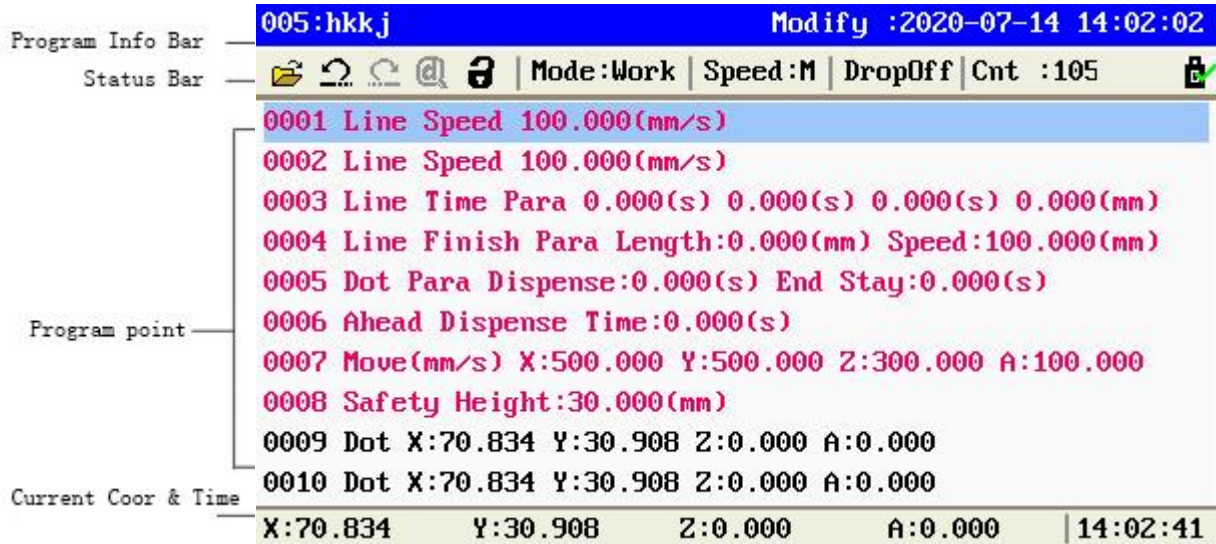
**Common cathode wiring diagram:**











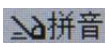
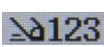
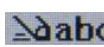
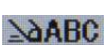
## Chapter 2 Main interface and key description

### 2.1 Main interface description

1. Description of main interface content distribution











2. **005:hkkj** Dispensing file serial number and file name, "005" is the serial number, "hkkj" is the file name.
3. **Modify :2020-06-23 16:01:07** The time when the dispensing file was last modified.
4.  Open the dispensing file icon, and use the "Table" button to switch the cursor to the icon.
5.  The "Undo" and "Redo" status indication icons can reach 30 times of "Undo" and "Redo". If the icon is gray, there is no operable "Undo" or "Redo".
6.  It means that the dispensing file has been edited and needs to be "debugged". If the icon is gray, the file has been "debugged".
7.  The file is not locked,  The file has been locked,  The machine is locked.
8. **Mode:Work** The running mode is divided into three modes: "work", "no glue" and "constant speed"; "work" mode is the normal dispensing processing mode; "no glue" mode is that the movement speed and path of the machine are the same as the "work" mode, But there is no glue; the "uniform speed" mode means that the machine's running path is the same as the "working" mode, but it runs at the speed of the "uniform speed" mode, and no glue is output. It is mainly used for path testing.
9. **Speed:F** Manual movement speed, divided into "fast", "medium" and "slow" speed, press "speed" key to switch in turn.





















10. **DropOff** Quickly set the idle glue switch option when idle, select 1 to turn on the idle glue dispensing mode, and select 2 to turn off the idle glue mode.
11. **Cnt :105/0** Workpiece counter, the previous value is the workpiece count value, the latter value is the set number of workpieces to be processed, if the workpiece count value reaches the set value of the workpiece to be processed, it will prompt that the workpiece count is full; if there is no workpiece count limit, it will be The number of processed workpieces is set to "0".
12.  U disk insertion,  No U disk is inserted or the U disk cannot be recognized.
13.  Pinyin input、 Digital input、 Enter lowercase letters、 Input capital letters, press the "#" key in the character input state to switch the input method.









## 2.2 Handheld programmer key description



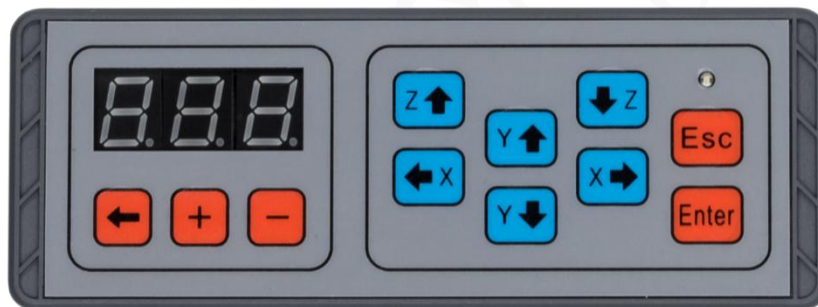
1.  Z axis up by manual
2.  Z axis down by manual
3.  Y axis front by manual
4.  Y axis back by manual









- 
5.  X axis left by manual
  6.  X axis right by manual
  7.  Manual A-axis moves counterclockwise
  8.  Manual A-axis clockwise movement
  9.  Manual B-axis counterclockwise movement
  10.  Manual B-axis clockwise movement
  11.  Switching Y1 and Y2 axes in double Y mode
  12.  Switch manual speed “slow, middle, fast”
  13.  Operation of exiting the menu or canceling the input dialog
  14.  Cursor switch between “dispensing programming point” area and “short menu bar” area, or transform plane when previewing.
  15.  Analysis of the current dispense file whether its programmed point accord with the dispense programming rules, if yes, then the icon  will become gray.
  16.  Press this key can pop up some help information of the current page, press any key to exit
  17.  Preview the glue out path graphic in current dispense program file in XY, XZ, YZ plane position,  
 to change plane, press other any key to exit
  18.   Undo and redo to the edition of programming points, up to 30 times, for preventing misuse effectively.
  19.  In front of the cursor point of the selected insert a blank dispense program point.
  20.  Delete the programming point of selected in main page, or in the menu state used for deleting something.
  21.  Jump to the special programming point address by manual input.
  22.  Into Menu 1, for the dispense point of action, displaying as black.





- 
23.  Into Menu 2, for dispense point of parameters setting, displaying as red.
  24.  Into Menu3, for device of parameters setting and some application operation
  25.  Perform to home.
  26.  Perform step dispense test.
  27.  Dispense working run or pause.
  28.  Dispense working stop.
  29.  Cursor up a page in main page state, or up a page in menu state.
  30.  Cursor down a page in main page state, or down a page in menu state.
  31.  Cursor up a line in main page state, or up a line in menu state, or up a line in input dialog.
  32.  Cursor down a line in main page state, or down a line in menu state, or down a line in input dialog.
  33.  Start point of dispense line program in main page, or input '1' ,characters in input dialog.
  34.  Middle point of dispense line program in main page , or input '2' , 'abc' in input dialog.
  35.  Finish point of dispense line program in main page , or input '3' , 'def' in input dialog.
  36.  Dispense dot program in main page, or input '4', 'ghi' in input dialog.
  37.  Arc point of dispense line program in main page, or input '5', 'jkl' in input dialog.
  38.  Dispense circle program in main page, or input '6', 'mno' in input dialog.
  39.  Dispense dump point (dump point is just like the dispense dot, only move to the point coordinate, but no more action, mainly used to other expect dispensing ,such as clear needle, etc) program in main page, or input '7', 'pqrs' in input dialog.
  40.  Set parameters of dispense dot program in main page, or input '8' , 'tuv' in input dialog.
  41.  Set parameters of dispense line program in main page, or input '9', 'wxyz' in input dialog.
  42.  Set parameters of dispense line speed program in main page, or input '0' in input dialog.

43.  Set Z height parameters in main page, or input space character or decimal point in input dialog.
44.  Move the needle to the programming point of cursor selected in main page when there is coordinate occurred, or switch IME or input negative value symbol in input dialog.
45.  +  Enter Menu 4, which is the parameter setting of the lower layer of the device, etc. It is recommended not to be open to users.
46.  +  Enter menu 5, menu 5 is the parameter default value setting, it is recommended not to be open to users.
47.  +  Enter menu 6, menu 6 is to enter the "menu display and hide" setting interface, it is recommended not to open to users.

### 2.3 Program Selection and Pin-to-Pin Button Description



1.  The current file selected is dispense file 123.
2.  Move the decimal point bit of the current dispense file No., there is ‘+’, ‘-’ operation follow with the decimal point bit.
3.  Plus 1 on the bit of decimal point in the dispense File No.
4.  Minus 1 on the bit of decimal point in the dispense File No.
5.  Z axis move up by manual when adjusting needle point.
6.  Z axis move down by manual when adjusting needle point.
7.  Y axis move front by manual when adjusting needle point.
8.  Y axis move back by manual when adjusting needle point.

- 
9.  X axis move left by manual when adjusting needle point.
  10.  X axis move right by manual when adjusting needle point.
  11.  Enter or confirm the adjustment operation for needle point, when enter the adjustment to the needle point position, LED on the back of the film began flashing, press manual key then press confirm key to finish the operation.
  12.  Cancel the adjustment operation.

---

## Chapter 3 The basic method of programming

### 3.1 Unit symbol interpretation

1. Length unit (mm) = (millimeter)
2. Time unit (s) = (second)
3. Speed unit (mm/s) = (millimeter per second)
4. Acceleration unit (mm/(s\*s)) = (speed of increment of millimeter per second for one second)

### 3.2 Appointment for dispense program finish

To improve the readability of the dispensing program, programming points can be kept a 'Non program' line between the lines, if there are two consecutive lines of 'Non program', then means here is the end of the program or subroutine return, its useful is the same as 'Program end or return'.

### 3.3 Run mode of dispense program

The running of dispense program is according to the sequence from address 0001 begin, and down to execute action or parameter setting of each program point until the program end or press 'stop', 'emergency' key. Among those program points expect the point of dispense dot, dispense line, dispense arc, dispense circle and clue, also have the order such call, array, jump, delay, pause, etc.

As using program point method in dispense parameters setting, so we can achieve use different dispense parameters in different dispense area in one processing file. Such as following program points:

```
0001 Line Speed 100.000(mm/s)
0002 Line Start X:37.733 Y:34.271 Z:15.941
0003 Line End X:63.716 Y:61.222 Z:38.561
0004 Line Speed 200.000(mm/s)
0005 Line Start X:27.747 Y:20.865 Z:21.198
0006 Line End X:58.329 Y:67.088 Z:41.308
0007 Line Speed 300.000(mm/s)
0008 Line Start X:8.247 Y:15.023 Z:3.380
0009 Line End X:31.046 Y:39.114 Z:5.452
0010 No Record
```

Then the line of 0002-0003 dispense with a speed of 100 mm/s, the line of 0005-0006 dispense with a speed of 200 mm/s, the line of 0008-0009 dispense with a speed of 300 mm/s.

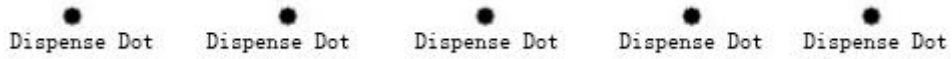
### 3.4 Basic path composition for dispensing

The basic paths for dispensing are single point dispensing, 3D linear dispensing, 3D circular arc dispensing, XY planar circular dispensing, XY planar circular dispensing and XY planar rectangular dispensing, etc. Among them, single point dispensing, line start point, line middle point, line end point, circular arc point and circular dispensing,

these commonly used programming points have special shortcut keys on the keyboard, so there is no need to go to the menu to select them. The following are the basic graphics of the dispensing process:

1. Dispense dot 

Dot
ghi 4

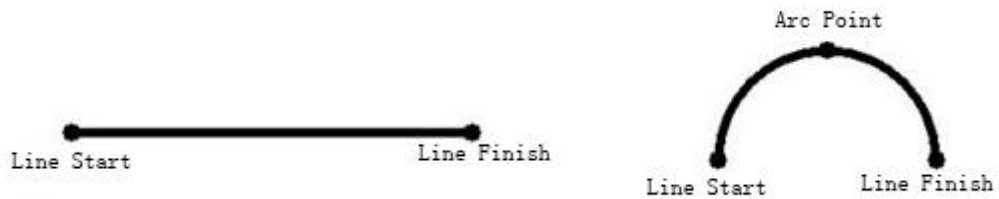


2. Single dispense line and arc 

LineSta
@ 1

LineEnd
def 3

Arc
jkl 5

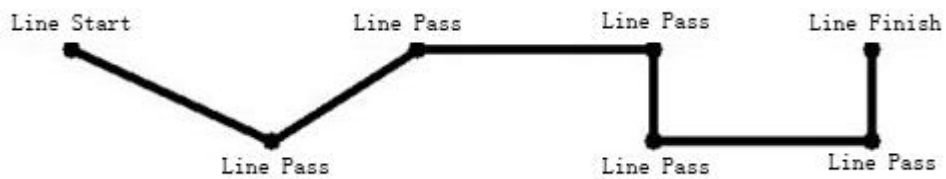


3. Continuous dispense line 

LineSta
@ 1

LinePass
abc 2

LineEnd
def 3



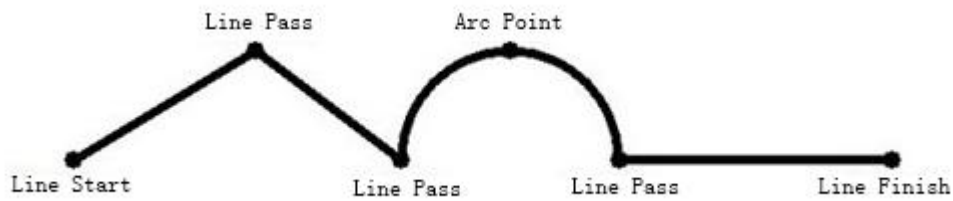
4. The continuous line segment and arc combination dispensing 

LineSta
@ 1

LinePass
abc 2

Arc
jkl 5

LineEnd
def 3



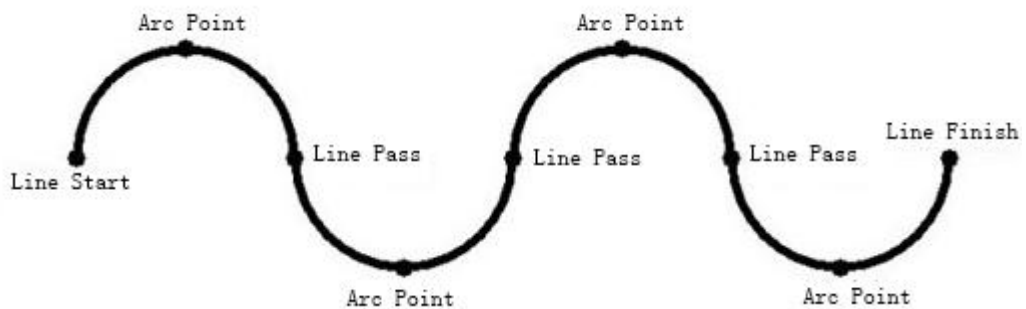
5. Continuous arc dispensing 

LineSta
@ 1

Arc
jkl 5

LinePass
abc 2

LineEnd
def 3



## Chapter 4 Menu 1

Menu 1 is for programming dispensing actions and common dispensing file operations. The programming points generated by Menu 1 are usually dispensing operation classes and are shown in black. Menu 1 includes the following.

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #800000; color: white;"> <th style="text-align: left; padding: 2px;">Menu1 Instruct P 1/4</th> </tr> </thead> <tbody> <tr style="background-color: #000080; color: white;"><td style="padding: 2px;">1.File Name Edit</td></tr> <tr><td style="padding: 2px;">2.Create Default Value</td></tr> <tr><td style="padding: 2px;">3.Multi Record Edit</td></tr> <tr><td style="padding: 2px;">4.Label Set</td></tr> <tr><td style="padding: 2px;">5.Dispense Array</td></tr> <tr><td style="padding: 2px;">6.Array Expand</td></tr> <tr><td style="padding: 2px;">7.Call Subroutine</td></tr> <tr><td style="padding: 2px;">8.Call File</td></tr> <tr><td style="padding: 2px;">9.Program Jump To</td></tr> </tbody> </table>	Menu1 Instruct P 1/4	1.File Name Edit	2.Create Default Value	3.Multi Record Edit	4.Label Set	5.Dispense Array	6.Array Expand	7.Call Subroutine	8.Call File	9.Program Jump To	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #800000; color: white;"> <th style="text-align: left; padding: 2px;">Menu1 Instruct P 2/4</th> </tr> </thead> <tbody> <tr style="background-color: #000080; color: white;"><td style="padding: 2px;">1.Prog Jump To</td></tr> <tr><td style="padding: 2px;">2.Program End</td></tr> <tr><td style="padding: 2px;">3.Delay</td></tr> <tr><td style="padding: 2px;">4.Pause</td></tr> <tr><td style="padding: 2px;">5.Program Input</td></tr> <tr><td style="padding: 2px;">6.Program Output</td></tr> <tr><td style="padding: 2px;">7.Brush Rect</td></tr> <tr><td style="padding: 2px;">8.Brush Circle</td></tr> <tr><td style="padding: 2px;">9.Dispense On/Off</td></tr> </tbody> </table>	Menu1 Instruct P 2/4	1.Prog Jump To	2.Program End	3.Delay	4.Pause	5.Program Input	6.Program Output	7.Brush Rect	8.Brush Circle	9.Dispense On/Off
Menu1 Instruct P 1/4																					
1.File Name Edit																					
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Menu1 Instruct P 3/4																					
1.Work Counter																					
2.Go Free Position																					
3.Go Home																					
4.Multi-Gun On/Off																					
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3.Ellipse Program																					
4.Speed Scale Set																					
5.Axis-A Move																					
6.Axis-B Move																					

### 4.1 Page 1 1. File's Name Edit

As follow picture, press  to switch IME.



### 4.2 Page 1 2. Greate Default Value

As shown in the figure, the following 7 common dispensing parameters can be generated. Each dispensing parameter can also be generated individually in menu 2, and can be quickly modified one by one after being selected in the main interface after generation. The function of each parameter is described in the individual description of menu 2.

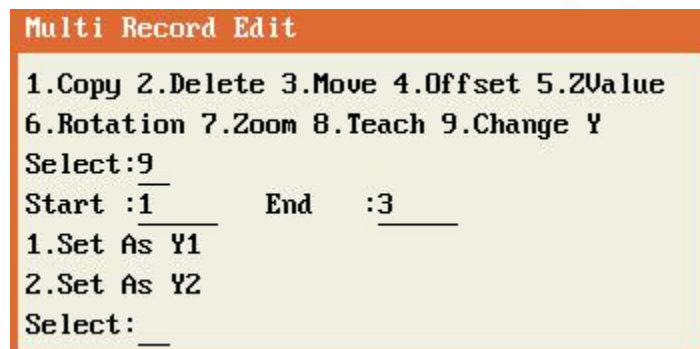
```

0001 Line Speed 100.000(mm/s)
0002 Line Time Para 0.000(s) 0.000(s) 0.000(s) 0.000(mm)
0003 Line Finish Para Length:0.000(mm) Speed:100.000(mm)
0004 Dot Para Dispense:0.000(s) End Stay:0.000(s)
0005 Ahead Dispense Time:0.000(s)
0006 Move(mm/s) X:500.000 Y:500.000 Z:300.000
0007 Safety Height:30.000(mm)
0008 No Record
0009 No Record
0010 No Record

```

### 4.3 Page 13. Multi Record Ddit

As shown in the figure, editing multiple programming points has the following operation items. If it is a single Y-axis mode, there is no "9. Change Y".



#### 1. Copy

As shown in the following three pictures, copy the 0001-0003 programming point to the 0005 programming point, and the third picture is the result of the first picture performing the second picture operation.

```

0001 Dot X:19.581 Y:13.195 Z:0.000
0002 Dot X:38.935 Y:13.195 Z:0.000
0003 Dot X:63.570 Y:13.195 Z:0.000
0004 No Record
0005 No Record
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record

```

```
0001 Dot X:19.581 Y:13.195 Z:0.000
0002 Dot X:38.935 Y:13.195 Z:0.000
0003 Dot X:63.570 Y:13.195 Z:0.000
0004 No Record
0005 Dot X:63.570 Y:13.195 Z:0.000
0006 Dot X:82.924 Y:13.195 Z:0.000
0007 Dot X:107.559 Y:13.195 Z:0.000
0008 No Record
0009 No Record
0010 No Record
```

## 2. Delete

As shown in the following three pictures: Delete 0005-0007 programming point, the third picture is the result of the first picture performing the second picture operation.

```
0001 Dot X:19.581 Y:13.195 Z:0.000
0002 Dot X:38.935 Y:13.195 Z:0.000
0003 Dot X:63.570 Y:13.195 Z:0.000
0004 No Record
0005 Dot X:63.570 Y:13.195 Z:0.000
0006 Dot X:82.924 Y:13.195 Z:0.000
0007 Dot X:107.559 Y:13.195 Z:0.000
0008 No Record
0009 No Record
0010 No Record
```

### Multi Record Edit

1.Copy 2.Delete 3.Move 4.Offset 5.ZValue  
6.Rotation 7.Zoom 8.Teach

Select:2

Start :5 End :7

' OK '

' ESC '

```
0001 Dot X:19.581 Y:13.195 Z:0.000
0002 Dot X:38.935 Y:13.195 Z:0.000
0003 Dot X:63.570 Y:13.195 Z:0.000
0004 No Record
0005 No Record
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record
```

### 3. Move

As shown in the following three pictures: move the programming point 0001-0003 behind the programming point 0005, this function is mainly used to adjust the order of each segment of the dispensing process, the third picture is the first picture to perform the second picture operation the result of.

```
0001 Dot X:19.581 Y:13.195 Z:0.000
0002 Dot X:38.935 Y:13.195 Z:0.000
0003 Dot X:63.570 Y:13.195 Z:0.000
0004 Line Start X:82.599 Y:24.034 Z:23.026
0005 Line End X:102.749 Y:24.034 Z:23.026
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record
```

```
Multi Record Edit
1.Copy 2.Delete 3.Move 4.Offset 5.ZValue
6.Rotation 7.Zoom 8.Teach
Select:3
Start :1      End   :3
Move To  :6
```

```
0001 Line Start X:82.599 Y:24.034 Z:23.026
0002 Line End X:102.749 Y:24.034 Z:23.026
0003 Dot X:19.581 Y:13.195 Z:0.000
0004 Dot X:38.935 Y:13.195 Z:0.000
0005 Dot X:63.570 Y:13.195 Z:0.000
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record
```

### 4. Offset

As shown in the following three figures, the coordinates of the programming points 0001-0005 are shifted. The third figure is the result of the first figure performing the second figure operation.

```

0001 Dot X:29.581 Y:23.195 Z:10.000
0002 Dot X:48.935 Y:23.195 Z:10.000
0003 Dot X:73.570 Y:23.195 Z:10.000
0004 Line Start X:92.599 Y:34.034 Z:33.026
0005 Line End X:112.749 Y:34.034 Z:33.026
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record

```

**Multi Record Edit**

1.Copy 2.Delete 3.Move 4.Offset 5.ZValue  
6.Rotation 7.Zoom 8.Teach

Select: 4

Start : 1                      End    : 3

Offset X (mm): 10

Offset Y (mm): 10

Offset Z (mm): 10

```

0001 Dot X:19.581 Y:13.195 Z:0.000
0002 Dot X:38.935 Y:13.195 Z:0.000
0003 Dot X:63.570 Y:13.195 Z:0.000
0004 Line Start X:82.599 Y:24.034 Z:23.026
0005 Line End X:102.749 Y:24.034 Z:23.026
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record

```

**5. Z value**

The Z-axis coordinate value of the programming point within the editing range becomes the specified coordinate value. The main function of this function is to make several programming points dispense on the same plane.

**6. Rotation**

Rotate the dispensing pattern of the programming point within the editing range, mainly if the fixture is deformed and rotated, you can use this function to correct it without reprogramming.

**7. Zoom**

Enlarge or shrink the dispensing graphics of the programming points within the editing range, mainly after the DXF file is used to generate the dispensing file. This function can be used to correct the processing size deviation from the actual size due to the accuracy of the machine.

## 8. Teach

This function can shift the dispensing point of the input address range according to the relative displacement of the starting point coordinate and the coordinate value to which the glue gun moves.

## 9. Change Y

As shown in the following three figures: the 0001-0005 programming point is changed from Y1 dispensing processing to Y2 dispensing processing, and the third graph is the result of the first graph performing the second graph operation.

```
0001 Dot X:29.58 Y2:23.20 Z:10.00 A:0.00 B:0.00
0002 Dot X:48.94 Y2:23.20 Z:10.00 A:0.00 B:0.00
0003 Dot X:73.57 Y2:23.20 Z:10.00 A:0.00 B:0.00
0004 Line Start X:92.60 Y1:34.03 Z:33.03 A:0.00 B:0.00
0005 Line End X:112.75 Y1:34.03 Z:33.03 A:0.00 B:0.00
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record
```

### Multi Record Edit

```
1.Copy 2.Delete 3.Move 4.Offset 5.ZValue
6.Rotation 7.Zoom 8.Teach 9.Change Y
Select:9
Start :1      End   :3
1.Set As Y1
2.Set As Y2
Select:  _
```

```
0001 Dot X:29.58 Y1:23.20 Z:10.00 A:0.00 B:0.00
0002 Dot X:48.94 Y1:23.20 Z:10.00 A:0.00 B:0.00
0003 Dot X:73.57 Y1:23.20 Z:10.00 A:0.00 B:0.00
0004 Line Start X:92.60 Y1:34.03 Z:33.03 A:0.00 B:0.00
0005 Line End X:112.75 Y1:34.03 Z:33.03 A:0.00 B:0.00
0006 No Record
0007 No Record
0008 No Record
0009 No Record
0010 No Record
```

## 4.4 Page 1 4. Label Set

The label can be used for calling arrays, loops, calling subroutines, program jumps, and general input programming. It can also be used to annotate dispensing programming to improve programming readability.

## 4.5 Page 1 5. Dispense Array

For example, when placing multiple horizontally and vertically arranged workpieces on the dispensing jig plate, and the horizontal and vertical distances are the same, array dispensing can be used. As long as a workpiece is processed for dispensing, then the array can be used to achieve the entire workpiece. The machining process greatly improves the programming efficiency. There are two ways to program array dispensing:

**Dispense Array**

1.Array As Input Offset

2.Array As Teach Offset

Set:|\_

For example, when the fixture plane of the workpiece is consistent with the XY plane, and the horizontal and vertical directions are parallel to the X and Y axis directions, the first array method can be used, or the second array method can be used. If the fixture plane of the workpiece is not consistent with the XY plane, or the horizontal and vertical directions are not parallel to the X and Y axis directions, the second array method is used.

Dispensing programming as shown below:

```

0001 Label:111
0002 Dot X:30.428 Y:32.289 Z:38.992
0003 Line Start X:30.428 Y:46.516 Z:38.992
0004 Line End X:60.938 Y:47.539 Z:38.992
0005 Line Start X:30.908 Y:77.318 Z:38.992
0006 Arc X:48.588 Y:60.198 Z:38.992
0007 Line End X:68.900 Y:79.674 Z:38.992
0008 No Record
0009 No Record
0010 No Record
  
```

平整夹具编程方式（左图）、倾斜夹具编程方式（右图）:

**Array**

Array :1.Hori 2.Vert Select:1

Hori Num :3

Vert Num :3

Offset-X(mm):30

Offset-Y(mm):30

Call :1.Addr 2.Label Select:2

Label :111|

**Array**

Array :1.Hori 2.Vert Select:2

Hori Num :3

Vert Num :3

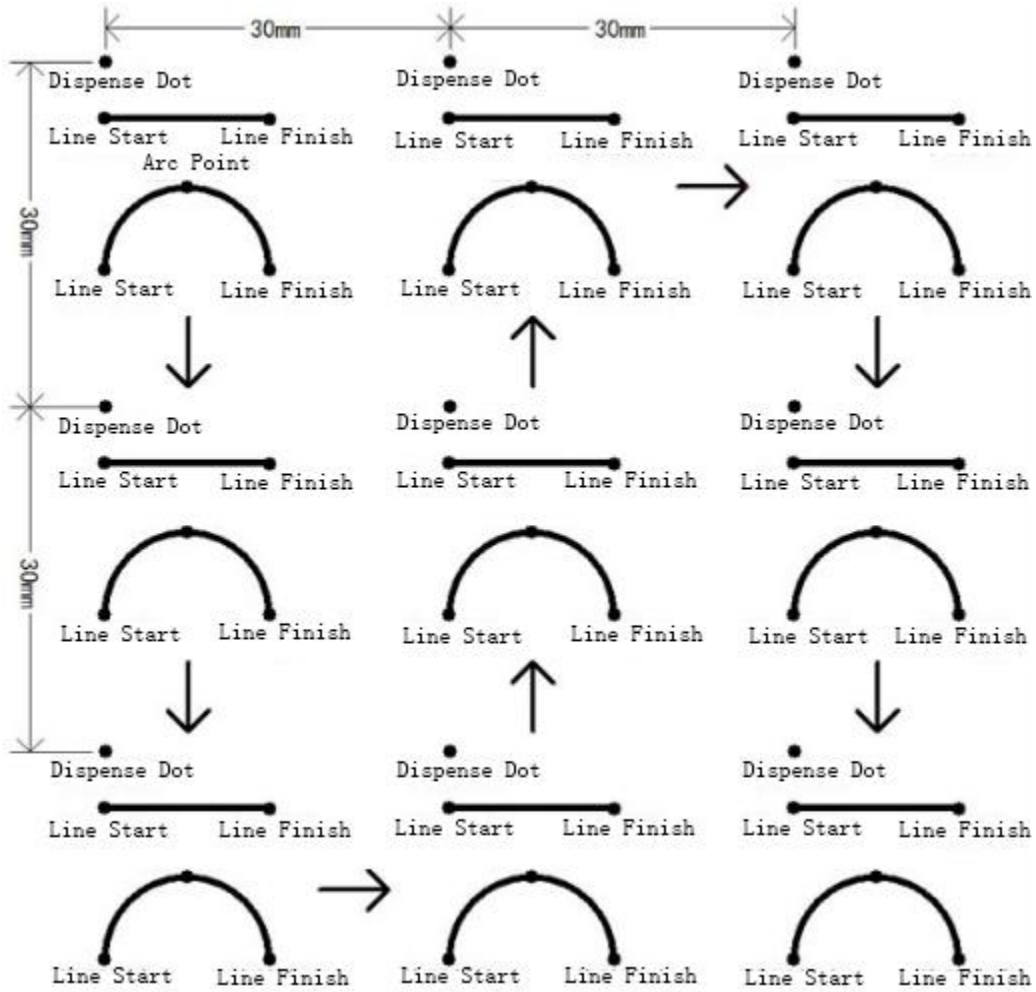
HoriCoor:138.353 61.571 38.992

VertCoor:83.606 181.480 38.992

Call :1.Addr 2.Label Select:1

Addr :1

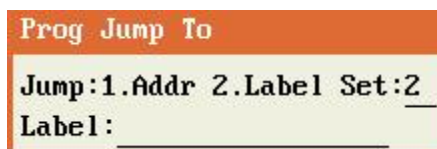
The resulting dispensing processing shape is as follows:



#### 4.6 Page 1 6. Array Expand

Select the array dispensing programming point with the cursor on the main interface, and perform the array expansion operation to generate the programming point with the same effect as the array dispensing, and remove the array dispensing programming point. Use this function when the fixture plate is not very regular. The dispensing path of each workpiece can be modified one by one.

#### 4.7 Page 1 7. Prog Jump To



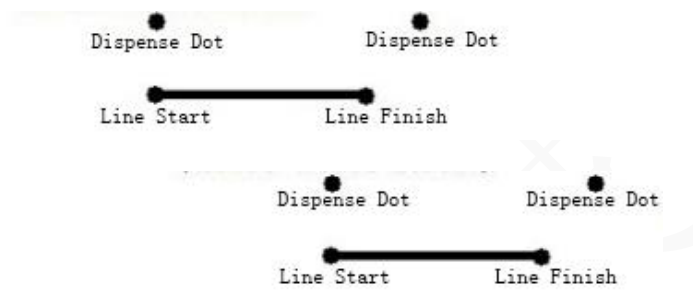
For example, if you place multiple workpieces in the same direction but have no regular positions on the jig plate, you only need to program a workpiece for dispensing processing, and then call this subroutine at the starting point coordinates of each workpiece. It can be the address of the subroutine or the label of the subroutine. Dispensing programming as shown below:

```

0001 Call Pro 24.846 75.002 19.776 Call Addr:0006
0002 Call Pro 56.201 84.776 28.283 Call Label:Subroutine
0003 No Record
0004 No Record
0005 Label:Subroutine
0006 Dot X:24.846 Y1:75.002 Z:19.776
0007 Dot X:46.337 Y1:74.994 Z:19.768
0008 Line Start X:24.993 Y1:85.004 Z:19.768
0009 Line End X:40.000 Y1:84.776 Z:19.776
0010 Program End

```

The resulting dispensing process is as follows.



#### 4.8 Page 1 8. Call File

```

Call File
1.Work As Current File Start
2.Work With Offset Of Former
Set:1|
File No.:0

```

Calling a file is similar to calling a subroutine in terms of usage and function. It turns the called subroutine into calling a dispensing processing file number, and the dispensing processing programming point in the subroutine becomes the dispensing processing programming point of the called file.

#### 4.9 Page 1 9. Program Jump To

```

Prog Jump To
Jump:1.Addr 2.Label Set:2
Label:

```

When the execution reaches this programming point, the program jumps to the specified address or label for execution, generally used for loops and so on. Programming as shown in the figure below: when the program point No. 0007 is executed, the program jumps to "0001 label: cyclic dispensing" and continues to execute the dispensing action in the range 0002-0006.

```

0001 Label:Loop
0002 Dot X:24.846 Y1:75.002 Z:19.776
0003 Dot X:46.337 Y1:74.994 Z:19.768
0004 Line Start X:24.993 Y1:85.004 Z:19.768
0005 Line End X:40.000 Y1:84.776 Z:19.776
0006 Y1 Program Jump To Label:Loop
0007 No Record
0008 No Record
0009 No Record
0010 No Record

```

#### 4.10 Page 2 1. Limited Loop

**Prog Jump To**

Loop Cnt:1|\_\_\_\_\_

Call:1.Addr 2.Label Set:2

Label: \_\_\_\_\_

The function of limited number of cycles is similar to that of "program jump to", except that "program jump to" is an unlimited number of times, and the limited number of cycles is a limited number of jumps. Programming as shown in the following figure will dispense glue in the range of 0002-0006 The action is repeated 10 times.

```

0001 Label:Loop
0002 Dot X:24.846 Y1:75.002 Z:19.776
0003 Dot X:46.337 Y1:74.994 Z:19.768
0004 Line Start X:24.993 Y1:85.004 Z:19.768
0005 Line Pass X:0.000 Y1:0.000 Z:0.000
0006 Line End X:21.263 Y1:7.954 Z:9.514
0007 Y1 Loop Call Label:Loop Cnt:10
0008 No Record
0009 No Record
0010 No Record

```

#### 4.11 Page 2 2. Program End

When the programming point is executed in the subprogram, the subprogram returns. When the programming point is not executed in the subprogram, the dispensing process ends. If there are more than two consecutive lines of "unprogrammed blank programming points", the The function of the programming point is the same, that is, if there are more than two consecutive "No Record" blank programming points", the program ends.

#### 4.12 Page 2 3. Delay



If the program execution reaches the delay programming point, the dispensing process stops for a certain time and then continues to execute the dispensing process programming point.

#### 4.13 Page 2 4. Pause

If the program execution reaches the pause programming point, the dispensing process is suspended, wait for the "Run" key to be pressed, and then continue to execute the dispensing process programming point.

#### 4.14 Page 2 5. Program Input

Program Input	PGUP	PGDN
When Input   Is	01.通用输入	01
Jump To :	02.通用输入	02
1.Addr 2.Label	03.通用输入	03
Select:	04.通用输入	04
Addr :	05.通用输入	05
	06.通用输入	06
	07.通用输入	07
	08.通用输入	08

The function of input signal programming is that when the program reaches the programming point, if the input state of the specified input signal matches the programmed value, the program jumps to the specified address or label, and if it does not match, the program continues to execute.

As shown in the following figure, when the program reaches the programming point of 0002, it will detect the state of "general input 1". If the input signal is 0, the program will continue to detect the input signal after jumping to 0001, and continue until the input signal becomes 1. Execution, the use of this function can achieve some cooperation with other devices or as a pause button input. (Semaphore definition: if there is a signal, the semaphore is defined as 1, if there is no input signal, the semaphore is defined as 0)

```

0001 Label:Loop
0002 Y1When Input 1 <通用输入 01>= 0 JumpLabel:Loop Or Cont
0003 Dot X:24.846 Y1:75.002 Z:19.776
0004 Dot X:46.337 Y1:74.994 Z:19.768
0005 Line Start X:24.993 Y1:85.004 Z:19.768
0006 Line Pass X:0.000 Y1:0.000 Z:0.000
0007 Line End X:21.263 Y1:7.954 Z:9.514
0008 Y1Out 1 <通用输出 01> Is 1, Delay 1.500s Off
0009 Program End
0010 No Record
  
```

#### 4.15 Page 2 6. Program Output

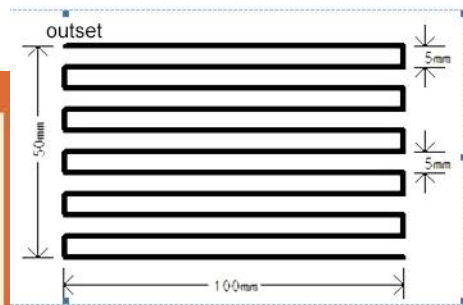
Program Output		
Output _____	Is _____	01.通用输出 01
Out Time(s): _____		02.通用输出 02
		03.通用输出 03
		04.通用输出 04
		05.通用输出 05
		06.通用输出 06
		07.通用输出 07
		08.通用输出 08

When the program is executed to the output signal programming point, the output signal specified in the programming point will output the corresponding set value, "1" is DC-24V output, "0" is DC-0V output. If the output state is set to 1, the output delay time represents the duration when the output state is 1, otherwise the output delay time is invalid.

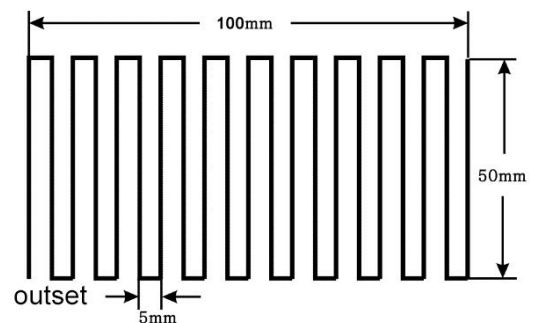
#### 4.16 Page 2 7. Brush Rect

The starting point of the square glue is the upper left corner of the square, and the parameters are the glue length, the glue width and the path spacing. In actual programming applications, the glue length and glue width can be obtained by subtracting the coordinate values of the needle, and the starting point coordinate is the square point The current coordinates at the time of glue programming confirmation. As shown below: programming on the left can get the dispensing path on the right.

Brush Rect
X-Axis Width(mm):100
Y-Axis Width(mm):50
Path Spacing(mm):2
Path 1.Hori 2.Vert 3.U-Ring 4.H-Ring Select:1
PS:Move Needle To Top Left!



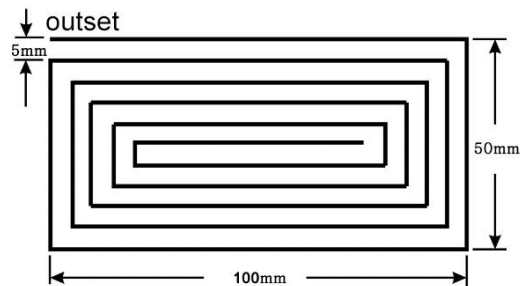
Brush Rect
X-Axis Width(mm):100
Y-Axis Width(mm):50
Path Spacing(mm):5
Path 1.Hori 2.Vert 3.U-Ring 4.H-Ring Select:2
PS:Move Needle To Top Left!



```

Brush Rect
X-Axis Width(mm):100
Y-Axis Width(mm):50
Path Spacing(mm):5
Path 1.Hori 2.Vert 3.V-Ring 4.H-Ring Select:β
PS:Move Needle To Top Left!

```



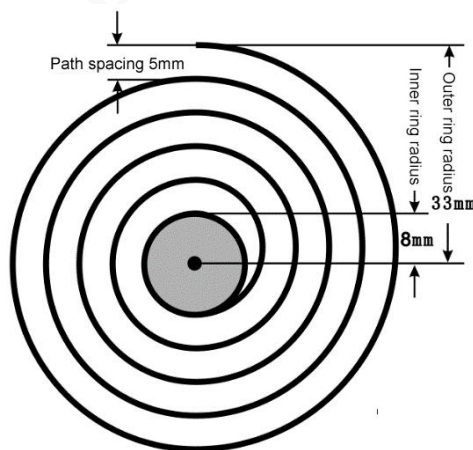
#### 4.17 Page 2 8. Brush Circle

The output path of the circular and circular glue is spiral. When programming, move the needle to the center of the circle to be circularly glued. You can set the circle radius, path radius of the circle, circle, and glue. As shown below: programming on the left can get the dispensing path on the right.

```

Brush Circle
Outer Radius(mm):33
Inner Radius(mm):8
Path Spacing(mm):5
Path 1.Clockwise 2.Anti-Clockwise Select:
PS:Move Needle To Circle Center!

```



#### 4.18 Page 2 9. Dispense On/Off

When the program point is reached, the dispensing control signal will be output accordingly. The program point can be placed between the line segment dispensing, to achieve the special glue application of opening and closing glue in the line segment.

#### 4.19 Page 3 1. Work Counter

When the program point is reached, the workpiece counter increases the corresponding setting value, and then compares whether the count value overflows the limit value, if it overflows, it stops. This function is mainly used for piece counting for cyclic processing.

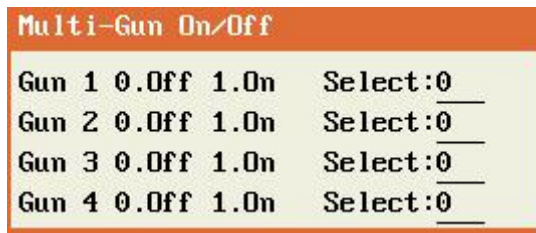
#### 4.20 Page 3 2. Go To Free Position

When this command is executed, the needle will return to the coordinates of the idle stop position. This programming point is generally used to clean the needle mouth during dispensing.

#### 4.21 Page 3 3. Go Home

This programming point allows the machine to perform the homing action.

#### 4.22 Page 3 4. Multi-Gun Set



Multi-Gun On/Off			
Gun 1	0.Off	1.On	Select:0
Gun 2	0.Off	1.On	Select:0
Gun 3	0.Off	1.On	Select:0
Gun 4	0.Off	1.On	Select:0

After setting the number of glue guns (1-4) in item 3 on page 3/4 of menu 4, you can manually control the activation/deactivation of each glue gun under this menu, where setting "1" means activation and setting "0" means deactivation, and the default is all 0. As shown in the figure ( The number of glue guns is 4 for example):

#### 4.23 Page 3 5. Base Point Set

This function is used to verify whether the position of the dispensing needle has shifted after multiple uses. The method of use is to set a reference point on the Y axis, and then perform the "Move to Cursor" operation to see if the needle coincides with the reference point. If it coincides, it indicates that the remaining dispensing position can be reached correctly. If it does not coincide, it indicates that the dispensing needle is offset. Need to recalibrate the needle point.

#### 4.24 Page 3 6. Go Home Cnt Increase

Each time the command is executed, the system automatically resets the count value by 1 and compares it with the value of the number of automatic resets set in menu two. If they are equal, the system resets to the original point.

#### 4.25 Page 3 7. Clean Cnt Increaese

Each time the command is executed, the system cleans the needle count value by one and compares it with the number of cleaning needle intervals set in menu two. If they are equal, the cleaning needle position is executed to perform the cleaning action.

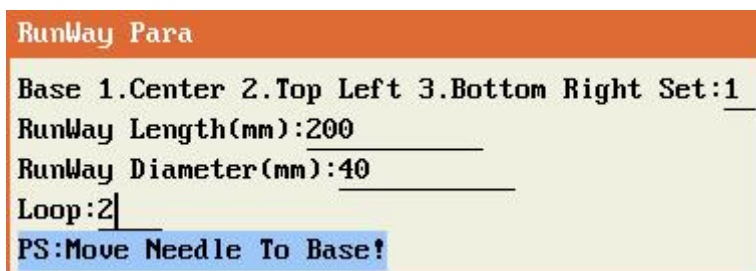
#### 4.26 Page 3 8. Z-axis Down Offset

In this interface, you can specify the offset of the Z axis position. The method of use is to set the offset value

and press the "ENTER" key to automatically insert the words "Z-axis offset: XX (mm)". When the program runs this instruction, the Z-axis offset to the specified value.



#### 4.27 Page 3 9. RunWay Para



Set the runway shape trajectory can be set by the following steps.

Step 1: Set the reference point, the options for setting the reference point are "1. center point, 2. the first straight path start point, 3. the second straight path start point", choose one of the three options;

Step 2: Set the total runway length in mm.

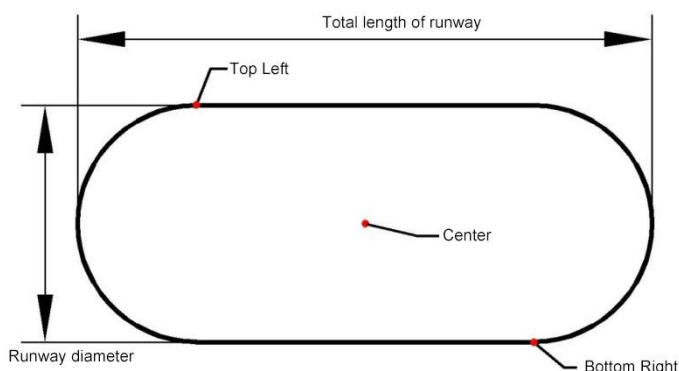
Step 3: Set the runway diameter length in mm;

Step 4: set the number of laps of the runway;

Step 5: Perform offset operation on the initially edited runway graphics. Firstly, move the cursor to the instruction line of runway programming, then press the "Preview" key to bring up the preview interface, and then press the " Enter " key to bring up the "Offset operation interface". There are two ways of offset operation:

"1.Coordinate offset or 2.Teach offset", choose one of them to operate.

The position of each parameter point can be referred to the following figure.



## 4.28 Page 4 1. Rounded rectangle

```
Round Rectangle Para
Base 1.Center 2.Top Left 3.Bottom Right Select:1
Corner Radius(mm):20
X-Axis Length(mm):140
Y-Axis Length(mm):160
Loop:2
PS:Move Needle To Base!
```

The movement path of the rounded rectangle can be set by the following steps:

Step 1: set the corner radius (inscribed circle radius);

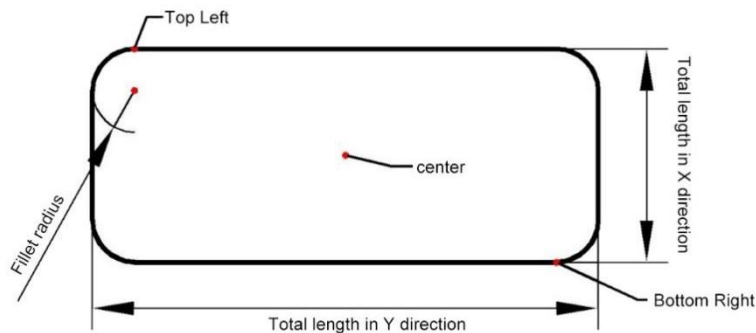
Step 2: set the reference point. The setting options of the reference point are "1. Center , 2.Top Left, 3. Bottom Right", and one of the three selection methods is optional. ;

Step 3: Set the total length of the runway in mm;

Step 4: Set the length of the runway diameter in mm;

Step 5: Set the number of running laps;

Step 6: Perform the offset operation on the pre-edited runway graphics: first move the cursor to the runway programming command line, then press the "Preview" button to pop up the preview graphical interface, and then press the "ENTER" button to pop up the "Offset Operation" interface. There are two types of offset operation modes: "1. Coordinate offset, 2. Teaching offset", you can choose one of them to operate.



Sketch map of rounded rectangle points

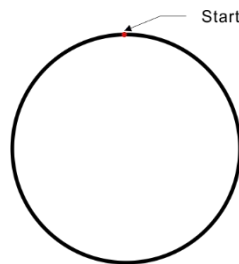
## 4.29 Page 4 2. Circle Program

```
Circle Para
1.Circle As 12 o'clock
2.Take 3 points make Circle
Set:|
```

Setting up an integer circular trajectory can be done in two ways as described above:

1. setting the circle at the 12 o'clock position of the circular arc;
2. taking three circular arc coordinates to set the circle;

Among them, way 1 requires the user to provide the reference point and radius of the circle to determine the position and size of the circle, whose reference point is the 12 o'clock position of the circular trajectory, and will run the whole trajectory in the clock direction with this as the starting point, as follows



Twelve o'clock direction fixed circle schematic

```

Circle Para
Press 'Enter' Get Base
Press 'MoveTo' Move To Set Coor
First:X:57.086 Y:89.749 Z:23.075
Second:X:63.131 Y:102.229 Z:23.075
Third:X:70.801 Y:102.229 Z:23.075
Loop:2.000
  
```

Mode 2 needs to confirm the position and size of the circle through the three points on the circle. After editing, if you need to run to the starting position of the whole circle, you need to move the cursor to the position of the circle command program, and then press the "Move to Cursor" button to automatically run to the starting position.

```

Ellipse
Press 'Enter' Get Base
Press 'MoveTo' Move To Set Coor
First:X:49.026 Y:25.513 Z:18.850
Second:X:84.695 Y:38.399 Z:18.850
Third:X:108.063 Y:52.569 Z:18.850
Loop:2.000
  
```

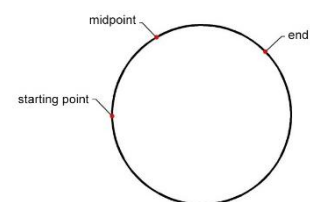


Diagram of the whole circle point position

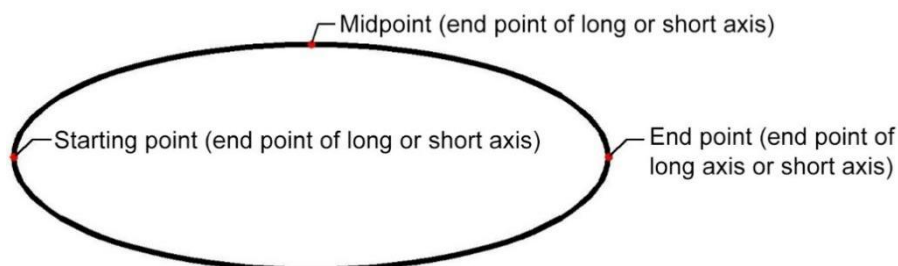
### 4.30 Page 4 3. Ellipse Program

Setting the ellipse trajectory can be confirmed by obtaining the starting point, middle point, and end point on the ellipse. If you want to run to the starting point of the ellipse after editing the ellipse, you need to move the cursor to the ellipse command program position, and then press the "Move to Cursor" key. The system will automatically run to the starting point.

```

Ellipse
Press 'Enter' Get Base
Press 'MoveTo' Move To Set Coord
First: X:49.026 Y:25.513 Z:18.850
Second: X:84.695 Y:38.399 Z:18.850
Third: X:108.063 Y:52.569 Z:18.850
Loop: 2.000

```



Schematic diagram of ellipse points

### 4.31 Page 4 4. Speed Scale Set

When there are multiple line segment dispensing speeds that need to be varied midway through the programming, this command can be inserted at the top of the machine when adjusting the machine to make the overall speed ratio change.

```

Speed Scale Set
Speed Scale(0.1-5.0): 1

```

### 4.32 Page 4 5. Axis- A move

Use the current A-axis location as the target point and make the A-axis move to this position alone when the program is executed at this step. Note that the correct setting (single or double A mode) in the Set Machine Structure option of Menu 4 is required to use this command, otherwise a warning will pop up.

### 4.33 Page 4 6. Axis- B move

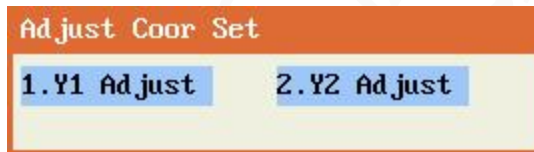
Use the current B-axis location as the target point and make the B-axis move to this position alone when the program is executed at this step. Note that the correct setting (Double A mode) in the Set Machine Structure option of Menu 4 is required to use this command, otherwise a warning will pop up.;

## Chapter 5 Menu 2

Menu 2 is mainly the programming point for setting the dispensing parameters. The programming point generated by Menu 2 is displayed in dark red. Menu 2 includes the following.

Menu2 Profiles P 1/3	Menu2 Profiles P 2/3	Menu2 Profiles P 3/3
1. Manual Adjust Set	1. Line Time Para	1. Auto Adjust Set
2. Manual Adjust Execute	2. Dot Dispense Para	2. Auto Adjust Execute
3. Z-Axis Down Limit	3. Output When Estop	3. Free Drop Coor Set
4. Free Coor Set	4. Output When Init	4. Go Home Cnt Set
5. Z Safety Height	5. Free Drop Time Set	5. Clean Position Set
6. Move Speed Para	6. Debug Speed Set	6. Clean Para Set
7. Dispense Ahead Time	7. Work Counter Set	7. Double Point Adjust
8. Line Speed Para	8. Dispense Pluse Set	
9. Line Finish Para	9. Batch Modify Speed	

### 5.1 Page 1 1. Manual Adjust Set

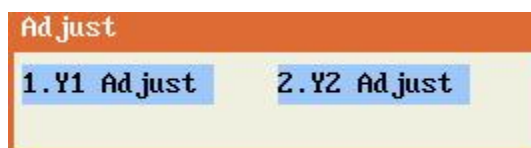


The purpose of the needle point is to correct the processing error caused by the needle offset when replacing the needle, which can be corrected by calibrating the needle point operation.



If the set coordinates are used as the needle point, move the needle manually to the position to be set and click on the "Confirm" button on the hand-held trainer.

### 5.2 Page 1 2. Manual Adjust Execute



After entering the calibration needle point menu, the needle automatically moves to 3mm above the needle

---

point coordinates (to prevent collision), and then manually move the needle to the needle point and press the Enter key to complete the calibration needle point operation; after the operation is completed, all The coordinate value of the dispensing process will compensate the error of the needle offset to ensure that the processing accuracy remains unchanged.

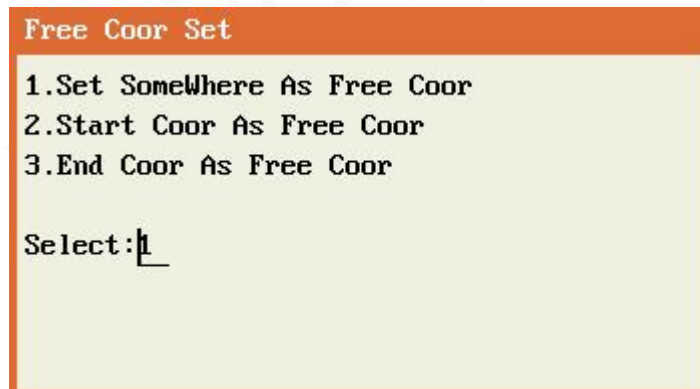
This function can also use the dedicated calibration needle point keyboard without a handheld programmer. As long as the machine is in the idle state, press the "ENTER" key of the calibration needle point keyboard to enter the needle point operation. The LED on the mask will flash, then press the manual movement key on the keyboard to move the needle to the needle alignment point, and then press the " Enter " key to complete the calibration needle alignment operation, the LED will turn off after exiting.

### 5.3 Page 1 3. Z-Axis Down Limit



Set this value to limit the downward movement of the glue gun to prevent the glue gun from moving down and colliding with the workpiece or jig when manually.

### 5.4 Page 1 4. Free Coor Set



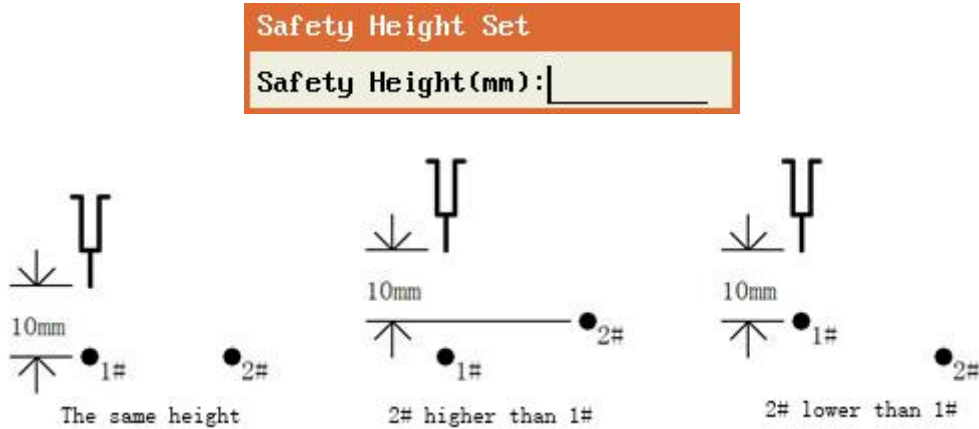
The idle stop point refers to the stop position after the dispensing process. The following three options can be set:

1. Use the set coordinates as the idle stop point;
2. Take the point above the starting point of dispensing as the free stop;
3. Take the top of the dispensing end as the free stop point;

For general dispensing processing, you can choose 2 or 3 options. The working efficiency will be higher; but if you need needle cleaning or timed dispensing when idle, you need to select item 1, so that the coordinate can be set to the needle cleaning or timing glued.

## 5.5 Page 1 5. Z Safaty height

The height of this setting is the height that the glue gun will increase when the glue gun is moved to the next dispensing processing point after dispensing. To improve efficiency, the setting value should not be too large, as long as it does not touch the height of the workpiece. For example, the set lifting height is 10mm. If the height between the two processing points is not on the same plane, the height shall prevail. The height of the glue gun when moving from 1# single point dispensing to 2# single point dispensing is as shown in the figure below.



## 5.6 Page 1 6. Move Speed Para

The air-moving speed refers to the moving speed from the completion of a section of glue processing to the next section of glue processing during the processing. The translation speed and the up and down movement speed are set independently. The speed directly affects the processing efficiency, but when set Also refer to the actual performance and load weight of the machine to see if it can withstand it.

**Move Speed Set**

X-Axis Move Speed (mm/s): \_\_\_\_\_

Y-Axis Move Speed (mm/s): \_\_\_\_\_

Z-Axis Move Speed (mm/s): \_\_\_\_\_

A-Axis Move Speed (deg/s): \_\_\_\_\_

## 5.7 Page 1 7. Dispense Ahead Time

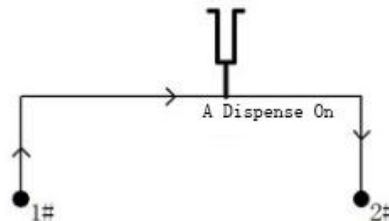
**Safety Height Set**

Safety Height (mm): 30

Since the glue has a certain viscosity, it takes a certain time from the opening of the dispensing valve to the dispensing of the glue. In order to improve work efficiency, this process is placed in the process of air movement. If the advance dispensing time is set to 0.1 seconds, then according to The set moving speed and acceleration calculate the position where the dispensing signal is turned on during the moving process, but in order to prevent

the glue from dripping out too quickly, the advance dispensing time should be set according to the viscosity of the glue, and should not be too large.

As shown in the figure below, the glue gun moves from the 1# dispensing to the 2# dispensing. If the advance dispensing time is set to 0.1 seconds, the glue gun needs to be moved from point A to 2# dispensing according to the air movement speed and acceleration. Seconds, the dispensing valve is at point A instead of moving to dispensing point 2#.



### 5.8 Page 1 8. Lime Speed Para

The line segment dispensing speed refers to the speed at which the glue gun moves during glue application, including line segment dispensing, arc dispensing, circular dispensing, and glue dispensing. The setting of the speed can refer to the requirements of the viscosity of the glue, the pressure, and the amount of glue.

### 5.9 Page 1 9. Lime Finish Para

The drawing action is to solve the problem of tailing caused by the viscosity and hysteresis of the glue. This setting is effective for line segment dispensing, arc dispensing, circular dispensing, and square dispensing. The setting items are as follows.

**Finish Para Set**

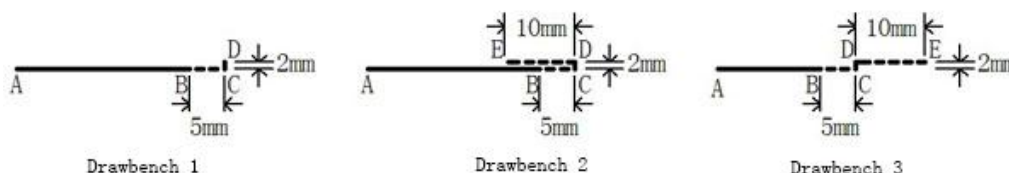
Finish Height(mm):

Finish Length(mm):

Finsih Speed(mm/s):

Finish Type: 1. | 2. | 3. | 4. \ 5. / Select:

According to the parameters set in the above figure, the following figure is a schematic diagram of the wire drawing action at the end of the line dispensing.



Points A and C are the line start point and line end point of the line dispensing. The solid line is the path taken when the valve is opened, and the dotted line is the path taken after the valve is closed, because the distance for closing the glue in advance is 5mm. So when you reach point B, the dispensing signal is turned off. Before the point C, go at the dispensing speed of the line segment, after point C, go at the drawing speed, and after the

drawing action is finished, lift at the speed parameter and the height of the glue gun.

### 5.10 Page 2 1. Line Time Para

Time Para Set	
Line Start Time(s):	_____
Line Pass Time(s):	_____
Line End Time(s):	_____
Delay Len Of Dispense On(mm):	_____
Ahead Len Dispense Off(mm):	_____

In the parameter setting of the dispensing time of the line segment.

"Line segment dwell time" refers to the time that the needle moves to the starting point of the dispensing and opens at the dispensing point after the dispensing valve is opened. It mainly solves the problem of lag in dispensing, similar to the function of opening the glue in advance.

"Ending time of line segment" refers to stopping after the line segment is dispensed and then lifting, which is a supplement to the drawing action.

This setting is also effective for arc dispensing, circular dispensing, and glue application.

### 5.11 Page 2 2. Dot Dispense para

In single point dispensing parameter setting.

"Single dispensing time" refers to the time when the dispensing valve opens at the single dispensing point.

"End residence time" refers to the end of the dispensing time at the single point of dispensing, and the remaining time after closing the dispensing valve. This is mainly to solve the problem of lagging in the glue collection and prevent drawing.

"Brushing lift height" means that after a single point of dispensing, first lift a certain height at a slower speed

"drawing lift speed", and then raise it to the glue gun lift height at an air movement speed, mainly to solve the problem of drawing. The value can be set to 0.

Dot Para Set	
Dot Time(s):	_____
Stay Time(s):	_____
Finish Up Height(mm):	_____
Finish Up Speed(mm/s):	_____

### 5.12 Page 2 3. Output When Edstop

Set the output signal of general output during emergency stop, "1" is output 24V, "0" is output 0V.

Output When Estop																
Old Value:																
B	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Value:																
B	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
V																

### 5.13 Page 2 4. Output When Init

Set the output signal of general output when starting up, "1" is output 24V, "0" is output 0V.

Output When Init																
Old Value:																
B	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Value:																
B	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
V	1															

### 5.14 Page 2 5. Free Drop Time Set

This function is mainly used to prevent the glue from curing at the needle mouth when the glue that is easy to dry is idle and not working. If this function is not enabled, the glue time or interval time can be set to 0. As shown in the figure below, the dispensing signal will automatically turn on for 1 second every 10 seconds in the idle state.

Free Drop Time Set	
Drop Time(s):	1
Interval Time(s):	10
Set '0' When Disable!	

### 5.15 Page 2 6. Debug Speed Set

The set speed is the speed used in the "no glue" and "uniform speed" operating modes.

Debug Speed Set	
Speed(mm/s):	10

## 5.16 Page 2 7. Work Counter Set

Run Counter Set	
Count:	1
Limit:	10
Set As '0' When No Limit!	

"Counter value" and "limit value" can be set in the workpiece counter setting. During the operation, "counter value" will increase the corresponding set value every time the "workpiece counter" programming point is executed, such as "counter value" exceeds the "limit value" It indicates that the workpiece count has overflowed and the machining cannot be continued until the count value is newly set. If the workpiece count limit is not used, set the "limit value" to 0.

## 5.17 Page 2 8. Dispense Pluse Set

This function is mainly to control the time of glue dispensing in the dispensing process. Among them, the low-level pulse width time means no glue will be discharged in this period of time, and the high-level pulse width time means the glue will be discharged at this end time. For example: single-point dispensing time is 1s, and the high and low pulse widths are set here to 100ms, then the actual effect is: glue out 100ms, glue stop 100ms, then glue out 100ms, glue stop 100ms, until the end of 1s.

Dispense Pluse Set	
Low Pluse Width(ms):	100
High Pluse Width(ms):	200

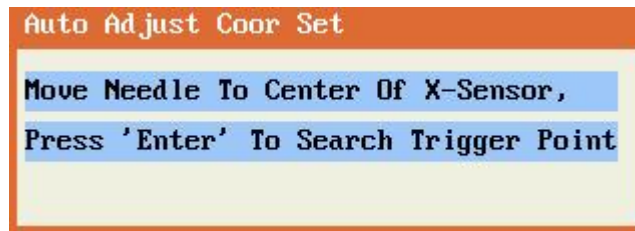
## 5.18 Page 2 9. Batch modify Speed

This function is to batch modify the running speed of dispensing within a certain programming address.

Batch Modify Speed	
Addr:	7
Addr:	21
Percentage(%)	50

Select Record	
0002	Line Time Para 0.000(s) 0.000(s) 0.000(s) 0.0
0003	Line Finish Para Length:0.000(mm) Speed:100.0
0004	Dot Para Dispense:0.000(s) End Stay:0.000(s)
0005	Ahead Dispense Time:0.000(s)
0006	Move(mm/s) X:500.000 Y:500.000 Z:300.000 A:10
0007	Safety Height:30.000(mm)
0008	Dot X:29.58 Y2:23.20 Z:10.00 A:0.00 B:0.00
0009	Dot X:48.94 Y2:23.20 Z:10.00 A:0.00 B:0.00

### 5.19 Page 3 1. Auto Adjust Set



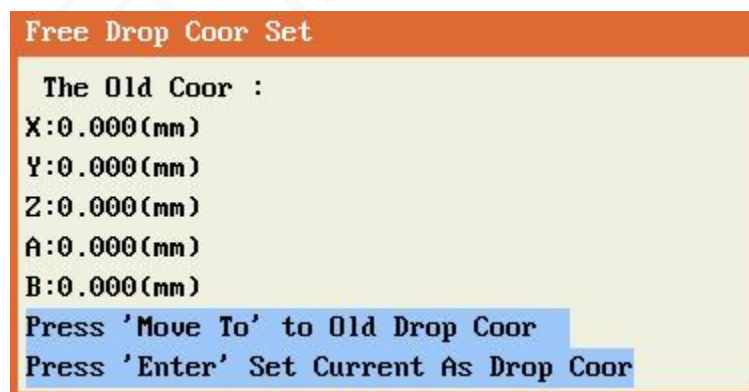
Move the needle to the center of the automatic needle sensor at a moderate height. After pressing "ENTER", the needle will move left, right, back and forth to search the trigger point of the X, Y and Z direction sensors to obtain the needle-to-needle point coordinates.

### 5.20 Page 3 2. Auto Adjust Option

Automatically calibrate the alignment point, the needle moves to the coordinates of the previous needle point, and then move left, right, back, up and down to search for the trigger point of the X, Y, and Z direction sensors to obtain the new needle point coordinates. By comparing the previous and newly obtained coordinates of the needle point, the difference values of X, Y and Z coordinates are obtained respectively. Coordinate offset all the programming points of the holes according to the difference to get the coordinates of the new programming point.

### 5.21 Page 3 3. Free Drop Coor Set

This function can set the position of idle glue dispensing, manually move the needle to the specified position, and press Enter to set successfully.

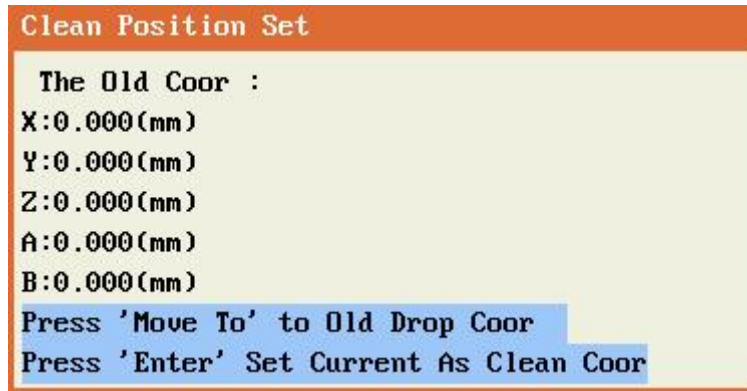


### 5.22 Page 3 4. Go Home Cnt Set

This function can set the number of intervals of automatic reset. If the function is not enabled, it is set to 0.

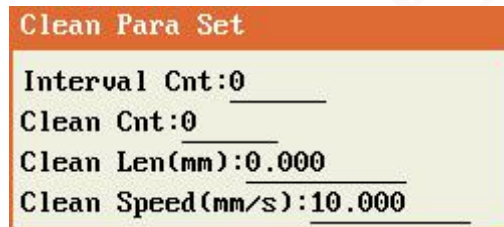


### 5.23 Page 3 5. Clean position Set



This function can set the position of the cleaning needle, manually move the needle to the specified position, and press the ENTER key to set successfully.

### 5.24 Page 3 6. Clean Para Set



This function can set the operation parameters of the cleaning needle. If this function is not enabled, the interval times can be set to 0.

Interval Cnt (Interval count): indicates how many times the dispensing interval will go to the cleaning position for cleaning action;

Clean Cnt (Clean Count): indicates how many times the needle reciprocates during the cleaning process;

Clean Len(Clean length): indicates the distance of the needle reciprocating movement during the cleaning process;

Clean Speed( Speed of cleaning): indicates the speed of the reciprocating movement of the needle during the cleaning process.

### 5.25 Page 3 7. Double Point Ad just

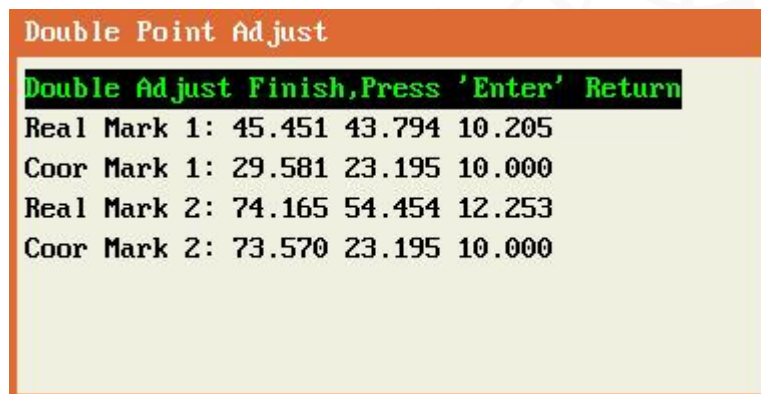
During the machining process in some occasions, the position of the workpiece may be offset, but the general single-point calibration can only solve the position offset, but not the rotation offset with the calibration point as the center of rotation. Double-point calibration can solve the problem well and compensate the error generated by the calibration to all the programmed points, so that the machine can machine the workpiece normally..

Steps for double point calibration .



Assuming that there are two programming points in the current programming file, A and B, then

1. move the current axis to the actual location of point A, and then click "Enter" to select the programming point corresponding to point A in the programming file to complete the calibration of the first point;
2. move the current axis to the actual location of point B, and then click " Enter " to select the programming point corresponding to point B in the programming file to complete the calibration of the second point, so that the dual-point calibration is completed.



## Chapter 6 Menu 3

Menu 3 is mainly a menu for setting or operating the machine, and no programming point is generated.

Menu 3 includes the following.

Menu3 Utility P 1/3	Menu3 Utility P 2/3	Menu3 Utility P 3/3
1.Needle Move To	1.Key Voice On/Off	1.Load Language File
2.File Copy Option	2.Speed Priority Set	2.run from cursor
3.Import DXF File	3.Small Key Lock/Unlock	
4.File Lock/Unlock	4.File Name View	
5.Machine Lock/Unlock	5.Machine Information	
6.File-PWD Set	6.Program Version	
7.Machine-PWD Set	7.Update APP	
8.Input Name Edit	8.View Button Status	
9.Output Name Edit	9.View Input/Output	

### 6.1 Page 1 1. Needle move To

After entering this menu, input the coordinate value to which the needle moves, and then press the "ENTER" key, the needle will move to the entered coordinate position.

Needle Move To	
X-Axis Coor(mm):	0
Y-Axis Coor(mm):	0.000
Z-Axis Coor(mm):	0.000
A-Axis Coor(deg):	0.000
B-Axis Coor(deg):	0.000

### 6.2 Page 1 2. DJF Copy (File copy Option)

This function can realize the use of U disk or handheld programmer for storage, and realize the copying of the dispensing processing files between different machines. Then copy to other dispensers. Copying with a handheld programmer is more suitable for on-site use. Copying with a U disk can not only copy between dispensers but also store to a computer backup. The file copy operation includes the following options.

DJF Copy
1.From Machine To HandPad
2.From Machine To UDisk
3.From HandPad To Machine
4.From UDisk To Machine
5.Copy Between Machine
6.Import 3DL01 File From UDisk
Select: __

#### 1. From Machine To HandPad

This operation is to copy the currently opened dispensing processing file to the handheld programmer.

#### 2. From Machine To Udisk

This operation is to copy the currently opened dispensing processing file to the root directory of the U disk, and the stored file name extension is "DJF". (Note: U disk must be formatted as FAT32 format)

#### 3. From HandPad To Machine

Copy the dispensing processing file stored in the handheld programmer to replace the currently opened dispensing processing file of the dispenser.

#### 4. From Udisk To Machine

Copy the dispensing processing file in the root directory of the USB flash drive to replace the currently opened dispensing processing file of the dispenser. (Note: U disk must be formatted as FAT32 format)

#### 5. Copy Between Machine

This function is to copy and replace the glue processing files between different numbers in the dispenser. It is mainly used for the backup of the glue processing files. When the misprogramming operation occurs and the undo function cannot be used to restore, the backed up files can be used.

### 6.3 Page 1 3. Improt DXF file



Save the AutoCAD graphic file as AutoCAD 2010 DXF format file, save it to the root directory of the U disk, and then operate this function to convert the graphic file into a glue file.

Only supports "point", "straight line", "circle", "circle", "polyline", such as the more copied graphics, such as "spline curve", "ellipse", etc., need to be converted into "multi-segment" line".

Since the Y axis direction of AutoCAD and the dispenser coordinate system is exactly opposite, the value of the maximum Y axis stroke in CAD is taken as the 0 coordinate of the Y axis of the dispenser.


### 6.4 Page 1 4. File Lock/unlock



When the current file is not locked, the icon displayed in the status bar is  , and the parameter settings of the current file and the machine can be modified; the icon displayed in the status bar is  when the current file is locked, then the current file cannot be modified, but The parameter settings of the machine can be modified.

## 6.5 Page 1 5. Machine lock/unlock



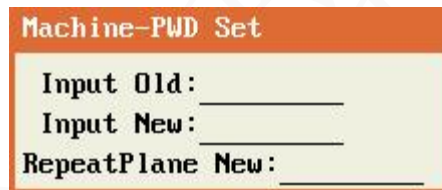
In the unlocked state, the setting parameters of the machine can be modified. Whether the current file is locked is related to the current file's own lock/unlock setting; in the locked state, the icon displayed in the status bar is  , at this time all the dispensing files and the machine's All parameter settings are locked.

## 6.6 Page 1 6. File lock Pas Set



The password set in this menu should be used for "page 1. 4. File Lock/unlock ".

## 6.7 Page 1 7. Machine -PWD Set



The password set in this menu is used for the operation of "Menu 3, page 1, 5. Advanced locking/unlocking of the machine".

## 6.8 Page 1 8. Input name Edit



The default name of the programmable universal input port is " GP input 01"- " GP I input 16". In order to improve the readability of the program, each programmable universal input port can be named according to the function of the application, so that programming more convenient.

## 6.9 Page 1 9. Output name Edit



The default name of the programmable universal output port is "GP output 01"- "GP output 8". In order to improve the readability of the program, each programmable universal output port can be named according to the function of the application, so that programming more convenient.

## 6.10 Page 2 1. Key Voice On/Off



This menu can set whether the key tone of the handheld programmer is turned on or off.

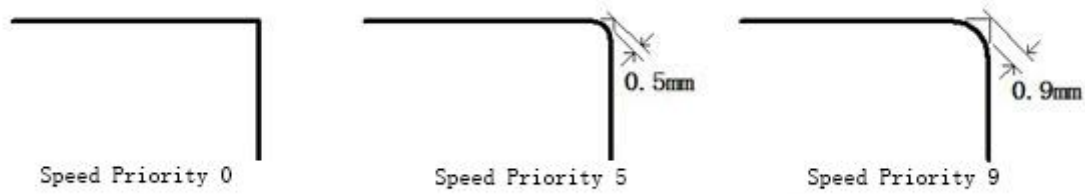
## 6.11 Page 2 2. Speed priority Set



In the actual movement of the machine, such as a single motor shaft at the corner, it is actually a process of forward and reverse rotation. In order to reduce mechanical vibration and prevent loss of synchronization, the speed must be reduced to close to the forward and reverse rotation 0, which means that the machine must be decelerated at the corner.

But for the dispensing, if the speed is inconsistent, it will lead to the inconsistency of the amount of glue. In order to solve this problem, the corner becomes a small circular transition at the corner when the accuracy allows, so that the speed at the corner and the speed of the straight line can be made It is more consistent to solve the inconsistency of glue volume, but this is achieved at the expense of path accuracy, so when setting this value, both speed and path accuracy should be referenced and an appropriate value should be taken.

The value of the speed priority level is 0-9. The larger the value, the more uniform the speed but the larger the path error. If it is 0, the path is completed without error, but the speed at the inflection point will be reduced. The following figure shows the priority and Relationship diagram of path error.



## 6.12 Page 2 3. Small Key lock/unlock

### Small Key Lock/Unlock

0.Unlock 1.Lock Set:0

The small keyboard refers to the special keyboard for calibrating the needle point. The function of this function is to lock this keyboard away from the handheld programmer if you want to prevent misoperation.

## 6.13 Page 2 4. File name View

File Name View		Press '#' To Create New
000:Pro000	008:Prog008	
001:Prog001	009:Prog009	
002:Prog002	010:Prog010	
003:Prog003	011:Prog011	
004:Prog004	012:Prog012	
005:Prog005		
006:Prog006		
007:Prog007		

Since there are many dispensing files (150), if it is more troublesome to open and search one by one, you can use this function to browse through pages to find the number of the file you want to open and then open it. You can also press the "Delete" button to delete the selected file.

## 6.14 Page 2 5. Machine Information

Display device information, such as machine model.

## 6.15 Page 2 6. Program Edition

Display program version information, such as the following figure.

Program Version
ARM:2020-09-16-6A0
DSP:2020-10-23-003 AA
Motor lock:0
HW:6DU301
Axis:X Y Z A B C


**ARM:** 09/16/2020; program code 6A0.

**DSP:** October 23, 2020; Version 003 AA.

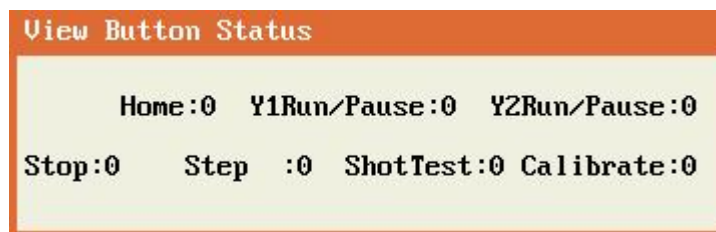
**HW:** 6DU301 motherboard board model information.

**Axis:** X Y Z A B C Axis name

## 6.16 Page 2 7. Update App

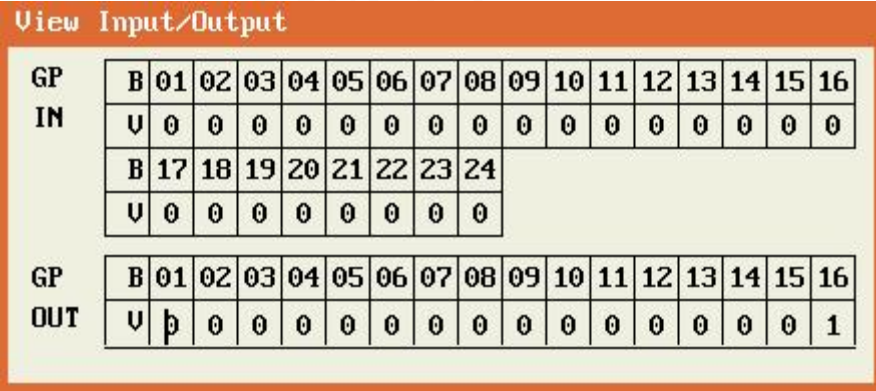
Just put the application files in the root directory of the U disk in FAT32 format, insert the U disk and enter the menu operation to update. If the U disk can be read normally after being inserted, the U disk insertion icon displayed on the far right of the status bar is  .

## 6.17 Page 2 8. View Function Key



View the input status of the keys. The key is not pressed, the status value is 0; the key is pressed, the status value is 1.

## 6.18 Page 2 9. View Input/Output



The screenshot shows a menu titled "View Input/Output" with two tables:

GP IN	B	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GP IN	B	17	18	19	20	21	22	23	24
	U	0	0	0	0	0	0	0	0

GP OUT	B	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

01-06 of "General input" are the origin signals of X, Y, Z, A, B, and 2Y axes respectively, and the value is '1' when there is an input signal, and '0' when there is no input signal. The value is '1' if there is an input signal and '0' if there is no input signal.

07-08 of "General input" are programmable fast input ports, and the value is '1' when there is an input signal, and '0' when there is no input signal.

09-16 of "General Input" are programmable normal inputs with the value of '1' when there is an input signal, and '0' when there is no input signal.

The 01-16 points of "general output" can be tested. If the corresponding output point lights up when the

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input value is "1", the test port is normal, and vice versa. When the input value "0" corresponds to the output point light off, the test port is normal, and vice versa.

### **6.19 Page 3 1. Load language file**

Put the language package into the root directory of the U disk, and then choose to import the language package, you can switch the system language in the switch menu 4 after success, generally in the device has been installed when the factory language package, the user does not need to care about this item.

### **6.20 Page 3 2. Run from cursor**

Causes the program to run from the current cursor position.



## Chapter 7 Menu 4

Use "Stop" + "Menu 1" to enter Menu 4. Menu 4 is the manufacturer's menu for setting the machine parameters. It is not recommended to be open to users. Menu 4 includes the following.

Menu4 System P 1/5	Menu4 System P 2/5	Menu4 System P 3/5
1.X-Axis Para Set	1.Named Company	1.Machine Type Set
2.Y-Axis Para Set	2.Start/Stop Speed Set	2.System Para Copy
3.Z-Axis Para Set	3.Acc Set	3.Estop Mode
4.A-Axis Para Set	4.Max Speed Set	4.Multi-Gun Set
5.B-Axis Para Set	5.Go Home Speed Set	5.Home Mode Of Power On
6.Time Limit PWD Set	6.Manual Speed Set	6.Auto Adjust Port Set
7.Date/Time Set	7.Update IME	7.Machine Install Mode
8.Time Limited Set	8.Update Power Screen	8.Z Height When Adjust
9.Named Machine	9.Program Change Mode	9.Key Input Port Set

Menu4 System P 4/5	Menu4 System P 5/5
1.Output Port Set	1.Dual-Y Run Set
2.Driver DIR Set	2.Teaching Box Set
3.Init System Para	3.Serial Para Set
4.Utility Output	
5.Protect Port Set	
6.Negative Angle Set A	
7.Negative Angle Set B	
8.System Language	
9.Dual-Y Adjust Set	

### 7.1 Page 1 1-5. X/Y/Z/A/B para Set

The motor shaft parameter setting options are as follows.

X-Axis Para Set
Pluse Per Revolution: <u>3200</u>
Pitch(mm): <u>52.000</u>
Range(mm): <u>300.000</u>
Home Offset(mm): <u>0.000</u>
Home: 1.NC 2.NO 3.Disable Set: <u>2</u>
Priority(1-6) Set: <u>3</u>

Pulses per revolution: refers to the number of pulses per revolution of the drive motor, that is, the number of subdivisions of the motor.

Pitch: refers to the travel of the motor for each revolution, that is, the circumference of the pulley or the pitch of the screw.

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Range: The longest distance the axis can move.

Home offset: The origin offset value can be 0 or positive and negative values, that is, the value set after the origin position is captured and then offset as the 0 coordinate.

NC(Normally closed)/NO(normally open): When the motor shaft is not triggered to the origin, the output of the origin capture sensor is low level or the micro switch is the sensor is closed state is normally closed, otherwise it is normally open.

Shield: If shielding is selected, the axis does not use homing or limit function.

## 7.2 Page 1 6. Set 8-Bit Pass

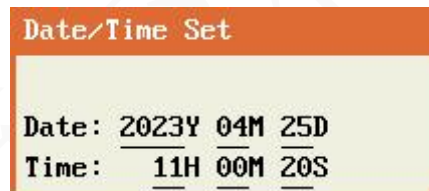
Set the key before using the restricted use time setting.



The screenshot shows a menu titled "Set 8-Bit Pass" with a light green background and an orange header. Below the title, there are two lines of text: "Input New:" followed by a horizontal line, and "Repeat New:" followed by a horizontal line.

## 7.3 Page 1 7. Set Date/Time Pass

Because the usage time limit needs to refer to the machine's clock, so if the usage time limit is set, then to modify the machine's time you must enter the usage time limit password.



The screenshot shows a menu titled "Date/Time Set" with a light green background and an orange header. Below the title, there are two lines of text: "Date: 2023Y 04M 25D" and "Time: 11H 00M 20S". Each part of the date and time is underlined.

## 7.4 Page 1 8. Time Limited Set

Before using this function, you must first set up or modify the secret key in item 5 on page 1 of menu 4, and then use the "Constant Key Generator" software (PC side) to set up and generate a 16-bit restricted use password.

**Modify 8-Bit Pass**

Input Old: \_\_\_\_\_

Input New: \_\_\_\_\_

Repeat New: \_\_\_\_\_

Set the 8-bit key (first time you use this function you have to set the key first)

(Time Setting) 时限设置

(Restricted Date Calculator)  
**限制使用日期计算**

Machine password (please enter machine password)  
机器密码 请输入机器密码

Restrictions (Time)  
限制时间 年 / 月 / 日

Permanent release of restrictions  
 永久解除限制

Registration Code  
注册码

**Generate**  
生成

Find the "Restricted Use Date Calculator" applet in the "Product Centre" of the WeChat public website of HCC, open it as shown in the picture on the left. Enter the set 8-digit key and restriction time and click the "Generate" button to generate 16-digit restriction characters



QR Code

**Time Limited Set**

No Use Time Limit

16Bit Pass For Use Limit  
|\_\_\_\_\_

Enter the 16-bit restricted characters generated by the applet and press OK to complete the restricted use setting.

### 7.5 Page 1 9. Name Machine Edit

The edited device name will be displayed on "Page 3 of Menu 2 5. Machine Information".

### 7.6 Page 2 1. Name Company Edit

The edited company name will be displayed on "Page 3 of Menu 2 5. Machine Information".

## 7.7 Page 2 2. Start/stop speed Set

In motion control applications, there is an acceleration and deceleration process for the motor operation to improve work efficiency. The start and stop speeds can not be 0, but they cannot be too large. The larger the load, the smaller the start/stop speed needs to be. It is generally recommended to be 20mm/s for the phenomenon of step loss or large mechanical noise.

Start/Stop Speed Set	
Start Speed(mm/s):	20
Stop Speed(mm/s):	20

## 7.8 Page 2 3. Acc Set

Each acceleration includes the following.

Acc Set(mm/(s*s))	
Start Acc :	4000
Stop Acc :	4000.000
EStop Acc :	4000.000
Manual Acc :	300.000

In actual use, manual acceleration can be set smaller, generally between 100-500. Manual acceleration can be set to have an obvious start acceleration process during manual operation. It is easier to achieve small distance movement when the speed is high, taking into account the speed And move a small distance.

The control card supports asymmetric acceleration and deceleration. The start acceleration and stop acceleration can be set to different values. In practical applications, the stop acceleration is generally set to be greater than the start acceleration. The setting of the acceleration should be based on the comprehensive consideration of the driving capacity of the motor, the size of the load, the mechanical performance, etc., with no loss of steps and excessive vibration as the standard.

## 7.9 Page 2 4. Max Speed Set

Set the maximum allowable value of each speed during user programming, which can prevent the user from setting a speed greater than the machine design requirements and causing lost steps. It includes the following

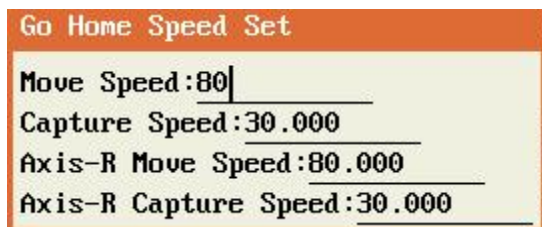
Max Speed Set	
XY-Axis Max Speed:	1000
Z-Axis Max Speed:	800.000
Line Dispense Max Speed:	800.000
R-Axis Max Speed:	300.000

The maximum speed of the XY axis here refers to the maximum allowable plane movement speed of the air movement in the dispensing application programming, the maximum speed of the Z axis refers to the maximum allowable movement speed of the vertical movement in the dispensing application programming, and the

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maximum speed of the dispensing refers to the application application programming The maximum allowable dispensing speed of the line segment.

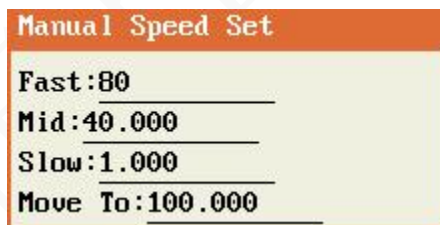
### 7.10 Page 2 5. Go home Speed Set



The origin capture is to record the position where the origin signal is triggered when the motor shaft moves. In order to have the same trigger position each time, it must be triggered in the same direction each time, so when the motor shaft position is not in the direction of the origin capture, it must first move to the origin capture. The origin is captured in the direction.

The "moving speed" here refers to the speed of the motor shaft moving from the non-origin capture direction to the capture direction. This speed can be higher, and the general setting range is 50-150mm/s. "Capture speed" refers to the movement of the motor shaft to trigger the origin. The speed of the signal, in order to improve the accuracy, this speed should not be too high, the general setting range is 20-60mm/s.

### 7.11 Page 2 6. Manual Speed Set



The speed of manual movement is divided into three speeds: fast, medium and slow. Press the "Speed" key to cycle. Normally, the speed is set to 80mm/s, the medium speed is set to 40mm/s, and the slow speed is set to 1mm/s; moving to the cursor speed corresponds to the speed setting of "Move to Cursor" on the shortcut key.

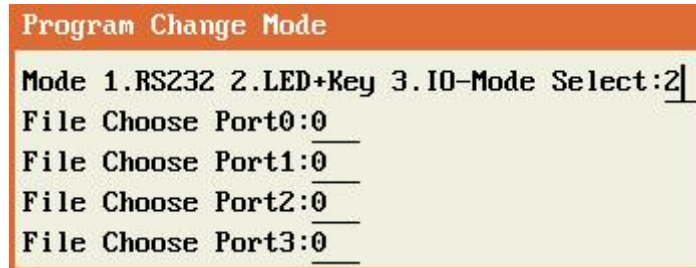
### 7.12 Page 2 7. Update IME

The Pinyin input method uses the GB2312 font library, which has about 7,000 commonly used Chinese characters. The Pinyin input method is generally updated when the motherboard is shipped from the factory, and there is no need to perform this operation.

### 7.13 Page 2 8. Update Power Screen

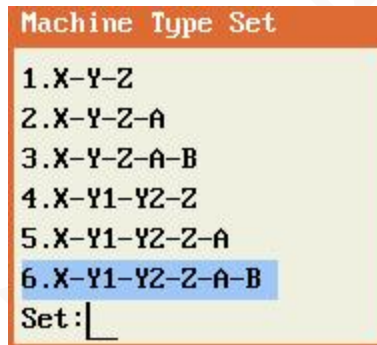
This version does not support the boot screen!

### 7.14 Page 2 9. Program Change Mode



The selection of the dispensing file program can use the digital tube plus button mode or dialing mode. For example, using the dialing mode can use the 1-digit, 2-digit, 3-digit dial. The unused high digits default to 0, and When using the dial, in order to prevent the serial number of the selected file from conflicting with the value of the dial, the function of opening the file by the handheld programmer will be blocked.

### 7.15 Page 2 1. Machine Type Set

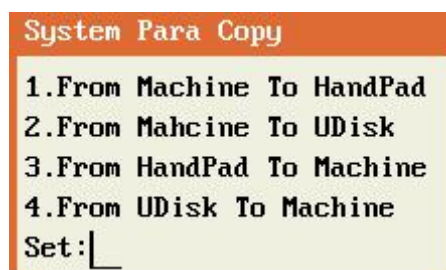


The machine mechanism can be set up in this interface, which currently supports six modes:

1. X-Y-Z
2. X-Y-Z-A
3. X-Y-Z-A-B
4. X-Y1-Y2-Z
5. X-Y1-Y2-Z-A
6. X-Y1-Y2-Z-A-B

The factory default is X-Y-Z mode.

### 7.16 Page 3 2. System Para Copy

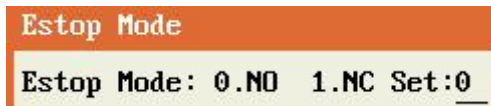


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The function of this menu is to copy the system parameters set on a certain machine to the handheld programmer or U disk, and then copy it from the handheld programmer or U disk to other machines of the same model, without setting one by one.

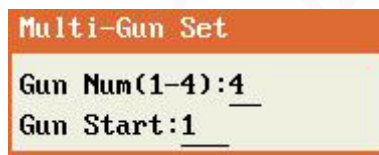
The copied content includes various machine parameters and default parameters that need to be set at the factory.

### 7.17 Page 3 3. Estop Mode



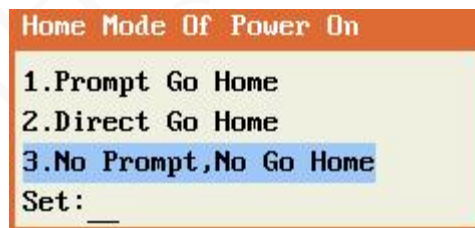
When the " Stop" prompt appears, press the "Esc" key to enter the emergency stop switch mode setting menu, so that when the emergency stop switch is damaged or you want to modify the emergency stop switch mode, you can quickly modify it.

### 7.18 Page 3 4. Multi-Gun Set



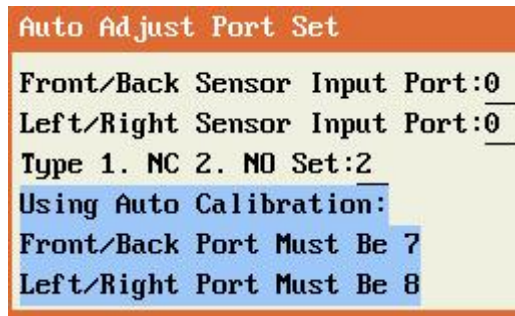
The number of " Multi-Gun " can be set here

### 7.19 Page 3 5. Home Mode Of Power On



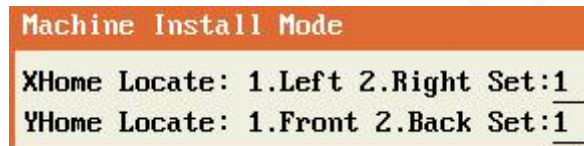
1. Prompt go home: Prompt to return to origin when powering on. Press the return to origin button to execute the return to origin operation.
2. Direct go home : perform the return-to-origin action directly after power-on.
3. No prompt, no go home: after power on, press the return to origin button to execute the return to origin operation.

## 7.20 Page 3 6. Auto Adjust Port Set



Automatic needle sensor setting: You can search for X and Y detection at one location at the same time; you can also detect X and Y at different locations; Z axis will select one of the sensors to detect.

## 7.21 Page 3 7. Machine Install Mode



XHome Locate: If the left side is selected, the right side is the positive direction, and the left side is the positive direction when returning to the origin. If the right side is selected, the left side is the positive direction, and the right direction is searched for the origin sensor when returning to the origin.

YHome Locate: if the platform is selected, the back of the table is in the positive direction, and the forward motion is searched for the origin sensor when returning to the origin; if the gantry is selected, the front of the table is in the positive direction, and the sensor is searched for the backward movement when returning to the origin.

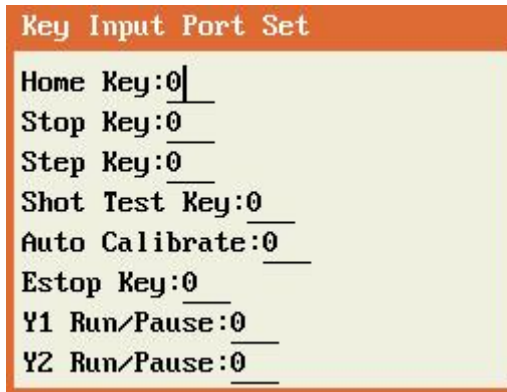
## 7.22 Page 3 8. Z height When Adjust



Set the safety height of the Z-axis when setting the needle.

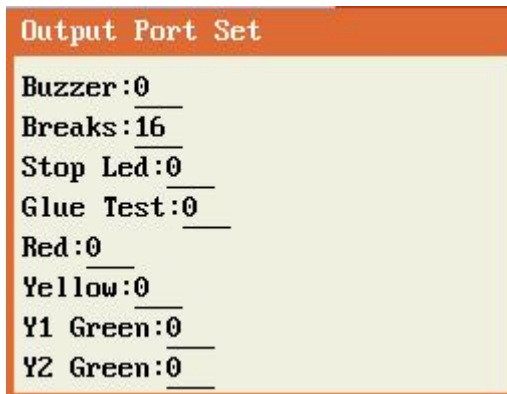
## 7.23 Page 3 9.Key Input Port Set

In this interface, you can set the input port used by the button, as shown below.



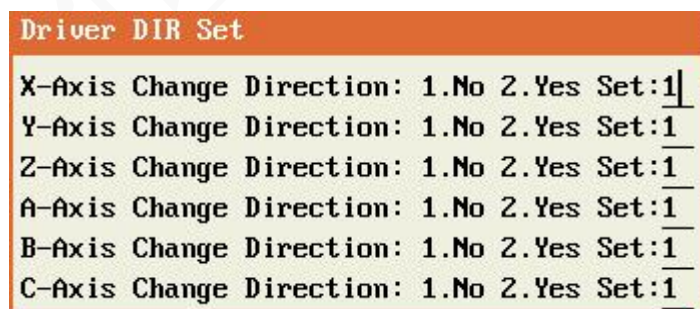
## 7.24 Page 4 1. Output Port Set

Under this interface, the dedicated function output port can be set, as shown in the following figure.



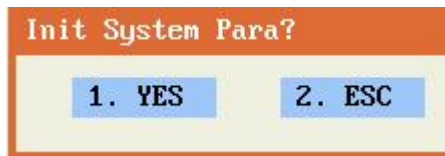
## 7.25 Page 4 2. Driver Wire Mode

This function is to modify the direction directly by this function when the setting of the pulse direction of the servo is reversed without resetting by the servo.

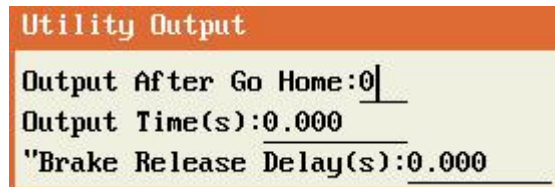


## 7.26 Page 4 3. Init System Para

The parameters are initialized. After initialization, all parameters are restored to the initial settings. Before initialization, please back up some important parameters such as the set port number and the parameters of each motor. After initialization, set them one by one.



### 7.27 Page 4 4. Utility Output

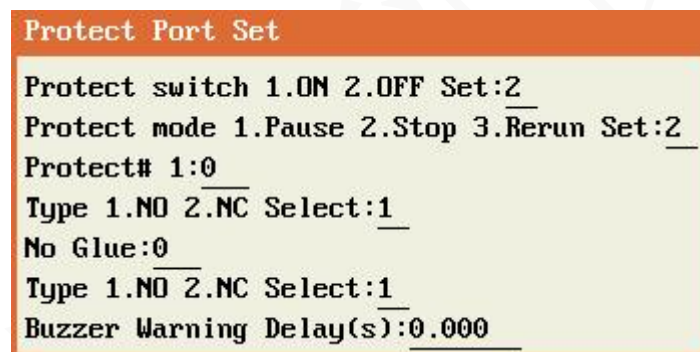


Output After Go Home: Set the reset completion signal port.

Output Time(S): Set the reset completion signal delay time.

Brake Release Delay (S): Set the brake release delay signal time.

### 7.28 Page 4 5. Protect Port Set



Grating is normally used to give feedback when an object or person enters the protective range of the grating during the operation of the equipment, thus protecting the object or person from harm, while glue-free detection is used to give a timely notification signal to the system when there is no glue to avoid useless work.

Selecting open will turn on the general switch for both the grating and the glue-free detection, but the corresponding function will only take effect when the input port associated with the grating or glue-free detection is within the valid selection range.

Function selection after an alarm:

1. Pause: the current movement is suspended and will start directly when the feedback input from the encoder or glue-free detection is normal;

2. Stop: stops the current movement directly;

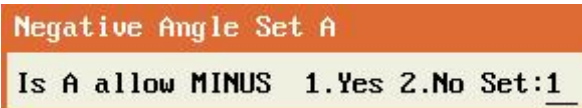
3. Rerun set: pauses the current movement, but will not start running directly when the feedback input from the encoder and glue-free detection is normal, but will wait for the user to press run again;

Buzzer alarm delay refers to the duration of the buzzer chirp.

### 7.29 Page 4 6. Negative Angles Set A

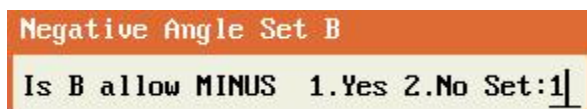
This screen allows you to set whether or not the A-axis is allowed to rotate at a negative angle, as shown in

the figure below.



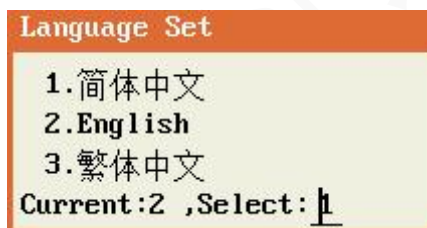
### 7.30 Page 4 7. Negative Angles Set B

This screen allows you to set whether or not the B-axis is allowed to rotate at a negative angle, as shown in the figure below.



### 7.31 Page 4 8. System Language

The system language can be switched in this interface. Currently, it supports Simplified Chinese, English and Traditional Chinese.



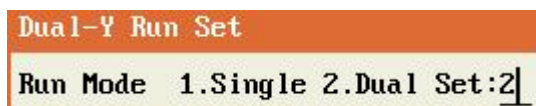
### 7.32 Page 4 9. Dual-Y Adjust Set

In Double Y mode, the needle pairing mode can be set in this screen.

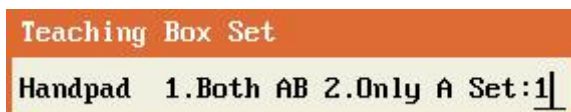


### 7.33 Page 5 1. Dual-Y Run Set

In Double Y mode, the startup mode can be set in this screen.



### 7.34 Page 5 2. Teaching Box Set



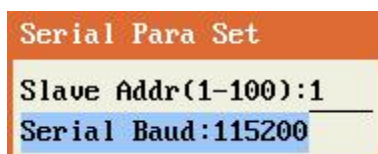
Select the type of handheld instructor, option 1 means the current handheld type has 4 keys to control the

forward and reverse of A and B axes respectively, option 2 means the current handheld type has only 2 keys to control the forward and reverse of A axis, the following figure shows the difference between the two handheld types.



Single-A handheld      Double-A handheld

### 7.35 Page 5 3. Serial Para Set



Communication serial port using Modbus protocol, in this interface you can set the local slave address and also set the serial port baud rate to match the device.

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## Chapter 8 Default Parameter Setting Menu

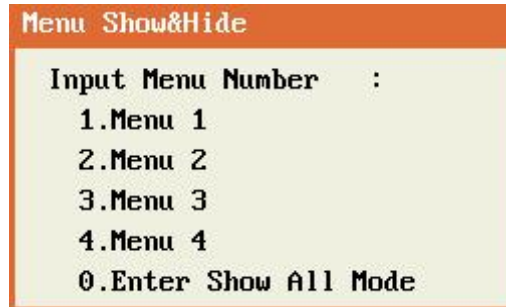
Use "Stop" + "Menu 2" to enter the default parameter setting menu. The content of this menu is not recommended for users. The default parameter setting menu includes the following.

Default Value	PG 1/2	Default Value	PG 2/2
1.Line Speed	:100	1.Dot Finish Sp	:100
2.Line Start Time	:0.000	2.Dot Finish Ht	:0.000
3.Line End Time	:0.000	3.ZAxis Height	:30.000
4.L EndLen	:0.000	4.XYMove Speed	:500.000
5.L End H	:0.000	5.ZMove Speed	:300.000
6.L End Sp	:100.000	6.R Move Speed	:100.000
7.End NoGlue L	:0.000	7.Debug Speed	:100.000
8.Dot Time	:0.000	8.Ahead Time	:0.000
9.Dot End Time	:0.000		

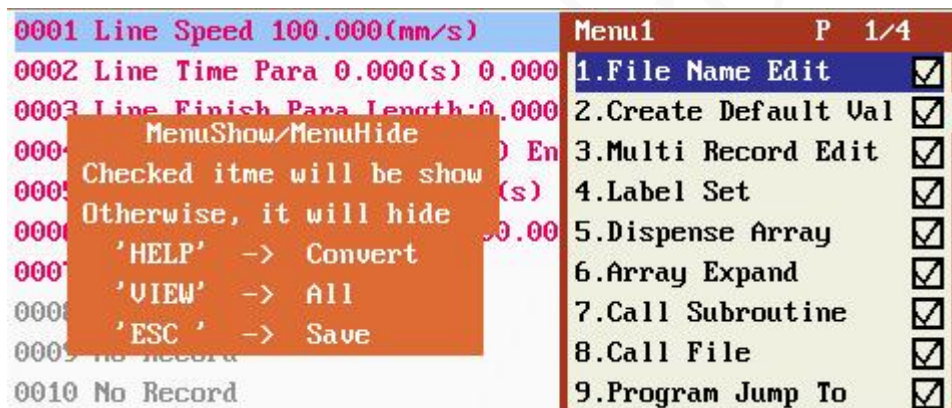
The default value parameters are mainly the dispensing processing parameters in the dispensing application. If the above parameters are not set in the dispensing processing programming, the parameters set in the default values are used.

## Chapter 9 Menu display and hiding

Use "Stop" + "Menu 3" to enter the "Menu Display and Hide" setting interface. The menu content is not recommended for users. The menu display and hiding interface includes the following.



**Select the menu to be adjusted:** press the number corresponding to the menu to enter the interface as shown in the figure below, press the "ENTER" key to select the function options to be displayed or hidden, press the "Help" button to quickly reverse the selection, press the " View(Pre-view) " button Can be selected or cleared. After completing the settings, press the " ESC(Exit) " button to exit.



**Enter all menu mode:** After entering this mode, all the hidden functions set before will be displayed. If you need to exit, you can press "0" key to exit or restart the system after power off.