Automatic Dispense Machine User Manual

Catalog

Chapter 1   Summary

There are 3-5 controlling axis in the Automatic Dispense Machine control system called 4D2Y or HK-3D-F00, which can support all kinds for automatic dispensing control such as gantry structure with three axes, three axes plus rotation axis, three axes plus double Y axes, three axes plus double Y axis plus rotation axis. The teach box of the machine adopt the 5 inch true-color LCD screen to make the operation menu and boot screen more abundant. To make the transmission speed faster and signal Anti-Interference, It adopts the Industrial field bus for connecting between main board and teach box. The teach box can not only storage dispense processing file, system configure file, but also copying file each other when using multiple machines (or using the U Disk to copy). Using ARM + DSP + FPGA control program, with a strong computing power, short refresh time, excellent acceleration and deceleration performance in motion control, They can support high-speed high-precision 3D-line, three-dimensional circular motion. Their motion control board has 256M of storage space, can store 1000 dispense processing files, each file can store 4000 dispense programmed point, they can support work without teach box connection, dispense processing files available digital number display and button Options to select.

1.1   Hardware

1. Motor axis number: 5 axis output, respectively XYZ three - dimensional coordinate axis, a rotating axis of the rotating shaft, double Y axis function of Y2 expansion axis, it also can realize the rotation axis of the double Y axis dispensing machine control.

2. Acceleration and deceleration performance: S-curve acceleration and deceleration mode, acceleration and deceleration acceleration set independently; 10K speed refresh rate, make the mechanical response better performance, less noise.

3. Pulse output frequency : 4MHz linear interpolation, 2MHz circular interpolation(including 3 axis space circular interpolation), Using a motor which has 20000 pulses each turn as an example, sufficient to meet the existing high-speed servo motor 5000 rpm/min requirements.

4. Home, Limit Input: Each motor has its own home-input, positive and negative limit-input, no need to take up the general input of programmable hardware resources.

5. Programmable input/output: it has 12 ways independent and dedicated programmable input and output, all used optical isolation and each output current up to 500mA.

6. Supporting 3 bits digital number tube or 3 bits dial switch interface, setting in the menu between the two ways, can change and switch 1000 dispense files range 0-999 quickly.

7. Using the small key to adjust, in the absence of a teach box can also facilitate the realization of the error due to changing the needle correction.

8. Function key: including 5 function keys as 'Run/Pause', 'Stop', 'Back to Origin', 'Dispense test', 'Step test', also can control the output by the corresponding indicator led and have a input button called 'Emergency'.

9. Owning CAN bus, RS-232, Ethernet, can be customized to the special needs of special programs.

10. Read/Write in U disk: Use the FAT32 file system, no longer than 2G capacity U disk can't be formatted to limit the FAT format.

11. Storage space : main board 256MV, can store 1000 dispense processing files, each with 4000 program points; teach box 16MB, can store the boot screen, dispense file, copy the dispense file to each other in multiple machines is especially useful.

12. Screen of teach box : Use 480 X 272 pixels, 16 million true color 5-inch LCD screen, allowing the operator menu interface and boot screen is much more abundant.

13. Work Voltage: DC 24V.

14. Work environment : degree 0℃--45℃, humidity 40%--80%.

15. Storage environment : degree -40℃--60℃, humidity 0%--95%.

1.2 Software

1. Three-dimensional linear interpolation, circular interpolation space (real hardware three-dimensional instead of line fitting).

2. Function of double Y axis, without back to the origin when changing the Y axis.

3. Owning the rotation A axis, which can follow with the tangent of route of XY axis.

4. The corner processing can set the priority of the speed and the path for the goodness of fit, and realize the smooth transition of the turn.

5. DXF file conversion function, it can convert the DXF file exported by the finished dispense route file created by CAD software to the dispense file.

6. Programming point of the editor can be 30 times the "undo" "redo", to prevent misuse effectively.

7. Dispensing parameter setting is set up in the programming point, which can be realized in the same dispense process when different areas have different dispense parameters.

8. In the return to the origin of the action when the axis back to the origin of the XYZ three axis at the same time the origin of the capture action.

9. With Quanpin IME to input Chinese.

1.3 Accessory

1. Main board

HK-3D-F00 Main board（194mm * 110mm * 42mm）
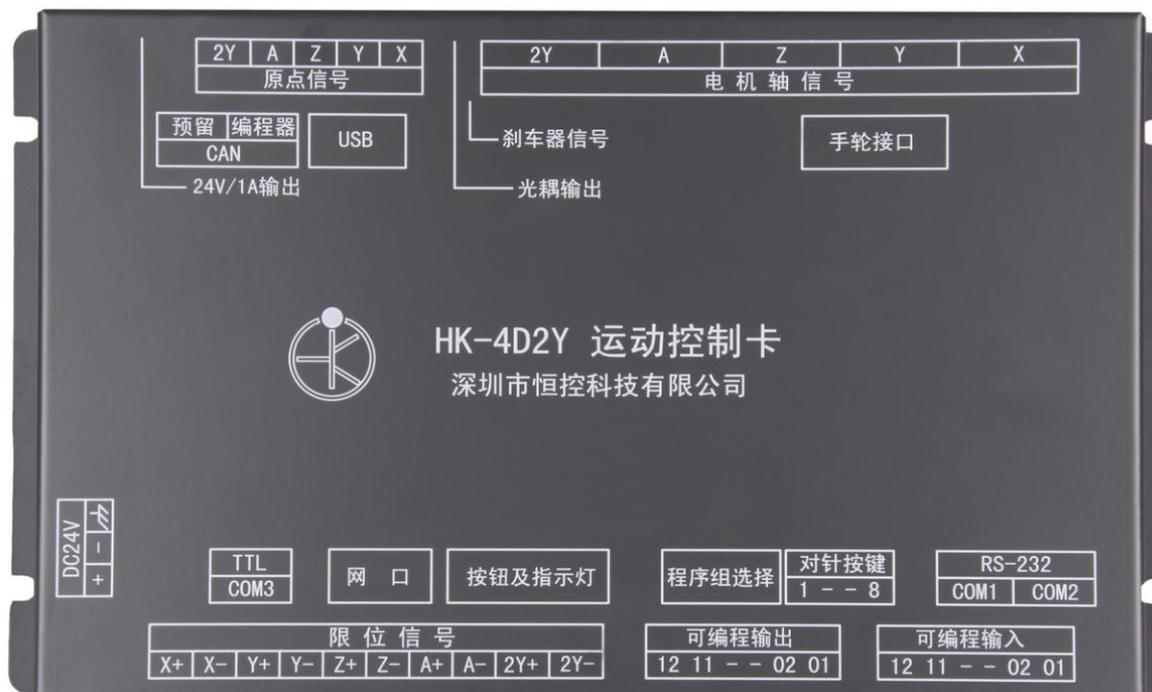
HK-4D2Y Main board（224mm * 130mm * 42mm）

2. Teach box (242mm * 142mm * 26mm)

3. Program group selection and needle calibration panel (107mm * 40mm), Circuit board (70mm * 40mm)

4. Connecting line (Length can be customized)

1.4 Main board floor mounting dimensions(Height : 42mm)
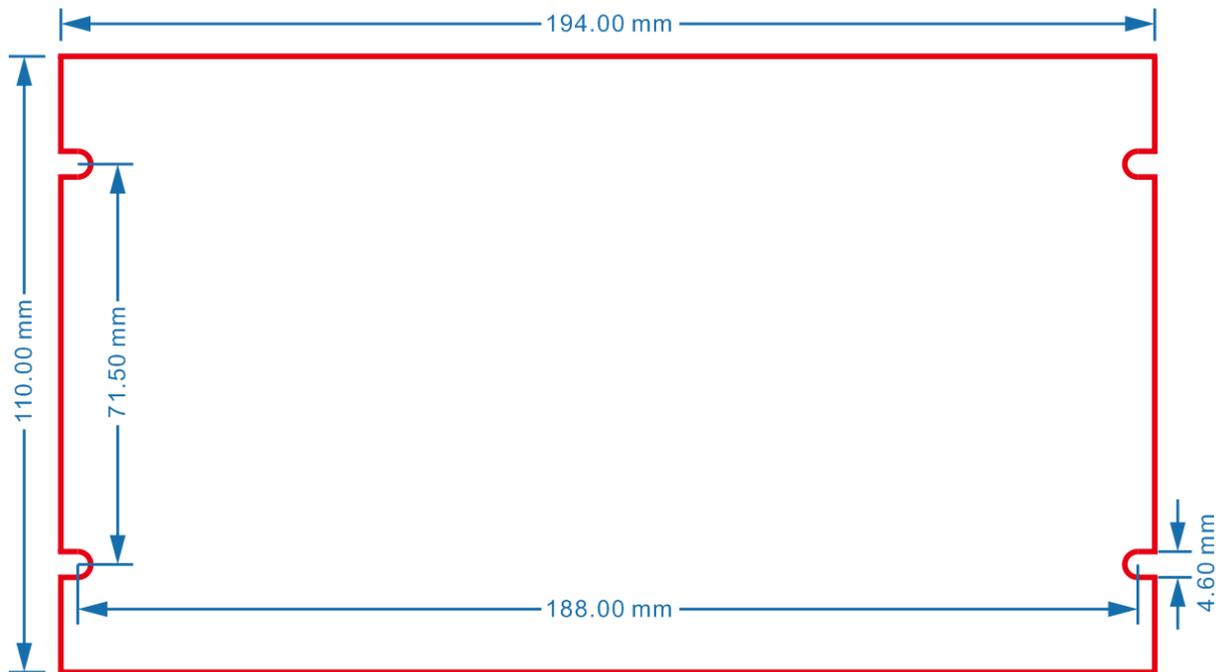
HK-3D-F00 Main board
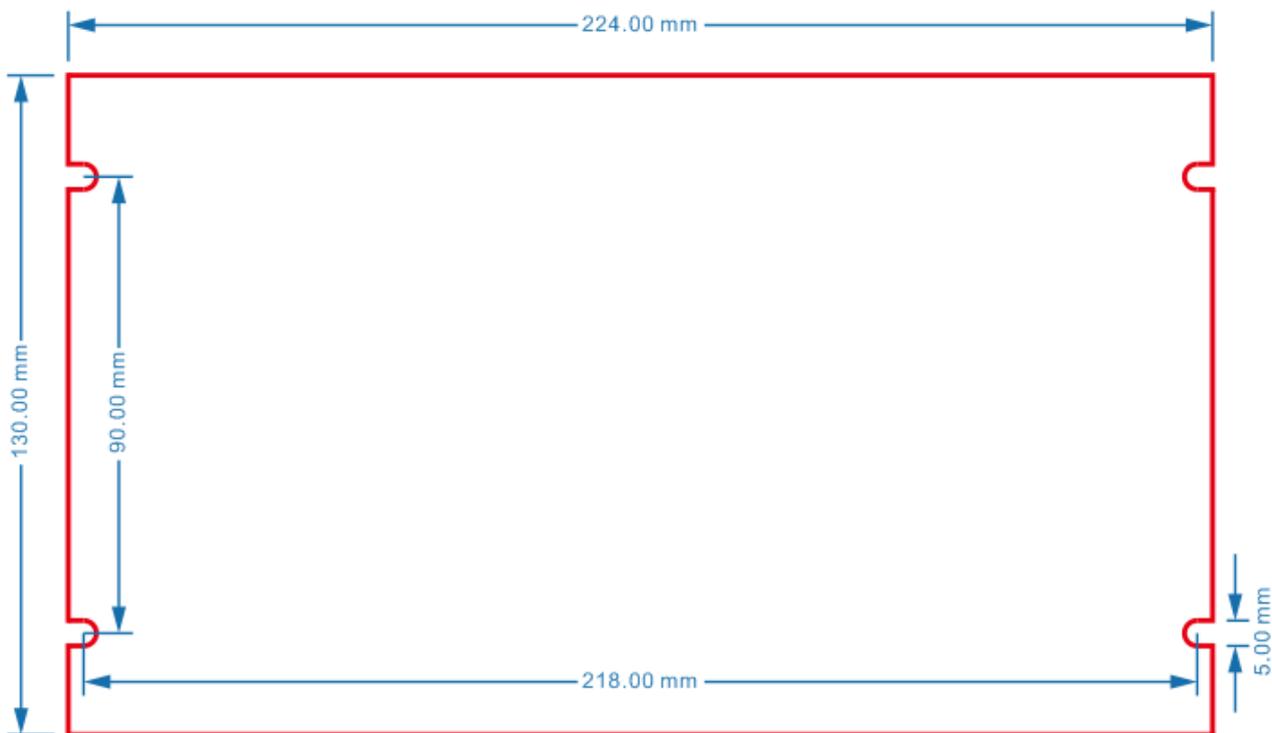
HK-4D2Y Main board

1.5 Interface Schematic
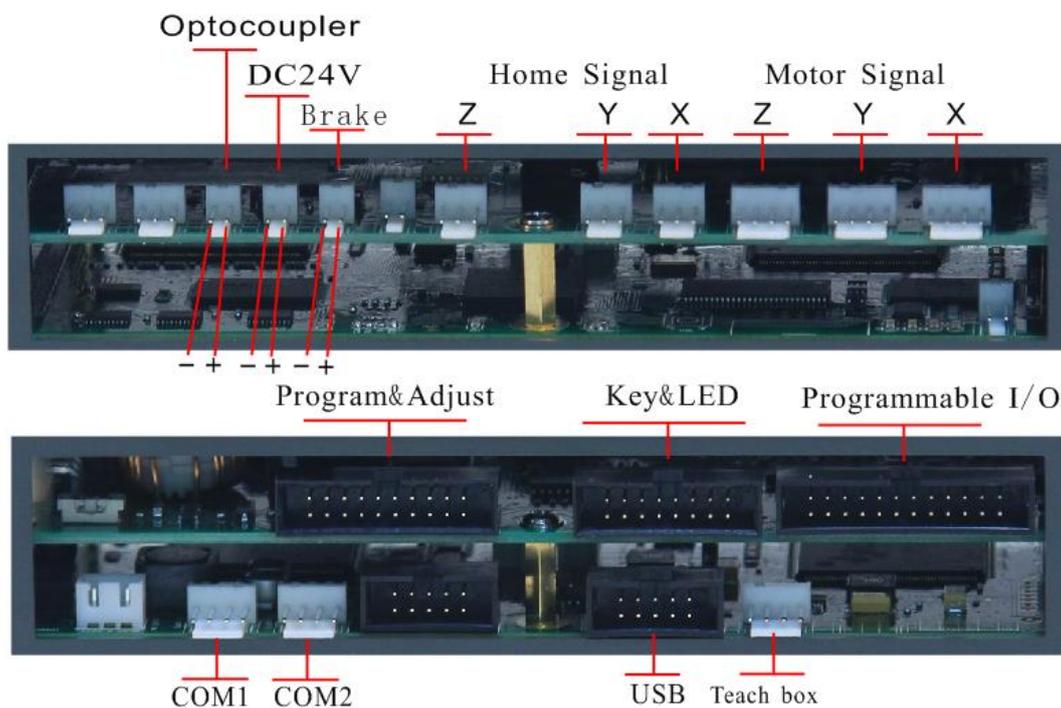
HK-3D-F00 Interface Schematic
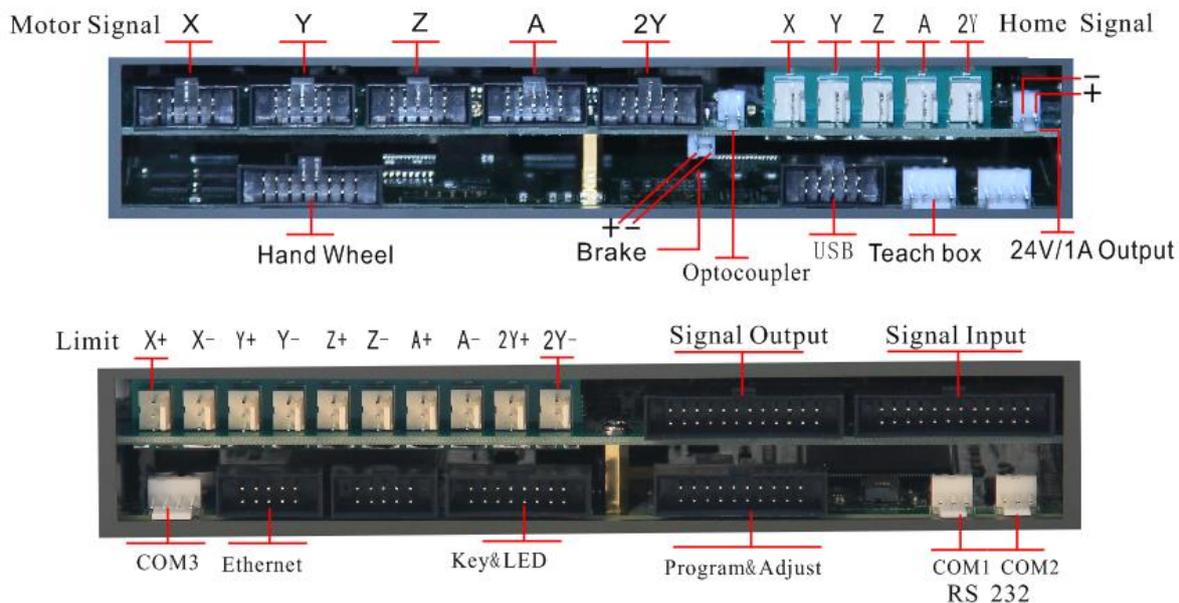
HK-4D2Y Interface Schematic

Note : If change the foot 1 and foot 8 in the cable between main board and digital tube, it will not damage but not use normally, just repair it by changing again.

1.6 Programmable input and output interface description
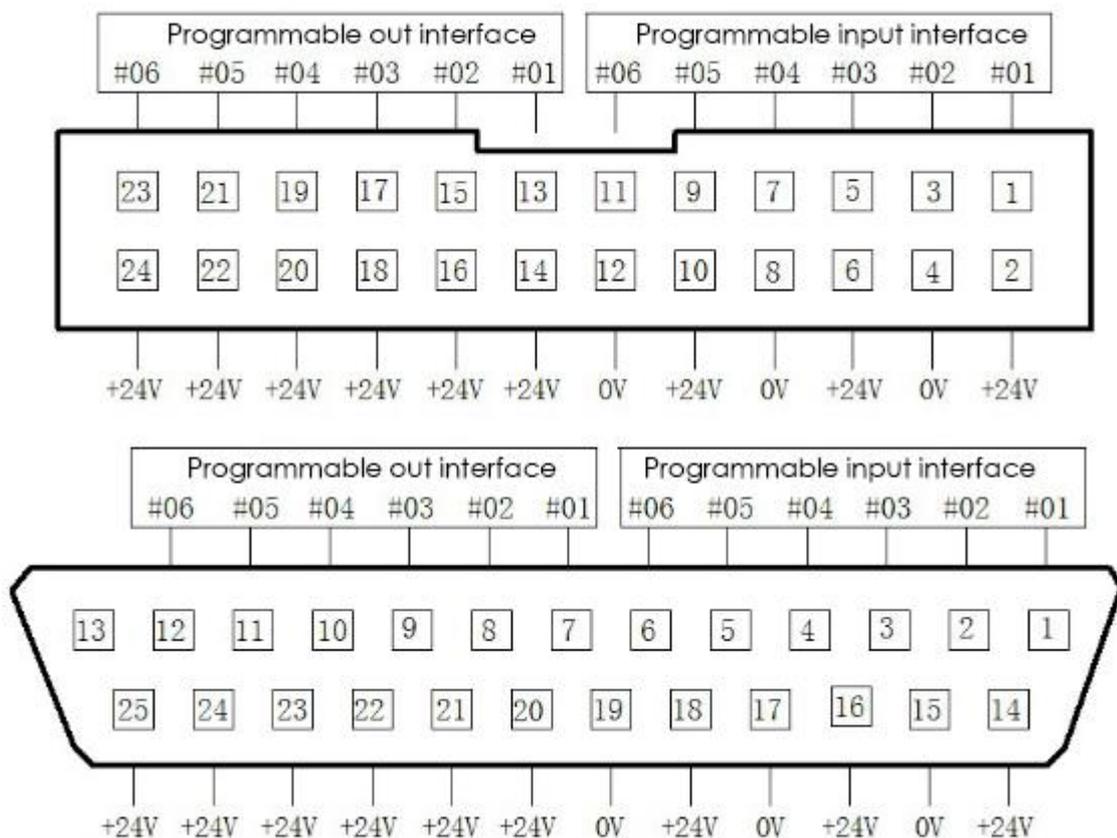
HK-3D-F00 programmable input and output interface
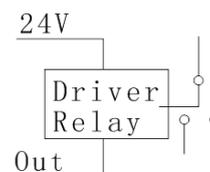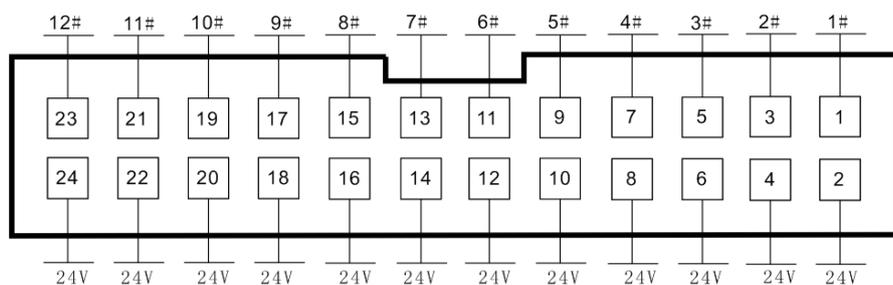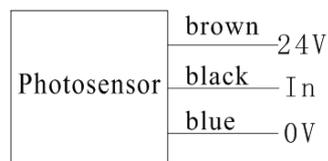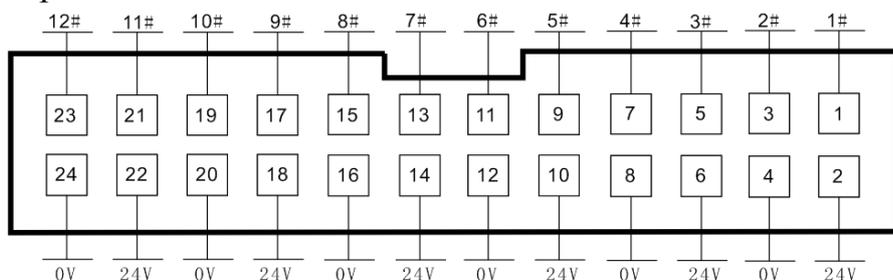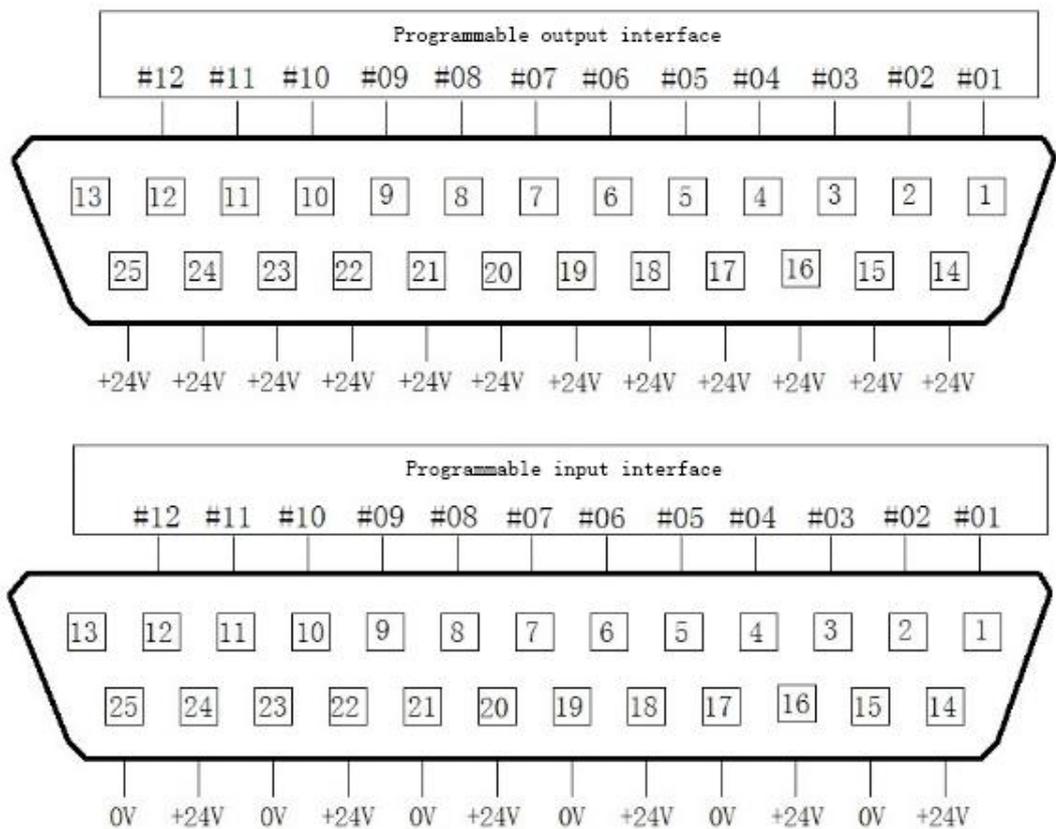
4D2Y programmable input and output interface

Note : 1. The output port is an open collector output, and the positive electrode is connected to the
+24V, the negative electrode is connected to the output interface.

2. To get the input signal, we can connect input port to 0V or pull the sensor down to 0V.

1.7 Buttons and LED interface description
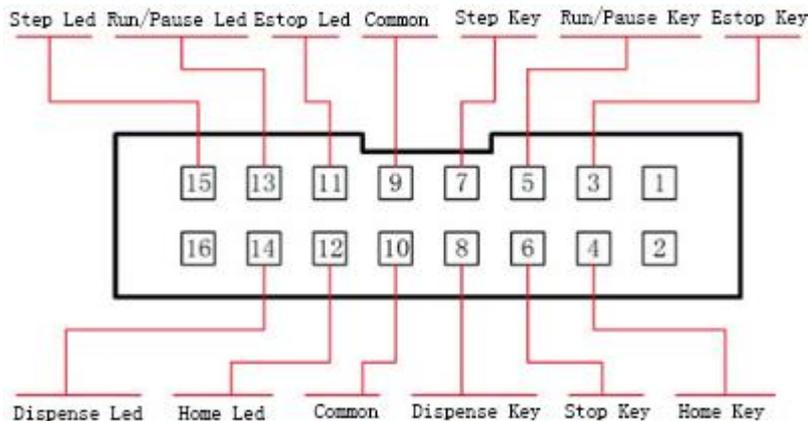
Note: 1. Enable drive indicator LED, connected to the positive terminal (+ 5V), common negative pole

2. For Buttons，Connect one pin to the button signal, and the other to the common(0V).

1.8 Motor axis signal interface description
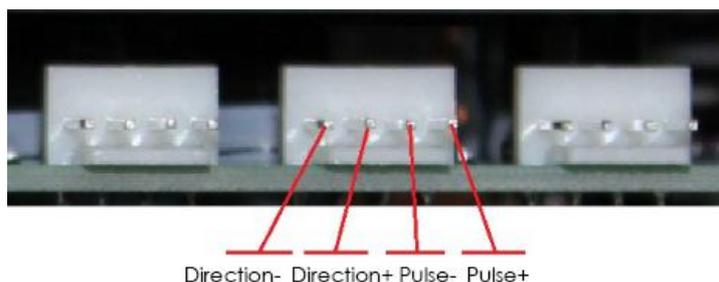
HK-3D-F00   Motor axis signal
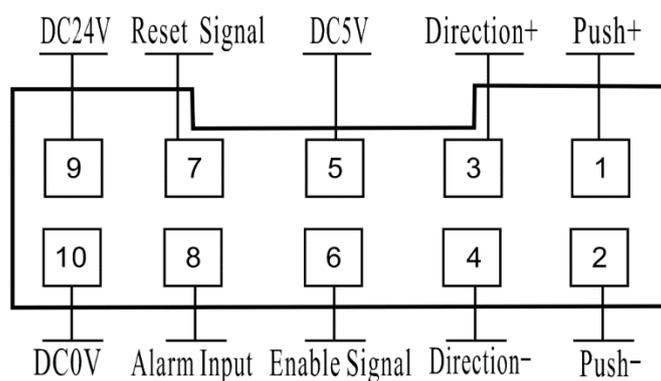
4D2Y   Motor axis signal

Note: The stepper driver can only be connected to 1, 2, 3, 4 pin; servo drive please refer to the servo instructions access feedback signal.

1.9 Limit signal and home signal interface description
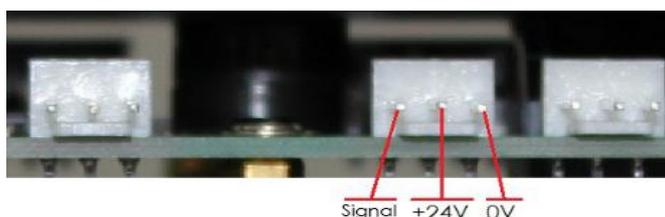
HK-3D-F00   Home signal

4D2Y   Limit signal and home signal

1.10 Dispense signal interface description(In the case of 3DF00, 4D2Y is the same as it)
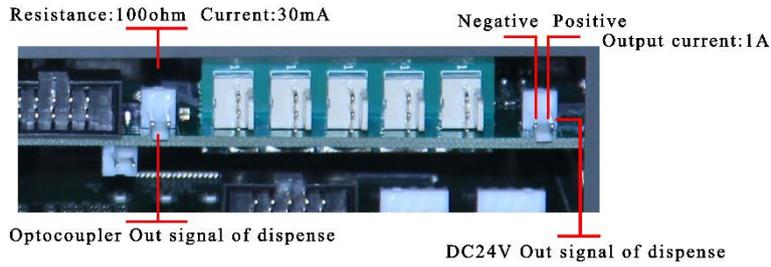
If use optocoupler to output the dispense signal but can't glue or can't stop to glue, we can switch the two edge of the optocoupler output signal.

1.11 Use dial switch to choose the program group interface description

We can use digital tube to choose program group with the supported 10pin line. But use the dial switch, then must select the dial switch mode in page 2, menu 4. The wire method between the program select interface and dial switch of dial switch mode is in follow, if only need 1bit or 2bit, then just remove the high bits.
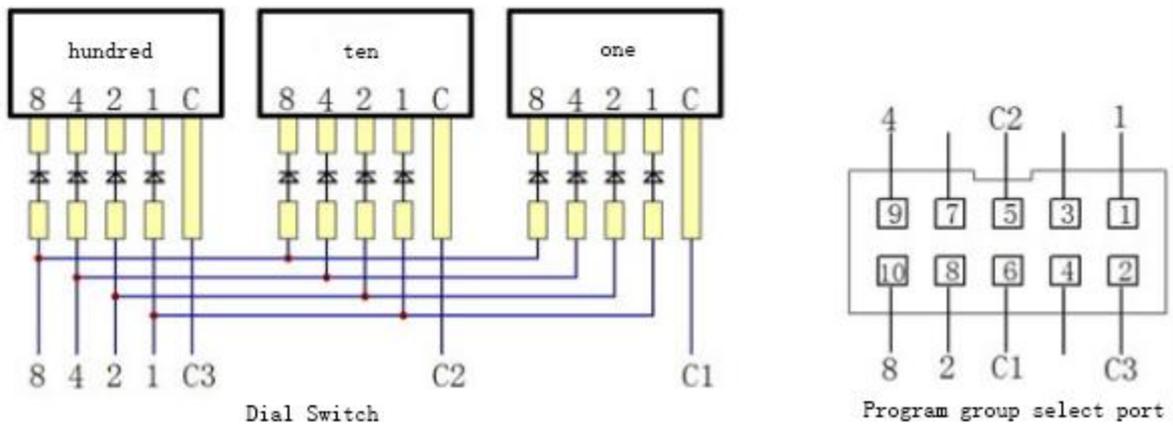
Chapter 2　Main interface and press key description

2.1　Main interface and description

1.　Main interface description of content distribution.
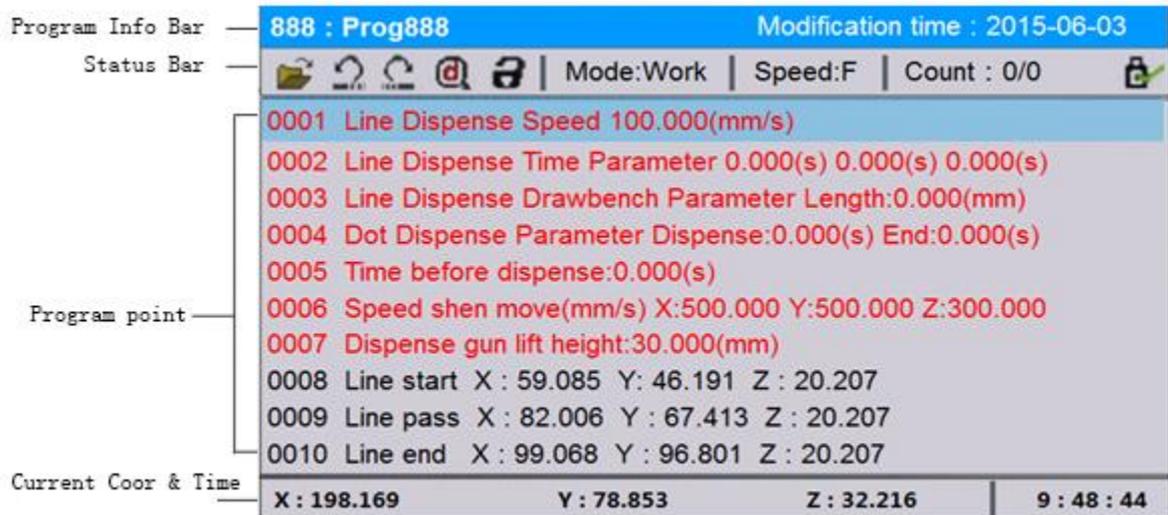
2.　**888 : Prog888** Dispense file No. And File name, "888" is No., "Prog888" is file name.

3.　**Modification time : 2015-06-03** Latest modified time of the dispense file.

4.　Icon of open dispense file, can use "Table" key move the cursor to this icon.

5.　"undo" "redo" state indication icon, up to 30 times to "undo", "redo", but can't use when icon is gray.

6.　Means the dispense file is edited, need "debug" operation, when already debugged , the icon becomes gray.

7.　File is not locked, file is locked, machine is locked.

8.　**Mode:Work** Run mode, including 3 modes like 'work', 'no glue', 'uniform speed'; 'work' mode is normal dispense processing mode , 'no glue' mode is the same movement speed and path as 'work' mode ,but no glue out, 'uniform speed' mode is the same movement path as 'work' mode ,but in uniform speed, and no glue ,mainly used for movement path testing.

9.　**Speed:F** Move speed by manual, part of "fast, middle, slow", press the "speed" key to switch.

10. Count : 0/0 Workpiece counter, in front of the value is the count value of the workpiece, behind the value set the number of workpieces to be processed. If the work count reach the number of set to be processed, it will prompt that the workpiece counter is full, and if there is no work piece number limit, set the limit number as '0'.

11. Insert U Disk, No U Disk.
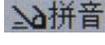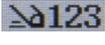
12. Pinyin input, number input, lower-case letter input, capital letter input, Press "#" can change the IME when in the character input state.
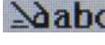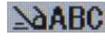
2.2 Teach box key description
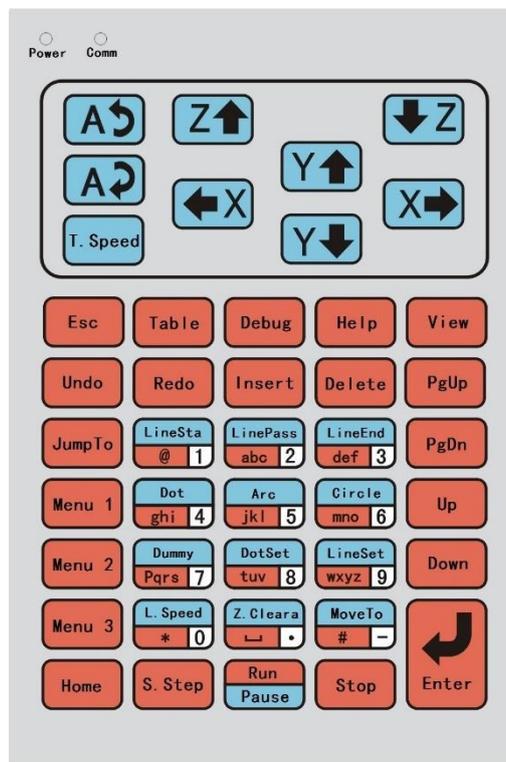
1. The fourth axis named A axis counter clockwise rotation by manual.

2. The fourth axis named A axis clockwise rotation by manual.

3. Z axis up by manual.

4. Z axis down by manual

5. Y axis front by manual

6. Y axis back by manual

7. [←X] X axis left by manual

8. [X→] X axis right by manual

9. [T. Speed] Switch manual speed "slow, middle, fast"

10. [Esc] Operation of exiting the menu or canceling the input dialog

11. [Table] Cursor switch between "dispensing programming point" area and "short menu bar" area, or transform plane when previewing.

12. [Debug] Analysis of the current dispense file whether it's programmed point accord with the dispense

programming rules, if yes, then the icon [@] will become gray.

13. [Help] Press this key can pop up some help information of the current page, press any key to exit

14. [View] Preview the glue out path graphic in current dispense program file in XY, XZ, YZ plane position,

press [Table] to change plane, press other any key to exit.

15. [Undo] [Redo] Undo and redo to the edition of programming points, up to 30 times, for preventing misuse effectively.

16. [Insert] In front of the cursor point of the selected insert a blank dispense program point.

17. [Delete] Delete the programming point of selected in main page, or in the menu state used for deleting something.

18. [JumpTo] Jump to the special programming point address by manual input.

19. [Menu 1] Into Menu 1, for the dispense point of action, displaying as black.

20. [Menu 2] Into Menu 2, for dispense point of parameters setting, displaying as red.

21. [Menu 3] Into Menu3, for device of parameters setting and some application operation

22. [Home] Perform to home.

23. [S. Step] Perform step dispense test.

24. [Run Pause] Dispense working run or pause.

25. **Stop** Dispense working stop.

26. **PgUp** Cursor up a page in main page state, or up a page in menu state.

27. **PgDn** Cursor down a page in main page state, or down a page in menu state.

28. **Up** Cursor up a line in main page state, or up a line in menu state, or up a line in input dialog.

29. **Down** Cursor down a line in main page state, or down a line in menu state, or down a line in input dialog.

30. **LineSta @ 1** Start point of dispense line program in main page, or input '1' ,characters in input dialog.

31. **LinePass abc 2** Middle point of dispense line program in main page , or input '2' , 'abc' in input dialog.

32. **LineEnd def 3** Finish point of dispense line program in main page , or input '3' , 'def' in input dialog.

33. **Dot ghi 4** Dispense dot program in main page, or input '4', 'ghi' in input dialog.

34. **Arc jkl 5** Arc point of dispense line program in main page, or input '5', 'jkl' in input dialog.

35. **Circle mno 6** Dispense circle program in main page, or input '6', 'mno' in input dialog.

36. **Dummy Pqrs 7** 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.

37. **DotSet Tuv 8** Set parameters of dispense dot program in main page, or input '8' , 'tuv' in input dialog.

39. **LineSet Wxyz 9** Set parameters of dispense line program in main page, or input '9', 'wxyz' in input dialog.

40. **L. speed * 0** Set parameters of dispense line speed program in main page, or input '0 ' in input dialog.

41. **Z. cleara ␣ .** Set Z height parameters in main page, or input space character or decimal point in input dialog.

42. **MoveTo # -** 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.

43. **Stop** + **Esc** Change Y axis between Y1 and Y2 then display when in double Y mode.

44. **Stop** + **Menu 1** Into menu 4, for bottom layer parameters of the device, suggested not open to users.

45. **Stop** + **Menu 2** Into menu 5, for system default parameters, proposed not open to users.

2.3 Program selection and adjustment key description
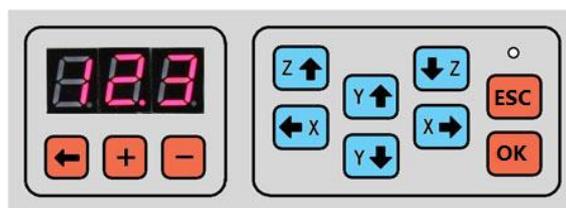
1. The current file selected is dispense file 123.

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   Basic method for programming description

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 Dispense Speed 100.000(mm/s)
0002  Line start  X : 0.000  Y: 0.000  Z : 46.451
0003  Line end   X : 36.928  Y : 14.081  Z : 46.451
0004  Line Dispense Speed 100.000(mm/s)
0005  Line start  X : 36.928  Y: 46.191  Z : 46.451
0006  Line end   X : 36.928  Y : 96.801  Z : 46.451
0007  Line Dispense Speed 100.000(mm/s)
0008  Line start  X : 36.928  Y: 46.191  Z : 46.451
0009  Line end   X : 36.928  Y : 96.801  Z : 46.451
```

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   The basic composition of the dispensing path

The basic dispensing path including dispense dot, dispense line in three-dimensional, dispense arc in three-dimensional, dispense circle in XY plane, glue circle in XY plane, glue rectangle in XY plane, etc. Among them there are some shortcut keys for the normal path so that no need to select in menu. The basic graphic for dispense processing is as follows:

1. Dispense dot

Dot
ghi 4

Dispense Dot   Dispense Dot   Dispense Dot   Dispense Dot   Dispense Dot
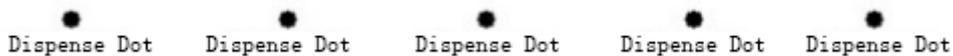
2. Single dispense line and arc

LineSta	LineEnd	Arc
@ 1	def 3	jkl 5

Line Start   Line Finish

Arc Point

Line Start   Line Finish
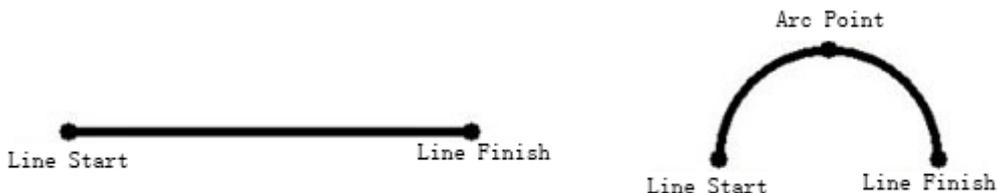
3. Continuous dispense line

LineSta	LinePass	LineEnd
@ 1	abc 2	def 3

Line Start   Line Pass   Line Pass   Line Finish

Line Pass   Line Pass   Line Pass
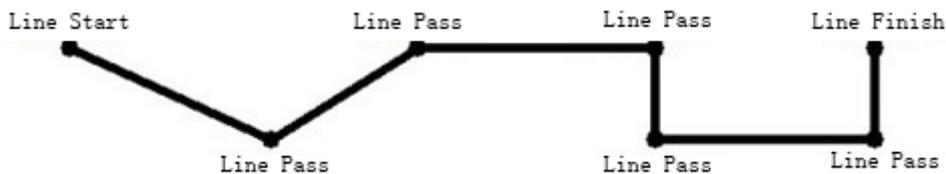
4. The continuous line segment and arc combination dispensing

LineSta	LinePass	Arc	LineEnd
@ 1	abc 2	jkl 5	def 3

Line Pass   Arc Point

Line Start   Line Pass   Line Pass   Line Finish
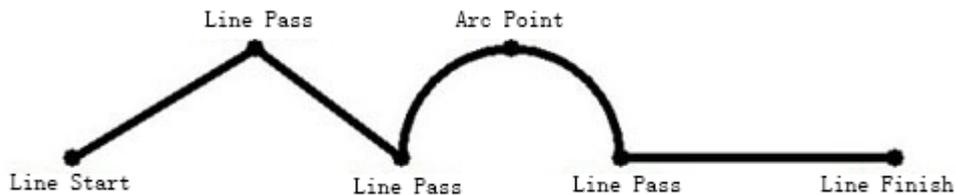
5. Continuous arc dispensing

LineSta	Arc	LinePass	LineEnd
@ 1	jkl 5	abc 2	def 3

Arc Point   Arc Point

Line Finish

Line Start   Line Pass   Line Pass   Line Pass

Arc Point   Arc Point
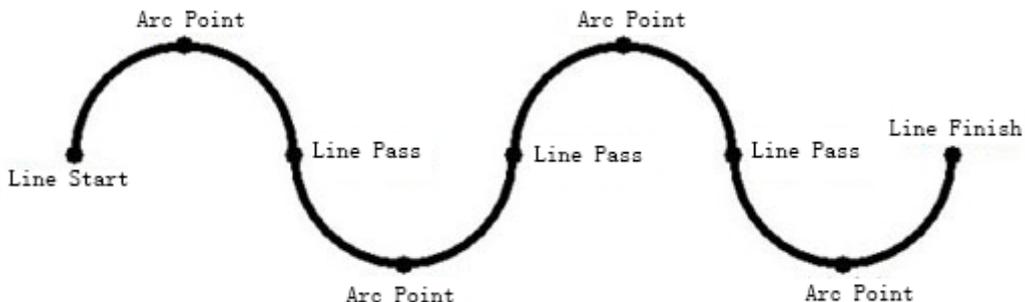
6. Dispense circle

The starting position of the circular dispensing can be setting by angle unit, 12 o'clock position is 0 degrees, clockwise rotation. As following the starting point is the 45 degrees for dispensing, in actually use if the initial angle is set to 45 degrees, the inertia of the machine is the smallest so strongly recommend that the start angle is set to 45 degrees.

You can also set beyond the point of circular dispensing, that is, the needle after a turn off the glue can also take a set of arc length, this function can make the starting point and finish point have more uniform glue, as following the figure is set to 45 degrees, the red is go beyond the point of view of the path.
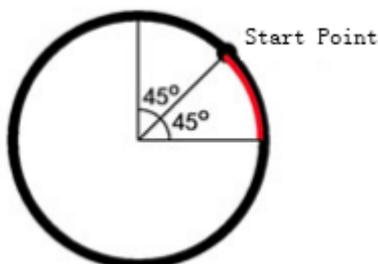
Chapter 4   Menu 1

Menu 1 is dispense programming action and frequently-used dispense file operation, Menu 1 generated by the dispense programming point is usually the type of dispense operation, with a black display. Menu 1 contains:

Menu1 Pg 1/3	Menu1 Pg 2/3	Menu1 Pg 3/3
1.File's name edit	1.Limited loop	1.Counter
2.Default parameters	2.Program end	2.Goto the free location
3.Multiple programming	3.Delay	3.Home(reset)
4.Label set	4.Pause	4.Multiple gun set
5.Array dispense	5.Input program	5.Reference point set
6.Array expand	6.Output program	6.Auto home counter
7.Call subroutine	7.Square brush	7.Gun clear counter
8.Call file	8.Circle brush	
9.Program goto	9.Dispense signal ON/OFF	

4.1   Page 1   1. File's name edit

As follow picture, press **MoveTo # -** to switch IME.

File name edit
File Name: 点胶程

xu
1许 2须 3需 4虚 5嘘 6蓄 7续 8序 9叙　向上 向下　上页 下页
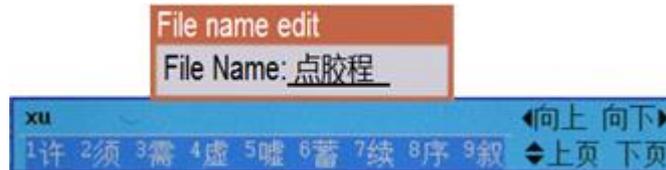
4.2   Page 1   2. Default parameters

As follow picture, the default parameters have 7 common dispense parameters, each parameter can also generate in menu 2, after generate and selected in main face, we can modify it one by one. The function descriptions of each parameter are located in menu 2.

0001 Line Dispense Speed 100.000(mm/s)
0002 Line Dispense Time Parameter 0.000(s) 0.000(s) 0.000(s)
0003 Line Dispense Drawbench Parameter Length:0.000(mm)
0004 Dot Dispense Parameter Dispense:2.000(s) End:0.000(s)
0005 Time before dispense:0.000(s)
0006 Speed shen move(mm/s) X:500.000 Y:500.000 Z:300.000
0007 Dispense gun lift height:30.000(mm)

4.3　Page 1　3. Multiple programming

As follow picture, there are following operations when edit multiple programming points, if the machine is single Y axis mode, then have no "8. Change Y axis".
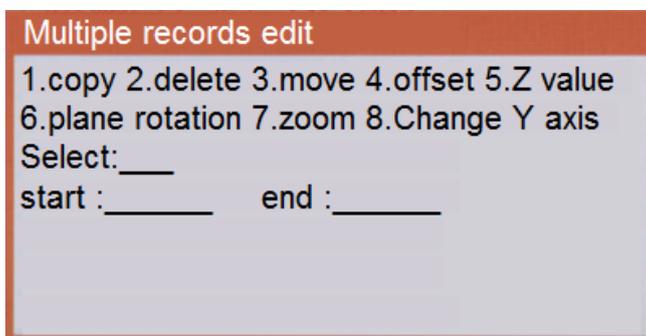
1. **Copy**: as following three pictures, copy 0001-0003 program points to 0005, the third picture is result when the first picture execute the second picture.
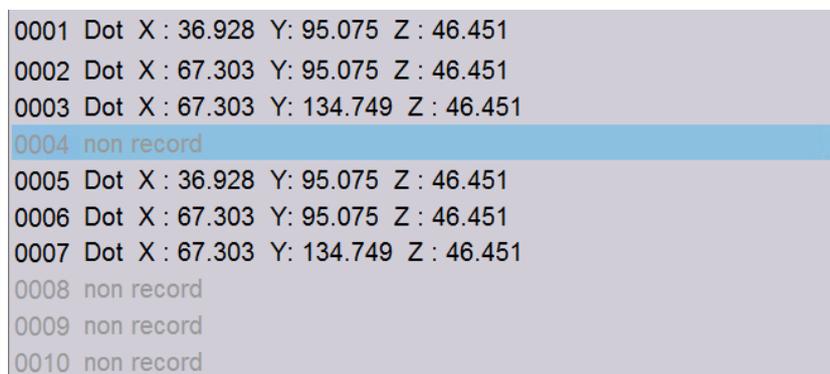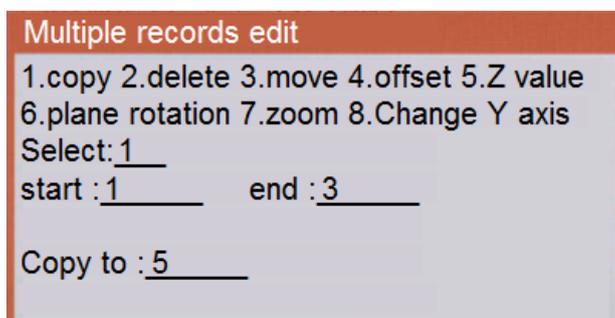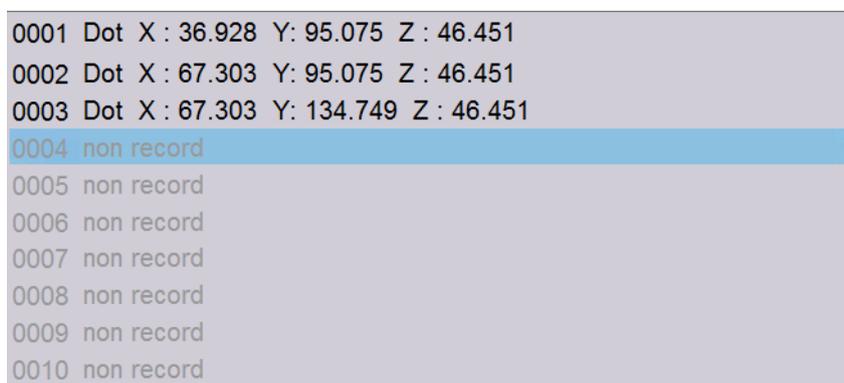
2. **Delete**: as following three pictures, delete 0005-0007 program points, the third picture is result when the first picture execute the second picture.

```
0001 Dot X : 36.928 Y: 95.075 Z : 46.451
0002 Dot X : 67.303 Y: 95.075 Z : 46.451
0003 Dot X : 67.303 Y: 134.749 Z : 46.451
0004 non record
0005 Dot X : 36.928 Y: 95.075 Z : 46.451
0006 Dot X : 67.303 Y: 95.075 Z : 46.451
0007 Dot X : 67.303 Y: 134.749 Z : 46.451
0008 non record
0009 non record
0010 non record
```

```
Multiple records edit
1.copy 2.delete 3.move 4.offset 5.Z value
6.plane rotation 7.zoom 8.Change Y axis
Select:2__
start :5_____        end :7_____
        'OK'              'NO'
```

```
0001 Dot X : 36.928 Y: 95.075 Z : 46.451
0002 Dot X : 67.303 Y: 95.075 Z : 46.451
0003 Dot X : 67.303 Y: 134.749 Z : 46.451
0004 non record
0005 non record
0006 non record
0007 non record
0008 non record
0009 non record
0010 non record
```

3. **Move**: as following three pictures, move 0001-0003 program points to 0005 and behind, this function mainly used to adjust the order of all dispense processing files, the third picture is result when the first picture execute the second picture.

```
0001  Dot  X : 36.928  Y1: 95.075  Z : 46.451
0002  Dot  X : 67.303  Y1: 95.075  Z : 46.451
0003  Dot  X : 67.303  Y1: 134.749  Z : 46.451
0004  Line start  X : 67.303  Y1: 134.749  Z : 46.451
0005  Line end   X : 106.815  Y1 : 134.749  Z : 46.451
0006  non record
0007  non record
0008  non record
0009  non record
0010  non record
```

```
Multiple records edit
1.copy 2.delete 3.move 4.offset 5.Z value
6.plane rotation 7.zoom 8.Change Y axis
Select:3
start :1          end :3

Move  to :6
```

```
0001  Line start  X : 67.303  Y1: 134.749  Z : 46.451
0002  Line end   X : 106.815  Y1 : 134.749  Z : 46.451
0003  Dot  X : 36.928  Y1: 95.075  Z : 46.451
0004  Dot  X : 67.303  Y1: 95.075  Z : 46.451
0005  Dot  X : 67.303  Y1: 134.749  Z : 46.451
0006  non record
0007  non record
0008  non record
0009  non record
0010  non record
```

4. **Offset**: as following three pictures, offset the 0001-0005 program point, the third picture is result when the first picture execute the second picture.

```
0001  Line start  X : 67.303  Y1: 134.749  Z : 46.451
0002  Line end   X : 106.815  Y1 : 134.749  Z : 46.451
0003  Dot  X : 36.928  Y1: 95.075  Z : 46.451
0004  Dot  X : 67.303  Y1: 95.075  Z : 46.451
0005  Dot  X : 67.303  Y1: 134.749  Z : 46.451
0006  non record
0007  non record
0008  non record
0009  non record
0010  non record
```

```
Multiple records edit
1.copy 2.delete 3.move 4.offset 5.Z value
6.plane rotation 7.zoom 8.Change Y axis
Select: 4
start : 1          end : 5
offset X(mm): 10
offset Y(mm): 20
offset Z(mm): -10
```
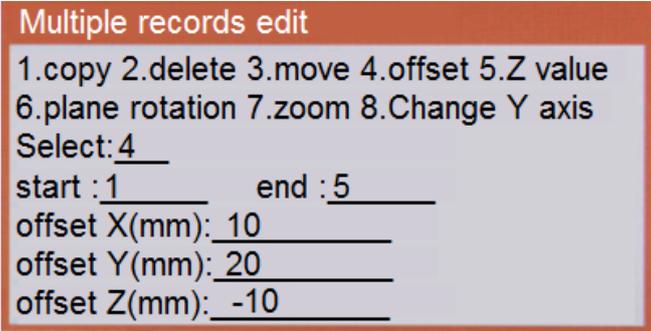
```
0001  Line start  X : 77.303  Y1: 154.749  Z : 36.451
0002  Line end   X : 116.815  Y1 : 154.749  Z : 36.451
0003  Dot  X : 46.928  Y1: 115.075  Z : 36.451
0004  Dot  X : 77.303  Y1: 115.075  Z : 36.451
0005  Dot  X : 77.303  Y1: 154.749  Z : 36.451
0006  non record
0007  non record
0008  non record
0009  non record
0010  non record
```

5. **Set Z value**: set the Z axis value of the programming point to the special coordinate value in the edit range. The mainly use is to make a number of programming points on the same plane dispensing.

6. **Plane rotation**: rotating the programming point in the edit range, mainly used for correcting when the clamp tool is rotated without programming again.

7. **Zoom**: zoom the graphic of dispense graphic in or out in the edit range, mainly used for correcting when DXF file generating processing file due to the accuracy of the machine caused the deviation by the processing size and the actual size.

8. **Change Y axis**, as following three pictures, change Y1 axis processing to Y2 axis from 0001-0005, the third picture is result when the first picture execute the second picture.

```
0001  Line start  X : 77.303  Y1: 154.749  Z : 36.451
0002  Line end   X : 116.815  Y1 : 154.749  Z : 36.451
0003  Dot  X : 46.928  Y1: 115.075  Z : 36.451
0004  Dot  X : 77.303  Y1: 115.075  Z : 36.451
0005  Dot  X : 77.303  Y1: 154.749  Z : 36.451
0006  non record
0007  non record
0008  non record
0009  non record
0010  non record
```

```
Multiple records edit
1.copy 2.delete 3.move 4.offset 5.Z value
6.plane rotation 7.zoom 8.Change Y axis
Select:8
start :1          end :5
1.Set as Y1
2.Set as Y2
Select : 2
```

```
0001  Line start  X : 77.303  Y2: 154.749  Z : 36.451
0002  Line end   X : 116.815  Y2 : 154.749  Z : 36.451
0003  Dot  X : 46.928  Y2: 115.075  Z : 36.451
0004  Dot  X : 77.303  Y2: 115.075  Z : 36.451
0005  Dot  X : 77.303  Y2: 154.749  Z : 36.451
0006  non record
0007  non record
0008  non record
0009  non record
0010  non record
```

4.4   Page 1   4. Label set

Labels can not only used to called with array, loop, sub, jump, general input programming, etc. but also be used to program comments to improve the readability of the dispense program.

4.5   Page 1   5. Array dispense

If dispense processing fixture plate placed multiple horizontal and vertical arrangement of the work piece, and horizontal and vertical respectively spacing is consistent then can use array dispense, as long as the series good machining of one work piece, and then use the array dispense can achieve full disk work piece machining, so that programming efficiency is greatly improved. There are two ways for array dispense as follows:
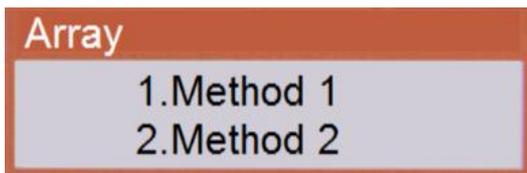
If processing fixture plate placed multiple horizontal and vertical arrangement of the work piece, and horizontal and vertical respectively spacing is consistent then can use array, as long as the series good machining of one work piece, and then use the array can achieve full disk work piece machining, so that programming efficiency is greatly improved.

Dispense program as following:

Program method of method 1:

Program method of method 2:
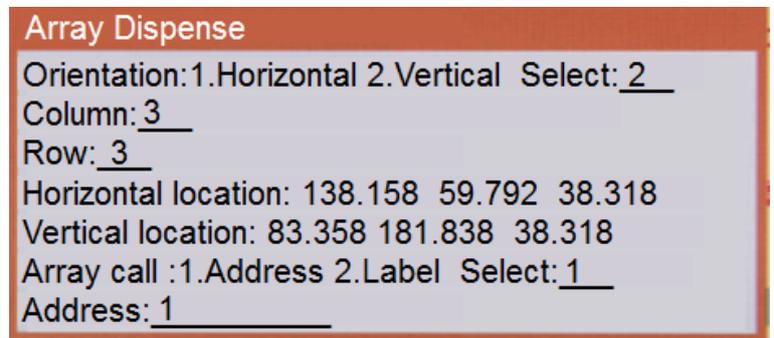
Result of dispense process as following picture:
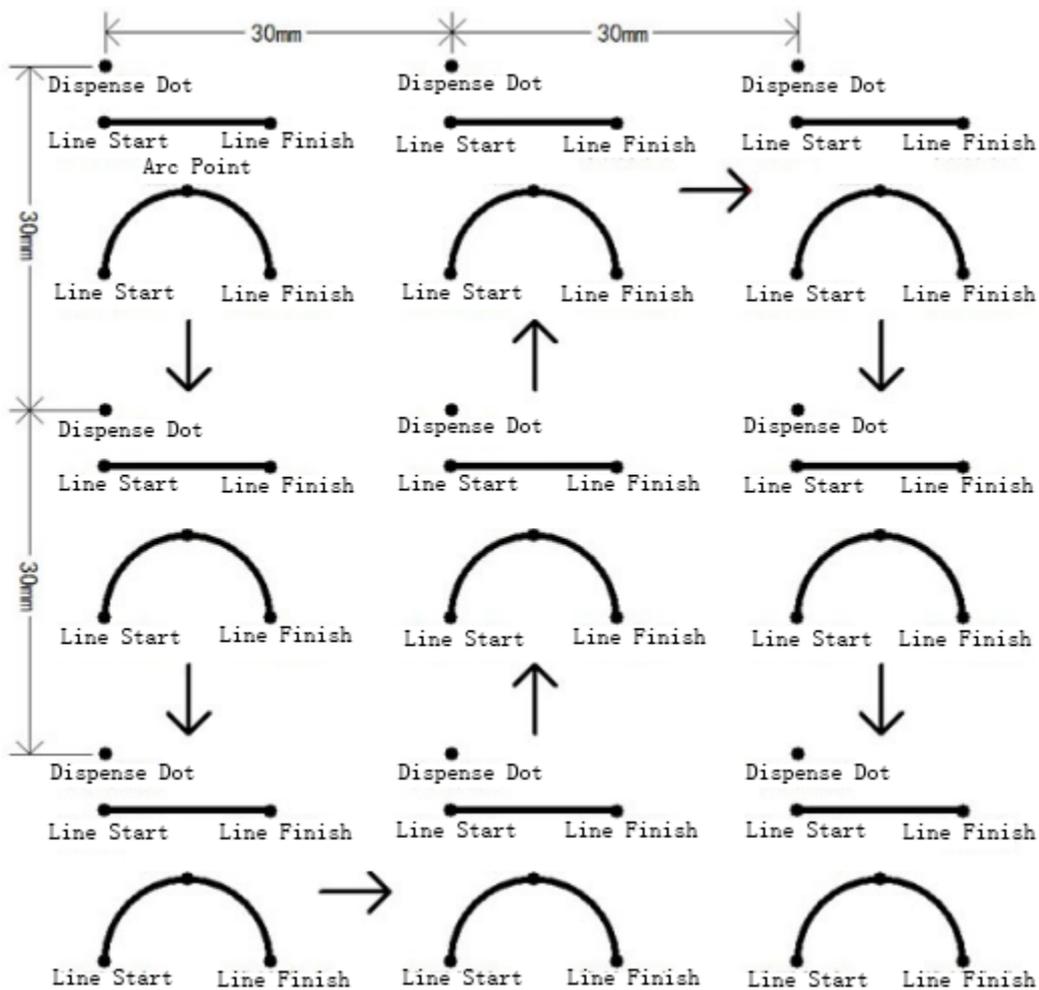
4.6 Page 1   6. Array expand

Selected the array programming point of the cursor in the main page, performing array deployment can generate programming points with the same effect as the array. It can modify each screw hole when the tool disc is not regular.

4.7　Page 1　7. Call subroutine

　　If dispense processing fixture plate placed multiple direction, But there is no rule of the work piece. It is only necessary to programming and dispensing of one work piece then call the subroutine in starting coordinate of each work piece. It can call the address or the label of the subroutine. Such as dispensing programming below:

```
0001  Call subroutine 32.297 0.000 50.000 Call add:0006
0002  Call subroutine 49.993  49.993  50.000  Call Label:子程序1
0003  non record
0004  non record
0005  Label :子程序1
0006  Dot  X : 0.000  Y: 0.000  Z : 50.000
0007  Dot  X : 39.098  Y: 0.000  Z : 50.000
0008  Line start  X : 0.000  Y1: 12.366  Z : 50.000
0009  Line end   X : 30.363  Y1 : 12.366  Z : 50.000
0010  program end
```

Result of dispense processing is following:
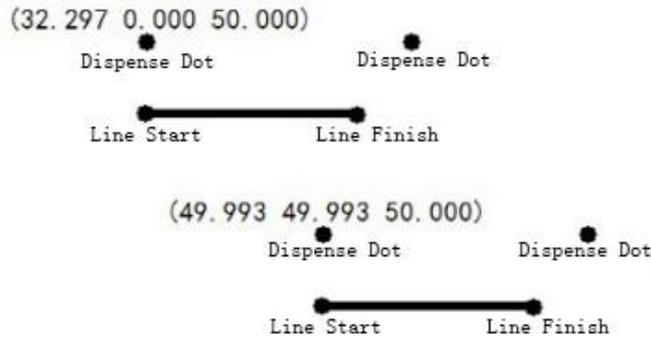
4.8　Page 1　8. Call file

　　The way to call file is the same to call subroutine, as long as change the called subroutine to a dispense file No., and change the dispense processing programming point from the subroutine to the file.

4.9　Page 1　9. Program jump

　　Program jump to special address or label to run when run to the current programming point, usually used to loop. As following picture, program will jump to 0001 label: loop dispense when work at 0007, keep working dispense action in 0002-0006 area.

```
0001  Label : 循环点胶
0002  Dot  X : 0.000  Y: 0.000  Z : 50.000
0003  Dot  X : 0.000  Y: 0.000  Z : 50.000
0004  Dot  X : 0.000  Y: 0.000  Z : 50.000
0005  Line start  X : 0.000  Y1: 12.366  Z : 50.000
0006  Line end   X : 30.363  Y1 : 12.366  Z : 50.000
0007  Jump to label:循环点胶
0008  non record
0009  non record
0010  non record
```

4.10　Page 2　1. Limited loop

It is similar to the "program jump", just the "program jump" is no limit counts when loop. As following picture: it will repeat 10 times dispense action in 0002-0006 area.

```
0001  Label : 循环点胶
0002  Dot  X : 0.000  Y: 0.000  Z : 50.000
0003  Dot  X : 0.000  Y: 0.000  Z : 50.000
0004  Dot  X : 0.000  Y: 0.000  Z : 50.000
0005  Line start  X : 0.000  Y1: 12.366  Z : 50.000
0006  Line end   X : 30.363  Y1 : 12.366  Z : 50.000
0007  Loop Call Label:循环点胶  time:10
0008  non record
0009  non record
0010  non record
```

4.11　Page 2　2. Program end

When in a subroutine execution to the programming, the subroutine returns, when not in a subroutine execution to the programming is dispense processing the end of the program, If there are more than two lines of "no programming point" means the end of the program.

4.12　Page 2　3. Delay

If the program execution to the delay dispense programming point is processed to stop the time delay a certain period of time and then continue to execute the dispense processing point.

4.13　Page 2　4. Pause

If the program execution to the pause dispense programming point, waiting for the run key then continue to execute the dispense processing point.

4.14　Page 2　5. Input program

Programming input signal is when the program execution to the programming of the point, if the values of the input state accord with the specified input signals then program jump to the specified address or label, if not then program continue to execute. As following picture, when program work at 0002,it will check the state of '通用输出 1', if input sign is '0' then jump to 0001 and check the signal again, until this input sign become 1 then working below. Use this function can be achieved with other devices with the work or as a pause key input, etc. (Signal definition: if has the input signal then the signal is defined as the amount of 1, no input signal is defined as the amount of the signal 0).

```
0001  Label : 循环点胶
0002  When in <通用输入 01>= 0 Goto label:循环点胶
0003  Dot  X : 0.000  Y: 0.000  Z : 50.000
0004  Dot  X : 0.000  Y: 0.000  Z : 50.000
0005  Dot  X : 0.000  Y: 0.000  Z : 50.000
0006  Line start  X : 0.000  Y1: 12.366  Z : 50.000
0007  Line end   X : 30.363  Y1 : 12.366  Z : 50.000
0008  Output <通用输出 01> is 1
0009  Delay:1.500(s)
0010  Output <通用输出 01> Is 0
```

4.15   Page 2   6. Output program

When the program is executed to the output signal programming point, then the output signal will output specified value, 1 as DC 24V output, 0 as DC 0V output.

4.16   Page 2   7. Square brush

The starting point of the square gluing is the upper left corner of the square, parameters including glue length, glue width, path distance, in actual use, glue length and width can be obtained by subtracting the coordinates of recording needle, the starting point coordinates of the confirmation of square glue programming. As following picture, we can program as left and get the path like the right.
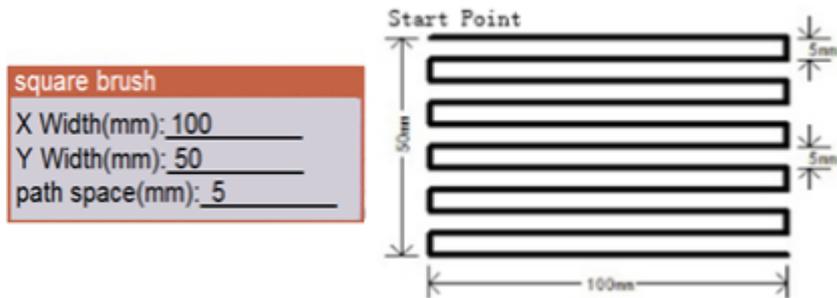
4.17   Page 2   8. Circle brush

Circular glue glues for spiral path, when programming let a needle placed to the center of the circular glue, then set the radius and path distance of circular glue. As following picture, we can program as left and get the path like the right.
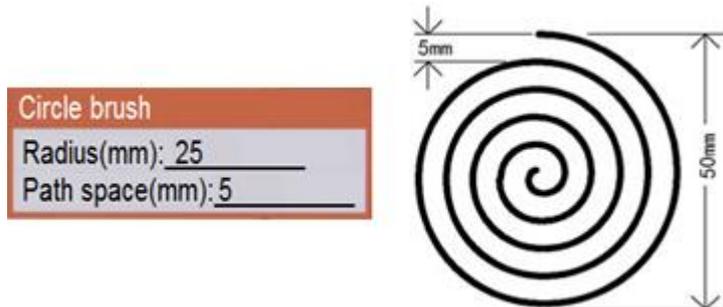
4.18   Page 2   9. Dispense signal ON/OFF

Work at this program point, we can output the dispense control signal, this point can put between dispense lines, realization of the special out of glue application in the line segment

4.19   Page 3   1. Counter

When the program is executed, the work piece counter increases the corresponding set value and then compares the value of the counting value to overflow limit, if overflow then stopped. This function usually used to count loop work pieces.

4.20   Page 3   2. Go to the free location

Work at this order, then the needle will go back to free stop position, mainly use for clear needle in dispense processing.

4.21   Page 3   3. Home (reset)

This current programming point makes the machine back to the origin

4.22   Page 3   4. Multiple gun set

When set the guns number(0-12) in menu 4, then in this menu we can control them enable or disable, when set as 1 means enable, and set as 0 means disable, and default is 0. As following picture:

```
multiple guns ON/OFF
Gun1 0:OFF 1.ON  Select: 0
Gun2 0:OFF 1.ON  Select: 0
```

4.22   Page 3   5. Reference point set

Function reserved.

4.22   Page 3   6. Auto home counter

Every execute the command once, then increase the number of auto reset, and compared with the value set in menu 2, if match the value, then reset to go to home.

4.22   Page 3   7. Gun clear counter

Every execute the command once, then increase the number of clean needle, and compared with the value set in menu 2, if match the value , then go to the cleaning position to clean..

Chapter 5   Menu 2

Menu 2 is mainly for the dispense parameter settings of the programming point, Menu 2 generated by the programming point is usually display black. Menu 2 contains:

Menu2 Pg 1/3	Menu2 Pg 2/3	Menu2 Pg 3/3
1.Check point set	1.Line dispense time set	1.Free dispense point
2.Check by manual	2.Dot dispense set	2.Auto home time set
3.Limited Value of Z	3.Output when emergency	3.Position gun clear
4.Free point set	4.Output when boot	4.Gun clear action
5.Height the gun lift up	5.Free dispense time	
6.Speed when move	6.Mode 'slow' speed set	
7.Ahead of dispense set	7.Counter set	
8.Line dispense speed	8.Dispense pulse width	
9.Line dispense Drawbench	9.Dispense speed modify	

5.1   Page 1   1. Check point set

Adjustment point, when there is some processing offset cased by the needle offset when changing needle, we can use the adjustment point to correct it. There are two ways to set the adjustment point, one is take the first dispense point coordinate as the adjustment point, the other is set the coordinate by manual, if choose the second one, move the needle to the specified position, then press confirm.

5.2   Page 1   2. Check by manual

When into the calibration menu, the needle move to the up 3mm than adjustment point automatically (Prevent collision), then move the needle to the specified coordinate to calibrate, pressing confirm to finish this calibration operation. Then all the dispense processing point will compensate the deviation from the offset of needle to ensure machining accuracy unchanged.

This function can also use the special calibration on the keyboard to operate while no teachbox available, as long as the machine in an idle state, we can press "confirm" key into the calibration operation, at the same time the keyboard mask on the LED will flash, then move the needle to the specified coordinate by manual, press "confirm" again to complete the calibration of the operation, then the LED will extinguish and exit.

5.3   Page 1   3. Limited Value of Z

Set this value to limit glue gun down to prevent the glue gun down to the number of collision work piece or the tool by manual.

5.4　Page 1　4. Free point set

Free stop point means the position of stop when dispense processing is finished, can set as below:

1.　Make the set coordinate as free stop point

2.　Make the above of starting point as free stop point

3.　Make the above of finish point as free stop point

The dispensing processing general can choose 2 or 3 work efficiency will be higher, but it need to choose 1 when needle have to clear or timing glue, then we can set the coordinate as the clear position or timing glue position.

5.5　Page 1　5. Height the gun lift up

This height is the glue gun lift height for moving glue gun from one to the next after dispense finished this point, to improve efficiency, this value not too large, As long as the guarantee does not meet the height of the work piece. Such as lift a 10mm height, if the two processing points are not in the same plane height then take the higher as standard, as following pictures are lift height when moving glue gun from 1# dispense dot to 2# dispense dot.

The same height　　2# higher than 1#　　2# lower than 1#
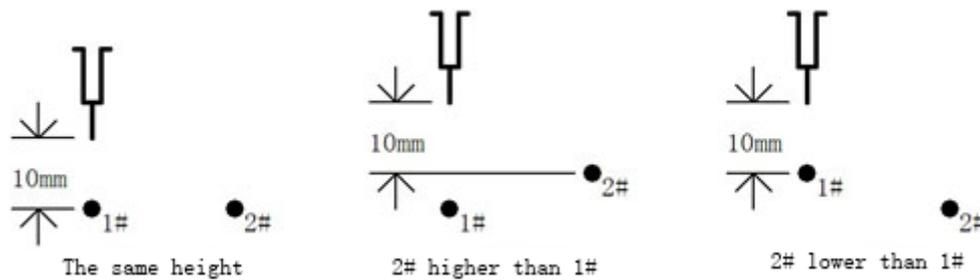
5.6　Page 1　6. Speed when move

Move speed refers to the speed in the process from the completion of a dispensing processing after moving to a dispensing process, Translation speed and down speed set independently, the size of the speed directly affects the efficiency of the machining process. But setting also have to reference the actual performance of the machine and the load weight, etc.

5.7　Page 1　7. Ahead of dispense set

As the glue has a certain viscosity, so the glue will take some time to open from the dispensing valve, in order to improve the work efficiency, the process is put in the process of the spatial shift. For example the glue time is set to 0.1 seconds, then calculating air shift open position according to the dispensing signal set null shift speed and acceleration in the process, but in order to prevent the glue from dropping out too quickly, the glue time should be set according to the viscosity of the glue, it should not be too large.

As following picture, the gun move to 2# to dispense when 1# dispense finished, if the glue time is set as 0.1 second, calculating from A position to 2# need 0.1s according empty move speed and acceleration, then the dispense valve open at A position instead of position 2#.
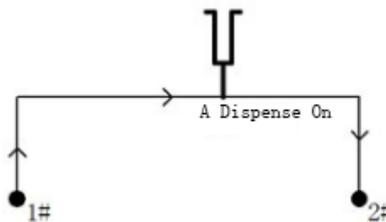
5.8　Page 1　8. Line dispense speed

Dispense line speed means the glue gun move speed when gluing, including dispense line, dispense arc, dispense circle, glue, etc. all use this speed. The speed of the setting can be referred to the adhesive viscosity, pressure, the amount of glue, etc.

5.9　Page 1　9. Line dispense Draw bench

Drawing action is to solve the problems caused by tailing for plastic sticky glue and lag, the set is effective for dispense line, dispense arc, dispense circle, glue rectangle. The settings are as following picture:

Line dispense Drawbench
Drawbench height(mm): 2
Drawbench length(mm): 10
Drawbench speed(mm/s): 50
Drawbench action:1.| 2.] 3.[4.\ 5./ Select: 2

According to the parameters above, below is the end of line drawing sketch of dispensing action.

Drawbench 1　　　　Drawbench 2　　　　Drawbench 3
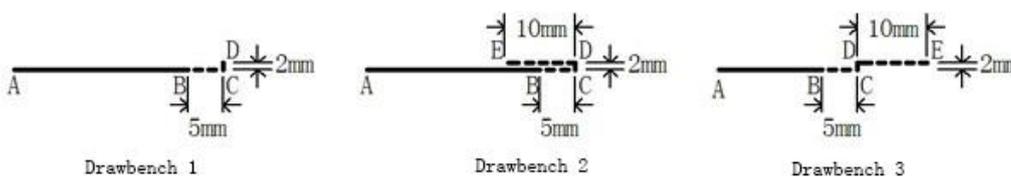
Point A and C are the starting point and finish point of dispense line, solid line is the path for glue valve open to go, dotted line is glue valve close to go, as the advance distance is 5 mm, so close glue valve at position B. Before Point C is dispense speed to go, after C is drawing speed to go, after drawing, lift the glue gun as empty speed and lift height ever be set.

5.10　Page 2　1. Line dispense time set

In dispense line time parameters setting.

'Line starting point stop time' means the needle move to starting point and open valve then wait, mainly to solve the lag problem, with the advance of glue similar function.

'Line finish point stop time' means lift after stop a moment when dispense finish, a complement for drawing.

This setting is useful to dispense arc, dispense circle, too.

5.11　Page 2　2. Dot dispense set

In dispense dot parameters setting,

'Dispense time' means at dispense dot position, open the valve and wait the time for glue.

'End pause time' means the time for glue valve keep stay after close at dispense dot position, this is mainly to solve the problem of glue lag, prevent wire drawing.

'Draw bench height lift up' means after dispense dot finish, first lift a special height with 'draw bench speed lift up', then lift to gun lift height with empty move speed. This is mainly to solve the problem of wire drawing, this value can be set as 0.
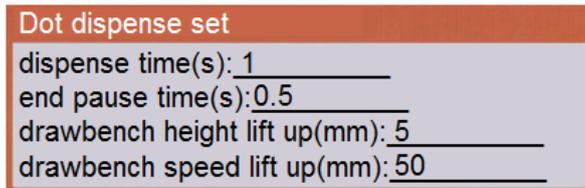
5.12　Page 2　3. Output when emergency

Set the general output signal when emergency occurrence, 1 means 24V, 0 means 0V.

5.13　Page 2　4. Output when boot

Set the general output signal when turn on the machine, 1 means 24V, 0 means 0V.

5.14　Page 2　5. Free dispense time

This function is mainly used to prevent the easy to dry glue is not working when the glue in the needle mouth curing, If the function is not enabled, the glue time or interval time can be set to 0. As setting below, every 10 seconds for 1 seconds to open the automatic dispensing signal.
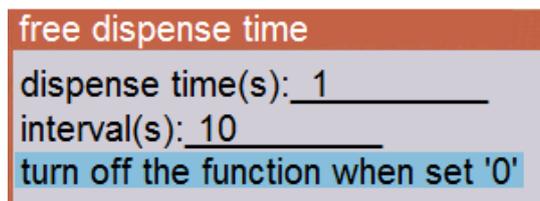
5.15 Page 2 6. Mode 'slow' speed set

This speed is used for 'no glue' or 'uniform' run mode.

5.16 Page 2 7. Counter set

We can set the count value and limit count value in the work piece counter, as running, the count value will add the set number when execute to the programming point, if the count value larger than the count limit value, prompt that count overflow, and stop processing, until set the count again. If not use the work piece count limit, please set the count limit value as 0.

5.17 Page 2 8. Dispense pulse width

This function mainly to control the glue interval time, the low level pulse width time indicates that the period of time is not gluing, and the High level pulse width time indicates the period of time is gluing.

For example: Dot dispense for 1 second, setting pulse width time all 100 ms. Then the effect is gluing for 100ms, and stop 100ms, then gluing 100ms again, stop 100ms , until 1s ends.
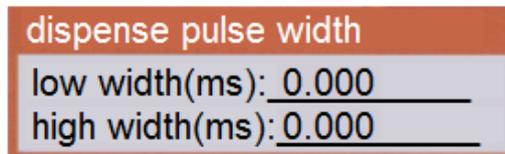
5.18 Page 2 9. Dispense speed modify

This function is to modify a section address of dispense speed.
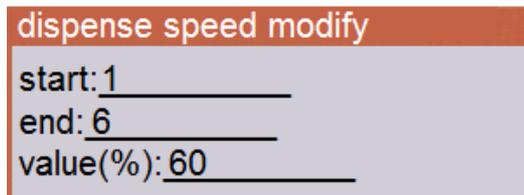
5.19 Page 3 1. Free dispense point

Here can set the position for dropping glue when free, move the needle to a designated place by manual, then press "Enter".

5.20 Page 3 2. Auto home time set

This function can set the interval times to reset, if not use, set as 0.

5.21 Page 3 3. Position gun clear

Here can set the position for clearing needle, move the needle to a designated place by manual, then press "Enter".

5.22   Page 3   4. Gun clear action

This function can set the parameters of clear needle, if not use, set as 0.

Interval: means how many times to go to the cleaning position to clean.

Times: means how many times to return the needle in the clean process.

Distance (mm): means return distance of the needle in the clean process.

Speed (mm/s): means return speed of the needle in the clean process.

```
Gun clear action
Interval: 0_____
Times: 0____
Distance(mm): 0.000_____
Speed(mm/s): 0.000_____
```
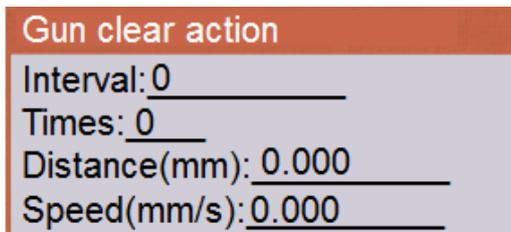
Chapter 6　Menu 3

Menu 3 is mainly machine setting or menu operation, no programming point generated. Menu 3 contains:

6.1　Page 1　1. Move to selected record

When input the specific coordinate of needle and press "confirm" key after enter the menu, the needle will move to the coordinate just inputted. As following picture, the needle will move to x:100，y:100，z:50.
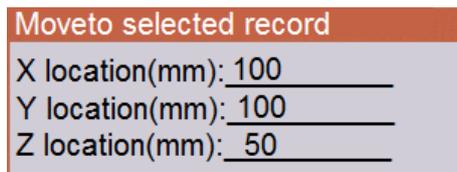
6.2　Page 1　2. Product file copy

This function can storage in U Disk or teach box and copy dispense files between each machine, when there are several machines process the same file, we can just program in one dispense machine and copy it to others. The teach box copying applies to the field using, and the U Disk copying can not only between dispense machines, but also storage in the computer as backup. File copying operation contains:
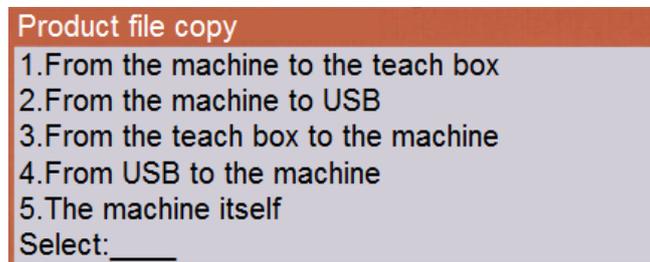
1. Form dispense machine to teach box

    This operation copy the current dispense processing file to the teach box.

2. From dispense machine to U Disk

    The operation is currently open dispensing processing files copied to the root directory of U Disk

"点胶机-点胶程序" folder, the extension file name is 'DJF' . (Note: U disk must be formatted as FAT32 format).

3. From teach box to dispense machine.

This operation copy the storage dispense file in the teach box to replace the current dispense processing file in the dispense machine.

4. From U Disk to dispense machine

Copy the dispense file in the root directory of U Disk called "点胶机-点胶程序" to current open dispense processing file. (Note: U disk must be formatted as FAT32 format)

5. Copy between each dispense programs.

This operation copy dispense files with different File No. to replace, mainly used to make a dispense processing files backup. We can use the backup file when can't undo after an error program operation.

6.3　Page 1　3. DXF file convert

Save the Auto CAD graphics file as Auto CAD 2010 DXF format file to "点胶\DXF 文件" folder, then operating this menu to convert graphics files into dispense processing files.

Only supported 'dot', 'line', 'arc', ' circle', 'multiply lines' , once have some complex graphic, such 'Spline curve' or 'ellipse' ,then need to convert to 'multiply lines'.

As Y axis between Auto CAD and dispense machine is contrary, so in CAD, Y axis travel value as a dispenser of Y axis 0 coordinates

6.4　Page 1　4. File locked

When the file unlock, icon display in the status bar, meanwhile the parameters of current file and machine all can be modified; when the file lock, icon display in the status bar, meanwhile the current file can't be modified , but not the parameters of the machine.

6.5　Page 1　5. Machine locked

When in unlock states, the parameters of machine can be modified, whether the file is locked is up to the file lock/unlock setting; when in lock states, icon display in the status bar, meanwhile all the parameters of dispense file and machine are locked.

6.6　Page 1　6. File password

This menu is used to set the password for the "Page 1　4.file locked"

6.7　Page 1　7. Machine password

This menu is used to set the password for the "Page 1　5. Machine locked"

6.8　Page 1　8. Input name edit

The default name of programmable universal input port is "通用输入 01"—"通用输入 12", to improve the readability of the program, each programmable universal input port can be named according to the function of the application, so that the programming is more convenient.

6.9　Page 1　9. Output name edit

The default name of programmable universal output port is "通用输出 01"--"通用输出 12", to improve the readability of the program, each programmable universal output port can be named according to the function of the application, so that the programming is more convenient.

6.10　Page 2　1. Buzzer of key

This menu can set whether the key voice of teach box is on or off.

6.11　Page 2　2. Speed priority set

While the Longmen type three dimensional machine is in actual movement process, it is actual a positive inversion process for a single axis motor in the corner, in order to reduce the vibration of the machine and prevent the loss of step, must be reduced to close to 0 in positive reversal, It is the machine that must be slowed down at the corner.

But if the dispensing speed inconsistency will lead to inconsistent amount of glue, to solve this problem, In the case of the accuracy of the situation at the corner turned into a small arc transition, In this way, we can make the speed and straight line at the corner more consistent, so it can solve the problem amount of plastic inconsistent, but this is achieved at the expense of the path accuracy , so set the value of the time to speed and path accuracy should be referred to a neutral value.

The value of the speed priority level is 0 - 9, the bigger the value is, the more uniform the velocity is, the bigger the path error is, for the 0 level, the path is complete without error, but the speed of the inflection point will be reduced, the following figure is the relationship between priority and path errors:
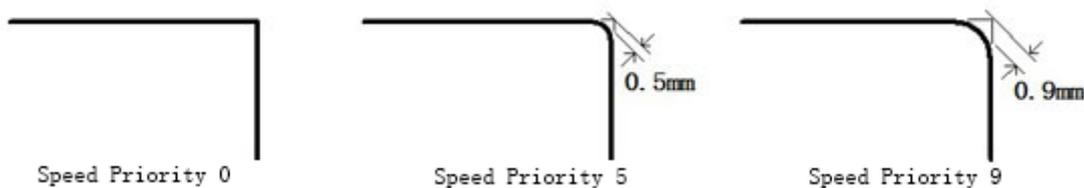
6.12　Page 2　3. Small key locked

Small keyboard means special keyboard for the check adjustment point, this menu usually used to prevent misuse with locking this keyboard and taking the teach box away.

6.13   Page 2   4. File view

Because the dispense processing file is so many (1000 files), it's terrible to open and search file one by one, so we can use this function for tabbed browsing, find the number of file we wanted then open it.

6.14   Page 2   5. Machine's information

Display the device information, such as machine number, etc.

6.15   Page 2   6. Program edition

Display the program version information.

6.16   Page 2   7. Program update

As long as put the application program file into U Disk of FAT32 format with folder called "点胶机/升级文件", enter the menu and update the program after insert the U Disk. If the U Disk can identify correct, icon will display at the right in status bar.

6.17   Page 2   8. FPGA update

As long as put the driver program file into U Disk of FAT32 format with folder called "点胶机/升级文件", enter the menu and update the program after insert the U Disk. If the U Disk can identify correct, icon will display at the right in status bar.

6.18   Page 2   9. DSP update

As long as put the DSP program file into U Disk of FAT32 format with folder called "点胶机/升级文件", enter the menu and update the program after insert the U Disk. If the U Disk can identify correct, icon will display at the right in status bar.

6.19　Page 3　1. Input view

As shown in the following picture:

b	01	02	03	04	05	06	07	08	09	10	11	12
v	0	0	0	0	0	0	0	0	0	0	0	0

Origin/limited:

b	S1	S2	S3	S4	S5	H1	H2	H3	H4	H5	E1	E2	E3	E4	E5
v	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0-12 of "general input" is 12 input states for programmable input port, when check input signal for '1', no input signal for '0'.

"origin limit" is input state of origin signal and limit signal, S1-S5 for 1-5 axis negative direction limit signal, H1-H5 for 1-5 axis origin signal, E1-E5 for positive limit signal, when check input signal for '1', no input signal for '0'.

6.20　Page 3　2. Button status view

As following picture:

Button status view

Origin:0　Run:0　Stop:0　Step:0　Dispense:0

View the input state of function key, when no key means states is 0, when check key down means states is 1.

6.21　Page 3　3. Output view

As following picture:

output view

output:

b	01	02	03	04	05	06	07	08	09	10	11	12
v	0	0	0	0	0	0	0	0	0	0	0	0

View general output state, also control the output state of general output port. Set 1 means open the corresponding port, set 0 means close the corresponding port.

Chapter 7   Menu 4

Press "Stop" + "Menu1" into Menu 4, Menu 4 is the menu for manufactor to set parameters of machine, not recommend opening for users. Menu 4 contains:

Menu4 Pg 1/3	Menu4 Pg 2/3	Menu4 Pg 3/3
1.Axis X Parameter	1.Start/Stop speed	1.System parameters copy
2.Axis Y Parameter	2.Acc set	2.Emergency mode
3.Axis Z Parameter	3.Maximum speed set	3.Multiple gun
4.Axis A Parameter	4.Home's speed set	4.Home way boot
5.Password	5.Speed by manual	5.Auto check input set
6.Time set	6.Pinyin method update	6.Move mode of X and Y
7.Limited used time	7.Boot screen update	7.Z height when check
8.Machine's name edit	8.Control select	8.Chinese-English shift
9.Company's name edit	9.Number of Y	

7.1   Page 1   1-4. Set parameters of XYZA axis

The motor shaft parameter setting options are shown below:

```
Axis X parameter
Pulse/r: 12800
Screw pitch(mm): 52
Length(mm): 200
Offset at origin(mm): -5
origin:1.Close 2.Open 3.No use  Select: 2
limited:1.Close 2.Open 3.No use  Select: 1
```

Pulse/r: means the number of pulses for the driver motor per revolution, or the fine fraction of driver motor.

Screw Pitch: means the run distance for the driver motor per revolution, or the circumference of the belt pulley or the pitch of lead screw.

Length: The longest distance the axis can move.

Offset at origin (mm): Home offset can be 0 or others, as well as offset the error value as coordinate 0 after capture the home position.

Close/Open: Close if capture sensor output low voltage when motor shaft don't trigger the origin, and the opposite is open.

No use: If you select no use, the axis does not use the origin or limited.

7.2   Page 1   5. Password

Before set the use limit time, set the password first.

7.3　Page 1　6. Time set

As the use of time to limit the need have to refer to the clock machine, so if you set the time limit to modify the machine, you must enter a password that uses a time limit.

7.4　Page 1　7. Limited used time

When out of factory we can set to limit the use of time, then when the limit time become, it will pop a dialog to ask for the password to relieve while turn on the machine, or input the password in menu to relieve.

7.5　Page 1　8. Machine's name edit

The name of device edited will display at "menu 3, page 2, 5.device information".

7.6　Page 1　9. Company's name edit

The name of company edited will display at "menu 3, page 2, 5.device information".

7.7　Page 2　1. Start/stop speed set

The motor has a process of acceleration and deceleration in motor control applications when running, to improve work efficiency, start/stop speed can set neither 0 nor too large, the greater the load, the smaller the start/stop speed, or it will cause the loss of step or mechanical noise, general recommendations in 20 mm/s.

7.8　Page 2　2. Accelerate set

Various acceleration contains:
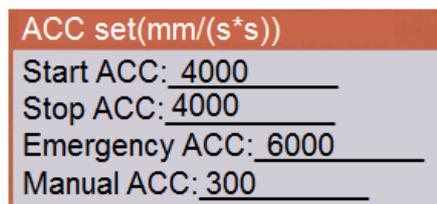
The manual move speed can set a little smaller in actual use, generally between 100-500, manual moving acceleration is set a little smaller to have an obvious start acceleration process in manual operation, it is easy to move a short distance when it is moving at a high speed, satisfied the speed and short distance requirements.

The control card support asymmetric acceleration and deceleration, start acceleration and stop acceleration can be set to different values, the actual application of the general will be set larger to stop the acceleration than the start acceleration. The acceleration of the size of the setting must be according to the motor drive capacity, load size, mechanical properties, etc. taking not lose step, shaking not big as the standard.

7.9   Page 2   3. Maximum speed set

Setting the maximum value allowed by each axis speed in user programming, this will prevent the user from setting a speed that is greater than the speed of the machine design requirements, so that prevent the lose of step. Including following contents:

```
Maximum speed set(mm/s)
Axis X/Y: 1000_____
Axis Z: 800_____
Axis of line dispense: 500_____
```
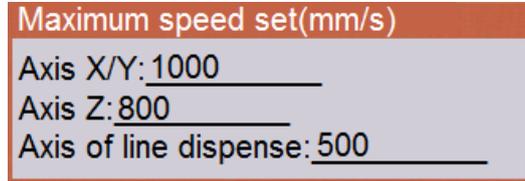
Here the x y axis max speed is set for the plane moving speed of the plane moving speed of the application of the pointing glue is allowed to the maximum. Z axis max speed is dispensing application programming on the moving speed of the hollow shift the maximum allowable value, dispense max speed is dispensing application programming in line allows maximum dispensing velocity.

7.10   Page 2   4. Home's speed set

Origin capture is record the position of motor shaft when it trigger the origin signal, in order to be in the same position every time, it must be triggered in the same direction every time, so we must move to the correct direction first then perform origin capture when the position of motor shaft is not at the direction of origin capture direction.

"move speed" is the speed that the motor shaft move from error direction to the direction of origin capture, this speed can be upper, generally set range as 50-150mm/s, "capture speed" is the speed that motor shaft move to trigger the origin signal, to improve the accuracy, this speed should not be too high, generally set range as 20-60mm/s.

7.11   Page 2   5. Speed by manual

Manual movement speed is high, medium and low speed of three, press "speed" can cycle switch. Generally set high speed as 80mm/s, middle speed as 40mm/s, low speed as 1mm/s.

7.12   Page 2   6. Pinyin method update

Pinyin IME use the GB2312 library, almost 7000 commonly used Chinese characters, usually the factor has been updated the Pinyin IME, so it's no need to perform this action.

7.13   Page 2   7. Boot screen update

Make the required boot logo to a 480*272 pixels,24 bit color bitmap file with PhotoShop, then save it to the folder called "点胶机/LOGO" of the U Disk, insert the U Disk and perform the update operation. (Note: The U Disk must be formatted as FAT32)

7.14 Page 2 8. Control select

We can use two ways to select the dispense processing file, dial switch and digital tube, if using the dial switch , we can have 1 bit, 2 bit, 3 bit, and the high bit will default as 0 if not use. As well as there is no conflict between the opened file number and the value of the dial, the function which opening file of the teach box will be shield.

7.15 Page 2 9. Number of Y

We can set as single Y or double Y work mode, out factory default is single Y mode. If set as double Y work mode, then use [Stop] + [Esc] to change Y axis, and coordinate value in the display area will display as Y1 or Y2.

7.16 Page 3 1. System parameters copy

The function of this menu is copying the system parameters from one machine to teach box or U Disk and then copy it from teach box or U Disk to other same size machines, no need to set them one by one.

If save to the U Disk, must create the folder called "点胶机-配置文件" first, and the suffix of this file must be "CFG". (Note: U Disk must be formatted as FAT32)

The contents of the copy include the machine parameters and the default values of the factory settings.

7.17 Page 3 2. Emergency mode

When prompt "emergency" press "cancel" to enter the menu of set emergency mode, so we can modify it quickly if the emergency stop switch damaged or need to modify the emergency mode.

7.18 Page 3 3. Multiple gun

Here set the number of the glue guns for the system.

7.19 Page 3 4. Home way boot

1. Prompt home when boot: prompt to go back to the origin when the machine power on, press "home" to perform this action.

2. Home when boot: go directly to the origin when the machine power on.

3. No prompt, no home when boot: must press "home" to perform this action after the machine power on.

```
Home way boot
1.Prompt home when boot
2.Home when boot
3.No prompt and no home when boot
Select: 3
```
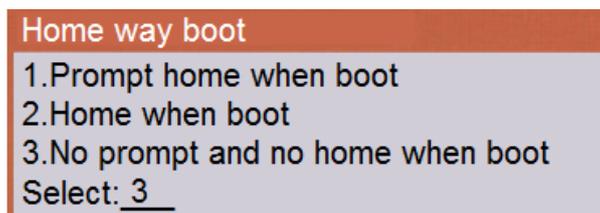
7.20　Page 3　5. Auto check input set

```
auto check input set
front/back sensor input(1-16) 1__
left/right sensor input(1-16):1__
type 1.normal close 2.normal open  Select 2__
```
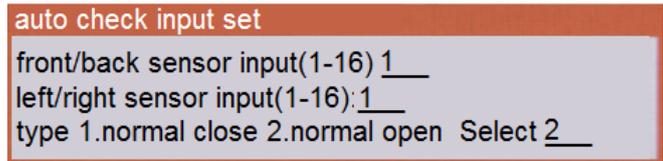
Set needle sensor automatically: Can not only in a position at the same time to search for XY detection. But also XY were detected at different locations.

7.21　Page 3　6. Move mode of X and Y

```
Machine install
Install X: 1.Left 2.Right  Select:_1__
Install Y: 1.Front 2.Back  Select:_1__
```
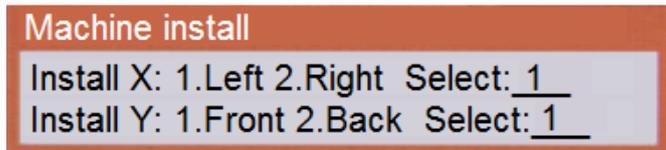
Install X axis home: when on the left, then the right way is the positive direction, and it will move to left to search the home sensor when go to home. When on the right, then the left way is the positive direction, and it will move to right to search the home sensor when go to home.

Move style of Y axis: when select the platform, then the backward is the positive direction, and it will move forward to search the home sensor when go to home. When select the second one, then the forward will be the positive direction, and it will move backward to search the home sensor when go to home.

7.22　Page 3　7. Z height when check

Here set the safe height of Z axis when adjusting the needle.

7.23　Page 3　8. Chinese-English shift

This function mainly to change the display language between Chinese and English.

Chapter 8　Default value

Press "Stop" + "Menu2" into default value is not recommend opening for users. Default parameters setting menu contains following contents:

Default value　Pg 1/2	Default value　Pg 1/2
1.Line speed　:100.000	1.dot end sp　:100.000
2.Line st time　:0.000	2.dot end hei　:0.000
3.Line en time　:0.000	3.height Z　　:30.000
4.Line length　:0.000	4.speed X/Y　:500.000
5.Line height　:0.000	5.speed Z　　:300.000
6.Line end sp　:100.000	6.Slow speed　:100.000
7.Line len non　:0.000	7.ahead time　:0.000
8.dot time　　:0.000	
9.dot end time　:0.000	

The default value is the main processing parameters in the application of glue dispensing parameters, if not set above parameters in dispense program file, then the dispense machine will use the default parameters value.

Appendix 1

Method for setting the use time limit

Use the time limit setting method is no longer a password, but the way to use the authorization. We can achieve any change in the use of the period, the use of the time limit is the way to use the date, not the number of days.

To set or modify the restriction of the use of date, as long as input the 16 bit number, which in front of the 8-bit said year, month, day (YYYYMMDD). Low 8 bit is to verify the legitimacy of eight former date character verification code, encryption using XOR mode. The following is the use of the method:

1. Set or modify the password in Menu 4-1-5.

This 8-bit password used for achieving the XOR algorithm or modifying system time after setting the use limit. (because the use of the time limit is based on the system time to judge, so set the use of restrictions on the clock can't be arbitrarily modified, Once you have set the use of restrictions, the machine will be locked if customer destroy the clock power or chip.)

2. Set use time limit in Menu 4-1-7.

Enter the 16bit setting characters, the former 8 are the use of the period of years, months, days. Latter 8 are used for verification code.

The generation of verification code is as follows:

Such as the password of the machine is 12345678, to authorize the machine to use in August 11, 2013, then the verification code of manufacture if 20130811 XOR 1234578 equals 26167989, then get the legal authorization code 2013081126167989, This license code allows the machine to be used to the machine clock in August 11, 2013. We can continue to authorize delay when expired. If you want to unlock the permanent use of a time, then use a legal authorization code with "3" at the first character of time to unlock.

Note:

Use method of XOR:

1. Use computer to open the calculator.

2. Select view/science mode.

3. 20130811 [Xor] 12345678 then got the result 26167989.