# Spray hand manipulator control system V3.0 VERSION

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# 1 System configuration and installation

### **1.1 Basic Configuration**

1,8 inch true color touch screen

2, servo control panel

3, I / O board

4, the power part (2 power supply)

### 1.2 System installation

1, wiring operations must be carried out by a professional electrician.

2, to confirm the power to disconnect before starting the job.

3, please install on metal and other fire-retardant materials and away from combustibles.

4, must be safely grounded.

5, the external power supply failure, the control system failure, in order to make the whole system safe, be sure to set the external control system security circuit.

6, installation, wiring, operation, maintenance, must be familiar with the contents of this manual; use must also be familiar with the relevant machinery, electronic common sense and all relevant safety precautions.

7, install the controller of the electrical box, should have a well-ventilated, oil, dust conditions. If the electronic control box is closed, it is easy to make the controller temperature is too high, affecting the normal work, to be installed fan, electric box suitable temperature is 50  $^{\circ}$ C below, do not use in condensation and freezing place.

8, the controller should be installed to avoid contactors, transformers and other accessories too close to the layout, to avoid unnecessary surge interference.

CAUTION: Improper handling may result in hazards, including personal injury or equipment accidents.

# **2** Operation interface

## 2.1 Appearance and description



# 2.2 Key function description

### 2.2.1 State selection switch

Manual control of the state is divided into three kinds, namely manual, stop, automatic.

"Manual" : The status selector switch to the left to enter the manual state, the upper

left corner of the screen icon becomes As shown in Fig Manual (1) In this state, manual operation and programming can be performed.

"Stop": The status selector switch to hit the middle of the state into the stop, the upper

Settings

left corner of the screen icon becomes Figure In this state, parameter setting is possible

"Auto": The status selector switch to the right to enter the automatic state, the upper

In this state can be fully automatic and the corresponding settings.

### 2.2.2 Function keys

"Start" key: Pressing this key will start the corresponding action when performing OPR and fully automatic operation.

"Stop" key: Function 1: Press this button to enter the single cycle mode. In the automatic mode, the system will stop in the single-cycle mode. After pressing the [Stop] key again, the robot Stop motion.

Function 2: In the event of an alarm, press this key in the stop state to clear the alarm display that has been resolved.

"Origin" key: In the stop state, press this key, then press "start" key to start the home return operation.

Note: You can select the way of homing and the order of homing in this key. For details, please refer to 3.2.1.17 Function description of origin command.

"Reset"key: Press the [Reset] key and then press the [Start] key to return all the axes to the home position.

Note: You can also add other commands to this key, for example, to turn off an output point when you press the reset button. For details, see section 3.1.

"Acceleration / deceleration" key: These two keys can be used to adjust the global speed of manual and automatic.

### 2.2.3 Axis action keys

**X** + (**X1** +)key: Pressing this key moves the axis in the positive direction at the current speed.

X- (X1-) key: The axis moves at the current speed in the negative direction.

Y1- (Y1-) key: The axis moves at the current speed in the negative direction.

Y1- (Y1-) key: The axis moves at the current speed in the positive direction;

**Z** + (**Z** +) key: Pressing this key moves the axis in the positive direction at the current speed.

Z- (Z-) key: The axis moves at the current speed in the negative direction.

**U** + (**A** +)key: Pressing this key moves the axis in the positive direction at the current speed.

U- (A-)key: The axis moves at the current speed in the negative direction.

V + (B +)key: Press this key to move in the positive direction at the current speed.

V- (B-) key: The axis moves in the negative direction at the current speed.

**W** + (**C** +)key: Pressing this key moves the axis in the positive direction at the current speed.

W- (C-)key: The axis moves at the current speed in the negative direction.

There are two types of axis motion, one is the world coordinate motion and the other is the joint movement. Pressing the axis type in manual mode and pressing the axis action button will activate the corresponding axis.

#### **Operating procedures:**

1, in manual mode, click this icon once to open the manual keyboard button.

2, the icon after opening the icon below, in this figure, select the axis movement type and press the appropriate axis keys (keyboard keys or hand control button), the corresponding axis will act.

3,Manual speed control: in manual mode can press the acceleration and deceleration keys can be adjusted speed, can also be fixed in the manual speed, the corresponding setting can be entered in the stop state "parameter"  $\rightarrow$  "machine settings"  $\rightarrow$  "run parameters (Chapter 4.2.1) of the Standalone Control Manual option.

<b>√</b> fullk	eybd	partkeyb	d		Speed	10.0 %
JZ-	JZ+	JV-	JV+	Tune Sel Tune Speed: 🖌 🕅 x5		
-YL	ЈҮ+	-ענ	JV+	X10 X50		
јх-	JX+	J₩-	J\#+			
Line Z-	Line Z+	Rotate V-	Rotate V+			
Line Y-	Line Y+	Rotate V-	Rotate V+			
Line X-	Line X+	Rotate W-	Rotate W+			

## 2.2.4 Fine adjustment knob

Function: You can use this knob to precisely move the axis when the manual mode is fine-tuned.

To do this, click the Open button, click the [Tune sel] option, select the tune speed, select the axis to be fine-tuned in the left box, or press the axis button (on the hand controller) The fine adjustment knob moves the axis one point at a time to the target point.

fullk	.eybd	partkeyb	d	Speed 10.0 %
JZ	JV	WDZ	WDV 4	Tune Sel Tune Speed:
JY	ντ	WDY	WDV	X10 X50
ХĽ	JW	WDX	WDW	

Tune speed:

X1: The movement of a grid axis is 0.01mm or the axis is rotated by 0.01 degree.

X5: moving a grid axis 0.05mm or axis rotation 0.05 degrees.

X10: moving a grid axis movement 0.1mm or axis rotation 0.1 degrees.

X50: moving a grid axis moving 0.5mm or axis rotation 0.5 degrees.

World Coordinates: The position and attitude of the end point of the tool with the center of the robot base as the origin.

Joint coordinate: The coordinate value of the motor coordinate converted by the mechanism coupling relationship.

# 2.3 Main screen and axis definition

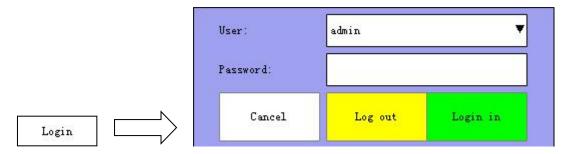
Status Display IO Monitor	Alar	m record button	
<b>W</b> PanelRobot			
Manual 🚯	I/O Records	sitest Alara	log super
		2016-11-07	16:16:27 星期一
Operation Program Settin Editing main V New M CMD Main Module	85 ▼ New Modu		← 🔝
	• New modu		
0:0 Program End	_		Edit
Speed display	Model numbe	er management	Account Login
Alarm content, information tips, world coord	dinate position joi	at coordinate position	display area
Alarm content, mormation tips, word coord			
Please press origin key and th	hen press st	art key to fi	nd origin 🔀
Editor S/H Insert Delete	U.	Down Fix Ind	lex Save
	e (1 57		
This line shows the location	of the world coo	ordinates	

## 2.3.1 Main screen description

This line shows the position of the joint

#### 1, Rights management

Login: Click "Login" to enter the login interface, first select the user type, enter the password, then click "login". To exit to the minimum privilege click on "Log out". Log in before you set up the system, because different user names have different administrative rights.



Operator (op): The permission can only be moved in the manual state can not enter the teaching page to teach the page, automatic state can start the robot, adjust speed, stop state can enter the home return.

Administrator (admin): This permission can only move the axis in the manual state can not enter the teaching page for teaching, automatic state can start the robot, adjust the speed, stop state can enter the home return.

(Super): The user can perform all the operations except for user management, the default login password 123456.

Super administrator (root): the user can perform all the operations under the default login password 12345678.

Permissions Size: Operator <Administrator <Administrator <Super Administrator

**2, I / O monitoring:** Click once to see I / O points and intermediate variable on-off state, click the second page retraction.

**3, Module number:** Click on the module number to enter the model management page can be "new", "load", "copy", "delete" specific methods of operation are as follows:

New program: in the new file name text box to enter the new model name, and then click "New" button, you can create a new model of the blank program, model name can enter letters and numbers.

Copying program: After entering a new name in the new module name text box, click the saved model name, and then click the [Copy] button to copy the stored model number program to the new model number program .

Load the program: Click the stored model number, and then click "Load" button, you can load the selected model number, run automatically when running the program.

Deleting a program: Click the stored module number, and then click the [Delete] button to delete the module. The currently loaded module can not be deleted.

Export program: Click the saved module number, and then click [export to U disk] button, you can export the selected model.

Import program: insert U disk to USB port of manual controller Click "Import from U disk" button, select the module to import. Click "Open" button and then "Load" to import the module.

**4, Alarm log:** click once will appear alarm log page, the page records the most recent alarm records, click the second page retraction.

### 2.4 Operating mode

The manipulator has manual, stop, automatic three states, the status selector switch to the left gear position for the manual state, in which the state of the robot manual operation. Rotate the status selector switch to the neutral position to stop the robot. In this state, the robot will stop all the movements and return to the home position. Rotate the status selector switch to the right position and press the "Start" button once, the robot will enter the automatic running state.

#### 2.4.1 Return to the origin

In order for the robot to operate correctly and automatically, the OPR operation is performed every time the power is turned on and stopped. The OPR operation will drive each axis of the robot to its home position.

#### Return to the origin operation method:

Condition 1: Operation flow without origin setting:

1. Move all axes to the home position in the manual mode.

2. In the stop state, go to [Parameter Setting]  $\rightarrow$  [Mechanical Setting]  $\rightarrow$  [Motor Parameter] page, click "Set as Origin" or "Set as Origin" button, and then click "Save Origin" button.

Condition 2: The flow of operation has been set to the origin:

Press the "OPEN" key in the stop state to display the selection dialog box as shown in the following figure. Select the option according to the actual situation (if you do not understand the options, please click the [Help] button) The robot starts the OPR operation.

"Display Help" Details:

□ Near the origin: The position is probably used in the vicinity.

□ Emergency shutdown before shutdown: only to determine the shutdown has been captured before the emergency stop can be used.

□ re-homing: has not returned in the vicinity of the origin of the time, once again when the original point of use.

Note: You can not perform manual, automatic operation and parameter setting for the robot during the OPR. In case of an emergency, press the [STOP] key to stop the OPR or press the [Emergency button] button.

# 3 Manual status

The hand control knob on the third gear hit the manual state into the following interface:

CanelRobot						
🕛 🖊 Ma	nual 🔥	)	1/0	Records:test	Alarm log	super
Operation	Program	Settin	igs		2016-11-07 16:19:	13 星期一
Editing main	▼ New M CMD	Main Module	▼.	New Module		
0:0 Progr	ram End					Edit
						, NC
		Manual k	eyboard bu	tton (this button i	s only displayed	in manual
Reference P	oint Edit butt	on (this but	on will on	y be displayed	if you are in m	nanual
mode)						
<b>♀</b> →						
Please pres	s origin l	key and t	hen pre	ss start ke	y to find c	origin <
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

### 3.1 Program

Modulus of the composition: a set of modules contains a main program and eight subroutines can be selected according to their actual use.

Program selection method: Pull down the "Edit" menu, select the program (click once that means selected).

Special subroutine: Subprogram 8, the program itself in the default subroutine 8, regardless of the state (automatic / manual / stop) will automatically run.

Tip: In the case of the program to teach to run automatically when the subroutine and the main program is running at the same time.

"Programmable Keys": You can program in a self-defined key name.

New Programmable Keys: Click "New Programmable Keys"  $\rightarrow$  Edit Key Name Click OK  $\rightarrow$  Pull Down "Edit" Menu Move the page up and down to find the programmable key, click once the name of the button has been edited into the teaching page teach.

Special programmable keys:

"ORIGINAL" If you perform homing in the stop mode (pressing the home key again to start), the system will execute the program that has been edited in the "Origin" key if the sequence of homing or other actions is instructed in this key.

"Reset" Pressing the [Reset] key once in the stop state, the system will execute the program which has been edited in the reset button.

Deleting Programmable Keys: Select the name of the button in the drop-down "Edit" and then click the [Delete Programmable Keys] button.

C Panel	Robot	onvol		1/0		ecords:ttt		Alarm log	
Ope	eration	anual Progr	am Se	ttings		ecords, tit		2016-11-04 11:2	29:37 星期五
Editing	main		M CMD Main M		V New	/ Module			
0:	Sub-1								
	Sub-2								
	Sub-3 Sub-4								
	Sub-5								
	Sub-6 Sub-7								
	Sub-8								
		ustom Origin							
	M CMD[1]:C	ustom Return							
<b>∀</b> ≁							-		
Plea	se pre	ss origi	in key and	1 then	press	start	key	to find	origin <
Edit	or S/H	Insert	Delete		Up	Down		Fix Index	Save

# 3.1.1 Programming interface

🌾 PanelRobot						
6	Manual 📑		I/O Re	cords:ttt	Alarm log	super
Operation	Program	Setti	ngs		2016-11-04 11:33:00	· 星期五 ← III
Editing main	▼ New M C	CMD Main Module	New New	Module		
0:1 X	:0 Speed:80.0 Delay:	:0.00				
1:2 Ү	:0 Speed:80.0 Delay:	:0.00				
2:3 Z	:0 Speed:80.0 Delay:	:0.00 ←	Program conte	ent		
3:0 Pr	rogram End					Edit
		nis number is th	e operator in th	e first few steps	s to	
Serial numb		sert this progra	m, if you need t	o click on the		
0-						
					1977 - 19	
Please pre	ess origin	key and t	hen press	start key	to find or	cigin 🧹
Editor S/H	Insert	Delete	Vp	Down	Fix Index	Save

"Trial": press this button, the program will run this step.

"Up": Click on the program to move to the previous line.

"DOWN": Click to move to the next line.

"Copy": Click the [Copy] button to pop up the contents of the selected copy of the selection box as shown below:



NOTE: The number entered in the "Selected Line" edit box indicates the program number

Copy the use case: Suppose you need to copy the program number 0 and 1, the procedure is as follows

Step 1: Click the Copy button, enter 1 in the "Selected Row" edit box and then click the [Copy Selected Row to Current Row] button.

0:0	X:0 Speed:80.0 Delay:0.00	1							
11	Y:0 Speed:80.0 Delay:0.00				Run	CVW	Paste	Edit	c/vc
2:2	Program End			Copy Curr	ent Line				
			Seq[1]	Copy Between Se	eq and Curre	nt			

Step 2: Select the next line you want to paste the program Click the [Paste]

button

4:2	Program End		Edi
3:1	¥:0 Speed:80.0 Delay:0.00		
2:0	X:0 Speed:80.0 Delay:0.00		
1:5	Y:0 Speed:80.0 Delay:0.00		
0:4	X:0 Speed:80.0 Delay:0.00	_Pasted after	

Note: If the copy of the "end of the module" sentence paste into the program is invalid.

"Paste": Paste the copied program in a single click.

"Modify": Click once to modify the program content from the new definition.

[Shield]: click that shield, if you want to cancel and then a "shield" can be.

"Delete": Click delete to delete the program.

"Collation No.": Click the number in the auto-finishing sequence.

### 3.1.2 Action menu

Click "Action" to enter the action type interface to teach, as shown below:

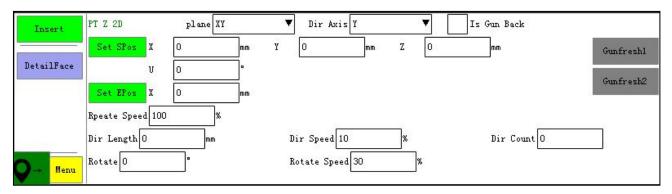
Action menu: The action menu contains 8 spray patterns and 17 basic actions. Click once on the "Open" menu and then the second "Close" menu.

🌾 PanelRobot						
6	Manual 🧯	10 ·	1/0	Records:ttt	Alarm log	super
Operatio	n Program	n Settin	ngs		2016-11-04 13:42:46	6 星期五 ← <b>[]]</b>
Editing main	Vew M	CMD Main Module	▼ 1	New Module		
0:0	X:O Speed:80.0 Delay	::0,00			Run CUW Paste	e Edit C/VC
1:1	Y:O Speed:80.0 Delay	:0.00			an alka	(
2:2	Program End					
Insert Menu		PT Z 2D FT Arc 2	PT Saw 2D PT Fare Saw	PT Are Dir DI	ne ceycle	Base CMD
Please p	ress origin	key and t	hen pres	s start key	to find o	rigin <
Editor S/H	Insert	Delete	Մբ	Down	Fix Index	Save

### 3.1.2.1 Spray mode

### Linear spraying action:

### 1,straight L-shaped



**Plane:** Pull down the triangular arrow to select the plane to spray.

**Dir axis:** Pull down the triangular arrow to select the axis to move.

Is gun back: After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

Set the starting point(Set Spos): in the manual state, move the axis to the starting point and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box.

**Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "Set EPos" button to set the coordinates of the end of the location of the edit box.

**Repeat Speed:** Sets the speed at which repetitive actions are performed.

Dir length: Set the length of the inch axis.

Dir speed Set the moving speed of the jog axis.

Cycles: Sets the number of action cycles.

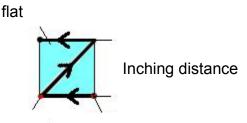
Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

**"Gun fresh1**" button: Click this button once to turn green atomization 1(Y014), oil volume 1(Y015), spray amplitude 1(Y016) These three output points will have the output (the corresponding output light will be on) And then click the button once to become gray.

Note: This button is here for the convenience of the user during debugging.

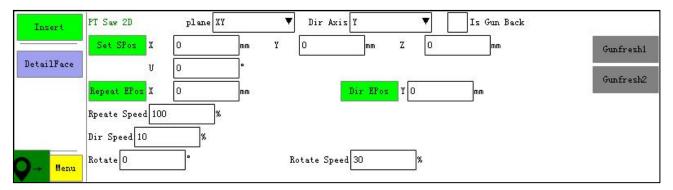
**"Gun fresh2"** Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding output light will be on) Once the button turns gray.



terminal point

starting point

### 2、Straight serrated



Plane: Pull down the triangular arrow to select the plane to spray.

**Dir axis:** Pull down the triangular arrow to select the axis to move.

**Is gun back:** After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

**Set the starting point(Set Spos):** in the manual state, move the axis to the starting point and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box.

**Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "set end point" button to set the coordinates of the end of the location of the edit box.

Repeat Speed: Sets the speed at which repetitive actions are performed.

Dir speed Set the moving speed of the jog axis.

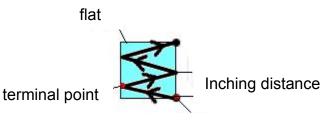
Cycles: Sets the number of action cycles.

Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

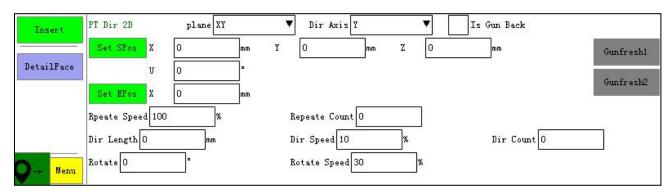
**"Gun fresh1**" button: Click this button once to turn green atomization 1(Y014), oil volume 1(Y015), spray amplitude 1(Y016) These three output points will have the output (the corresponding output light will be on) And then click the button once to become gray. Note: This button is here for the convenience of the user during debugging.

**"Gun fresh2**" Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding output light will be on) Once the button turns gray.



starting point

### 3、Linear motion



Plane: Pull down the triangular arrow to select the plane to spray.

**Dir axis:** Pull down the triangular arrow to select the axis to move.

Is gun back: After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

Set the starting point(Set Spos): in the manual state, move the axis to the starting point and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box. **Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "set end point" button to set the coordinates of the end of the location of the edit box.

**Repeat Speed:** Sets the speed at which repetitive actions are performed.

Rotate Count: Sets the number of reciprocating sprays.

Dir length: Set the length of the inch axis.

**Dir speed** Set the moving speed of the jog axis.

**Dir Count:** Sets the number of action cycles.

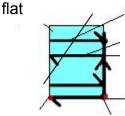
Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

"**Gun fresh1**" button: Click this button once to turn green atomization 1(Y014), oil volume 1(Y015), spray amplitude 1(Y016) These three output points will have the output (the corresponding output light will be on) And then click the button once to become gray. Note: This button is here for the convenience of the user during debugging.

**"Gun fresh2"** Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding output light will be on) Once the button turns gray.

The second spray on the same track

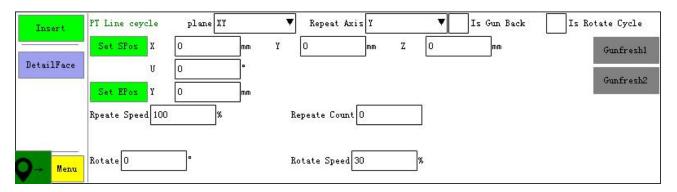


The first spraying Inching distance

terminal point

starting point

### 4、 Linear reciprocating type



Plane: Pull down the triangular arrow to select the plane to spray.

Dir axis: Pull down the triangular arrow to select the axis to move.

**Is gun back:** After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

Rotate Follow: When checked, the rotary axis is also rotated when the gun is sprayed.

Set the starting point(Set Spos): in the manual state, move the axis to the starting point and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box.

**Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "set end point" button to set the coordinates of the end of the location of the edit box.

**Repeat Speed:** Sets the speed at which repetitive actions are performed.

Rotate Count: Sets the number of reciprocating sprays.

Cycles: Sets the number of action cycles.

Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

"Gun fresh1" button: Click this button once to turn green atomization 1(Y014), oil volume

1(Y015), spray amplitude 1(Y016) These three output points will have the output (the

corresponding output light will be on) And then click the button once to become gray.

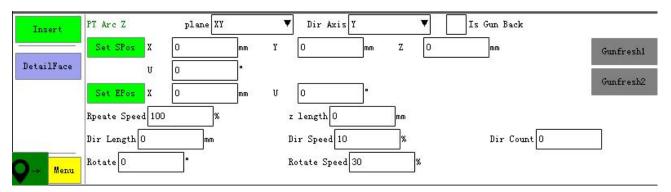
Note: This button is here for the convenience of the user during debugging.

**"Gun fresh2**" Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding

output light will be on) Once the button turns gray.

### **Curved spray action**

### 1、Curve Z-shape



Plane: Pull down the triangular arrow to select the plane to spray.

**Dir axis:** Pull down the triangular arrow to select the axis to move.

**Is gun back:** After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

**Set the starting point(Set Spos):** in the manual state, move the axis to the starting point and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box.

**Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "set end point" button to set the coordinates of the end of the location of the edit box.

**Repeat Speed:** Sets the speed at which repetitive actions are performed.

**z length:** the z length, the positive number is the convex arc, and the negative number is the concave arc.

Dir length: Set the length of the inch axis.

Dir speed :Set the moving speed of the jog axis.

Cycles: Sets the number of action cycles.

Rotate: Sets the angle at which the turntable rotates.

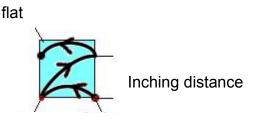
Rotate Speed: Sets the speed at which the dial rotates when it rotates.

**"Gun fresh1**" button: Click this button once to turn green atomization 1(Y014), oil volume 1(Y015), spray amplitude 1(Y016) These three output points will have the output (the

corresponding output light will be on) And then click the button once to become gray.

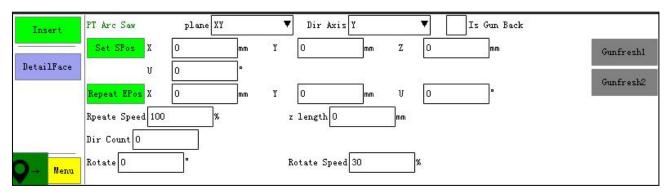
Note: This button is here for the convenience of the user during debugging.

**"Gun fresh2**" Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding output light will be on) Once the button turns gray.



terminal point starting point

### 2、Curve jagged



Plane: Pull down the triangular arrow to select the plane to spray.

**Dir axis:** Pull down the triangular arrow to select the axis to move.

**Is gun back:** After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

Set the starting point(Set Spos): in the manual state, move the axis to the starting point and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box.

**Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "set end point" button to set the coordinates of the end of the location of the edit box.

Repeat Speed: Sets the speed at which repetitive actions are performed.

**z length:** the z length, the positive number is the convex arc, and the negative number is the concave arc.

Cycles: Sets the number of action cycles.

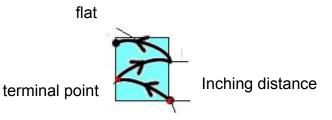
Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

**"Gun fresh1**" button: Click this button once to turn green atomization 1(Y014), oil volume 1(Y015), spray amplitude 1(Y016) These three output points will have the output (the corresponding output light will be on) And then click the button once to become gray.

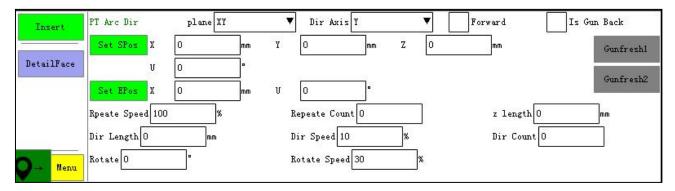
Note: This button is here for the convenience of the user during debugging.

**"Gun fresh2**" Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding output light will be on) Once the button turns gray.



starting point

### 3、Curve inching



Plane: Pull down the triangular arrow to select the plane to spray.

**Dir axis:** Pull down the triangular arrow to select the axis to move.

**Is gun back:** After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

Set the starting point(Set Spos): in the manual state, move the axis to the starting point

and then click "Set the starting point(Set Spos)" button to Set the starting point(Set Spos) of the coordinates of the location edit box.

**Set the end point(Set Epos):** In the manual state, move the axis to the end point and then click "set end point" button to set the coordinates of the end of the location of the edit box.

**Repeat Speed:** Sets the speed at which repetitive actions are performed.

**z length:** the z length, the positive number is the convex arc, and the negative number is the concave arc.

Dir length: Set the length of the inch axis.

Dir speed :Set the moving speed of the jog axis.

Cycles: Sets the number of action cycles.

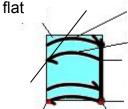
Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

**"Gun fresh1**" button: Click this button once to turn green atomization 1(Y014), oil volume 1(Y015), spray amplitude 1(Y016) These three output points will have the output (the corresponding output light will be on) And then click the button once to become gray.

Note: This button is here for the convenience of the user during debugging.

**"Gun fresh2**" Click this button once to turn green atomization 2(Y017), oil volume 2(Y020) spray amplitude 2 (Y021)These three output points will have the output (the corresponding output light will be on) Once the button turns gray.



The second spray on the same track

The first spray Inching distance

terminal point starting point

### DIY

Insert	DIY Action Set SPos X	Actions	 Y		Is Gun Ba	ck [	Is Rotat	e Cycle	Gunfreshl
DetailFace	υ	0							Gunfresh2
	N 0 10								
D→ Menu	Dir Count O Rotate O	•	I	Rotate Spee	ed 30	%			

**Action:** Drop-down Select the action that has been customized in the programmable buttons.

**Set the starting point(Set Spos):** in the manual state, move the axis to the target point and then click "Set the starting point(Set Spos)" button to teach the coordinates of the target point to the program.

**Is gun back:** After checking, it means that the axis of the control gun will return to the origin position and then go to the next starting point to finish spraying.

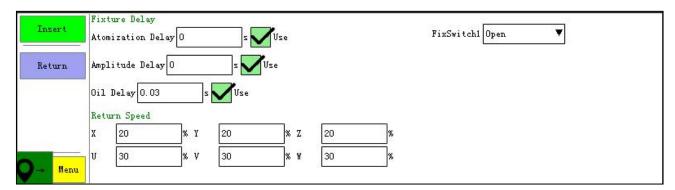
Rotate Follow: When checked, the rotary axis is also rotated when the gun is sprayed.

Cycles: Sets the number of action cycles.

Rotate: Sets the angle at which the turntable rotates.

Rotate Speed: Sets the speed at which the dial rotates when it rotates.

### Details of the interface parameters:



Atomization Delay: check the "use" to set the delay time after the atomization valve.

Anplitude Delay: check the "use" can be set after the Anplitude Delay delay time.

**Oil Delay:** Check this to "use" to set the delay time of the oil valve.

### FixSwich1:

1, the left(L): the gun moves to the left when the close to.

2,the right(R); gun: gun to move to the right to close it;

3,normally open(open): the gun is in full open state;

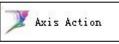
4, normally closed(close): the gun is always off;

5, bilateral: Close to both sides.

Return speed: It is used to set the speed for each axis to return to the starting point.

#### 3.1.2.2 Axis action

Click the



button to enter the following interface.

🌾 PanelRobot						<u>- 🗆 ×</u>
Ь 🖊	Manual 📑 🔒		I/0 R	ecords:ttt	Alarm log	super
Operation	Program	Setti	ngs		2016-11-04 15:52:3	8 星期五
Editing main	Vew M C	MD Main Module	▼ Nev	/ Module		
U.1 X	:U Speed:80.0 Delay:	0.00				
1:2 У	:0 Speed:80.0 Delay:	0.00				
2:3 S	ync Begin					
3:4 Z	:0 Speed:80.0 Delay:	0.00				
4:5 V	:O Speed:80.0 Delay:	0.00				
5:6 S	ync End					
6:0 P	rogram End					Edit
Insert	Set In 🗸	Sync Rel Poi	int			
Output Action	x	deg 80.0 %	0.00 s	de	eg 80.0 % 0.0	00 s
	У	deg 80.0 %	0.00 s S	ignal Stop X	010:X010 🛛 🔻	Fast Stop
Wait	Z	deg 80.0 %	0.00 s E	arly End Pos	)	343
Condition	ν 🗌	]deg 80.0 %	0.00 s	SD Pos	) <b>ESD</b> 10.0	*
♥→ Menu	v [	]deg 80.0 %	0.00 s	el		
Please pro	ess origin	key and t	hen press	start key	to find o	rigin <
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

**Note:** Clicking on the small box turns  $\sqrt{}$  to indicate that it is selected.

**Insert:** In the instruction page, select the location where you want to insert the action and choose to teach the action. Click Insert to insert the action into the program.

**Settings:** When the axis and the target location click "Settings" and then click "Insert" to teach the location of the target point to the program.

**Synchronization:** Select several axes and then select "Synchronize" the axis will be in motion at the same time movement.

"End Position": Inserting this step into teaching indicates that the next movement has started when the axis has not reached the target position when it reached the end position.

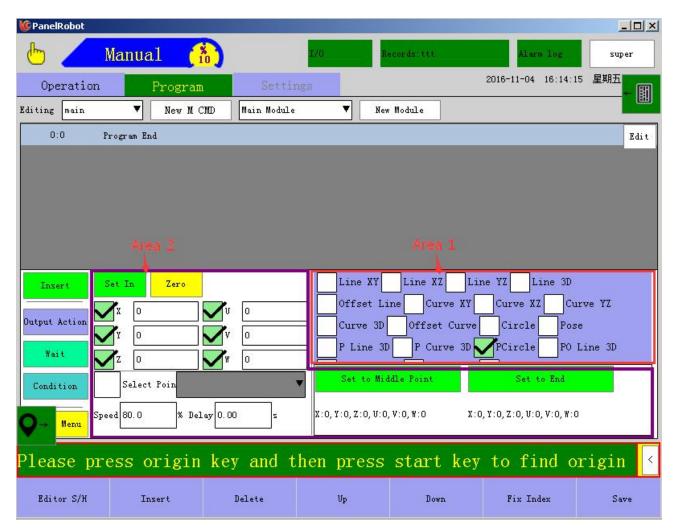
Use case: If the advance position is set to 200 and the position is set to 1000, the axis moves to the position of 800 (1000-200) and the next step is carried out, and the procedure continues to 1000.

"Advance Deceleration Position": Insert this step in the teachings to indicate that the axis will decelerate at the set speed when it reaches the advanced deceleration position. Use case: If the advance position is set to 200, the advance deceleration rate is 5%, the position is set to 1000, and the speed is set to 80%. Then the axis from 0-800 to 80% of the speed of operation, 800-1000 to 5% speed.

### 3.1.2.3 Path

Click the

button to enter the following interface.



### Area 1 is the type of action to insert:

Line 2D (Line XY, Line XZ, Line YZ): Holds the position in a plane from the current position to the "end point" position.

**Line 3D:** In the space, from the current position to "set to end" position to maintain a position to go straight.

**Curve 2D (Curve XZ, Curve XZ, Curve YZ):** Holds the arc in a plane from the current position to the position set to the intermediate point and the position set as the end point.

**Curve 3D:** In the space, from the current to "set to the middle point" position and "set to the end of the" position to maintain a position to take a curve.

**Posture:** from the current position into the target position.

Relative line: The current point as a starting point, the direction of the offset coordinates.

Relative Curve: The current point as a starting point, the direction of the offset coordinates.

**Posture straight line:** from the current point of conversion into the target position to "set the end" of the location of a straight line.

**Pose curve:** from the current point of change into the target position to "set to the middle point" and "set to the end" of the position to take the curve.

**Pose full circle:** from the current point of conversion into the target position to "set to the middle point" and "set to the end of the" circle.

**Free path:** no track movement, the movement of the axis at the same time moving simultaneously.

**Relative Joint:** Offset in the axial direction relative to the joint.

**Relative posture line:** Starting from the current point, U, V, W keep a posture in the direction of coordinate offset.

**Relative posture curve:** from the current point as a starting point, U, V, W to keep a posture in the direction of coordinate offset.

Full circle: Draws a circle with three known points.

#### Area 2 is to set the coordinates of the location method, set in two ways:

The first one: If it is the current manual control to display the coordinates of the coordinates of the edit position to edit the box you need to first hit the [set] button and then click [set the end] can be, if you want to zero is a direct click [Zero] button.

Second: use the reference point, check the reference point selection box 111 drop-down triangle arrows to select "point", and then click "set to the middle point" or "Set the end point(Set Epos)" button to replace the coordinates of the target point Coordinate value can be.

Reference point button Edit method:

Step 1: Check the box to use it.

Step 2: Click this icon in the lower left corner to open the reference point edit button interface, as shown below:

et In Jog Pos	FPO: (X:0, Y:0, Z:0, U:0, V:0, W:0)	
	LP1: (X:0, Y:0, Z:0, V:0, V:0, W:0)	
	DP2: (X:0, Y:0, Z:0, U:0, V:0, W:0)	
	]	
New Free		
New Locus		

Reference point role: to facilitate the user for the location of a point to re-use.

Note! : The free path can only refer to the joints, and the relative joints can only refer to the offset points. The rest of the action types can only refer to path points.

Points of the editing process:

Step 1: Position Instruction: Edit the value directly Move the axis to the target point and then click "Set World Position or "Set Joint Position" (choose according to the type of new point).

Step 2: Create a new point name in the Point Name dialog box.

Step 3: Click once to create a new type point (new node, the new path, the new offset point) to edit the point of editing a blank point to the dialog box.

Delete method: select the point you want to delete into a light blue and then click the "Delete" button.

Replace Location Method: Edit the "New Location" and click the "Replace Location" button to complete the replacement.

# 3.1.2.4 Output action



button to enter the following interface:

6	Manua	1		I/0	Records:ttt		Alarm log	_ 🗆 🗙
Operation	n I	Program	Settings	s		2016-11	1-04 16:28:01	星期五 ← []]
diting main	<b>v</b>	New M CMD	Main Module	¥	New Module			
0:0	Program End	1						Edit
Insert	¥	M						
					Tim	e Y		
	¥010	Normal YO	10 10	011	Tim Normal YO11	e Y	Normal	¥012
Path				1			Normal	
Path Wait	¥010	Normal YO	13 <b>1</b> YO	)14	Normal YO11	Y012	1	¥015
	Y010	Normal YO Normal YO	13 YO	014	Normal YO11 Normal YO14	Y012	Normal	Y015 Y020
Wait	Y010 Y013 Y016 Y021	Normal Y01 Normal Y01 Normal Y01 Normal Y02	13 10 16 10 21 10	014	Normal YO11 Normal YO14 Normal YO17	Y012 Y015 Y020	Normal Normal Normal	Y015 Y020
Wait	Y010 Y013 Y016 Y021	Normal Y01 Normal Y01 Normal Y01 Normal Y02	13 YO	)14 )17 )22	Normal Y011 Normal Y014 Normal Y017 Normal Y022	Y012 Y015 Y020 Y023	Normal Normal Normal	Y015 Y020 Y023
Wait Check	Y010 Y013 Y016 Y021 Y021	Normal YO1 Normal YO1 Normal YO2 Normal YO2	13 YO 16 YO 21 YO 	014	Normal Y011 Normal Y014 Normal Y017 Normal Y022	Y012 Y015 Y020 Y023	Normal Normal Normal	Y015 Y020 Y023

## 3.1.2.5 Check

Click the button to enter the following interface,On this page you can

select the valve to be tested.

🕼 PanelRobot					14444			146		
b 🦯 🛛	Manual			I/O	Re	ecords:ttt		Alar	n log	super
Operation	Pro	ogram	Setti	ngs				2016-11-04	16:31:15	星期五 ← []]
Editing main	▼ N	ew MICMD	Main Module	r.	▼ New	Module				
0:0 P	rogram End									Edit
Insert										
Path										
Wait										
Output Action										
		<b></b>								
♥ Menu	Start 🗸	End De	lay: 0.0	s						
Please pro	ess ori	gin key	v and t	hen j	press	start	key	to fi	nd or	igin 🤞
Editor S/H	Insert		Delete		Մթ	Down		Fix Ind	lex	Save

## 3.1.2.6 Condition

Click the



button to enter the following interface:

🎯 PanelRobot	te contra contra de la					
Ь 🦯	Manual 🕺 👫	)	I/0 R	ecords:ttt	Alarm log	super
Operation	Program	Settin	igs		2016-11-04 16:34:	11 星期五
Editing main	Vew M C	D Main Module	▼ Nev	Module		
0:0 F.	lag[0]:111					
1:1 X	:44.000 Speed:80.0 De	elay:0.00				
2:3 0	utput:YO300N Delay:0.	0				
3:4 I	F:Y0130N Limit:1.0 G	o to Flag[0]:111				
4:2 Y	:0 Speed:80.0 Delay:(	), 00			Run CUW Past	e Edit C/UC
5:5 P	rogram End				,	
Insert		se Flag X	Mem Ju	np		
Path	Y010:Y010		Y011:Y011		Y012:Y012	
Output Action	Y013:Y013		Y014:Y014		Y015: Y015	
Check	Y016:Y016		Y017:Y017		Y020 : Y020	
	Y021 : Y021		1022:1022		Y023 : Y023	
♥→ Menu		F Limit	: 1.0 s	Flag		<b>•</b>
Please pre	ess origin	key and t	hen press	start key	to find c	origin <
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

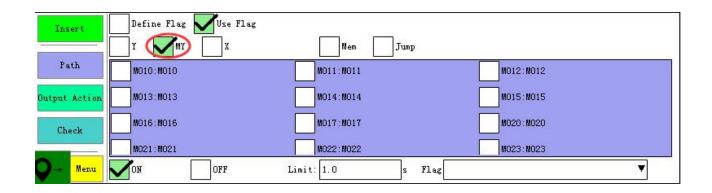
How to use labels:

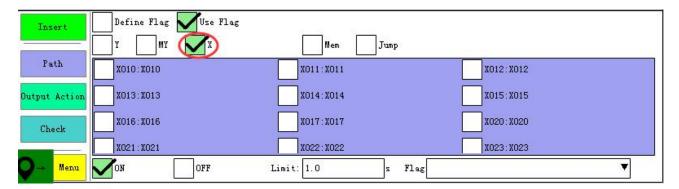
1, check the  $\sqrt{}$  definition label "option, click the label edit box" label \_\_\_\_\_ "pop-up keyboard edit name.

2, in the program need to jump into the location of the previous step from the good tag name.

3, check  $\sqrt{}$  "use labels" option to enter the condition selection interface:

Insert	Define Flag	Mem Jump	
Path	Y010: Y010	Y011:Y011	Y012:Y012
Output Action	<b>V</b> 013: Y013	Y014: Y014	Y015:Y015
Check	Y016: Y016	Y017: Y017	Y020 : Y020
	¥021 : Y021	¥022: ¥022	¥023 : ¥023
$\bigcirc \rightarrow $ Menu	OFF OFF	Limit: 1.0 s Flag	





Insert	Define Flag Y MY X Jump
Path Output Action	Const Data Left Addr: startPos 0 size 32 baseAddr 1 decimal 0
Check	Right Data:
$\bigcirc \rightarrow $ Menu	Limit: 1.0 s Flag

Insert	Define Flag Y MY X Mem Jump	
Path		
Output Action		
Check		
Q→ Menu	OFF Limit: 1.0 s Flag	▼

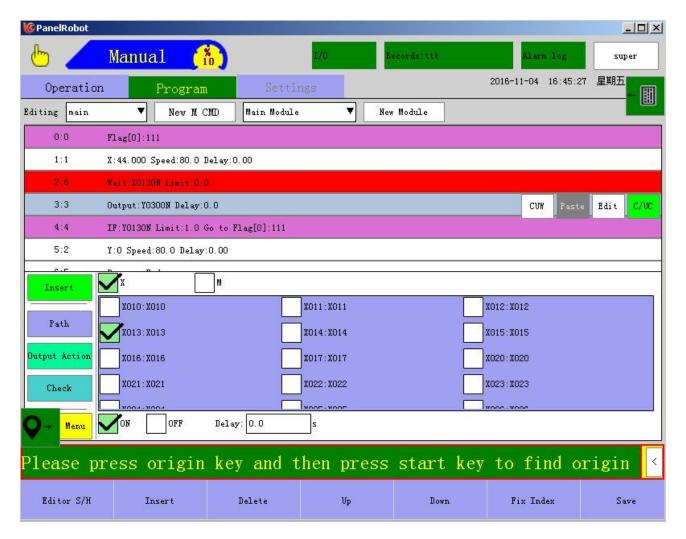
 $1_{\times}$  Edit the conditions in the need to insert the location after click [insert] button.

#### 3.1.2.7 Wait

Click the



button to enter the following interface:



Wait for signal insertion method: select the type of wait point  $\rightarrow$  select the wait point of the off  $\rightarrow$  set the delay time  $\rightarrow$  click "Save" button  $\rightarrow$  instruction page in the need to insert the location of the next click "insert".

Remark: When the action is executed to this step, the system will alarm if the output is not ON or OFF within the set waiting time.

## 3.1.2.8 Counter

Click the

button to enter the following interface:

@PanelRobot	Manual 🔒	•	I/0 R	scords:ttt	Alarm log	_OX
Operation	n Program	Setti	ngs		2016-11-04 16:46:4	48 星期五 ← III
diting main	▼ New M C	MD Main Module	▼ Nev	Module		
1:1	Fiagl0]:111 X:44.000 Speed:80.0 I	)elay:0.00				
2.6	Wait:X0130W Limit:0.0	i.				
3:3	Output:Y0300N Delay:0	). O				
4:7	Plus 1Counter[0][T:5]	[[C:1]:1			CVW Past	e Edit C/UC
5:4	IF:Y0130N Limit:1.0	Go to Flag[0]:111				
6:2	Y:O Speed:80.0 Delay:	0.00 Nam	- Cu	rrent Target		
Insert Path	Set Counter	0:1	1	5	1 New Delete	
Wait Condition						
lease p	ress origin	key and t	hen press	start key	to find c	rigin
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

Counter category: plus 1 counter type zero-type counter.

New counter method: Select the counter type  $\rightarrow$  new counter name  $\rightarrow$  click the "new"

button  $\rightarrow$  click "save" button  $\rightarrow$  complete.

Current: The current counter count value, the value can be set according to the user's actual situation.

If the current value of the counter is set to 2, the robot will start from the second object and start to stack the second object. If the counter is defined by the current value, .

Target: The target output for the counter.

## 3.1.2.9 Sync

Click tl		utton to ente	r the following	interface:		
🌾 PanelRobot					_	
6	Manual 🦕		I/O R	ecords:ttt	Alarm log	super
Operation	n Program	Setti	ngs		2016-11-04 16:47:5	77 星期五
Editing main	Vew M	CMD Main Modul	e 🔻 Nev	Module		
0:12	X:10.000 Speed:80.0	Delay:0.00				
1:13	Y:22.000 Speed:80.0	Delay:0.00				
2:14	Sync Begin					
3:15	X:0.000 Speed:80.0 D	elay:0.00				
4:16	Y:0.000 Speed:80.0 D	elay:0.00				
5:17	Sync End					
Insert Menu	Sync Begin					
Please p	ress origin	key and	then press	start key	to find o	rigin <
Editor S/H	Insert	Delete	Ψp	Down	Fix Index	Save

Inserting a sync start and a sync end before and after a program indicates that the program is combined to move simultaneously.

Note: 1, synchronization can not be nested with each other.

2, jump can not use the synchronization function.

3, the beginning of synchronization and synchronization of the end of certain

combinations appear, there must be synchronized to start teaching a synchronous end.

### 3.1.2.10 Comment

Click the

Comment

button to enter the following interface:

Note that the meaning of the mark, when the user teaches a lot of programs if too much looks will look messy, then the different procedures before and after the corresponding comments to facilitate the search problem.

🌾 PanelRobot						
6	Manual 📢		I/O R	ecords:ttt	Alarm log	super
Operation	Program	Setti	ngs		2016-11-04 16:52:0	22 星期五
Editing main	New M C	MD Main Module	e 🔻 New	Module		
<b>#</b> 0:18	pos 00000000000					
1:12	X:10.000 Speed:80.0 I	)elay:0.00			Run CVW Past	e Edit C/UC
2:13	Y:22.000 Speed:80.0 I	)elay:0.00			nn	
3:14	Sync Begin					
4:15	X:0.000 Speed:80.0 De	elay:0.00				
5:16	Y:0.000 Speed:80.0 De	elay:0.00				
C+17	omment:					
Insert	os 0000000000 zo					
O→ Menu						
V → Menu						]
Please p	ress origin	key and t	then press	start key	to find c	rigin <
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

Note Edit method: in the blank click into the name edit box  $\rightarrow$  edit the name and click "Save" key  $\rightarrow$  select the location to insert the next line, click "insert".

## 3.1.2.11 Stack

Click

Stack

button to enter the stack edit page, as shown below:

PanelRobot	Manual 👫		1/0	Records:ttt		Alarm log	X
Operation	Program	Setti	ngs		:	2016-11-04 16:55	:49 星期五
Editing main	▼ New M C	D Main Module	• 🔻	New Module			
0:5 P1	rogram End						Edit
Insert	Use Stack 🗸 Def	ine Stack		▼ New			
Output Action							
Path	Normal	Box		Data Source			
							>
Counter							
♥→ Menu			- <u>.</u>		8		
Please pre	ess origin	key and t	then pre	ss start	key	to find	origin <
Editor S/H	Insert	Delete	Up	Down		Fix Index	Save

Stacking type classification:1,Normal; 2,Box;3,Data Source

### **Normal stacking**

General stacking can be divided into two categories: rectangular shape, as the name suggests can be square out of the items; offset stack, can be stacked into a diamond shape can also be stacked on a slope (Z-axis offset).

#### Stacked rectangular shape of the operation method:

1, first click the "New" button to create a new stack name or open the file name has been built.

2, click " $\rightarrow$ " to enter the stack editing interface.

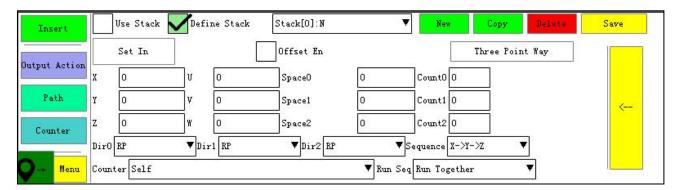
3, Set the starting point coordinates and spacing.

#### There are two ways to set up:

Use the three-point method to set: three-point method is to use has been set to

automatically calculate the three points offset, spacing.

The first step, in the manual state click "three-point method set" button to enter the edit page shown below.



In the second step, move the robot to the starting position of the stack and then click the "Set In" button to set the current coordinate value into the coordinates edit box of each axis.

In the third step, move the manipulator to the next point in the X1 axis direction and then click the [Set] button to set the coordinate value to the X1, Y1 coordinates edit box. Then move the robot to the next point in the Y1 axis direction and then click the [Set] button to set the coordinate value to the X1, Y1 coordinates edit box.

Step 4 Click the [OK] button to return to the previous page for other settings.

Do not use the three-point method: Calculate the spacing manually.

In the first step, enter the interface as shown in the figure below. Move the robot to the stacking start point manually and then click the [Set] button to set the current coordinate value to the coordinate edit box of each axis.

In the second step, manually measure the spacing between the points in each axis and edit the spacing values into the corresponding edit boxes.

In the third step, set the direction of stacking of each axis, and the positive direction refers to the direction of the axis position + (press the axis button on the hand controller to identify the direction of the axis position).

5, set the stack count, order, counter and run the order, the interface as shown below:

		Set In			Offset En	Offse	t Z with Y	Three Po	int Way	
put Action	x	0	Ju	0	X Offset	0.000	SpaceO	0.000	Count0 0	
Path	Y	0	v	0	Y Offset	0.000	Space1	0.000	Count1 0	
ounter	z	0	W	0	Z Offset	0	Space2	0	Count20	
	DirC	PP	▼D:	ir1 PP	▼Dir2	RP	▼ Sequence	X->X->Z	¥	

Count: Set the number of heap points on the axis.

Run Sequence: Sets the order in which each axis is stacked.

Counter selection: "self" means that the program runs a mode, the system default counter has been increased by 1; custom counter (in the action menu -> [counter] to set).

6, edit the data and click [Save] button.

7, playing  $\sqrt{}$  "using the stack" in the "stack" in the choice of using the stack, and set the stack speed, choose a good location in the program click on "set" to edit the stack to teach.

8, if the use of custom counters to be inserted in the process of teaching the stack counter plus 1 otherwise the counter does not count.

## The offset heap method of operation:

The use of offset stacks can be piled into a diamond shape or stacked on a sloped surface (Z-axis offset)

1, first click the "New" button to create a new stack name or open the file name has been built.

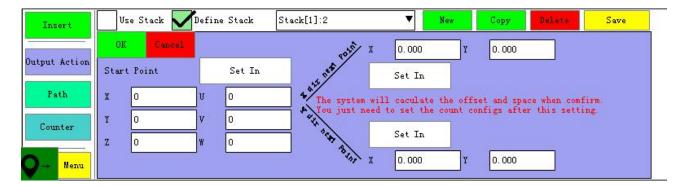
2, click " $\rightarrow$ " to enter the stack editing interface.

- 3. Check the [Use Offset] option
- 4, Set the starting point coordinates and spacing.

Diamond-shaped heap when the starting point and spacing of the set there are two ways:

**Use the three-point method to set:** three-point method is to use has been set to automatically calculate the three points offset and distance.

The first step, in the manual state click "three-point method set" button to enter the edit page shown below.



**In the second step**, move the robot to the starting position of the stack and then click the [Set] button to set the current coordinate value into the coordinates edit box of each axis. **In the third step**, move the manipulator to the next point in the X1 axis direction and then click the [Set] button to set the coordinate value to the X1, Y1 coordinates edit box. Then move the robot to the next point in the Y1 axis direction and then click the [Set] button to set

the coordinate value to the X1, Y1 coordinates edit box.

Step 4 Click the [OK] button to return to the previous page for other settings.

**Not using the three-point method:** manually calculate the offset distance and spacing of the axis.

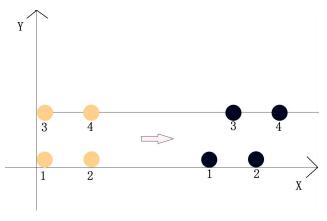
In the first step, enter the interface as shown in the figure below. Move the robot to the stacking start point manually and then click the [Set] button to set the current coordinate value to the coordinate edit box of each axis.

In the second step, manually measure the distance and offset between points in each axis and edit the spacing and offset values into the corresponding edit boxes.

**The third step** is to set the stacking direction of each axis, and the positive direction refers to the direction of the axis position + (press the axis key on the hand controller to identify) the reverse refers to the direction of the axis position.

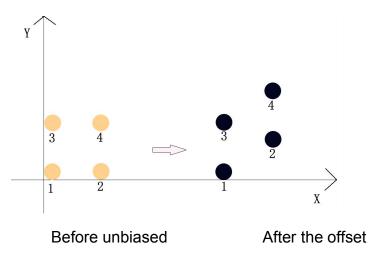
X, Y offset effect map:

The effect of the X offset is shown below, with the left unbiased and the right shifted by the X offset.



Before unbiased After the offset

The effect of the Y offset is shown below, with the left unbiased and the right shifted by X offset.



#### Inclined pile starting point, pitch setting mode:

**The first step** is to move the manipulator to the stack start position manually and then click the [Set] button to set the current coordinate value to the coordinates edit box for each axis.

In the second step, set the offset distance in the Z direction (default is Z in the X direction).

If you want to offset Z in the Y direction, check the [Y direction offset Z] option.

The third step, set the stacking direction, count, order, counter and run the order.

**Direction:** Direction, direction of axis position +, direction of minus axis, axis direction.

**Count**: Sets the number of points to be stacked on the axis.

Run Sequence: Sets the order in which each axis is stacked.

**Counter selection:** "self" means that the program runs a mode, the system default counter has been increased by 1; custom counter (in the action menu -> [counter] to set).

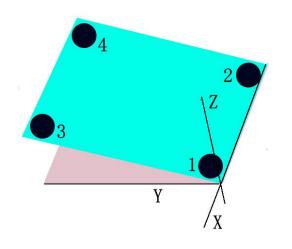
The fourth step, edit the data and click [Save] button.

**The fifth step,** playing  $\sqrt{}$  "using the stack" in the "stack" in the choice of using the stack, and set the stacking speed, choose a good location in the program click on "Settings" to edit the stack to teach.

**The sixth step,** if you use a custom counter to be inserted in the process of teaching the stack counter plus 1 or counter does not count.

## Slope offset Stacking Example:

Suppose you need to pile up four circles in the following heap position .



# Teaching Page Setup:

iting main	▼	New M CMD	ain Module 🛛 🔻	New Module		
0:3	Flag[0]:0000					
1:1	NormalStack[O Counter[O][T:	)]:N Speed:80.0 4][C:0]:444				
2:2	Plus 1Counter	·[0][T:4][C:0]:444	1			
3:5	Output: YO210N	V Delay:0.0				
4:4	IF:Counter[0]	[T:4][C:0]:444 Ar:	rive Go to Flag[0]:00	000.		
5:0	Program End					E
Insert	Use Stack	Define Stack	Stack[0]:N	▼ Net	« Сору I	lelete Save
	Set In		Offset En	Offset Z with Y	Three Point Wa	ay
tput Action	x o	υ ο	X Offset O	Space0	0 Co1	un t0 2
Path	¥ О	v	Y Offset 0	Space1	0 Cor	unt1 2 🦳
Counter	z O		Z Offset 10.00	00 Space2	10.000 Con	unt21
	Dir0 PP	▼Dir1 PP	▼Dir2 RP	▼ Sequence	x->y->z 🔻	
Counter						int2 1

Note: 1, because the counter is selected from the definition of the technology will need to teach more than one stack after the counter plus 1

2, if the counter is full, such as after the start of the new conditions, the need to use

conditions to clear the jump, conditional Jump page settings as shown

below:

Editing main	▼ New M CMD Main Module ▼ New Module	
0:3	Flag[0]:0000	
1:1	NormalStack[0]:N Speed:80.0 Counter[0][T:4][C:0]:444	
2:2	Plus 1Counter[0][T:4][C:0]:444	
3:5	Output:Y0210N Delay:0.0	
4:4	IF:Counter[0][T:4][C:0]:444 Arrive Go to Flag[0]:0000.	
5:0	Program End	Edit
Insert Path Output Action Check	Define Flag Y MY X Counter Mem Jump Counter[0][T:4][C:0]::444	
Q→ Menu	✓>=T Auto Clear Flag[Flag[0]:0000	10

Boxing and in-box stacking

Packing and in-box stacking Method of use:

- 1, select the "box and box stacking" option.
- 2, click " $\rightarrow$ " to enter the stack editing interface.

3, first click the "New" button to create a new stack name.

4, in this interface set up under the first box, the spacing between products, quantity, order, direction, and the choice of counter.

5, click " $\rightarrow$ " to enter the next editing interface This interface is set between each stacking box spacing, number, order, direction and the choice of counter.

- 6, set all the data Click the Save button.
- 7, playing  $\sqrt{}$ " "use stack "stack" in which to choose which stack, and set the stack speed,

select a good location in the program click on "set" to edit the stack to teach.

"Use Offset": When selected, offset the previous stack point by the set distance.

🌾 PanelRobot								
6	Manua	1 🔥	A 1	I/0 I	lecords:test	Alarm	log	super
Operati	on <b>a</b>	Program	Settings			2016-11-07	15:40:08 🛓	ÊĦ─ ← []]
Editing main	•	New M CMD	Main Module	V Ne	w Module			
0:0	Program En	d						Edit
Insert	Use Stad	ck 🔽 Define :	Stack Stack[1]	: BOX-BOX	▼ New	Copy De.	lete :	Save
	Set In		Offset	En		Three Point Way	•	
Output Action	x o	νο	SpaceO	0	CountO 2	16.0		
Path	у О	v o	Space1	0	Count1 2			>
Counter	z o	¥ [0	Space2					
and the second sec	Dir0 PP	▼Dir1 P	P This	-21 RP				
	Counter Coun			r2 RP	▼Sequence X->			
Q→ Menu		ter[0][T:4][C:0	]:444	▼ Ru	n Seq Run Togeth	her <b>V</b>		
		ter[0][T:4][C:0	]:444	▼ Ru	n Seq Run Togeth		nd ori	gin <
	press o	ter[0][T:4][C:0	]:444	▼ Ru	n Seq Run Togeth	her <b>V</b>		gin < Save
Please	press o	ter[0][T:4][C:0	ey and the	en press	start k	her ▼ ∢ey to fin		
Please	press o	ter[0][T:4][C:0	ey and the	en press	start k	her ▼ ∢ey to fin		
Please	press o	ter[0][T:4][C:0	ey and the	en press	start k	her ▼ ∢ey to fin		
Please Editor S/H	press o	ter[0][T:4][C:0]	I:444 by and the Delete	▼Ru en press Up	n Seq Run Togeth start k Down	her V Key to fil Fix Ind	lex	Save
Please	press o In	ter[0][T:4][C:0	Delete Stack Stack[1]	Run en press Up Up Up Up Up	start k	her V Key to fil Fix Ind Copy	elete	
Please Editor S/H	Dress O In: Use Stac Set In	ter[0][T:4][C:0]	Delete	Run en press Up Up Up Up Up	n Seq Run Togeth start k Down	her V Key to fil Fix Ind	elete	Save
Please Editor S/H	press o In	ter[0][T:4][C:0 rigin ke sert	Delete Stack Stack[1]	Run en press Up Up Up Up Up	n Seq Run Togeth start k Down	her V Key to fil Fix Ind Copy	elete	Save
Please Editor S/H Insert Output Action Path	Dress O In Use Stac Set In SpaceO	ter[0][T:4][C:0 rigin k ( sert	I:444 Delete Stack Stack[1] Offset Count0	Run en press Up Up Up Up Up	n Seq Run Togeth start k Down	her V Key to fil Fix Ind Copy	elete	Save
Please Editor S/H Insert Dutput Action	Dress o In: Use Stac Set In SpaceO Space1	ter[0][T:4][C:0 rigin k ( sert	I:444 Delete Stack Stack[1] Offset Count0 Count1 Count2 O	Run en press Up Up Up Up Up	n Seq Run Togeth start k Down	her        Key to fil       Fix Inde       Copy       Three Point Way	elete	Save

## Data source stacking

Data source stack usage:

- 1, select the "data source stack" option.
- 2, first click the "New" button to create a new stack name.
- 3, click " $\rightarrow$ " to enter the stack editing interface.

4, select the data source type, the data source type is divided into two types of irregular points (for irregular stacking), such as select this and then click "Edit Point" into the edit point box on the specific editing specific user ID.

5, playing  $\sqrt{}$ " "use stack "stack" in which to choose which stack to use, and set the stack speed, select a good location in the program click on "set" to edit the stack to teach.

<b>W</b> PanelRobot					240	<u>_</u> _×
Ь 🖊	Manual 🔒		1/0 Re	cords:test	Alarm log	super
Operation	Program	Setting	gs		2016-11-07 15:42:0	○ 星期一
Editing main	▼ New M C	MD Main Module	▼ New	Module		
0:0	Program End					Edit
Insert	Vse Stack 🗸 Def	ine Stack		▼ New		
Output Action						
Path	Normal	Box	Data :	Source		>
Counter						
♥→ Menu						
Please pi	ress origin	key and th	nen press	start key	v to find o	rigin 🧹
Editor S/H	Insert	Delete	Vp	Down	Fix Index	Save

Insert	Use Stack 🗹 Define	Stack Stack[2]:SD	<b>Vew</b>	Сору	Delete	Save
	Edit Pos		Offset Z with Y			
Output Action	Data Source Custom Pos				▼	
Path	Counter Counter [0] [T:4] [C:0	]:444	▼Run Seq Run Toge	ther	▼	<
Counter						
Q→ Menu						

Data source type option "irregular points" and then click "edit point" button to enter the point editing interface as shown below:

Set In	Total:6 Sync Replace	Close
20.000	1: (X:0, Y:0, Z:0, V:0, V:0, W:0)	
52.000	2: (X:20, 000, Y:0, Z:0, V:0, V:0, W:0)	
6.000	3: (X:20.000, Y:52.000, Z:0, V:0, V:0, W:0)	
99.000	4: (X:20,000, Y:52,000, Z:6,000, U:0, V:0, W:0)	
77.000		
5.000	5: (X:20,000, Y:52,000, Z:6,000, U:99,000, V:0, W:0)	
New	6: (X:20,000, Y:52,000, Z:6,000, V:99,000, V:77,000, W:5,000)	
Save		
	Point Name: 6 Delete	Replace

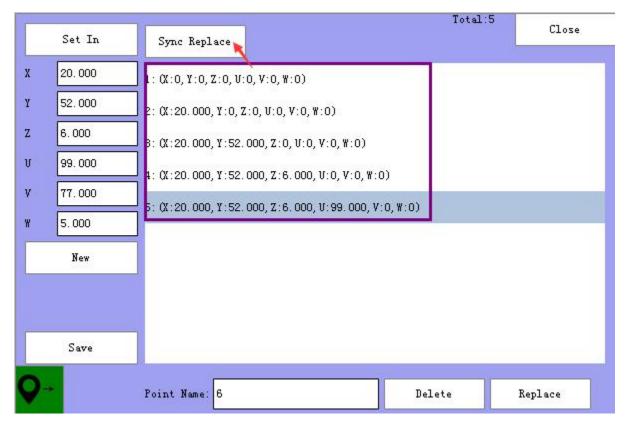
"Replace position": Click the edited position Click "Replace position" button to replace the old coordinate position with the current position.

"Synchronization Replacement": If the user has the position drawing and the starting coordinate of the drawing is inconsistent with the origin coordinate of the manipulator, it can be easily set in the irregular point by synchronous replacement.

Here's how:

1, first edit the target points Assumptions need to edit the five points as

follows:



2. Click the first point to change the coordinate value of the current point to the coordinate value of the origin (first point) of the drawing, and then click the [Save] button, as shown in the following figure:

Dedicated user ID display interface:

Insert	Use Stack Define Stack Stack[2]:SD 🔹 New Copy Delete	Save
	Pos And Cmp Only Cmp Offset Z with Y	
Output Action	Data Source www.geforcevision.com.cam::GeforceVision-Cam::[HID:100]	
Path	Counter [0][T:4][C:0]:444 ▼ Run Seq Run Together ▼	<
Counter		
counter		
🔾 → Menu		

# 3.1.2.12 Custom Alarm

Click

Custom Alarm

button to enter the following interface:

🌾 PanelRobot						
6	Manual 😽	0	I/O Re	cords:ttt	Alarm log	super
Operation	Program	Settin	ngs		2016-11-04 17:06:1	11 星期五
Editing main	Vew M C	MD Main Module	▼ New	Module		
	NormalStack[0]:1 Spec Counter[1][T:8][C:0]				CVW Past	e Edit C/UC
1:19 P	Plus 1Counter[1][T:8]	][C:0]:2				
2:23 A	Alarm:5004:5004					
3:5 P	Program End					
Insert 500	00: 5000					
	01: 5001					
	02: 5002					
	03: 5003					
	04: 5004					
	05: 5005 06: 5006					
	07: 5007					
Menu Menu	00: 5000					
Please pr	ess origin	key and t	hen press	start key	to find c	rigin <
Editor S/H	Insert	Delete	Մբ	Down	Fix Index	Save

#### 3.1.2.13 Module

Click



button to enter the following interface:

🌾 Paneli	Robot								
Ь		Manua	1 🔥		1/0	Records:ttt		Alarm log	super
Ope	ratio	n I	Program	Setti	ngs			2016-11-04 17:10	0:11 星期五
Editing	main	▼ [	New M CMD	Fun[0]:www	¥	New Module			
0:	4	X:22.000 Sp	peed:80.0 Dels	y:0.00					
1:	8	Call Fun[0]	]:www And then	return to next	line				
2:	5	Y:66.000 Sp	peed:80.0 Dels	y:0.00					
3:	6	Z:44.000 Sp	peed:80.0 Dels	y:0.00					
4:	0	Module End							Edit
Inse	rts	Call Module	Fun[0]:w	**	¥				
		Return To Fla	ag Next Lin	e	•				
									I
Q→	Menu								
Plea:	se p	ress o	rigin k	ey and t	hen pr	ess start	key	to find	origin <
Edit	or S/H	Ins	sert	Delete	Up	Dow	n	Fix Index	Save

Module New: Click "New Module" button  $\rightarrow$  New Module Name  $\rightarrow$  [Save]  $\rightarrow$  In the current module to teach into the program  $\rightarrow$  "Save"

Deleting a module: Pull down the module menu, select the module name and click the [Delete module] button.

Module Insert Method: Pull down the "Call Module" menu Select the module to be called  $\rightarrow$ Pull down the "Return Label" menu Select the return type (Note: If you select the label type, define the label and insert it in advance)  $\rightarrow$  Select The next step of the location click [insert] can.

## 3.1.2.14 Vision

Click Click butt

button to enter the following interface:

🌾 PanelRobot						-D×
6	Manual 🚺		I/0 R	ecords; ttt	Alarm log	super
Operation	Program	Settin	igs		2016-11-04 17:36:52	2 星期五 ← []]
Editing main	▼ New M C	MD Fun[0]:www	Ver New	v Module		
0:0 M	odule End					Edit
Insert	a Source				•	
	Catch Wait Data					
	_ mait Data					
Q→ Menu						
Please pre	ess origin	key and t	hen press	start key	to find o	rigin <
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

## 3.1.2.15 Path speed

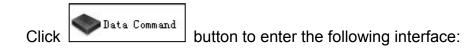
Click

button to enter the following interface:

🌾 PanelRobot						
b 🖊 I	lanual 🛛 🚺		I/O R	ecords:ttt	Alarm log	super
Operation	Program	Setti	ngs		2016-11-04 17:37:1	5 星期五
Editing main	▼ New M C	MD Fun[0]:www	▼ Nev	v Module		
0:0 M	odule End					Edit
Pat	n Speed:					
Sta	rt Speed	%				
End	Speed	%				
♥→ Menu						
Please pro	ess origin	key and t	then press	start key	to find o	rigin <
Editor S/H	Insert	Delete	Vp	Down	Fix Index	Save

Scope: applies only to the line in the path and curve type of movement.

# 3.1.2.16 Data command



6 PanelRobot						
6	Manual 🚮		I/O R	ecords:ttt	Alarm log	super
Operation	Program	Setti	ngs		2016-11-04 17:38:13	星期五 
Editing main	▼ New M C	MD Fun[0]:www	▼ New	/ Module		
0:0 M	odule End					Edit
						in an
Insert	Const Data	Addr Data				
Add	r Target: startPos 🛛	size 🕄	32 baseAd	dr 1 dec	rimal 0	
Dat	a: 0					
	<b>-</b> = _+==	x=+=				
♥→ Menu						
Please pro	ess origin	key and t	hen press	start key	to find or	igin <
Editor S/H	Insert	Delete	Vp	Down	Fix Index	Save

### 3.1.2.17 Origin

Click

button to enter the following interface:

PanelRobot	Manual 🔒		I/O R	eerds)ttt	Alarm log	X
Operation	Program	Settin	ngs		2016-11-04 17:40:2	4 星期五
Editing main	Vew M C	MD Fun[0]:www	V New	Module		
0:0 M	odule End					Edit
						174
	X Typel	<b>1</b> 80.0 % 0.00	) s W	Type1 ▼ 80.0	) % (0.00 );	5
Insert	Y Typel V				n <u>[20220</u>	
	Z Typel					
	]					
	JV Type1					
	V Type1	80.0 % 0.00	2			
Q→ Menu						
Please pro	ess origin	key and t	hen press	start key	to find o	rigin 🧹
Editor S/H	Insert	Delete	Vp	Down	Fix Index	Save

Function of origin command: In this interface, you can set the sequence and speed of axis homing.

Must be M CMD[0]:Custom Origin edited in this programmable button (pull down the "Edit" triangle button to select)

Insert Description:

1, inserted in the order of teaching represents the homecoming order.

2, set the speed of the axis back to the origin (Note: the speed of the origin should not be too fast to avoid collision).

3, insert the synchronization in the program start and end of the synchronization can be homogenized at the same time the axis action. 4, set up after you remember to save the data.

## 3.1.2.18 Extent

Click •••Extent button to enter the following interface:

🌾 PanelRobot						
6	lanual 👫		I/0 R	ecords:ttt	Alarm log	super
Operation	Program	Settin	ngs		2016-11-04 17:40:45	5 星期五 ← []]
Editing main	Vew M CI	D Fun[0]:www	▼ Nev	v Module		
0:0 M	odule End					Edit
Insert 🗸	Axis Ply Anal	og Control	Axis Sel	×.		
	 ]Delta Jump Control		AxisFly Pos1	0.000	Set In	
	]		AxisFly Pos2	0.000	Set In	
	Safe Range Control	Single Stack	AxisFly Speed	80.0 %		
			AxisFyl Num	1 Times		
			Delay	0.00 s		
♥→ Menu						
Please pre	ess origin	key and t	hen press	start key	to find o	rigin <
Editor S/H	Insert	Delete	Up	Down	Fix Index	Save

Analog control: After selecting the check box, you can set the analog quantity. (Tip 1: Enable the analog input before using this function.) Note 2: The adjustment of the analog quantity can be operated by the "Cycle, Output Counter" button in the automatic mode.

Channel: The system supports up to 6 channels.

Delay: Set the analog delay time.

# 3.2 Manual operation

## 3.2.1 Signal output

In this interface, you can force a certain output point output, click the [pass] button corresponding to the light will turn green, if the corresponding output signal lights will be on.

Special Note

Wash / Rob 1: Click this button to atomize 1 (Y014), spray 1 (Y015), oil 1 (Y016)These three lights will turn green.

2: Click this button to atomize 2(Y017), spray 2(Y020), oil 2(Y021) The three lights will turn green.

🌾 PanelRobot		The second second second			<u>-                                    </u>
h Mar	ual 🔥	1/0	Records:ttt	Alarm log	super
Operation	Program	Settings		2016-11-04 17:41:09	星期五 ← []]
Output Y Debugpr:	int Custom Btn				
Normal YO10	0n	Normal	Y011	On	Gunfresh1
Normal Y012	0n	Normal	Y013	0n	Gunfresh2
Normal Y014	0n	Normal	Y015	0n	
Normal YO16	0n	Normal	Y017	0n	
Normal YO2O	0n	Normal	Y021	0n	
Normal YO22	0n	Normal	Y023	0n	
Normal YO24	0n	Normal	Y025	0n	
<b>♀</b> → <sup>¥026</sup>	On	Normal	Y027	On	2
Please press	s origin key	and then pres	ss start key	to find or	igin <

# 3.2.2 Programmable keys

In this interface, press the button has been edited by the programmable button will be to implement the robot has been editing the program.

🌾 Panel Robo	t												IN
6	Man	ual 🔒			1/0	R	ecords:ttt			Alarm l	°¢	super	
Operat	ion	Program		Sett	ings				2016-11	-04 17	1:41:27	星期五 ←	
Output Y	Debugpri	nt <mark>Custom I</mark>	3tn										
Custom Orig	in	Custom Retur	'n										
<b>Q</b> -													
Please	press	origin	key	and	then	press	start	key	to	fin	l or	igin	<

# 4 Stop state

The third gear knob to hit the middle position into the "stop" state interface

You can view the settings of all parameters in the stop status but can not perform manual operation.

# 4.1 Parameter setting

Click "Settings" button to enter the following interface, in this interface you can set the product, machine and manual controller.



## 4.1.1 Product settings



Click the **Product** button to enter the following interface shown in , in this interface under the product-related things can be set.

🌾 Panel Robo	ıt									<u> </u>
88 /	Sett	ings (		1/0	R	ecords:ttt		A1 «	rm log	super
Operat	ion	Frogram	Se	ttings				2016-11-04	4 17:44:56	星期五
roduct S	etting	achine Sett	ings Pane	l Settings	;					
ProgramO	Vse	T	cuont:		ımb	Clear Coun	e l			
Program1	Vse	•	Target:		ımb					
Program2	Vse	•								
Program3	Vse	•								
Program4	Vse	•								
Program5	Vse	•								
Program6	Vse	•								
Program7	Vse	•								
Program8	Vse	•								
P1ease	press	origin	key an	d then	press	start	key	to f	ind or	igin <
										Return

Program: a program can use multiple programs at the same time, the system initially default to the main program and subroutine are used, such as do not want to use the drop-down triangle to select it as not used.

### **Special Note:**

1, the main program and the subroutine is running at the same time.

2, can be used separately The subroutine part does not use the main program to carry on the programming.

3, special subroutine - sequence subroutine 8 [Sub=8], in this interface, select the "use" or "do not use" option on the subroutine 8 is invalid. Because the system itself has been the default subprogram 8 in any state (automatic / manual / stop) will automatically run.

**Count:** The number of objects to be sprayed during a complete spray.

**Target:** Sets the number of cycles for a complete painting process.

**Clear Count:** Press this button once to clear the current production value.

# 4.1.2 Valve setting



Click the Valve Settings button to enter the following interface, in this interface can be

related to set the valve.

🌾 PanelRobo	t							all sold a		
8	Sett	ings 🔒	•	1/0	R	ecords:ttt		Ala	em log	super
Operat	ion	Program	Se	ttings			2	2016-11-04	17:47:02	星期五
Product Se	ettings <mark>M</mark>	achine Sett	ings Panel	. Settings						
Confirm	n									
							1		4	
Please	press	origin	key and	d then	press	start	key	to fi	nd or	igin <
										Return

# 4.2 Mechanical settings

Click the **"Mechanical Setting** "button to enter the following interface, in this interface can be related to the machine parameter settings.

🌾 PanelRobot					<u>-0×</u>
🛞 🖌 Set	tings 🔥	I/0	Records: ttt	Alarm log	super
Operation	Program	Settings		2016-11-04 17:47:36	星期五
Product Settings	achine Settings	Panel Settings			
	Running Configs	Here a configs	Struct Configs	System Configs	
Please pres	s origin key	and then	press start	key to find or	igin 🧹
					Return

# 4.2.1 Operating parameters



Click the Running Configs button to enter the following interface, in this interface can be

run under the relevant parameters.

🌾 PanelRobot					10	- 🗆 ×
🛞 🖉 Set	tings 🔥	1/0	Records:ttt	Al	arm log	super
Operation	Program	Settings		2016-11-0	4 17:48:20	星期五
Product Settings	lachine Setting:	Panel Settings				
Tolerance 500000	Pulse Turn Auto	Speed 10	& Alarm Times 0	Times		
Independent Manual	L Speed					
X Manual Speed 0.0	Y Manual Spee	ed 0.0	Z Manual Speed 0.0	)		
V Manual Speed 0.0	V Manual Spee	ed 0.0	W Manual Speed	)		
Please press	s origin key	and then	press start	key to f	ind or	igin <
						Return

**Tolerance:** The difference between the transmit pulse and the feedback pulse.

**Turn Auto Speed:** three-block knob to run automatically when the default run speed settings.

Alarm Times: Set the alarm output Y013 flashing several times.

Independent Manual speed: Check this to set the speed of each axis in manual mode.

#### 4.2.2 Motor parameters

🌾 PanelRobot					
🛞 🖊 Set	tings 🔥	1/0	Records: ttt	Alar	m log super
Operation	Program	Settings		2016-11-04	17:48:42 星期五
Product Settings	lachine Setting:	Panel Settings			
x yn Y	Un Z	Un U Un	V Un W	Un	
Encoder Type Encoder Read Way Axis Type Motor Dir Pulse Count Per Circle Reduction Ratio Positive Limit Negative Limit Positive Limit Negative Limit Point Negative Limit Point	Encode Typel V Encode RW1 V Rotate V PP V 10000 a 1.01 100 mm -300 mm 11 A ON 2 A ON	Test Pulse Z Pul	tor Test Pulse Number: 10000 Sent: 0 received: 0 se: 0 Motor+	Motor-	Test Clear Set All Origin
Please pres	s origin key	and then	press start	key to fi	nd origin <
					Return

**Axis use**: All axes are selected as the default use, if not, please check the "do not" check box.

Encoder Read Way: At present, "Huichuan", "Anchuan", "Taida" three brands.

Axis Type: The current type is divided into three "absolute", "incremental", "none."

Motor Dir: classified as three "pulse", "CAN", "RS485".

Motor Dir: The axis type is divided into rotation and straight.

Pulse Count Per Circle: Set the number of pulses per revolution of the servo motor.

Reduction Ratio: Sets the reduction ratio of the servomotor.

The deceleration ratio is the ratio of the instantaneous input speed to the output speed in the reduction mechanism, denoted by the symbol "i".

If the input speed is 1500r / min, and the output speed is 25r / min, then the speed reduction

ratio is: i = 1, the speed ratio of the input speed and output speed is 1: 60: 1.

**Positive Limit:** The maximum distance the axis moves.

Value	Input	Value	Input	Value	Input	Value	Input
0	Not use						
1	X10	9	X20	17	X30	25	X40
2	X11	10	X21	18	X31	26	X41
3	X12	11	X22	19	X32	27	X42
4	X13	12	X23	20	X33	28	X43
5	X14	13	X24	21	X34	29	X44
6	X15	14	X25	22	X35	30	X45
7	X16	15	X26	23	X36	31	X46
8	X17	16	X27	24	X37	32	X47

**Negative limit:** The minimum distance the axis moves.

**Negative limit point:** This item can define the negative limit point of X axis. The default is the normally closed point. If the check mark is set to long open point, input the specified value in the box to specify an input point as X axis negative limit point, Detailed numerical control please refer to the following table:

Value	Input	Value	Input	Value	Input	Value	Input
0	Not use						
1	X10	9	X20	17	X30	25	X40
2	X11	10	X21	18	X31	26	X41
3	X12	11	X22	19	X32	27	X42
4	X13	12	X23	20	X33	28	X43
5	X14	13	X24	21	X34	29	X44
6	X15	14	X25	22	X35	30	X45
7	X16	15	X26	23	X36	31	X46
8	X17	16	X27	24	X37	32	X47

**Origin :** This setting is when the axis in the homing to move forward or backward to find the origin, the default is to move forward, if you want to set the direction of movement please check the "reverse move."

Acceleration time(ACC 1): Set the acceleration time of the servo motor.

Deceleration time(ACC 2): Set the deceleration time of the servo motor.

Maximum speed(Max RPM): Set the maximum speed of the servo motor

**Motor +:** the motor forward test, test and feedback are displayed 10000, said the test was successful.

Motor -: the motor reversal test, the test showed 10000, 55536 feedback showed that the

test was successful.

**Set to Origin:** move a single axis or all axes to the origin and click "Set as Origin" or "Set All Origin" and click "Save".

### 4.2.3 Structural parameters



Click Struct Configs the button to enter the following interface, in this interface can be related to the configuration parameters.

🌾 PanelRobot							
8	Settin	gs 🔥		1/0	Records:ttt	Alarm log	super
Operation		Frogram	Setting	s l		2016-11-04 18:00:41	星期五
Product Sett	ings <mark>l</mark> ach:	ine Settings	Panel Sett	ings			
SACC 1	0	% SACC Time	0.000	m/s²			
SACC 2	0	% SDec Time	0.000	m/s²			
SDEC 1	0	% SACC Max	0.000	m/s			
SDEC 2	0	% Analog	En				
Machine 0.000	nm L23	3 330.000	mm L4	131.000 mm	Axis2 Di 0.000	• Axis6 Di 0.000	•
Machine 0.000	mm Ma	chine 0.000	mm_L12	0.000 mm	Axis3 Di 0.000	]•	
L01 410.000	mm L34	4a 125.000	mm 124	0.000 mm	Axis4 Di0.000	]•	
Machine 0.000	mm L34	4Ъ 383.000	mm Axis1 Di	0. 000 °	Axis5 Di0.000	]•	
Please_m	Cess o	rigin ker	v and th	en nress	start kev	to find or	igin <
r rease pi	. 055 0	rigin kej		ten prese	s Start Key		
							Return

## 4.3Manual setting

Click "**Panel Settings**" button to enter the following interface, in this interface can be related to the control device settings.



#### 4.3.1 Manual setting



Click the Panel Settings button to enter the following interface, in this interface can be

related to the controller settings.

le PanelRobot						
🛞 🖊 Se	ettings 🧃		/0 Records		larm log super	
Operation	Program	Settings		2016-11	-04 18:02:10 星期五	
Product Settin	gs Machine Sett	<mark>ings</mark> Panel Setti	ngs			
Language   中文	English					
Key Tone Key	Tone Off 🗹 Key 1	one On		Touch Calibrate		
Brightness -		+				
Screensaver Time5	min					
Date time	2016 year	11 mon 4 day	18 hour	2 minute	5 sec	
Dlasca pro	ec origin	key and the	n proce et	art kov to	find origin	
r rease pre	ess of rgill	key and the	n press st	art key to		Ĺ
					Return	n

Language: Select Chinese or English.

Key tone: key tone on, off switch.

**Date time:** The system displays the date and time, select the date and time, press the plus or minus keys to change.

Screensaver time: Set the time when the Screensaver time is on.

Brightness: Adjusts the brightness of the display.

**Touch Calibrate:** click and follow the prompts to operate can be corrected, or random rotation of the three-wheel knob and then use the hand controller shortcut keys in order to press  $F5 \rightarrow F3 \rightarrow F4 \rightarrow F3 \rightarrow F2 \rightarrow F3 \rightarrow F1 \rightarrow F5$  into the school screen Interface, follow the prompts to screen.

#### 4.3.2 Network Configuration



Click the Network Settings button to enter the following interface, in this interface can be related to the network settings.

🌾 PanelRobot								
🛞 🖊 S	ettings 🧯	<u>čo</u> )	I/O	Records: tt	t	Alarm J	Log	super
Operation	Program	Sett	ings		20	16-11-07 1	0:20:24	星期→
Product Settin	ngs Machine Set	tings <mark>Panel S</mark>	Settings					
Network En								
Local Addr: [	192 . 168	. 10 . 201						
Host Addr: [	192 . 168	. 10 . 197	9760					
CommunicateMode Se	rve 🔻							
Save								
Send Test								
text								
Please pr	ess origin	key and	then pr	ess star	t key t	to fin	d ori	gin <
								Return

Instructions:



- 2, set the robot IP address.
- 3, fill in the target peripheral IP address.
- 4, select the communication mode.
- 5, click [save] button to save the set data.
- 6. Click the [Send Test Data] button.

7, waiting for external feedback to the hand controller data that the network configuration is successful.

#### 4.3.3 Picture settings



Click the Picture Settings button to enter the following interface, in this interface, the

controller can start the picture and standby picture to update.

<b>W</b> PanelRobot		and the second second			_ 🗆 🗙
🛞 参数	故设定 🚹	1/0监视	程序:he	报警记录	super
手动操作	编程	参数设定		2016-10-09 09:36:13	星期天
产品设定	机器设定	手控设定	0		
			- 10		
扫描图片		设为启动图片	设为待机图片		
请按原点键象	《后按启动键	原点复归.			<
					返回

Start page and standby page Update method:

1, Production Pictures:

Image size: Start page image: Width \* Height is 800 \* 600 (unit: pixels).

Standby page image: width \* height of 800 \* 400 (unit: pixels).

Format: png format

- 2, In the U disk with the directory new HCUpdate\_pic, copy the picture to the folder
- 3, Insert the U disk to the manual control device to enter the picture settings interface, click

on the scan picture, select the picture, select the start page or set to standby page

4, If the standby page, change the status of the third gear can be set to boot the success of the start up page view you need to re-power to view.

#### 4.3.4 Registration



Click the Register button to enter the following interface, in this interface can be registered under the age hand controller.

PanelRobot											×
88 🧹	Sett	ings 🔓		1/0	R	ecords:ttt		Alarn	log	super	
Operatio	on	Program		Settings			20	16-11-07	10:40:38	星期一	
Product Set	tings M	achine Sett	ings <mark>Pa</mark> ı	nel Settin	gs						
Register Code		Regi	ster								
Please j	press	origin	key a	and ther	n press	start	key t	to fi	nd or	igin	<
										Return	

Registration method: Enter the registration code Click "Register" button to register successfully.

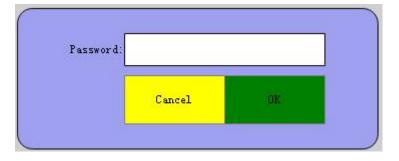
Special note: After entering the registration interface, the lower left corner and the lower

right corner, respectively, there are two hidden buttons.

Hidden Button 1 Function: Click this button to set different registration codes for different usage periods.

How to use: The first step, click the hidden button 1 to open the blue box to open the following figure password login screen. Enter the password in this interface. Click the [OK] button.

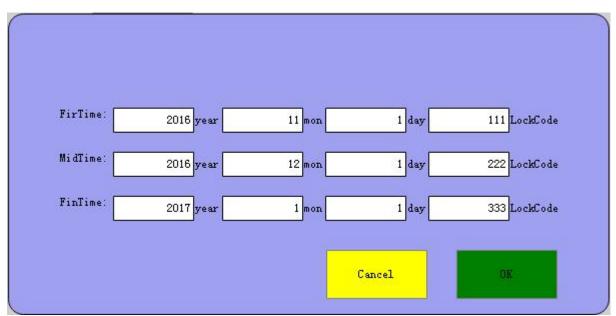
Tip: The account that can set this password must have root privileges



The second step is to set the corresponding registration code for different time periods as shown in the following figure. After setting, click [OK] button, then the system will pop



the screen. If you want to modify the settings,

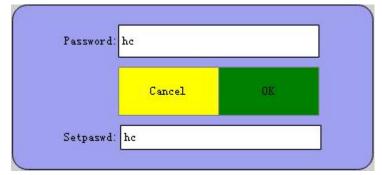


please see the hidden button 2 to use.

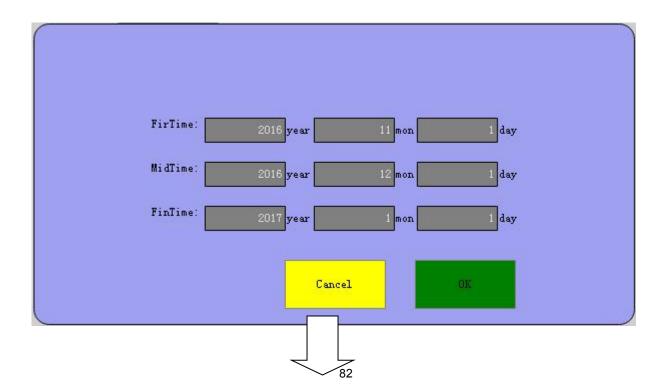
Hide button 2 function: modify the registration time and registration code.

Modify the use of the steps: The first step, click the hidden button 1 to open the blue box as shown below the password login screen. Enter the password in this interface. Click the [OK] button.

Tip: The account that can set this password must have root privileges



The second step, the login is complete, enter the following interface, in this interface edit box is locked, click on the hidden button 2 blue box live area pop-up keyboard input box, the default password is 88888, the password input keyboard edit box and then pop up a Confirmation box Click OK button to restart the system to click the hidden button 1 area to reset the time and password.



Form				
Min:0 Max:400000 Prec:1	0000			
7	8	9	+	-
4	5	6	Е	s
1	2	3	Car	cel
CE	o	•	E	nt



🌾 PanelRobot							
🛞 🖉 Set	tings 🔥	1/0	R	ecords:ttt	AL	arm log	he
Operation	Program	Settings			2016-11-0	7 10:57:07	星期一
Product Settings	Machine Settings	Panel Setting	s				
Register Code O							
	Register						
						Hide But	ton 1
Please pres	s origin ke	y and then	press	start k	ey to f	ind or	igin <
Hi	de Button 2						Return

#### 4.3.5 Maintain



Click the Maintain button to enter the following interface. In this interface, you can

update the controller version and backup and restore parameters.

🌾 PanelRobot													IX
88 🥖	Sett	ings 🔒			I/0	Re	scords:ttt			Alarm log		he	
Operation	n	Program		Settir	ngs				2016-1	1-07 11:0	0:45 🫓	星期一	
Product Sett	tings Ma	achine Sett	ings <mark>Pa</mark>	nel Set	tting	s							
UI Version: PENTU Update		<u>ot-1.1.4</u> ;Contro p/Restore	oller Vers:	ion: <u>1. 0. 1</u>									
	_/		Γ							Scan	Updater	8	
Manual ve	ersion r	number		Main co	ontrol	board nu	mber			Start	Vpdate	e	
				A	24			24					
Please p	ress	origin	key a	and t	hen	press	start	key	to	find	ori	gin	<
												Return	

Version upgrade method: plug in the U disk, a few seconds, click "scan update "to select the version you want to upgrade and then click "start update".

The upper left corner of this screen displays the current manual version number and the master version number.

#### 4.3.6 User Management

Click the button to enter the following interface, in this interface you can create, modify, delete the user name.

🌾 PanelRobot						<u>-                                    </u>
🛞 🖉 Se	ttings 👫	1/0	Records:ttt		Alarm log	he
Operation	Program	Settings		2016-11	1-07 11:07:18	星期一
Product Setting	s Machine Settir	<mark>ogs</mark> Panel Setting	s			
namelist:	super root hc	pa	ername: hc ssword: 123 cancel	delete	op mold syste root ok	
Please pre	ss origin l	cey and then	press start	key to	find or	igin <
						Return

System operator default password:

Op: 123

Admin: 123

Super: 123456

Root: 12345678

Permission Interpretation and Size Ranking: Op <Mold <System <User

Op: The permissions are: in the manual state can move the axis, but can not enter the teaching page to teach; automatic state can start the robot, adjust the speed; stop state can enter the home return.

Mold: This privilege has all the permissions of the Op; the settings associated with the model number.

System: This permission has: Op and Mold all rights; May revise the system parameter User: All operations are possible.

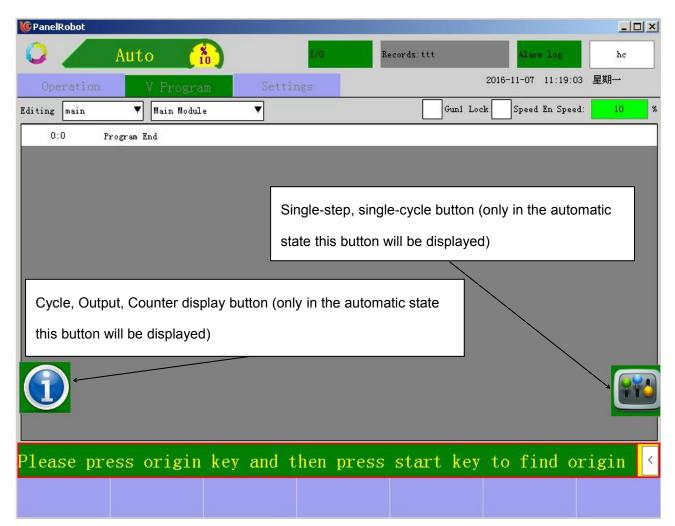
Create a new user name: Edit user name  $\rightarrow$  set password  $\rightarrow$  check the permissions  $\square$  Op  $\rightarrow$  click "OK".

- □ Admin
- □ Super
- $\square$  System
- □ User

Delete User Name: Click the user list  $\rightarrow$  click [Delete] button.

## **5** Automatic state

The third gear switch to the far right to enter the automatic state, enter the state and then once again "Start" key to enter the automatic operation of the robot state.



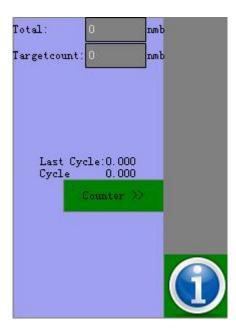
Lock gun: Check the gun will automatically shut down after the operation can not be used.

**Speed control enable**: After selecting the upper and lower keys on the hand controller, the system can adjust the speed.

**Step mode:** select a step as the single step starting point, and then click [single step start], the program will start from the start step has already started to carry out this step.

Single-cycle mode: the program will take a round starting position.

Cycle, output, count display button:



- 1, open this button to view the upper mold cycle time and current cycle time.
- 2, in this button to view the current output and target output.
- 3,Click the Counter button to view the counter status.

Total:	counter[0]:444	Target: 4	Current: O	
Targetco	n			
Las Cyc	t 1			

# 6 Alarm information and alarm reasons

Alarm number	Alarm information	Processing methods
Err1	Finish is not initialized	Start up is completed automatically cleared
Err2	Host axis configuration and manually controlled-axis configurations	Select host according to demand or manual control
Err3	Master axis configuration parameter error	No
Err4	Not enough memory	Teaching program for too long, will reciprocate the same action using module integration. Press the stop key to clear the alarm.
Err5	Teach parsing errors	Teach error manual and host application version does not match the type matches the version of the program. Press the stop key to clear the alarm.
Err6	Teaching data editing errors	Edit error overload mode, or create a new model number. Press the stop key to clear the alarm.

		Release the emergency stop press the stop button to clear alarms
<b>F7</b>	En contra de co	Reason: 1, And the emergency stop switch is
Err7	Emergency stop	pressed. 2, no wiring emergency stop switch
		ports on the host, if not required, separately
		that is, switch, you will need to $\ensuremath{STOP}$ port is
		shorted.
		Press the stop key to clear the alarm.
Err8	Autorun jumping errors	Reason: <b>1</b> , Teaches programs jump label is
		invalid or was deleted.
Err9	Failed to connect to host	Host free programs or the wrong version
Err10	Teaching program errors	Press the stop key to clear the alarm.
<b>F</b> 14	Configuration parameters are	Restart or press the stop key to clear the
Err11	stored fails	alarm.
Err12	Model set errors	Press the stop key to clear the alarm.
Err13	Single step/Single-loop	Duese the step here to allow the allow
EIIIS	debugger setting errors	Press the stop key to clear the alarm.
<b>F</b> ==4.4	From the host <b>FLASH</b> Data	From the heat <b>FLACL</b> D (
Err14	read error	From the host <b>FLASH</b> Data read error
		1, And repair wiring
Err15	<b>IO</b> Communication failure	
		2, Examination boards, IO
Err16	Servo absolute position read	Check the host and servo wiring
	failed	
Err17	Servo absolute position	Check the host and servo wiring
	failed to read the calibration	

Err18	Read function code error servo absolute position	Check the host and servo wiring
Err19	Servo absolute position read timeout	Check the host and servo wiring
Err20	IO 2 Communication failure	<ol> <li>And repair wiring .</li> <li>Check motherboard IO.</li> </ol>
Err21	IO 3 Communication failure	<ol> <li>And repair wiring .</li> <li>Check motherboard IO.</li> </ol>
Err22	IO 4 Communication failure	<ol> <li>And repair wiring .</li> <li>Check motherboard IO.</li> </ol>
Err23	Hand control and inconsistent host teaching program	No
Err24	<b>FPGA</b> Alarm, power failure restart!!!!	No
Err90	Motor <b>1</b> Alarm	Motor connection failure, or the host circuit failure Reason: 1, Host, and servo-drive connector; 2,Servo alarm failure;

		Motor connection failure, or the host circuit failure
Err91	Motor <b>2</b> Alarm	Reason: 1, Host, and servo-drive connector;
		Servo alarm failure;
		Motor connection failure, or the host circuit failure
Err92	Motor <b>3</b> Alarm	Reason: 1, Host, and servo-drive connector;
		Servo alarm failure;
		Motor connection failure, or the host circuit failure
Err93	Motor <b>4</b> Alarm	Reason: 1,Host, and servo-drive connector;
		Servo alarm failure;
		Motor connection failure, or the host circuit failure
Err94	Motor <b>5</b> Alarm	Reason: 1, Host, and servo-drive connector;
		Servo alarm failure;

		Motor connection failure, or the host circuit failure
Err95	Motor <b>6</b> Alarm	Reason: <b>1</b> , Host, and servo-drive connector;
		Servo alarm failure;
		Motor connection failure, or the host circuit failure
Err96	Motor <b>7</b> Alarm	Reason: 1, Host, and servo-drive connector;
		Servo alarm failure;
Err97	Motor <b>8</b> Alarm	Motor connection failure, or the host circuit failure
Err100	Axis <b>1</b> Sports fail	Press the stop key to clear the alarm. Movement again. Reason: 1, Teaches the same axis at the same time campaigns; 2, Main program and subroutine has the same shafts at the same time campaigns; 3,Teach single axis motion trajectory and run at the same time;

	Axis <b>2</b> Sports fail	Press the stop key to clear the alarm. Movement again.
		Reason: <b>1</b> , Teaches the same axis at the same time campaigns;
Err101		<b>2</b> , Main program and subroutine has the same shafts at the same time campaigns;
		<b>3</b> ,Teach single axis motion trajectory and run at the same time;
		Press the stop key to clear the alarm.
		Movement again.
Err102	Axis <b>3</b> Sports fail	Reason: <b>1</b> , Teaches the same axis at the same time campaigns;
		${f 2}$ ,Main program and subroutine has the same
		shafts at the same time campaigns;
		<b>3</b> ,Teach single axis motion trajectory and run at the same time;
		Press the stop key to clear the alarm.
		Movement again.
Err103	Axis <b>4</b> Sports fail	Reason: 1, Teaches the same axis at the same time campaigns; 2,Main program and subroutine has the same
		shafts at the same time campaigns;
		Shares are some sime sume sumparant,
		${f 3}$ , Teach single axis motion trajectory and
		run at the same time;;

		Press the stop key to clear the alarm. Movement again.
	Axis <b>5</b> Sports fail	Reason: <b>1</b> , Teaches the same axis at the same time campaigns;
Err104		<b>2</b> ,Main program and subroutine has the same shafts at the same time campaigns;
		<b>3</b> ,Teach single axis motion trajectory and run at the same time;
		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1, Teaches the same axis at the
		same time campaigns;
Err105	Axis <b>6</b> Sports fail	<b>2</b> ,Main program and subroutine has the same
		shafts at the same time campaigns;
		<b>3</b> , Teach single axis motion trajectory and
		run at the same time;
		Press the stop key to clear the alarm.
		Movement again.
Err106		Reason: 1, Teaches the same axis at the
		same time campaigns;
	Axis <b>7</b> Sports fail	
		${f 2}$ , Main program and subroutine has the
		same shafts at the same time campaigns;
		<b>3</b> , Teach single axis motion trajectory and
		run at the same time;

		1
		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1,Teaches the same axis at the same
		time campaigns;
Err107	Axis <b>8</b> Sports fail	2 Main program and subrouting has the same
		<b>2</b> ,Main program and subroutine has the same shafts at the same time campaigns;
		Sharob at the same time comparishes,
		<b>3</b> ,Teach single axis motion trajectory and
		run at the same time;
		Press the stop key to clear the alarm.
Err110	Axis <b>1</b> Speed setting error	Movement again.
<b>F</b> 444		Press the stop key to clear the alarm.
Err111	Axis <b>2</b> Speed setting error	Movement again.
Err112	Axis <b>3</b> Speed setting error	Press the stop key to clear the alarm.
		Movement again.
Err113	Axis <b>4</b> Speed setting error	Press the stop key to clear the alarm.
		Movement again.
Err114	Axis <b>5</b> Speed setting error	Press the stop key to clear the alarm.
		Movement again.
Err115	Axis <b>6</b> Speed setting error	Press the stop key to clear the alarm.
		Movement again.
Err116	Axis <b>7</b> Speed setting error	Press the stop key to clear the alarm.
		Movement again.
Err117	Axis <b>8</b> Speed setting error	Press the stop key to clear the alarm.
		Movement again.

Err120	Axis <b>1</b> Movement speed	Press the stop key to clear the alarm. Movement again. Reason: 1 ,Tracks acceleration setting too large
Err121	Axis <b>2</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err122	Axis <b>3</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err123	Axis <b>4</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err124	Axis <b>5</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err125	Axis <b>6</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err126	Axis <b>7</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err127	Axis <b>8</b> Movement speed	Press the stop key to clear the alarm. Movement again.
Err130	Axis <b>1</b> Limit alarm	Press the stop key to clear the alarm. Movement again. Reason: 1, Soft limit, sporting more than single-axis, reset uni axial soft limit; 2, Teaches procedures uni axial soft position out of range limit, modify the guidance program location.

		Press the stop key to clear the alarm. Movement again.
Err131	Axis <b>2</b> Limit alarm	Reason: <b>1</b> ,Soft limit, sporting more than single-axis, reset uniaxial soft limit;
		Single and, reset antantal bert fimit,
		${f 2}$ , Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
Err132	Axis <b>3</b> Limit alarm	Reason: <b>1</b> ,Soft limit, sporting more than single-axis, reset uniaxial soft limit;
		2 ,Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1, Soft limit, sporting more than
Err133	Axis <b>4</b> Limit alarm	single-axis, reset uniaxial soft limit;
		<b>2</b> , Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		- I

		Press the stop key to clear the alarm. Movement again.
Err134	Axis <b>5</b> Limit alarm	Reason: 1 ,Soft limit, sporting more than single-axis, reset uniaxial soft limit;
		<b>2</b> , Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1, Soft limit, sporting more than
Err135	Axis <b>6</b> Limit alarm	single-axis, reset uniaxial soft limit;
		<b>2</b> ,Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1 ,Soft limit, sporting more than
Err136	Axis <b>7</b> Limit alarm	single-axis, reset uniaxial soft limit;
		<b>2</b> ,Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.

		1
		Press the stop key to clear the alarm. Movement again.
Err137	Axis <b>8</b> Limit alarm	Reason: <b>1</b> , Soft limit, sporting more than single-axis, reset uniaxial soft limit;
		single-axis, leset uniaxial solt limit,
		<b>2</b> , Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
Err140	Avia 1 Negative limit alarm	Reason: <b>1</b> , Soft limit, sporting more than
	Axis 1 Negative limit alarm	single-axis, reset uniaxial soft limit;
		<b>2</b> ,Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
Err141		Reason: <b>1</b> Soft limit, sporting more than
	Axis <b>2</b> Negative limit alarm	single-axis, reset uniaxial soft limit;
		<b>2</b> ,Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.
I	1	1

		1
		Press the stop key to clear the alarm. Movement again.
Err142	Axis <b>3</b> Negative limit alarm	Reason: <b>1</b> ,Soft limit, sporting more than single-axis, reset uniaxial soft limit;
		<b>2</b> , Teaches procedures uniaxial soft position out of range limit, modify the guidance program location.
		Press the stop key to clear the alarm.
		Movement again.
Err143	Axis <b>4</b> Negative limit alarm	Reason: 1,Soft limit, sporting more than single-axis, reset uniaxial soft limit; 2,Teaches procedures uniaxial soft position out of range limit, modify the
		guidance program location. Press the stop key to clear the alarm.
		Movement again.
Err144	Axis <b>5</b> Negative limit alarm	Reason: <b>1</b> ,Soft limit, sporting more than single-axis, reset uniaxial soft limit;
		<b>2</b> , Teaches procedures uniaxial soft
		position out of range limit, modify the
		guidance program location.

Err145	Axis <b>6</b> Negative limit alarm	Press the stop key to clear the alarm. Movement again. Reason: 1, Soft limit, sporting more than single-axis, reset uniaxial soft limit; 2,Teaches procedures uniaxial soft position out of range limit, modify the guidance program location.
Err146	Axis <b>7</b> Negative limit alarm	Press the stop key to clear the alarm. Movement again. Reason: 1 ,Soft limit, sporting more than single-axis, reset uniaxial soft limit; 2 ,Teaches procedures uniaxial soft position out of range limit, modify the guidance program location.
Err147	Axis <b>8</b> Negative limit alarm	Press the stop key to clear the alarm. Movement again. Reason: 1, Soft limit, sporting more than single-axis, reset uniaxial soft limit; 2,Teaches procedures uniaxial soft position out of range limit, modify the guidance program location.

Err150	Axis 1 Large deviation	<pre>Machine setting -&gt; Operating parameters, Tolerance set, press the stop key to clear the alarm. Movement again. Reason: 1, Servo feedback signal not in the motor page to test motor positive inversion. 2,Tolerance is set too small, campaigns, feedback pulse and pulse output there is a gap, the tolerance value is set to a reasonable position.</pre>
Err151	Axis <b>2</b> Large deviation	Machine setting -> Operating parameters, Tolerance set, press the stop key to clear the alarm. Movement again. Reason: 1,Servo feedback signal not in the motor page to test motor positive inversion. 2,Tolerance is set too small, campaigns, feedback pulse and pulse output there is a gap, the tolerance value is set to a reasonable position.

		Machine setting -> Operating parameters,
		Tolerance set, press the stop key to clear the
		alarm. Movement again.
		Reason: 1 ,Servo feedback signal not in the
Err152	Axis <b>3</b> Large deviation	motor page to test motor positive inversion.
		2,Tolerance is set too small, campaigns,
		feedback pulse and pulse output there is a gap,
		the tolerance value is set to a reasonable
		position.
	Axis <b>4</b> Large deviation	Machine setting -> Operating parameters,
		Tolerance set, press the stop key to clear the
Err153		alarm. Movement again.
		Reason: 1 ,Servo feedback signal not in the
		motor page to test motor positive inversion.
		<b>2</b> , Tolerance is set too small, campaigns,
		feedback pulse and pulse output there is a gap,
		the tolerance value is set to a reasonable
		position.

		Machine setting -> Operating parameters, Tolerance set, press the stop key to clear the alarm. Movement again.
Err154	Axis <b>5</b> Large deviation	Reason: <b>1</b> ,Servo feedback signal not in the motor page to test motor positive inversion.
		2, Tolerance is set too small, campaigns, feedback pulse and pulse output there is a gap, the tolerance value is set to a reasonable position.
Err155	Axis <b>6</b> Large deviation	<pre>Machine setting -&gt; Operating parameters, Tolerance set, press the stop key to clear the alarm. Movement again. Reason: 1, Servo feedback signal not in the motor page to test motor positive inversion. 2, Tolerance is set too small, campaigns, feedback pulse and pulse output there is a gap, the tolerance value is set to a reasonable position.</pre>
Err156	Axis <b>7</b> Large deviation	Machine setting -> Operating parameters, Tolerance set, press the stop key to clear the alarm. Movement again.

Err157	Axis <b>8</b> Large deviation	Machine setting -> Operating parameters, Tolerance set, press the stop key to clear the alarm. Movement again. Reason: 1, Servo feedback signal not in the motor page to test motor positive inversion.
		2, Tolerance is set too small, campaigns, feedback pulse and pulse output there is a gap, the tolerance value is set to a reasonable position.
Err160	Axis <b>1</b> Acceleration alarm	Press the stop key to clear the alarm. Movement again. Reason: 1 And acceleration setting too large.
Err161	Axis <b>2</b> Acceleration alarm	Press the stop key to clear the alarm. Movement again. Reason: <b>1</b> And acceleration setting too large.
Err162	Axis <b>3</b> Acceleration alarm	Press the stop key to clear the alarm. Movement again. Reason: <b>1</b> And acceleration setting too large.
Err163	Axis <b>4</b> Acceleration alarm	Press the stop key to clear the alarm. Movement again. Reason: 1 And acceleration setting too large.

Err164	Axis <b>5</b> Acceleration alarm	Press the stop key to clear the alarm. Movement again.
		Reason: <b>1</b> And acceleration setting too
		large.
		Press the stop key to clear the alarm.
<b>F==105</b>		Movement again.
Err165	Axis <b>6</b> Acceleration alarm	Reason: <b>1</b> And acceleration setting too
		large.
		Press the stop key to clear the alarm.
		Movement again.
Err166	Axis <b>7</b> Acceleration alarm	movement again.
		Reason: 1 And acceleration setting too
		large.
	Axis <b>8</b> Acceleration alarm	Press the stop key to clear the alarm.
		Movement again.
Err167		
		Reason: 1 And acceleration setting too
		large.
		Press the stop key to clear the alarm.
	Axis <b>1</b> Limit signal alarm	Movement again.
Err170		Reason: 1, And ultimate disconnect signal
		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> ,And limit signal connected to the wrong port
		-

		Press the stop key to clear the alarm. Movement again.
		Movement again.
		Reason: 1, And ultimate disconnect signal
Err171	Axis <b>2</b> Limit signal alarm	<b>2</b> ,Limit signal normally closed or
		normally open odds with the switch
		installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
		Movement again.
	Axis <b>3</b> Limit signal alarm	Reason: 1, And ultimate disconnect signal
Err172		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
	Axis <b>4</b> Limit signal alarm	Movement again.
Err173		
		Reason: 1, And ultimate disconnect signal
		<b>2</b> ,Limit signal normally closed or
		normally open odds with the switch
		installation;
		2 And limit airmal arrested to the
		<b>3</b> , And limit signal connected to the wrong
		port

		Press the stop key to clear the alarm. Movement again.
		Reason: <b>1</b> , And ultimate disconnect signal
Err174	Axis <b>5</b> Limit signal alarm	<b>2</b> ,Limit signal normally closed or
		normally open odds with the switch
		installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
		Movement again.
Err175	Axis <b>6</b> Limit signal alarm	Reason: 1,And ultimate disconnect signal
		<b>2</b> ,Limit signal normally closed or
		normally open odds with the switch
		installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
Err176	Axis <b>7</b> Limit signal alarm	Movement again.
		Reason: 1, And ultimate disconnect signal
		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port

		Duces the step here to clean the clean
		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1, And ultimate disconnect signal
Err178	Axis <b>8</b> Limit signal alarm	<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
		Movement again.
	Axis <b>1</b> Negative limit signal alarm	Reason: <b>1</b> ,And ultimate disconnect signal
Err180		
LITTOO		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
	Axis <b>2</b> Negative limit signal alarm	Movement again.
Err181		Reason: <b>1</b> , And ultimate disconnect signal
		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		2 And limit aignal connected to the surrow
		3, And limit signal connected to the wrong
		port

		Press the stop key to clear the alarm.
		Movement again.
		Reason: 1, And ultimate disconnect signal
Err182	Axis <b>3</b> Negative limit signal	
EIITOZ	alarm	2, Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
		Movement again.
	Axis <b>4</b> Negative limit signal alarm	Reason: 1, And ultimate disconnect signal
Err183		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		open odds with the switch installation,
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
	Axis <b>5</b> Negative limit signal alarm	Movement again.
		Reason: 1, And ultimate disconnect signal
Err184		
		2, Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port

<b></b>		1
		Press the stop key to clear the alarm. Movement again.
		Reason: 1, And ultimate disconnect signal
Err185	Axis <b>6</b> Negative limit signal	<b>2</b> ,Limit signal normally closed or
	alarm	normally open odds with the switch
		installation;
		<b>3</b> , And limit signal connected to the wrong
		port
		Press the stop key to clear the alarm.
	Axis <b>7</b> Negative limit signal alarm	Movement again.
		Reason: 1, And ultimate disconnect signal
Err186		2, Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port
	Axis <b>8</b> Negative limit signal alarm	Press the stop key to clear the alarm.
Err187		Movement again.
		Reason: 1, And ultimate disconnect signal
		<b>2</b> , Limit signal normally closed or normally
		open odds with the switch installation;
		<b>3</b> , And limit signal connected to the wrong
		port

Err190	Axis <b>1</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err191	Axis <b>2</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err192	Axis <b>3</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err193	Axis <b>4</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err194	Axis <b>5</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.

Err195	Axis <b>6</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err196	Axis <b>7</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err197	Axis <b>8</b> The original signal is not set	Press the stop key to clear the alarm. Reset. Cause: the axis origin signals not set system parameters. Original point teaches the Executive with the original signal.
Err200	Motion failed	Press the stop key to clear the alarm. Movement again. Reason: there are some singular points in the trajectory, through single-axis motion around the singularity.
Err201	Manual linear trajectory starting coordinates are not set	No
Err202	Straight line trajectory endpoint coordinates manually is not set	No

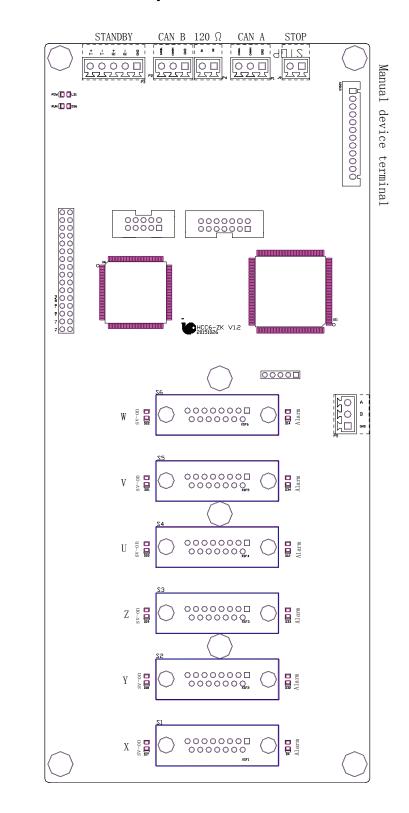
<b></b>		
Err203	Joint exercise starting coordinates manually is not set	No
Err204	Joint Movement end point coordinates manually is not set	No
Err205	Move line relative coordinates manually is not set	No
Err206	Joints move relative to the coordinates manually is not set	No
Err207	Teach straight line trajectory starting coordinates is not set	No
Err208	Teach a straight line trajectory endpoint coordinates is not set	No
Err209	Teaches joint starting coordinates are not set	No
Err210	Teaches joint movement end point coordinates is not set	No
Err211	Guidance line relative coordinates is not set	No
Err212	Teach joints move relative to the coordinate is not set	No
Err213	Tracking movement of the arc starting point coordinates manually is not set	No
Err214	Manual arc trajectory point coordinates in the middle is not set	No

Err215	Manually track movement of the arc endpoint coordinates is not set	No
Err216	Taught arc trajectory starting point coordinates is not set	No
Err217	Taught arc trajectory coordinates is not set	No
Err218	Taught arc trajectory endpoint coordinates is not set	No
Err219	Motion speed setting failed	Press the stop key to clear the alarm. Movement again. Reason: 1 Speed is set to 0 ; 2 , Trajectory in the movement, move on to the next motion, such as a track is running the main program, subroutine starts another trajectory.
Err220	Trajectory planning of failure	Press the stop key to clear the alarm. Slow movement again. Reason: there are some singular points in the trajectory, through single-axis motion around the singularity.
Err221	Trajectory planning failure	Reason: <b>1</b> Too fast, track movements, in a number of amendments to track speed, a joint motion is still too fast.
Err222	Timed out waiting for stack data source	Reason: <b>1</b> , Visual picture is not successful. <b>2</b> Disconnect, Visual Communications.
Err223	Stack data source error	Check the stack counter settings

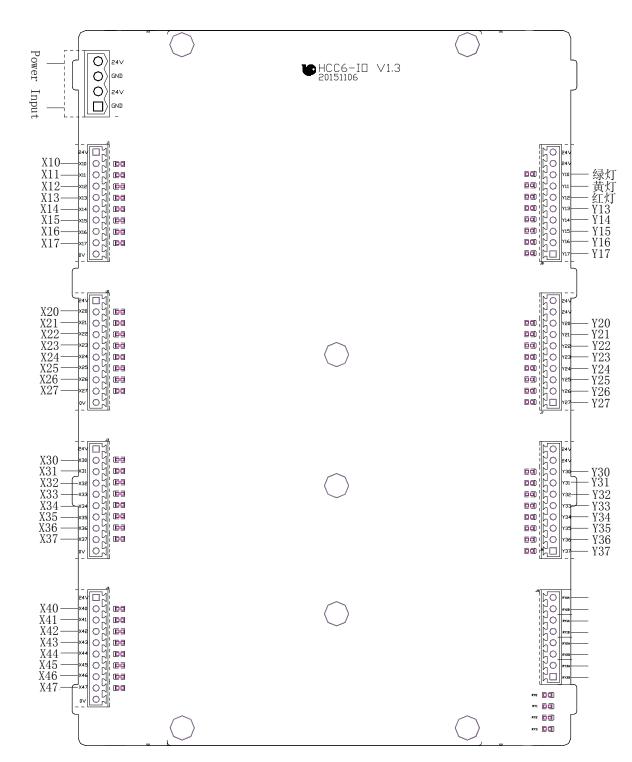
Err300	Counter is not defined	Press the stop key to clear the alarm. Reset.
Err500	Axis <b>1</b> Overcurrent alarm	No
Err501	Axis <b>2</b> Overcurrent alarm	No
Err502	Axis <b>3</b> Overcurrent alarm	No
Err503	Axis <b>4</b> Overcurrent alarm	No
Err504	Axis <b>5</b> Overcurrent alarm	No
Err505	Axis <b>6</b> Overcurrent alarm	No
Err506	Axis <b>7</b> Overcurrent alarm	No
Err507	Axis <b>8</b> Overcurrent alarm	No
Err510	Axis <b>1 z</b> Pulse errors	Check the servo wiring, check the servo
Err511	Axis <b>2 z</b> Pulse errors	Check the servo wiring, check the servo
Err512	Axis <b>3 z</b> Pulse errors	Check the servo wiring, check the servo
Err513	Axis <b>4 z</b> Pulse errors	Check the servo wiring, check the servo
Err514	Axis <b>5 z</b> Pulse errors	Check the servo wiring, check the servo
Err515	Axis <b>6 z</b> Pulse errors	Check the servo wiring, check the servo
Err516	Axis <b>7 z</b> Pulse errors	Check the servo wiring, check the servo
Err517	Axis <b>8 z</b> Pulse errors	Check the servo wiring, check the servo
Err520	Axis <b>1</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err521	Axis <b>2</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err522	Axis <b>3</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err523	Axis <b>4</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err524	Axis <b>5</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err525	Axis <b>6</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err526	Axis <b>7</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err527	Axis <b>8</b> No <b>z</b> Pulse	Check the servo wiring, check the servo
Err530	Axis <b>1</b> Origin offset	Origin has changed, reset the origin

Err531	Axis <b>2</b> Origin offset	Origin has changed, reset the origin
Err532	Axis <b>3</b> Origin offset	Origin has changed, reset the origin
Err533	Axis <b>4</b> Origin offset	Origin has changed, reset the origin
Err534	Axis <b>5</b> Origin offset	Origin has changed, reset the origin
Err535	Axis <b>6</b> Origin offset	Origin has changed, reset the origin
Err536	Axis <b>7</b> Origin offset	Origin has changed, reset the origin
Err537	Axis <b>8</b> Origin offset	Origin has changed, reset the origin
Err2048	IO Alarm start address	Press the stop key to clear the alarm.
Err4095	IO Address is currently only up to the end of alarm <b>3583</b>	Press the stop key to clear the alarm.
Err5000	Custom alarm started	Press the stop key to clear the alarm.
Err1000 0	Custom alarm end	Press the stop key to clear the alarm.

# **7 Board Port Definitions**

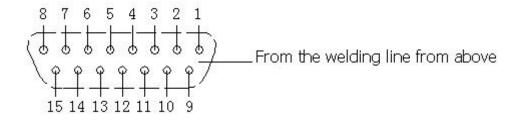


## 7.1 Main control board serial port definition



### 7.2 Port definition for the I / O board

## 7.3 Servo drive interface definition



PIN number	Terminal definition	PIN number	Terminal
			definition
1	+24V	9	0V
2	OA+	10	P+
3	OA-	11	P-
4	OB+	12	BRAKE
5	OB-	13	N+
6	OZ+	14	N-
7	OZ-	15	ALM
8	SON		

# 8 Wiring diagram

### 8.1 The servo connections and parameter setting

Control system output location command to position the servo motor control, command pulse type is forward pulse train and reverse pulse, pulse output frequency 500Kpps, Please set the correct servo drive parameters to match.

## 8.2 Example Panasonic servo motor used

Control		Set	
no	Parameter name	value	
Pr0.01	Control mode set	0	
Pr0.07	Command pulse input	4	
Pr0.07	mode setting	1	
Pr0.08	Motor pulses per	10000	
P10.08	instruction		
Pr0.11	Motor pulses per output	2500	
	number	2500	

Panasonic A5 Servo drive parameters

### Panasonic A5 Servo drive wiring

Control Panel terminal block interface		Panasonic (A5) Servo drive interface			
PIN numbe r	Signal definitions	Signal descriptions	PIN number	Signal definitions	Signal descriptions
10	P+	Forward impulse	3	PULS1	
11	P-	output	4	PULS2	Command pulse input 1
13	S+	Reverse pulse	5	SIGN1	Command pulse input 2
14	S-	output	6	SIGN2	Command pulse input 2
2	A+	A Feedback pulse	21	OA+	
3	A-	input	22	OA-	A Pulse output
4	B+	B Feedback pulse	48	OB+	
5	В-	input	49	OB-	B Pulse output
6	Z+	Z Feedback pulse	23	OZ+	
7	Z-	input	24	OZ-	Z Pulse output
1	+24V	+24V Power supply	7	COM+	External control power supply+
		24V Power to the	41	COM-	External control power supply-
9	0V		36	ALM-	Server alerts-
			10	BRKOFF-	Motor brake-
15	ALRM	Servo-drive alarm	37	ALM+	Server alerts+
8	SON	Servo	29	SRV-ON	Servo
Lead control brake relay coil (output 0V)		11	BRKOFF+	Motor brake+	

## 8.3 Using Mitsubishi servo motor records

#### Mitsubishi MR-E Servo drive parameters

#### (Resolution of servo motor 131072 Pulse / Turn)

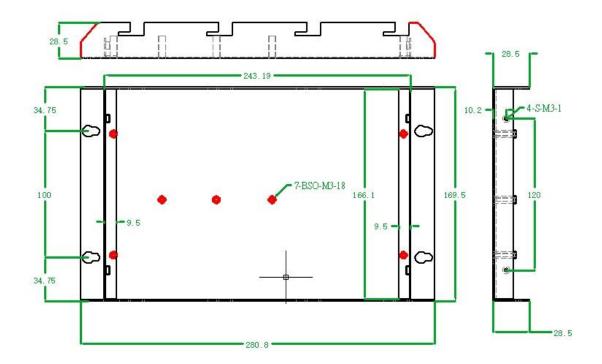
Control no	Parameter name	Set value
No.0	Control mode	0
No.1	Feature selection 1 The brake signal (CN1-12)	0012
No.3	Electronic gear	14
No.4	Electronic gearing denominator	1
No.21	Command pulse option	0000
No.27	Encoder output pulse rate	14
No.54	Feature selection 9 (output pulse rate)	1***

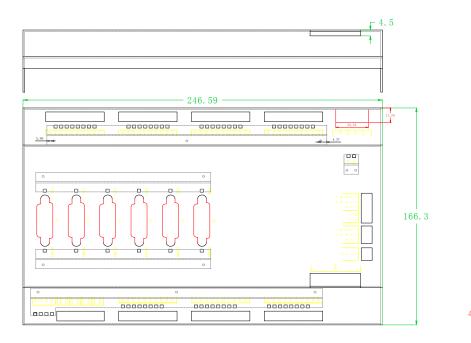
#### Mitsubishi MR-E Servo drive wiring

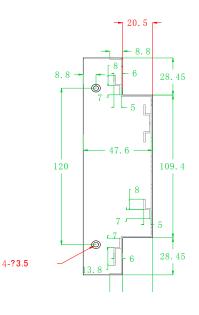
Control Panel terminal block interface		Mitsubishi MR-E Servo drive interface				
PIN numbe r	Signal definitions	Signal descriptions	PIN numbe r	Signal definitions	Signal descriptions	
10	P+	Forward impulse	23	PP	Command pulse input 1	
11	P-	output	22	PG	Command pulse input 1	
13	S+	Reverse pulse	25	NP	Command pulse input 2	
14	S-	output	24	NG	Command pulse input 2	
2	A+	A Feedback pulse	15	LA		
3	A-	input	16	LAR	A Pulse output	
4	B+	B Feedback	17	LB		
5	В-	pulse input	18	LBR	B Pulse output	
6	Z+	Z Feedback pulse	19	LZ	Z Bules output	
7	Z-	input	20	LZR	Z Pulse output	
1	+24V	+24V Power supply	1	VIN	External DC24V Power supply+	
9	0V	24V Power to the	13	SG	External DC24V Power supply-	
15	ALRM	Servo-drive alarm	9	ALM	Fault	
8	SON	Servo	4	SON	Servo	
Lead cor	ntrol brake rela	y coil (output 0V )	12	MBR	Electromagnetic brakes	
Mitsubis	Mitsubishi servo drive Terminal CN1 : 6 ( LSP )、 7(LSN) 、 8(EMG) And you want 13 ( SG ) Short					



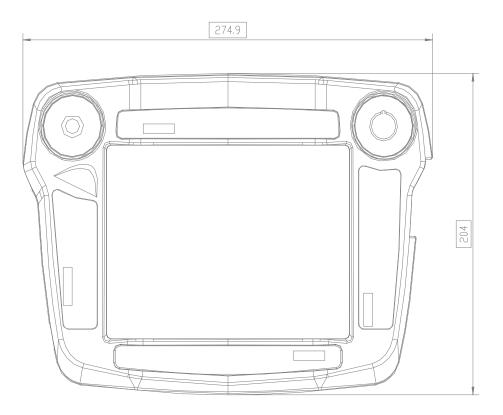
# 9.1 Board metal case sizes



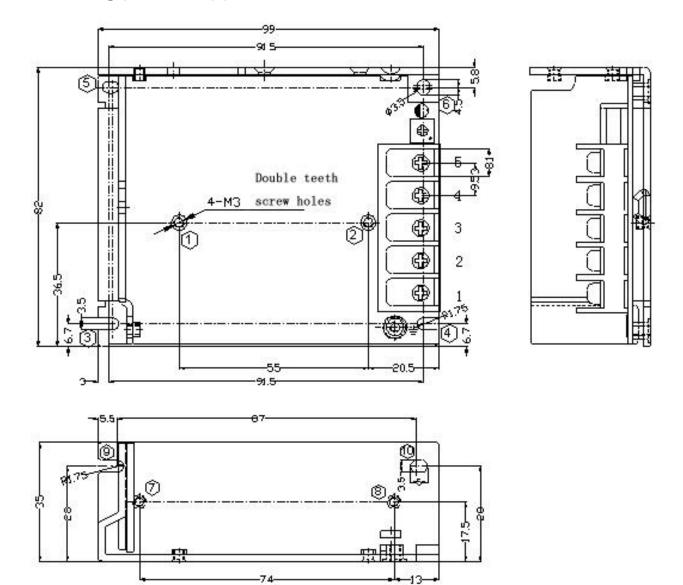




# 9.2 Hand controller

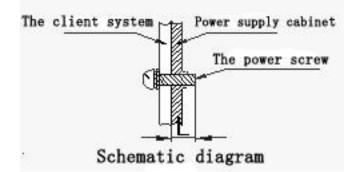


# 9.3 Switching power supplies installation dimensions



The	installation	Install a no.	Screw	Lmax	Install
installation			specification		torque
position					
Floor	screws	0-0	M3	4mm	6.5Kgf.cm(
installation		3-6	M3	4mm	max)
The side	screws	7-8	M3	4mm	6.5Kgf.cm(
		9-10	M3	4mm	max)

**Note:** n order to ensure the safety, screws into the power supply chassis length L (As shown in the figure below) as shown in the table above are satisfied



### 1, the installation of the ac input terminals

A	function	termi	The first material	Maximu
no		nal	installation specifications	m torque
1	Ν	9.5 with	22-14AWG	12Kgf.cm
2	L	clamshell		(max)
3		terminals		

### 2, install and use dc input terminals

A	function	termi	The first material	Maximu
no		nal	installation specifications	m torque
4	+V	9.5 with	22-14AWG	12Kgf.cm
5	-V	clamshell terminals		(max)

# This product is improved at the same time , information may be subject to change , without prior notice.