



Catalogue

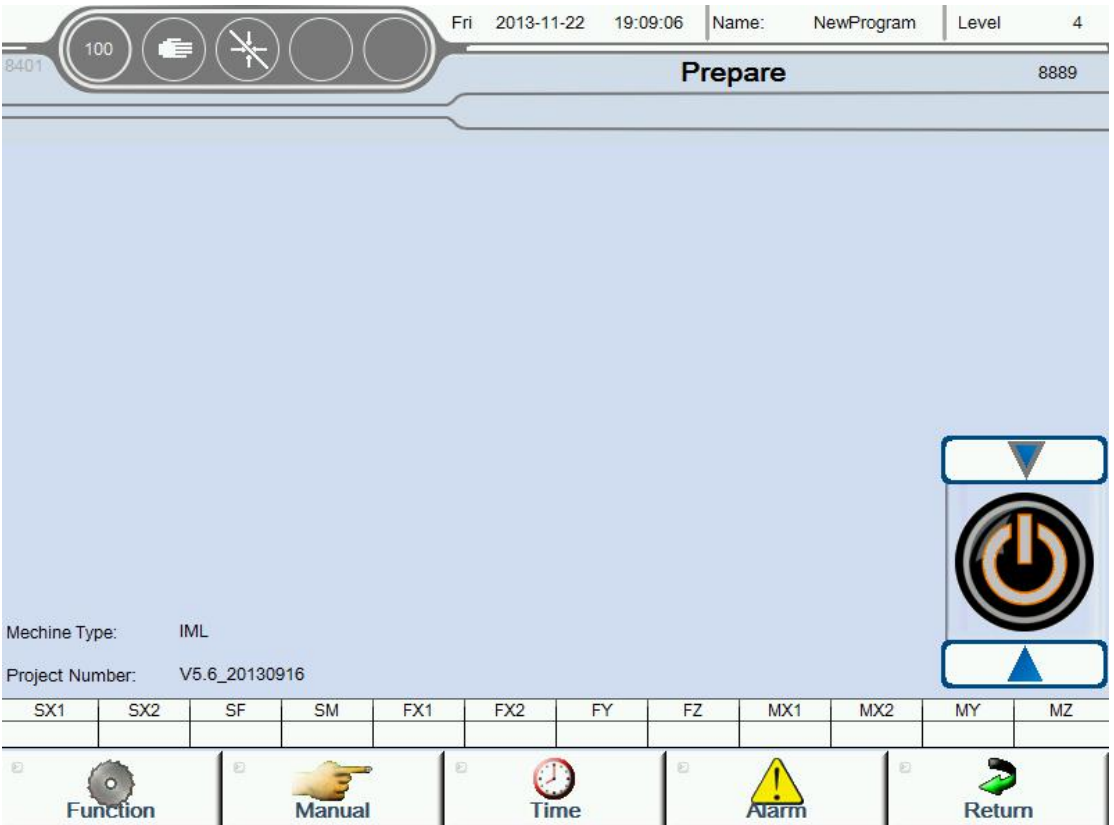
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1. Basic Screen

1.1 Prepare

After of the starting up, Automatic into prepare screen, as the picture below
1.1.1:



(Picture 1.1.1)

Prepare show the current state of the robot, User can easy understanding of the equipment running status,And can setup robot basic running parameter in this Screen,such as setup running speed,login password, motor switch etc.At the bottom of the page has 5 buttons, The 5 buttons to be distinguished 4 main function block.



Function Screen
Include Teach,System parameter ,
Servo parameter etc



Jog Operation Screen
Include robot Jog function,the add-on
function jog setting.



Relevant conventional set

Set blow the time parameter etc.



Alarm Screen

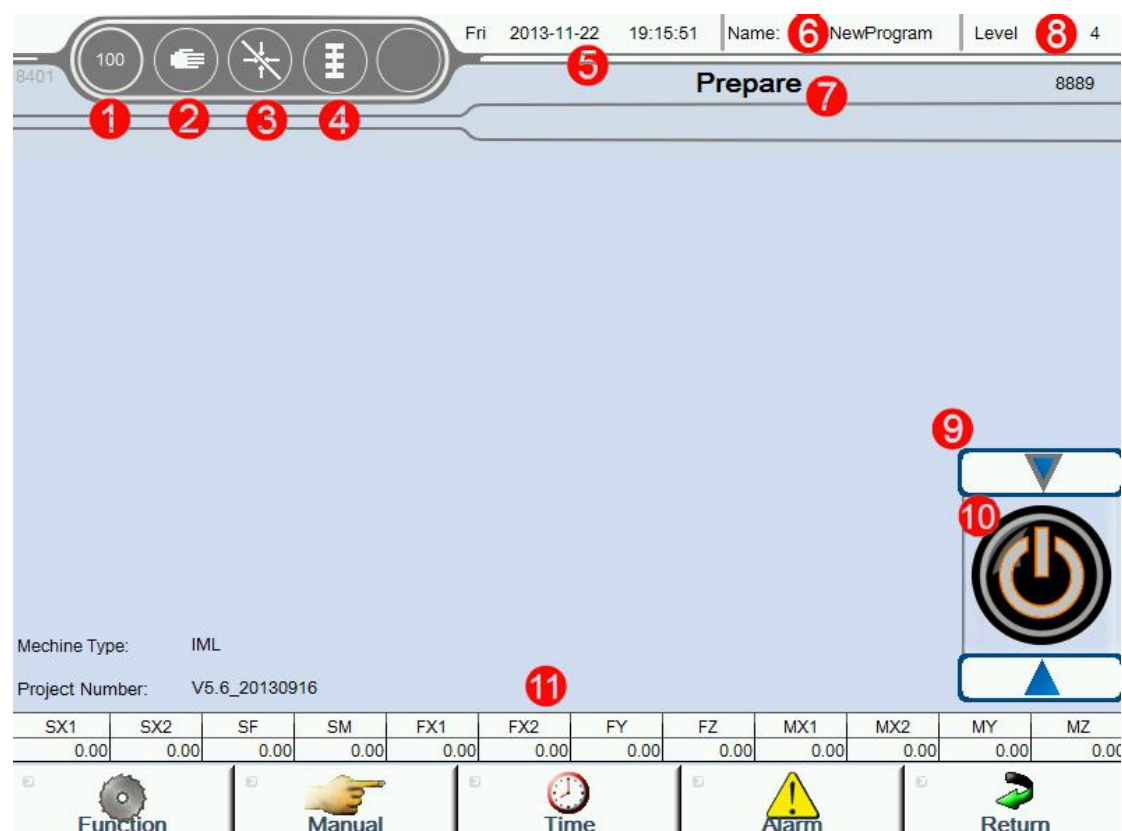
Detailed information on current and recent alarm, Convenient to analyze the cause of the problem.



Back up

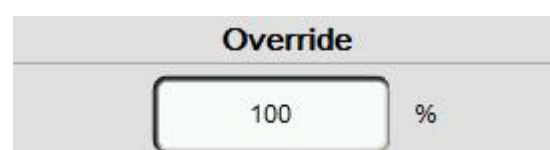
Exit the current screen to pre-screen.

The follow picture 1.1.2 detailed the **Prepare** screen about the meaning and function of each block display etc.

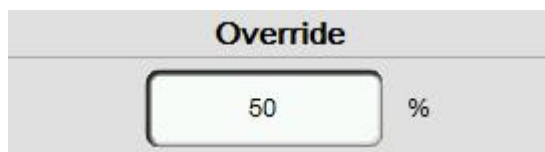


(Picture 1.1.2)

1. Running speed setting: set sum running velocity rate, can set 0 to 100 percentage;
Click here to appear a rate setting dialog box, an set 0 to 100 percentage.



Actual rate is 100 percentage, according to the set speed running.



Set actual rate is 50 percentage, according to the 50 percentage speed running.

2. The mark of Operating mode :



Manual mode: servo control off



Manual mode: servo control on



Automatic mode



Step mode



Step moving

3.The mark of Reference point :



Not get reference



Get reference already

4.The mark of Program editor: When this flag is displayed,unable to fully automatic operation;



Edit teach program, Teach mode

5.Current time:

6.Name of the current mode:Teach program name of currently used;


7.Alarm information:Display the current alarm information;


8.Login level:The different levels of password to get different levels of authority;

9.The servo Enable display button: After pressed display note 9,Press the button can startup and close servo motor enable;


10.Servo enable startup button:Startup and close the servo motor enable;

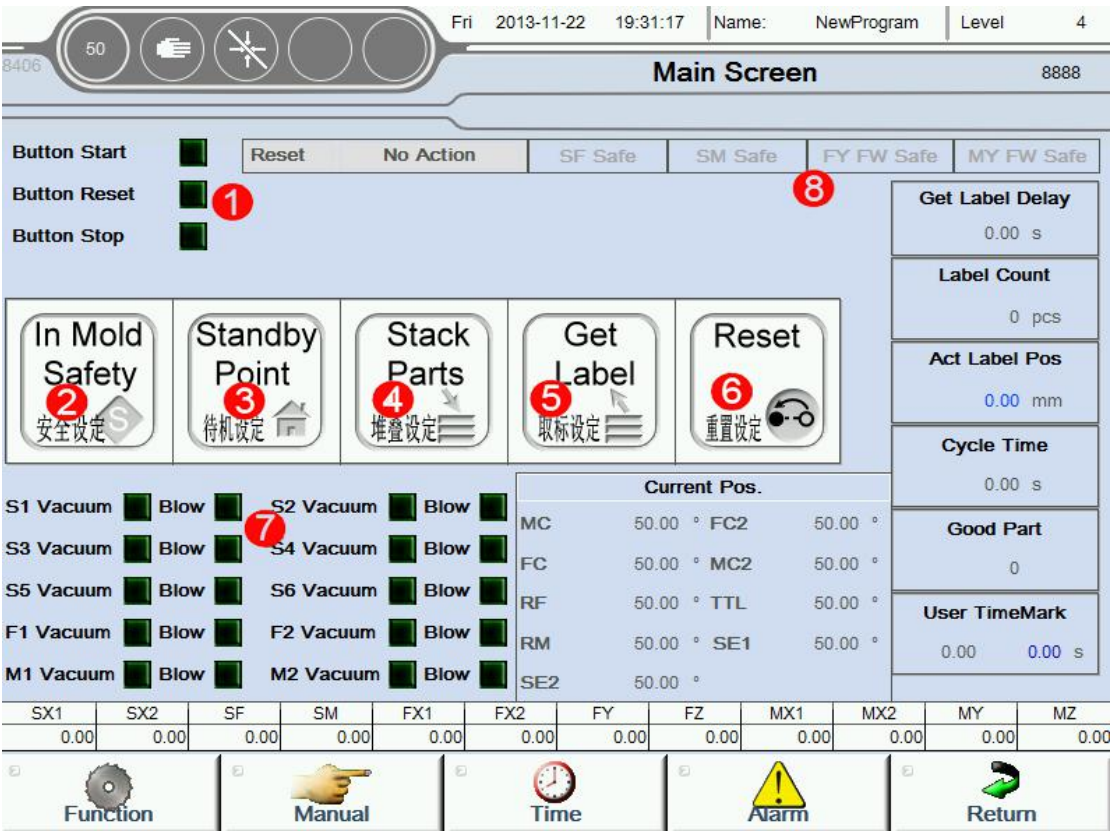
11.The current position of the robot:

When the arrow shows  ,Said the operation is not restricted,can forward and backward

When the arrow shows  , Said the operation is restricted,can not forward and backward

When the arrow shows  , Can forward but can not backward

When the arrow shows  , Can not forward but can backward



(Picture 1.1.3)

1.Hand controller"Start、Reset、Stop"Button state detection:

When the lights green said signal input, otherwise no signal input.

2.In Mold Safety:

3.Standby Point:

4.Stack Parts:

5.Get Label:


6.Reset:

7."Blowing" state detection:

When the lights green said signal input, otherwise no signal input;

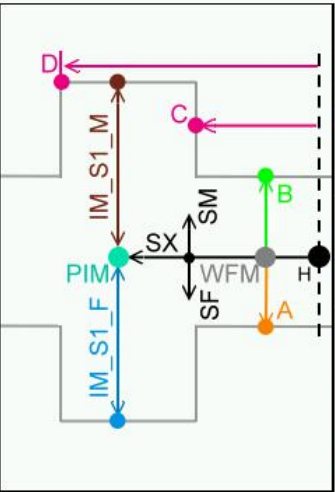
8.The current working state of the machine:

In Mold Safety Screen

Click  button into Mold Safety screen,as the picture below 1.2.1;

Attention: Please Set these Values in program mode ;

Please Set these Values In Program Mode

	Axis SX1 Safety In Mold 1	<input type="text" value="0.00"/> mm To D <input type="text" value="0.00"/> mm
	Axis SF Max Limited In Mold 2	<input type="text" value="0.00"/> mm
	Axis SF Min Limited In Mold	<input type="text" value="0.00"/> mm
	Axis SM Max Limited In Mold 3	<input type="text" value="0.00"/> mm
	Axis SM Min Limited In Mold	<input type="text" value="0.00"/> mm
	Y safety in Fside 4	<input type="text" value="0.00"/> mm
	F side safty height	<input type="text" value="0.00"/> mm
	Y safety in Mside 5	<input type="text" value="0.00"/> mm
	M side Safety height	<input type="text" value="0.00"/> mm

(Picture 1.2.1)

1.SX axis Safety In Mold:

Said if **SX** Out Mold Safety signal is not reaction:

- 1):if **SX** position in **C**(In Mold the minimum safe place) to **D** (In Mold the maximum safe place) range;
- 2):if **SX** position is not in **C** and **D**,so **SF**/**SM** maximum running is not allow exceed standby point;

2.SF axis max/min Limited In Mold:

Said if **SX** Out Mold Safety signal is not reaction **SF** Can run to maximum/minimum position.

3. SM axis max/min Limited In Mold:

Said if **SX** Out Mold Safety signal is not reaction;SM Can run to maximum/


minimum position.

4.Y safety in F-side FY:

Within the range,FX axis can run; **F-side safety height:** FZ axis within the range,FX axis can run;

5.M-side (MX/MY/MZ axis limiting condition) like as 4 set.

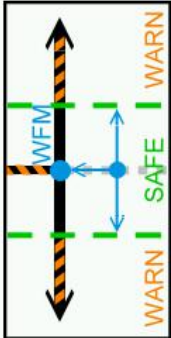
Standby Point Screen

Click  button to standby point screen .as the picture below 1.2.2:

Attention: Please Set these Values in program mode

When modify the setting in this screen the Teach mode is needed ;

Please Set these Values In Program Mode



Axis SX1 standby

Axis SX2 standby

Axis SF standby

Axis SM standby

0.00	mm	USE	
0.00	mm	USE	
0.00	mm	USE	Not Sync.
0.00	mm	USE	Not Sync.

(Picture 1.2.2)

Standby position said robot in out-mold waiting for the injection molding machine module open,every axis position.

Use the option:This axis Whether to participate in standby movement,When choose to use,When standby running,the axis will run to the corresponding standby point position;When choose not to use,the axis is not affected by standby operation(continue to initial state action);

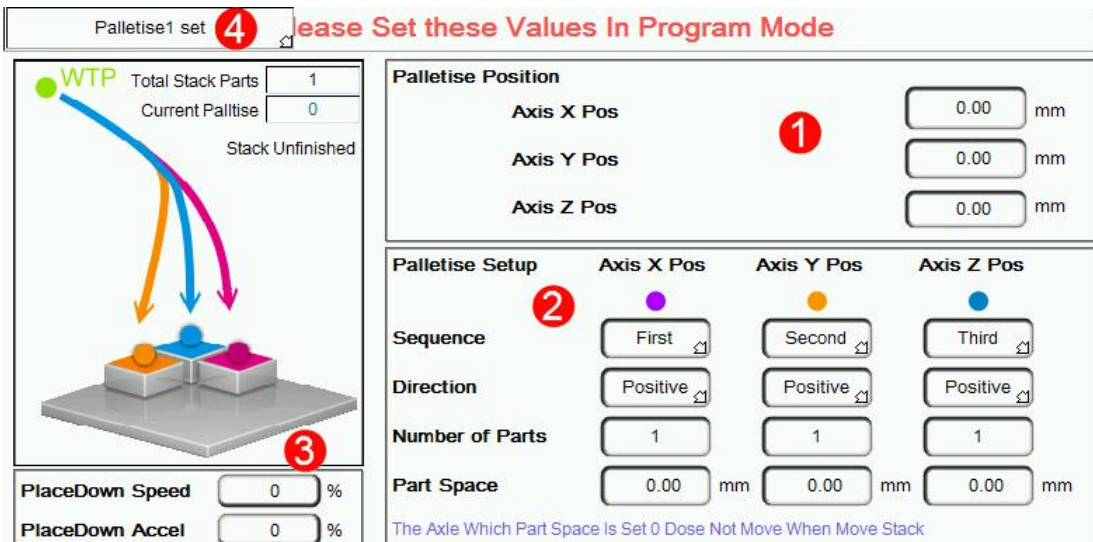
Separate running options:Said when standby running of **SF/SM**,Whether with

SX axis action:When choosing Separate running, then SX first run to the standby position,And then run **SF/SM** to standby point position;When choosing run at the same time,then **SX** and **SF/SM** run to the standby point together(Precondition for the axis in standby movement).

Stack Parts Screen

Click  button to Stack Parts Screen.as the picture below 1.2.3:

Attention: Please Set these Values in program mode ;



(Picture 1.2.3)

1. **Palletise Position:** Axis X(FX/MX)、Y(FY/MY)、Z(FZ/MZ) Position.

2. **Palletise Setup:**

Sequence: Set X, Y, Z stacked sequence,First of all increase which direction.

Direction: Set X、Y、Z direction,including the forward and reverse.The forward said axis position increase when stack,Whereas said axis position decrease;

Number of Parts: Set X、Y、Z three directions placement number.


Part Space: Spacing between adjacent two products;

3.**Stack Speed:** Place down speed and place down accelerated speed can be set.

Current Palltise: Program support 2 groups of different Settings of the stack,the corresponding stack group can call in the Program.

Stacked case, please see accessory 1

Get Label Screen


Click  button to get label screen.as the picture below 1.2.4:

Attention: Please Set these Values in program mode,get label case please see accessory 2.

Please Set these Values In Program Mode			
Get label Speed	<input type="text" value="10"/>	%	
Get label Accel.	<input type="text" value="10"/>	%	
Get Label Up V	<input type="text" value="0"/>	%	
Get Label Up A	<input type="text" value="0"/>	%	
		Label Position X	HL-X <input type="text" value="0.00"/> mm
		Label Position Y	HL-Y <input type="text" value="0.00"/> mm
		Label Position Z	HL-Z <input type="text" value="0.00"/> mm
		Label Position(Auto Calc.)	<input type="text" value="0.00"/> mm
		Up Postion(Rela.) when get label finish	<input type="text" value="0.00"/> mm
		Label Vertical Add	<input type="text" value="5.00"/> mm
		Times to Add Distance	<input type="text" value="0"/> / <input type="text" value="1"/>
		Move Down Pos. When Get label(Enable in first times)	<input type="text" value="0.00"/> mm
Detecting Label Speed	<input type="text" value="200"/>	%	Label Count <input type="text" value="0"/> Min Height Limited <input type="text" value="0.00"/> mm
Detect confirm Time	<input type="text" value="2.00"/>	s	Current Label Count <input type="text" value="0"/> Act Min Height Limited <input type="text" value="0.00"/> mm
Get Label Delay	<input type="text" value="0.00"/>	s	Get Label Continuou <input type="text" value="0"/> / 2 Table Turn Times <input type="text" value="0"/> / 2

(Picture 1.2.4)

Reset Setting

Click  button to Reset Setting screen.as the picture below 1.2.5:

Reset Settings	
Reset Speed	<input type="text" value="30"/> %
Reset Check Time(Single Step)	<input type="text" value="10.00"/> s
Reset Conveyor Time	<input type="text" value="4.00"/> s 0 Means Conveyor Do Not Reset
Reset Label Position	<input type="text" value="Off"/> ↕
Reset Variables' Values	<input type="text" value="Off"/> ↕
Reset Stack State	<input type="text" value="Off"/> ↕
AirBlow Reset	<input type="text" value="Off"/> ↕
Vacuum Reset	<input type="text" value="Off"/> ↕

(Picture 1.2.5)

- 1.**Reset Speed:** When click the reset button,Several axis movement reset Speed,
Setting can decide for themselves;
 - 2.**Reset Conveyor Time:** When reset, conveyor belt action time;
 - 3.**Check Label when Cycle Start:** Application in the case of getting label axis
for the servo axis;
 - 4.**Reset Check Time(Single Step):** If single-step speed faster than setting When
resetting,it will be alarm.
- Attention: Each axis reset sequence are those when the axis reference sequence
after starting up.

1.2 Function Screen

Click **Function** button into function screen.as the picture below 1.3.1:



(Picture 1.3.1)

1. Set some system function parameters;
2. Set language、unit、date、screen saver、change Password and parameter auto
save period;

3. Main screen;
4. Use for Program/servo parameter/IO parameter/system parameter/system event save etc;
5. Program Editor;
6. Program Monitor;
7. Use for variables parameter settings、 variable naming operations etc;
8. Vacuum config;
9. Check whether relevant feedback signals and other function signals use;
10. Used to set the usage of each axis, Including servo axis and pneumatic axis. And set reference sequence、 reference point etc;
11. Used to set servo running speed, each axis gain parameters and servo alarm message、 clear servo alarm etc;
12. For each axis running parameters Settings;
13. Used to monitor the real-time speed, current value and torque of each axis;
14. Use the input signal to control the output signal;
15. At the automatic runtime out whether disconnect the corresponding output;
16. Set the parameters related to production;
17. Set including Select type of the machine、 the status of Module configuration and Module check etc;

1.3 System Setup Screen

Click **System Setup** button into system settings screen. as the picture below 1.3.2.

The screenshot shows the 'System Settings' screen. At the top, there is a status bar with 'Fri 2013-11-22 19:47:33', 'Name: NewProgram', and 'Level 4'. Below this, the title 'System Settings' is centered. The main area contains two columns of settings, each with a numbered red circle callout:

Teach mode 1	On	MainScreenlogo 9	Not Display
Insert Delay Automatically 2	Off	Check Delete Teach Step 10	USE
Start from Last Command 3	Off	Third control 11	Off
Reboot to Clear EMS Alarm 4	Off	Following Move Type 12	Eur.Signal
EjeLabale 5	NotUse	SX Move Condition 13	SF/SM Ref.Signal
Cycle Run Confirm Button 6	USE	Vacuum Pump 14	NotUse
Level Key 7	NotUse	Mold Area Free Out Type 15	Out Mold Switch Sign
Auto Run EurSig Input Type 8	From IMM		

(Picture 1.3.2)

1. ☐ OFF: When Axis set position,direct input end position if the mode is Program Editor;
☐ ON: When Axis set position,need to manually move the axis to the desired position if the mode is Program Editor;
2. ☐ OFF: Need to manually add the delay orders after insert action if the mode is Program Editor;
3. ☐ ON: System will automatically add delay command after insert action if the mode is Program Editor;
3. ☐ ON: Machine stop after occur error when automatic.When start automatically again,the machine continue to run follow the steps to stop before ;
4. ☐ OFF: Machine stop after occur error when automatic,When start automatically again,the machine continue to run follow the first step form program ;
4. ☐ ON: After reboot emergency switch, need to restart clear the emergency alarm.
☐ OFF: After reboot emergency switch,emergency alarm clear;
5. ☐ Not USE: Do not use EjeLabel;
☐ USE: Use EjeLabel;
6. ☐ STOP: Cycle run confirm button, Click three buttons of the Controller on the left from top to bottom successively,beginning to run automatically;
☐ USE: Cycle run use confirm button,needed peripheral switch signal to trigger the cycle run after click three buttons of the controller on the left from top to bottom successively,This function is applicable to the safety confirmation before cycle run;
7. ☐ Not USE: Do not use level key(Need higher level authority);
☐ USE: Use level key(Need higher level authority);
8. ☐ From IMM: Needs to access Open/Close mould、 robot automatic etc When cycle run from injection molding machine.
☐ From Simulation: Can be cycle run do not need to obtain relevant signals from the injection molding machine.

9. **Display**: Display manufacturer LOGO on main screen;
- Not Display**: Do not display manufacturer LOGO on main screen;
10. **USE**: Confirm delete message appears when delete program step if the mode is program editor;
11. **STOP**: Direct delete program step and message do not appear when delete program step if the mode is program editor; In order to prevent the program steps accidentally deleted, Suggest to open this function;
11. **Positive**: If click light up left first button of controller when robot are used, Output 24 V to injection molding machine, else output 0 V.
12. **Negative**: If click light up left first button of controller when robot are used, Output 0 V to injection molding machine, else output 24 V.
13. **ON**: The part of the operation can be controlled by the injection molding machine manipulator, Limited to (Enable, startup, stop, Password level change, speed change etc);
13. **Eur.Signal**: Robot can to enter after receives the mould complete;
- Mold Open Switch**: Robot can to enter after corresponding grating signal was detected ;
- Mold Open Pos.**: Robot can to enter after open mold to set position (robot follow-up);
- Mold Open Pos.&Switch**: Robot can to enter after open mold to set position and corresponding grating signal was detected ; (robot follow-up);

1.4 Vacuum Config

Click Vacuum Config button into Vacuum setup screen.as the picture below

1.3.4

8406 50 Fri 2013-11-22 19:53:37 Name: NewProgram Level 4

Vacuum Setup 8303

Please Set these Values In Program Mode

F Side		SF Side		SM Side	
F1 Vacuum	Do Not Use	S1 Vacuum	Do Not Use	S1 Vacuum	Do Not Use
F2 Vacuum	Do Not Use	S2 Vacuum	Do Not Use	S2 Vacuum	Do Not Use
M1 Vacuum	Do Not Use	S3 Vacuum	Do Not Use	S3 Vacuum	Do Not Use
M2 Vacuum	Do Not Use	S4 Vacuum	Do Not Use	S4 Vacuum	Do Not Use
		S5 Vacuum	Do Not Use	S5 Vacuum	Do Not Use
		S6 Vacuum	Do Not Use	S6 Vacuum	Do Not Use
M Side					
F1 Vacuum	Do Not Use				
F2 Vacuum	Do Not Use				
M1 Vacuum	Do Not Use				
M2 Vacuum	Do Not Use				

(Picture 1.3.4)

1.F-side Vacuum : You can chose F 1,F 2,M 1,M 2 Vacuum,use or do not use in here,The chose vacuum can action when teaching used;

2.SF-side Vacuum: You can chose S 1,S 2,S 3,S 4,S 5,S 6 Vacuum,use or do not use in here,The chose vacuum can action when teaching used;

3.SM-side Vacuum: You can chose S 1,S 2,S 3,S 4,S 5,S 6 Vacuum,use or do not use in here,The chose vacuum can action when teaching used;

4. M-side Vacuum : You can chose F 1,F 2,M 1,M 2 Vacuum,use or do not use in here,The chose vacuum can action when teaching used;

1.5 Program Editor

Click **Program Editor** button into Program editor screen.as the picture below

1.3.5

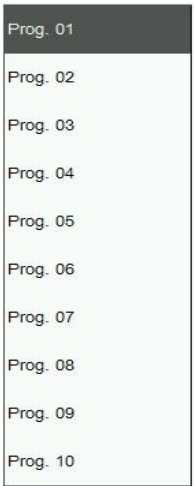


(Picture 1.3.5)

Teaching program editing methods:

Hold the action icon from “3” ,can drag and drop to “4”;

1.Program selection:In this menu, you can choose other programs.



Use the menu to switch between different program.

The program 1 is main program,program 2-10 is subprogram;The default system began to run only run the main program;Subprogram performed by the main program to call, Otherwise cannot perform;

2.Program named:

The current name is Program 1 , The virtual keyboard, click on the program name,as the picture below 1.3.6







(Picture 1.3.6)









- 1.Enter the program name;
- 2.Caps Lock,After press type in capital letters;
- 3.Click this button to confirm after the program name;

3.Command group






Command group including:Axis running,output,input,wait,jump;













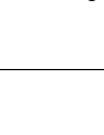

- 1.The table below for axis run command group, Program case please see annex 3

Command name	Chart	Function	Parameter	Unit
S-side linkage 		S-side linear interpolation run to set position	S X End position	mm/Inch
			S F End position	
			SM End position	
			S X 2 End position	
			Accelerated	% the maximum acceleration
			Speed	% the maximum speed
			Safety Time	Timeout alarm
			Mode of motion	Accurate pos/smooth pos
F-side linkage 		F-side linear interpolation run to set position	detection	Detection mould completed
			F X End position	mm/Inch
			F Y End position	
			F Z End position	
			Accelerated	% the maximum acceleration
			Speed	% the maximum speed
			Safety Time	Timeout alarm













M-side linkage 		M-side linear interpolation run to set position	Mode of motion	Accurate pos/smooth pos
			detection	Detection mould completed
			M X End position	mm/Inch
			M Y End position	
			M Z End position	
			Accelerated	% the maximum acceleration
			Speed	% the maximum speed
			Safety Time	Timeout alarm
SX1 Axis run 		SX1 Axis run to set position (Servo axis) Note①	End position	mm/Inch
			In interval	mm/Inch
			Accelerated	% the maximum acceleration
			Speed	% the maximum speed
			Safety Time	Timeout alarm
		SX1 Axis run to set position (Pneu.axis) Note②	Waiting in place	Waiting run in place to step down or directly run next step
			Detection	Detection mould completed
			End position	Absolute pos/relative pos
			Safety Time	Timeout alarm
			Waiting in place	Waiting run in place to step down or directly run next step
SX2 Axis run 		SX2 Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
SX1&SX2 Axis run 		SX1 and SX2 Axis run to set position meanwhile (Servo axis) Note③	End position	mm/Inch
			In interval	mm/Inch
			Accelerated	% the maximum acceleration
			Speed	% the maximum speed
			Waiting in place	Waiting run in place to step down or directly run next step
			Safety Time	Timeout alarm
			Detection	Detection mould completed
		SX1 and SX2 Axis run to set	Waiting in place	Waiting run in place to step down or directly run next step















		position meanwhile (Pneu.axis) Note④	End position	mm/Inch
			Safety Time	Timeout alarm
			Detection	Detection mould completed
SF Axis run 		SF Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
SM Axis run 		SM Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
FX1 Axis run 		FX1 Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
FX2 Axis run 		FX2 Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
FY Axis run 		FY Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②; ;	
FZ Axis run 		FZ Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
MX1 Axis run 		MX1 Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	
MX2 Axis run 		MX2 Axis run to set position	If choose Servo axis like with note①; If choose Pneu.axis like with note②;	

MY Axis run 		MY Axis run to set position	If choose Servo axis like with note① ; If choose Pneu.axis like with note② ;
MZ Axis run 		MZ Axis run to set position	If choose Servo axis like with note① ; If choose Pneu.axis like with note② ;
SF&FY linkage 		SF&FY axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④ ;
SM&MY linkage 		SM&MY axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④
SF&SM linkage 		SF&SM axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④
FY&MY linkage 		FY&MY axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④
FZ&MZ linkage 		FZ&MZ axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④
FX1&FX2 linkage 		FX1&FX2 axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④




MX1&MX2 linkage 		MX 1&MX 2 axis run meanwhile	If choose Servo axis like with note③ ; If choose Pneu.axis like with note④	
Stacking 		Call stack product program	Choose stack program	program support 2 groups of different Settings of the stack
			Perform side	F-side/M-side/Stack A/Stack B
			Safety Time	Timeout alarm
Get Label 		Call Label,Take the setting below link home page	Perform side	F-side/M-side/Stack A/Stack B
			Safety Time	Timeout alarm
			Vacuum used	Choice vacuum when get label
Reset Stacking 		Product stack quantity reduction	Choose stack program	When the program it has stopped cycle run because of error,This function can reset the number of stack procedures have been executed,When the program to automatically run again,Stack number starting from 0 count again.
Pneu.Axis Move 		Choose Pneu.axis movement	Perform side	Choose axis need action
			Target position	Select vertical, horizontal, or any place
			Waiting in place	Running in place before you execute the next step
			Direct run	This step and the next step to run at the same time
Standby 		Call standby set in the home page	Accelerated	% the maximum acceleration
			speed	% the maximum speed
			Safety Time	Timeout alarm
		Attention: Only the SF/SM position within the scope of standby position,S X can from Die outside running into the mould,Or from a mould run to the outside of the mold,Otherwise, the S X cannot run		
IO Jump 		According to Vacuum and the input to perform the corresponding	Vacuum or input	Which group can choose vacuum or input
			Status	Can choose the output state: on or off

		action	Next step	When the above conditions meet,Can choose to manually or run the next step
Set Vacuum 		Vacuum Open/Close	Choose Vacuum	Combination of the vacuum and single vacuum
			Status setting	Can choose the output state: on or off
Set Output 		Set output	Select the user output	Output 1~16
			Status setting	Can choose the output state: on or off
Set Func.Output 		Set Func.Output	Choose the Function signal	Signal selection:Conveyor Belt,oil injection,Elevator,Air Blow.
			Status setting	Can choose the output state: on or off
Set Variable 		Set the parameter of users choice	Choose user parameter	User parameters and variables
			Set value	Used for counting
EM 12 Setting 		Set Em 12 Output	Choose Em 12 output	[-]
			Status setting	Can choose the output state: on or off
EM 67 Setting 		Set Em 67 Output	Choose Em 67 output	[-]
			Status setting	Can choose the output state: on or off
Variable increase 		Parameters or variables of the choice plus 1	Choose the parameter or variable	Parameters or variables on the basis of the current plus 1, is used to count.
Variable decrease 		Parameters or variables of the choice minus 1	Choose the parameter or variable	Parameters or variables on the basis of the current minus 1, is used to count.

Delay 		After the time delay, run the next step	Delay time	Second S
Wait Vacuum 		Waiting for vacuum to meet set by the state, The program has been waiting for conditions to meet.	Vacuum choice	Choose the Vacuum which need to detect
			Status setting	Can choose the output state: on or off
			Safety Time	Set safety time of detection signal
Wait Input 		Waiting for the selected input signal meet set by the state, The program has been waiting for conditions to meet.	Choose the user signal	Input 1-16 or no choice
			Status setting	Can choose the output state: on or off
			Safety Time	Timeout alarm
Wait function input 		Waiting for Function signal meet set by the state, The program has been waiting for conditions to meet.	Choose the Function input	[-]
			Status setting	Can choose the output state: on or off
			Safety Time	Timeout alarm
Wait Variable 		Waiting for the choice of parameter variables to set conditions, The program has been waiting for conditions to meet.	parameters set	[-]
			Conditions choose	the logical relationship between Waiting for the value and set value
			Set value	Parameter values meet the set value of logic relations, run the next step
			Safety Time	Set action safe time
Wait Em 12 		Waiting for the Em 12 to set conditions, The program has been waiting for conditions to meet.	Choose Em 12	[-]
			Status setting	Can choose the output state: on or off
			Safety Time	Timeout alarm

Wait Em 67 		Waiting for the Em 67 to set conditions,The program has been waiting for conditions to meet.	Choose Em 67	[-]
			Status setting	Can choose the output state: on or off
			Safety Time	Set safety time of detection signal
Wait sync program run finish 		Wait sync program run finish ,Program will be waiting here	sync program run choice	When waiting for the subprogram after the completion of the run,Condition is met,Execute the next step
Wait Axis position 		Wait for the choice of servo axis position to meet the set conditions,Program will be waiting here.	Choose the servo axis	Choose the servo axis which need to detect position
			Conditions choose	the logical relationship between Waiting for the value and set value
			Position setting	The actual position values meet the set value of logic relations, run the next step
			Safety Time	Timeout alarm
Jump label 		Insert Jump label jump label automatically increase	[-]	[-]
Skip to set label 		Unconditional jump to set jump label	Choose jump label	Program is running to this step, jump to the next set
Call sync program 		Call sync run program	Choose sync run program	Sync of other programs except the icon in the program
Vacuum Jump 		if the input of vacuum meet the conditions of setting,then jump to the label by set	Choose Vacuum	[-]
			Status setting	the input state of vacuum : on or off
			Choose jump label	[-]

Input Jump 		if the input meet the conditions of setting,then jump to the label by set	Choose user input	Input 1-16
			Status setting	the input state: on or off
			Choose jump label	[-]
Func.Input jump 		if the input of function meet the conditions of setting,then jump to the label by set	Choose Func.Input	[-]
			Status setting	the input state: on or off
			Choose jump label	[-]
Variable Jump 		if the parameter variable meet the conditions of setting,then jump to the label by set	Choose user parameter	[-]
			Conditions Choose	Set value meet of the logical condition
			Jump value set	The actual value meet the set value then jump
			Choose jump label	[-]
Em 12 Input Jump 		if the Em 12 meet the conditions of setting,then jump to the label by set	Input choose	[-]
			Status setting	the input state: on or off
			Choose jump label	[-]
Em 67 Input Jump 		if the Em 67 meet the conditions of setting,then jump to the label by set	Input choose	[-]
			Status setting	the input state: on or off
			Choose jump label	[-]
Axis position Jump 		if the position of servo axis meet the conditions of setting,then jump to the label by set	Servo axis choose	[-]
			Conditions Choose	Set value meet of the logical condition
			Set position	The actual value meet the set value then jump
			Choose jump label	[-]
End Program 		End of program	[-]	if program run to this label,program over,Insert the label at the bottom of the the label as invalid label

Start Program			Begin of program	[-]	Began to run automatically,run program from now on
Other wrong steps			program step error	[-]	This step is not correct or not compatible with this version of the system.

4.Current Action:

5.The current instruction content:Set the current action parameters.

6.Exit Program editor:



In program editor model , Program can not switch to the automatic operation mode, Click on this button,The program of user editor will automatically save ; If do not quit, when controller restart, the program will do not save

7.Stack set screen



8. Into main screen



9. Into JOG screen



10. Insert delete command



insert rows(upper).



Delete the current teaching steps : When the system page delete message used, delete steps there are message,on the contrary,Can quickly remove teach step directly,In order to prevent the user deleted by mistake,Select for use after advice.



Complete the insertion or deletion

11. Jump to the number:

Input digital serial number in the Spaces,will jump to the corresponding program location

1.6 Program Monitor

Click **Program Monitor** button into current page. as the picture below 1.3.7:

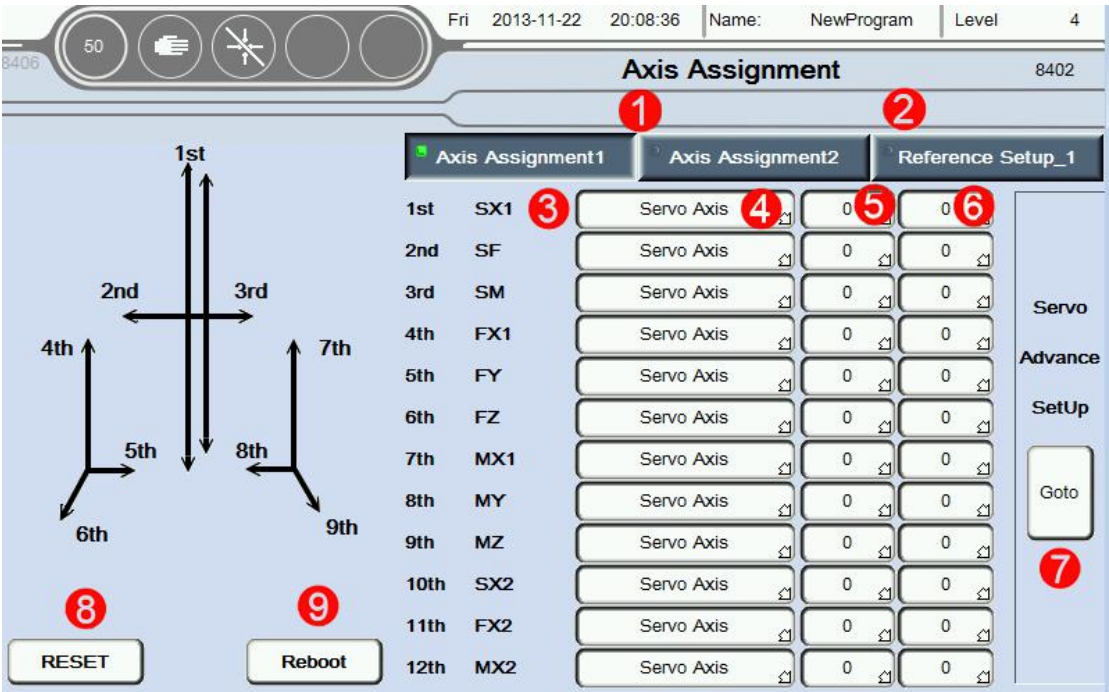


(Picture 1.3.7)

When robot run automatically, label will automatically follow the instruction to the current action,And with "dark gray" highlighted in color,At the same time on the right shows the specific content of the current instruction.

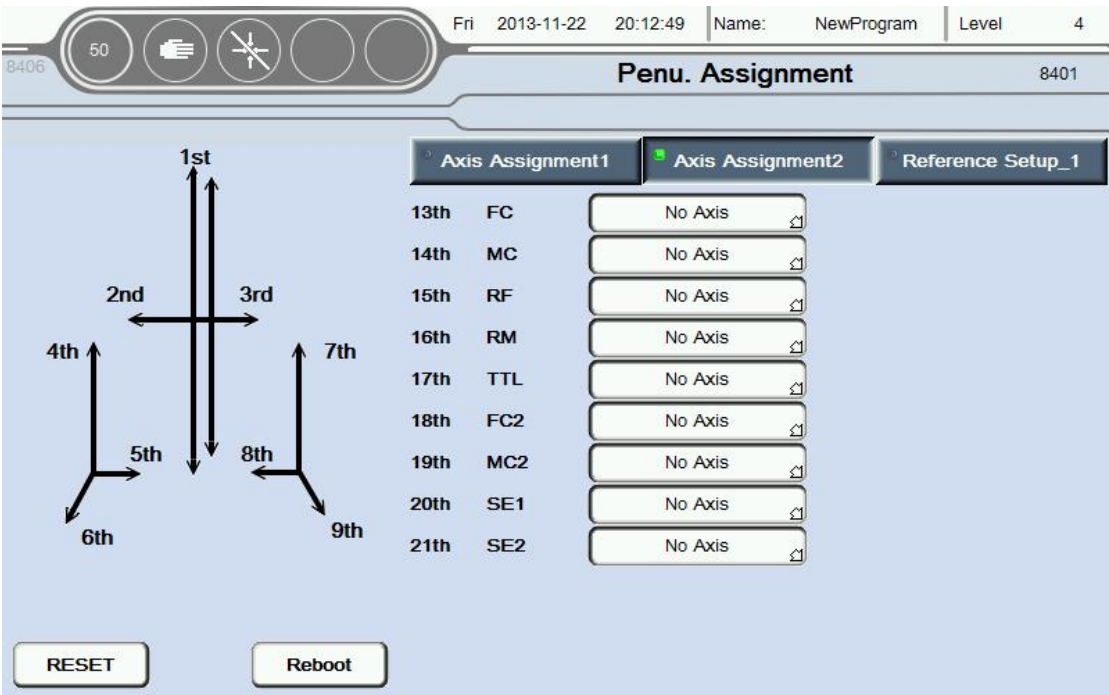
1.7 Axis Assignment

Click **Axis Assignment** button into current page. as the picture below 1.3.8:



(Picture 1.3.8)

1. **Axis Assignment** (Click **Axis Assignment 2** into Penu.axis choose, as the picture below 1.3.8.2);



(Picture 1.3.8.2)

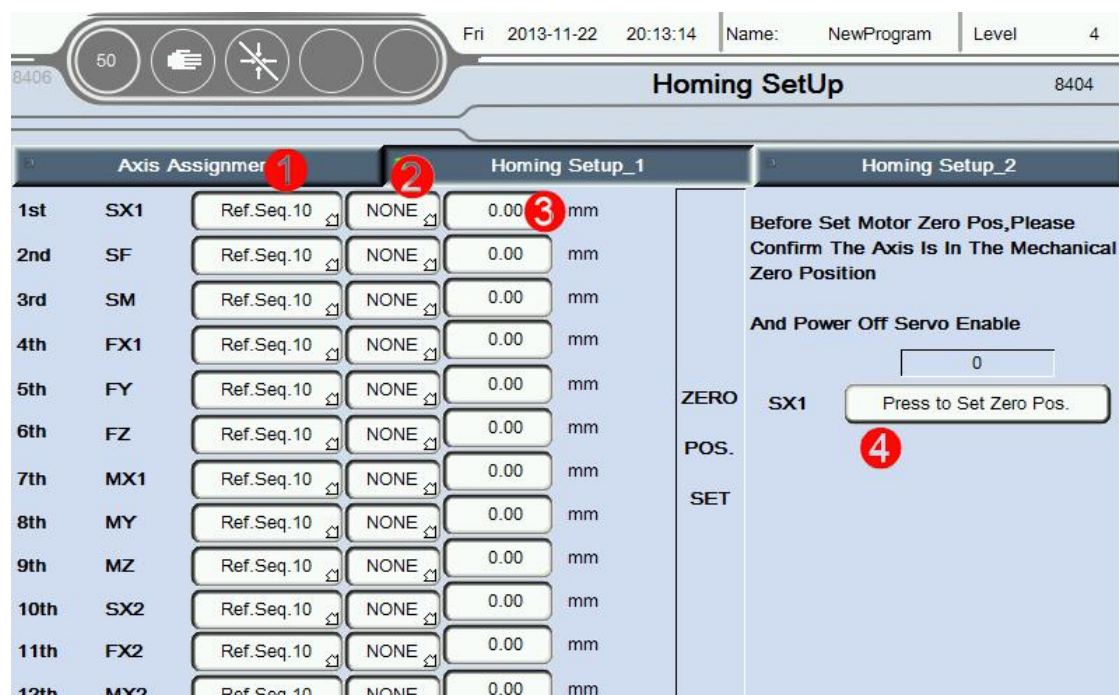
2.Home setup:Set axis to reference point of the relevant settings ;

3.The current name of axis:Can be based on rename the axis after click on the name of the axis;

4.Set axis type:Can choose servo axis,penu.axis or no choose(do not use this axis;

Click on the reference point setting 1, into the reference point setting 1. as the picture below 1.3.9.1;

Click on the reference point setting 2, into the reference point setting 2.as the picture below 1.3.9.2;



(Picture 1.3.9.1)

1.Set reference point sequence:In total,can be set level 10 reference point sequence,When reference point,Axis in order from small order to big order movement (To run the first order 1, second 2.....last 10);

2.Choose the reference point : Can choose no choose or the reference point ,if choosing a reference point,Only When in the corresponding of the axis induction to the point of the reference signal,can be zero.Otherwise the alarm to zero does not meet the conditions.On the other hand, the axis to zero without being limited by the reference point;

3.Set each axis zero offset : After all the axis to zero,If exist offset with ideal

position,the offset position can be set to the ideal position.Offset of the Servo axis unit is mm,The position offset of pneumatic axis have three options:No, the maximum and minimum values;

4.Click the button to set the current point is zero.

Attention:

1).Please make sure the axis in the mechanical zero point position,and make sure the motor enable has been closed,before set the mechanical point;

2).Mechanical zero setting is only applicable to absolute value of motor of use the Sigmatek driver(MDD/SDD);

3).The condition of zero:Mould outside signal + Mould complete signal + The reference zero signal(If the conditions are selected as the reference point + Currently no alarm),Otherwise the alarm return does not meet the conditions;

Axis Assignment			Homing Setup_1		Homing Setup_2	
13th	FC	Ref.Seq.1	Initial Pos	None		
14th	MC	Without Ref.	Initial Pos	None		
15th	RF	Without Ref.	Initial Pos	None		
16th	RM	Without Ref.	Initial Pos	None		
17th	TTL	Without Ref.	Initial Pos	None		
18th	FC2	Without Ref.	Initial Pos	None		
19th	MC2	Without Ref.	Initial Pos	None		
20th	SE1	Without Ref.	Initial Pos	None		
21th	SE2	Without Ref.	Initial Pos	None		

(Picture 1.3.9.2)

1. Set type of return:The same as upper of zero sequence Settings;

2.The initial position is set:The same as upper of zero offset Settings;

1.8 Module Status

Click **Configuration** button into configuration screen,as the picture below

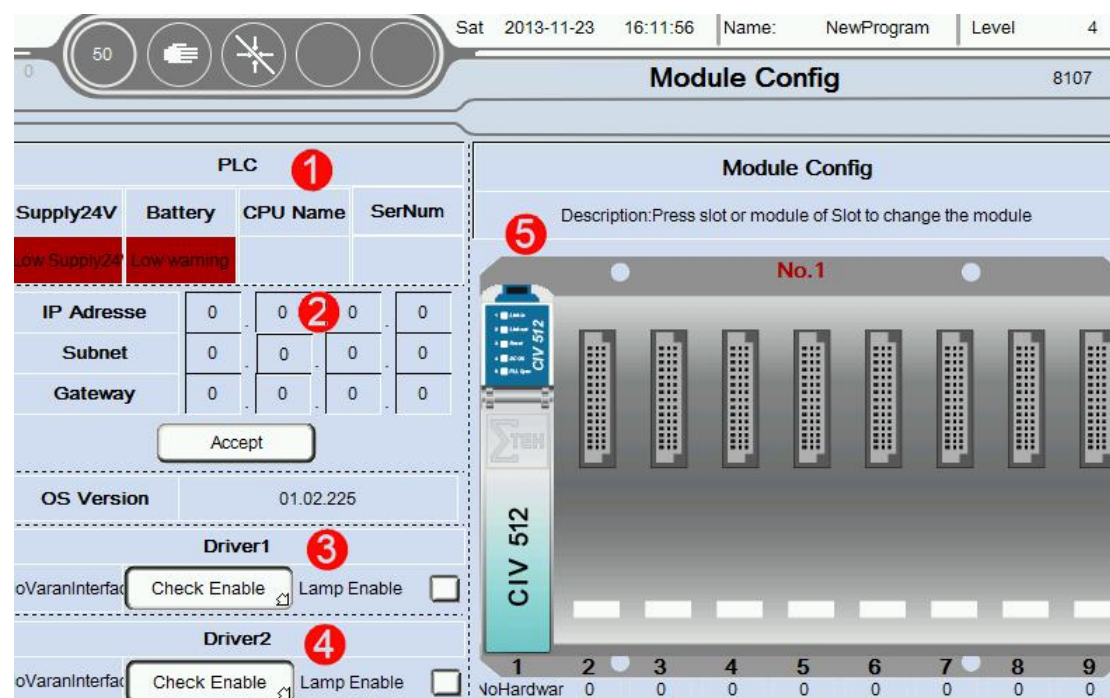
1.3.10:



(Picture 1.3.10)

1.The machine type can be choose:Standard IML,Side Entry,Double Mold,Different models,The limiting conditions of axis are different,It was advised setting corresponding models must be based on the actual.

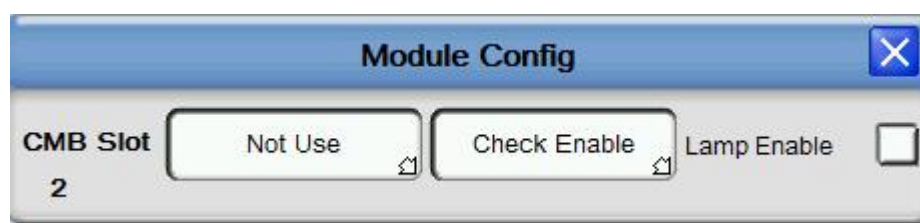
2.Click Module Config button into Module Config screen,as the picture below 1.3.11:



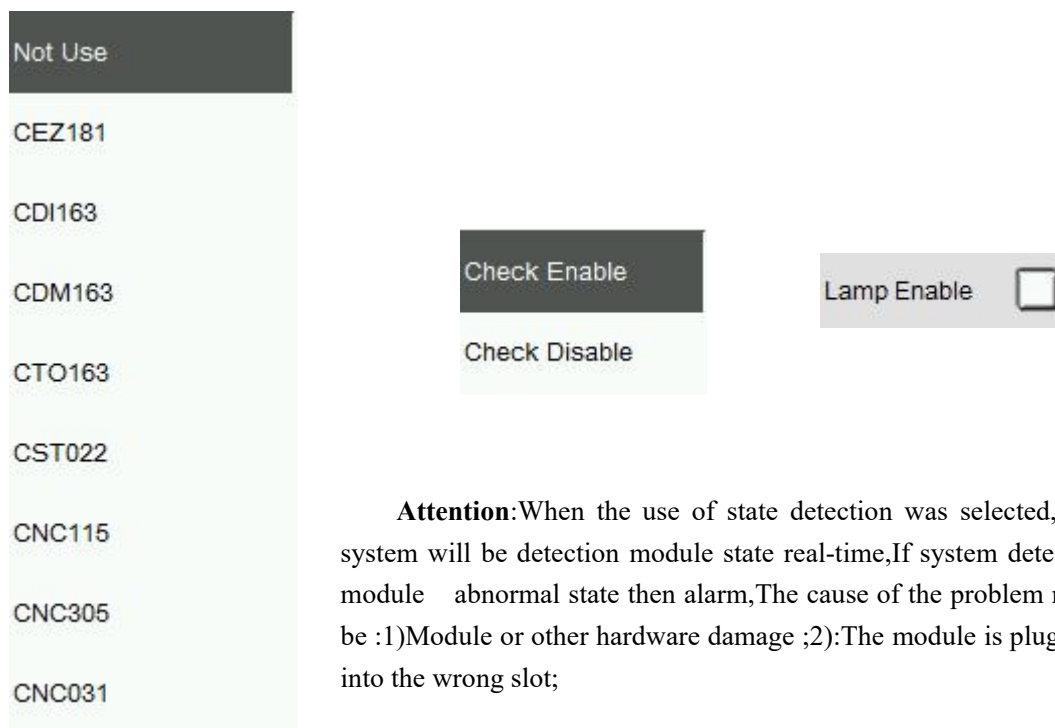
(Picture 1.3.11)

When the module connection is not correct, The corresponding module will turn red.

1. Current PLC status display;
2. IP address and PLC OS version ;
3. Driver 1: ☐ Yes ☐ No Using condition monitoring, Detect fault alarm whether allow buzzer output;
4. Driver 2: ☐ Yes ☐ No Using condition monitoring, Detect fault alarm whether allow buzzer output;
5. Module configuration: When you click on any module or Empty slots will be display module configuration page



1. In the first menu you can select the desired module ,as the picture below:



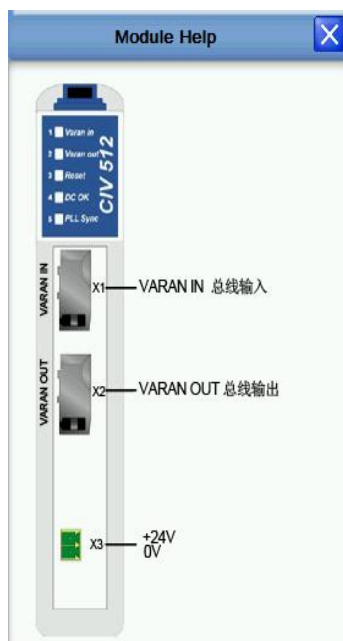
Attention: When the use of state detection was selected, The system will be detection module state real-time, If system detected module abnormal state then alarm, The cause of the problem may be : 1) Module or other hardware damage ; 2) The module is plugged into the wrong slot;

2. After choose the required modules, In the second menu can set whether need

condition monitoring;

2.Buzzer:When checked the buzzer sends out sound when alarm.No choice,no output;

When double click on the module pop-up help information for the corresponding module,as the picture below:



The help for module provides the user

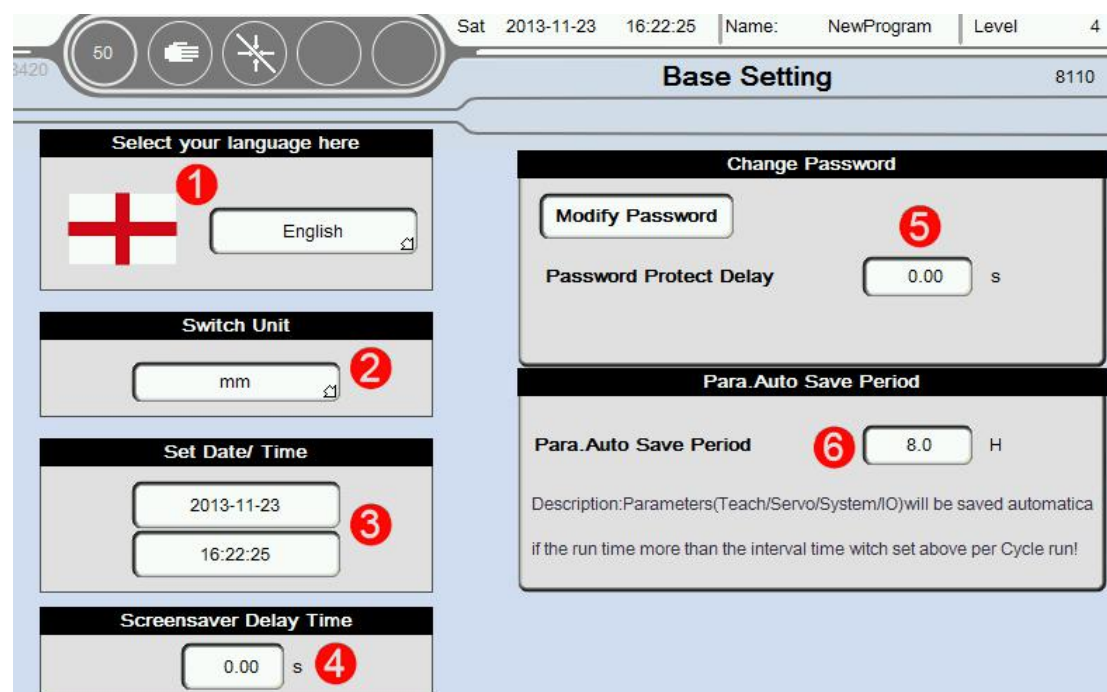
with a simple module interface specification

The function of each interface points for module,

mode of connection and the voltage type was Supported

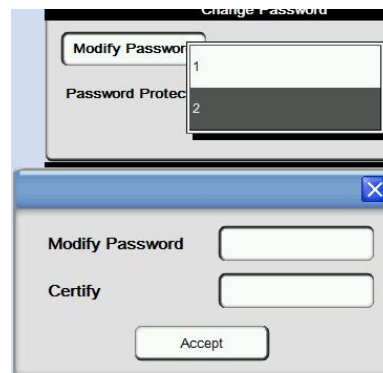
1.9 Base Setting

Click **Base Setting** button into Base Setting screen,as the picture below 1.3.12:



(Picture 1.3.12)

- 1.language settings:If click menu button then can choose a different interface language,currentlly,System is contains four languages: Deutsch,Turkish,English and Chinese.Also can expansion of language infinitely, according to the needs of users.
2. The machine unit at runtime,divided into two kinds of mm and inch;
3. Set Date/Time;
4. Set the screen saver time,Time is 0 closed screen saver;
- 5.Modify the level 1 to 2 password;level 3 password is for the administrator password(Need to be careful when change),Can not be changed;level 4 password is for the manufacturers (By the manufacturers hold)



First choose the password that need to modify,Selected and input the password of modified to the password change,Second input confirm password again in the confirmation field,Finally click ok button to complete the password change.

6. Parameters are automatically saved period:When the system switch from automatic to manual And fully automatic running time reaching the set time.Parameters including teaching,servo,system and I/O will be automatically saved once;**Attention:** Only if it was failure when the switch from automatic to manual,Continuous automatic runtime then parameters will not be saved;

1.10 Produce Setup

Click Produce Setup button into quantity setup screen,as the picture below 1.3.13:

The screenshot shows the 'Quantity Setup' screen. At the top, a status bar indicates 'Sat 2013-11-23 16:27:37', 'Name: NewProgram', and 'Level 4'. The main area contains several input fields and buttons:

- Total Quantity:** Input '1' with a red circled '1' and a 'Reset' button.
- Good Part:** Input '0' with a red circled '2' and a 'Reset' button.
- Reject Part:** Input '0' with a red circled '3' and a 'Reset' button.
- Total CycleTime with Machine:** Input '0.00 s' with a red circled '4'.
- Robot Idle Time:** Input '0.00 s' with a red circled '5'.
- Plan finished:** Input '0.0 %' with a red circled '6'.
- Quantity Setup:** Input '0' with a red circled '7'.
- Reject Alarm Interval:** Input '0' with a red circled '8'.
- Cycle Monitor:** Input '0.00 s' with a red circled '9'.

On the right side, there is a section titled '10 Last 3 Cycle Total Time record' with a table:

Last 3rd	Last 2nd	Last Cycle
0.00 s	0.00 s	0.00 s

Below the table, it shows 'Average Total Product Time(3 Cycles) 0.00 s'. Further down, there is a 'Plan finished' section with a yellow bar and 'Estimate Finish after 0 H 0 Min'. At the bottom, it shows 'Robot Idle Time Rate 0.0 %'.

(Picture 1.3.13)

- 1.Total quantity:Machines every action a mold,Numerical automatic plus one. After reset,Counting from 0 again;
- 2.Good Part:Machines every action a mold,If there is no Reject Part signal input,Numerical automatic plus one.After reset,Counting from 0 again;
- 3.Reject Part:Machines every action a mold,If there is Reject Part signal input,Numerical automatic plus one.After reset,Counting from 0 again;
- 4.Total Cycle Time with Machine:Machines every action a mold need cycle time.
- 5.Robot Idle Time:After the completion of the robot to take out the products,Waiting for injection mould signal of standby time.
6. Plan finished:The current production of the setting percentage.
7. Quantity Setup:Need to set the number of Quantity,When you run the number of module to achieve set value,Stop and alarm prompt.
8. Reject Alarm Interval:Reached set value when the number of occurrences of Reject signal,Stop and alarm prompt.

9. Cycle Monitor: If cycle time more than monitoring time, Stop and alarm prompt.

10. Last 3 cycle total time record: The average shape cycle is average time for the first three period, Predict work completion time is according to the average shape cycle, Automatically calculate how long it will take to get the job done. Robot idle rate is the ratio of idle time and total cycle time;

1.11 Check Setup

Click **check setup** button into signal check screen, as the picture below 1.3.14:

8406 50 8105

Sat 2013-11-23 16:32:28 Name: NewProgram Level 4

Signal Check

Please Set these Values In Program Mode

Vacuum S1 Check <input type="checkbox"/>	Vacuum S2 Check <input checked="" type="checkbox"/> 0.00 s 1 Times
Vacuum S3 Check <input type="checkbox"/>	Vacuum S4 Check <input type="checkbox"/>
Vacuum S5 Check <input type="checkbox"/>	Vacuum S6 Check <input type="checkbox"/>
Vacuum F1 Check <input type="checkbox"/>	Vacuum F2 Check <input type="checkbox"/>
Vacuum M1 Check <input type="checkbox"/>	Vacuum M2 Check <input type="checkbox"/>

Safety Device <input type="checkbox"/>	Label Check <input type="checkbox"/>
Ejector Feedback Check <input type="checkbox"/>	Pressure Check <input type="checkbox"/>

(Picture 1.3.14)

Attention: Please Set these values in program mode!

Set whether the corresponding signal detection, If choose detection,

During automatic operation, Did not detect the signal, will be alarm;

As the picture above.



→ Check:

1. Detection time: After output this point, When reaching set time, then the corresponding signal detection again.

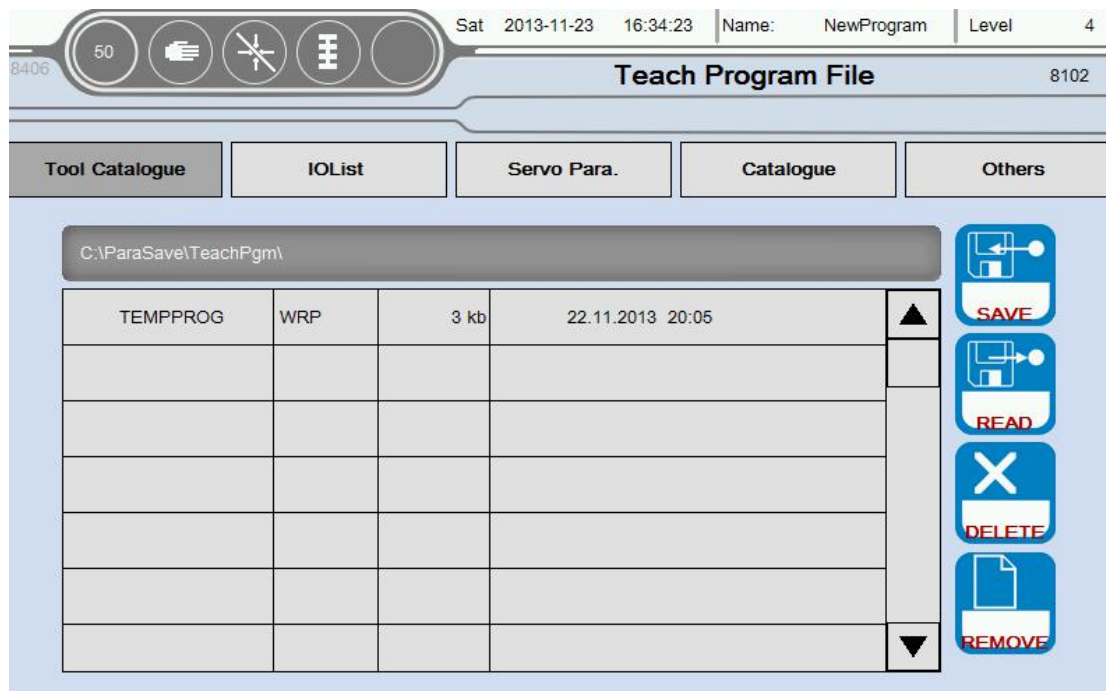
2. Number of times: Input 0 or 1 that every signal undetectable then alarm, Enter 2

absorb less than 2 times in a row or not put then ,And so on;

☐ → Do not detection

1.12 File Save

Click **File Save** button into File Save screen,as the picture below 1.3.15:



(Picture 1.3.15)

This page can save the current machine information, parameter settings, etc., as a backup.

1. **Tool catalogue**:Represents the teachings editing program;
2. **IO List**:Indicates that the configuration of the I/O parameters;
3. **Servo Para**:Indicates that the configuration of the servo parameters;
4. **System Para**:Represents the interface other than the above configuration parameters;
5. **Other**:Save system event file;



6. The current file path,When not insert U disk,Otherwise the path for PLC built-in TF card,Insert the usb,The corresponding path default to U disk;
7. Save the file information currently,as the picture below 1.3.15,TEMPPROG is

the file name,WRP is the file type,5kb is the file size,Finally, the file save time;

8. **Save**:Press the Save button to save the current machine information;
9. **Read**:Select the saved file is loaded after the point of reading the button to save the file in the machine information, etc.;
- 10.**Delete**:When the file is not saved, you can select the appropriate file click Delete;
- 11.ReMove:When you want to re-compile a program, press the ReMove button to enter the programming page;

1.13 Variables

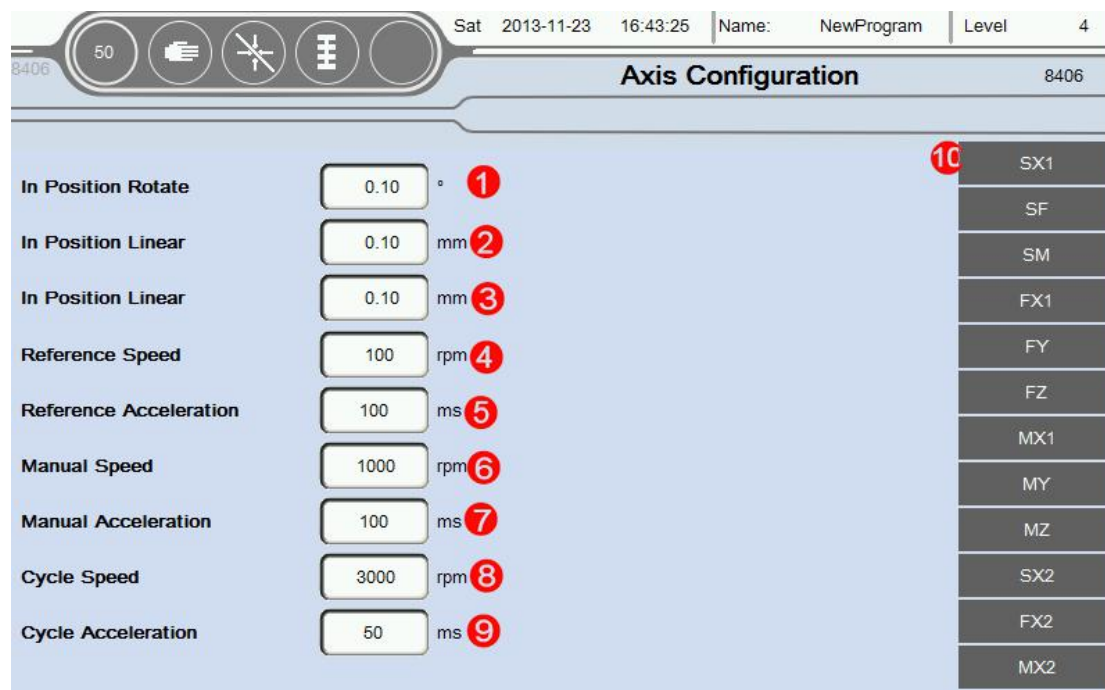
At the Function screen,Select the Variables button to enter this page,as the picture below 1.3.16:

(Picture 1.3.16)

- 1.There are ten variables you can use in a Teaching program,Can be used for signs, statistics, etc.Another multiple vacuum,input,output signal monitoring.
- 2.At the same time the user can click on an empty area behind the variable renaming variables,Facilitate the teaching mode identification of variables;
- 3.Stack state: 1 means stack is finish, 0 is not finish.

1.14 Axis Configuration

Select the Back button return to the menu interface, Choose Axis Configuration button into this page,as the picture below 1.3.17:



(Picture 1.3.17)

1. In position Rotate: If the unit is running servo axis angle, Determine the minimum angle of deviation is in place. For example: If you want to rotate 30° , Here is set to 0.10° . Then, When the servo to 29.90° , System Default that has been in place, The remaining 0.1° with the next step to run together;
2. In position Linear: Running unit is mm, Determine whether the minimum position deviation in place. For example: If you want to move a 30 mm, This set is 0.10 mm, Then, When the servo to 29.90 mm, System Default that has been in place, The remaining 0.1 mm with the next step to run together;
3. In position Linear: Running unit is mm, Determine whether the minimum position deviation in place. For example: If you want to move a 30 mm, This set is 0.10 mm, Then, When the servo to 29.90 mm, System Default that has been in place, The remaining 0.1 mm with the next step to run together;

Attention: This place interval and teaching program in place each icon editing interface consistent intervals, The default value of the program between the two major

party is in place interval setting.

4. Reference Speed:Return to the Home when the maximum speed of the motor 。

Unit is RPM (r/min)

5. Reference Acceleration:Return to the Home when the acceleration of the motor 。

Unit is ms (millisecond) .Attention,The shorter the acceleration time acceleration is bigger.

6. Manual speed:Manual mode the maximum run speed of the motor, Unit is RPM (r/min)

7. Manual Acceleration:Manual mode the maximum run acceleration of the motor 。

Unit is ms (millisecond) .Attention,The shorter the acceleration time acceleration is bigger.

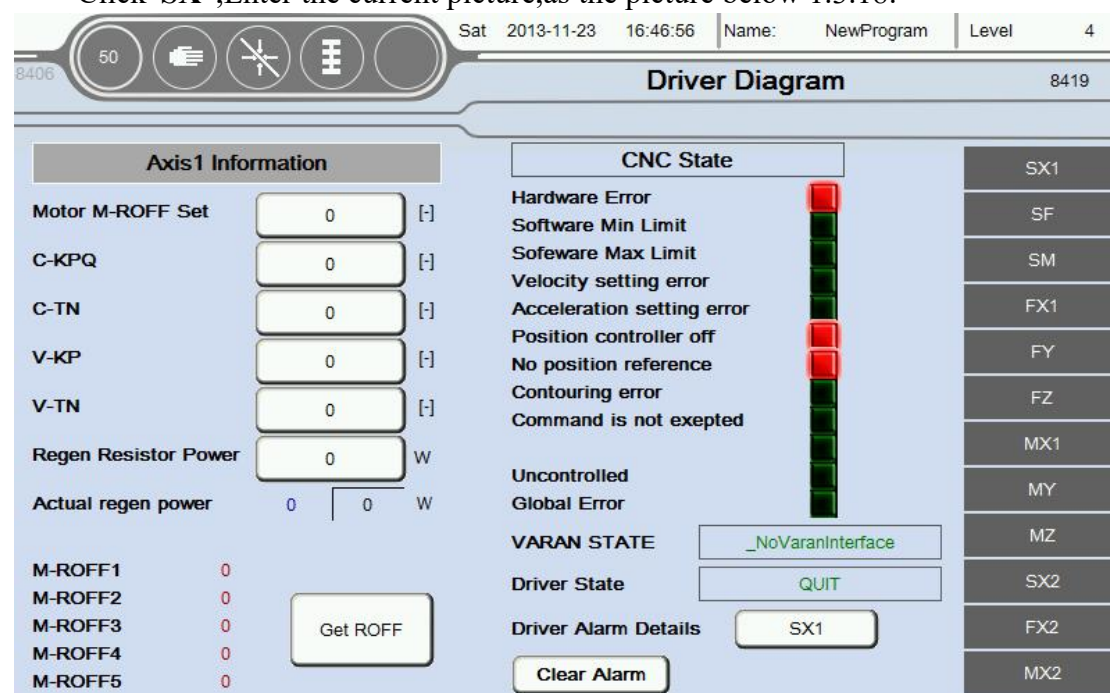
8. Cycle Speed:Automatic mode maximum running speed of the motor. Unit is RPM (r/min)

9. Cycle Acceleration: The acceleration of time can't more than the set value when run automatically.

Attention:Of the speed/acceleration limiting,Servo motor running parameters Settings interface with maximum revolutions,Program defaults to the smaller one between the two values is the highest speed.

10.Servo axis status information:Can click on the following

Click“SX”,Enter the current picture,as the picture below 1.3.18:



(Picture 1.3.18)

Information in a servo axis parameters to automatically read,Don't need to be set.Suggested that only when the default parameters inapplicable,To modify carefully.

Attention:

- 1.When all the parameters to 0 before restart automatically read the system default parameters (Mainly used in the case of parameter change chaos,Other situations without modification) ,If these parameters are not very accurate,Can be set automatically according to the actual running situation of motor.Such that the zero angle of motor is not accurate,Can click on the button **Get ROFF** get zero,Then write into motor M-ROFF Setting;
- 2.When * * axis is pulse type servo,You don't need to set up and read the parameter information and status

CNC status

Hardware Error:Servo drive hardware error;

Software Min Limit:Axis is beyond of software minimum position Setting

(Servo operation parameters Settings);

Software Max Limit:Axis is beyond of software maximum position Setting (Servo operation parameters Settings);

Velocity Setting Error:Actual speed exceeds the speed of the motor setting;

Acceleration Setting Error:Actual Acceleration exceeds the Acceleration of the motor setting;

Positon controller off:Close enable or position control;

No position reference:Didn't finish the reference action;

Contouring error:Axis actual position beyond set deviation;

Command error:The instructions are not allowed to perform;

idle position:Actual position error,idle position;

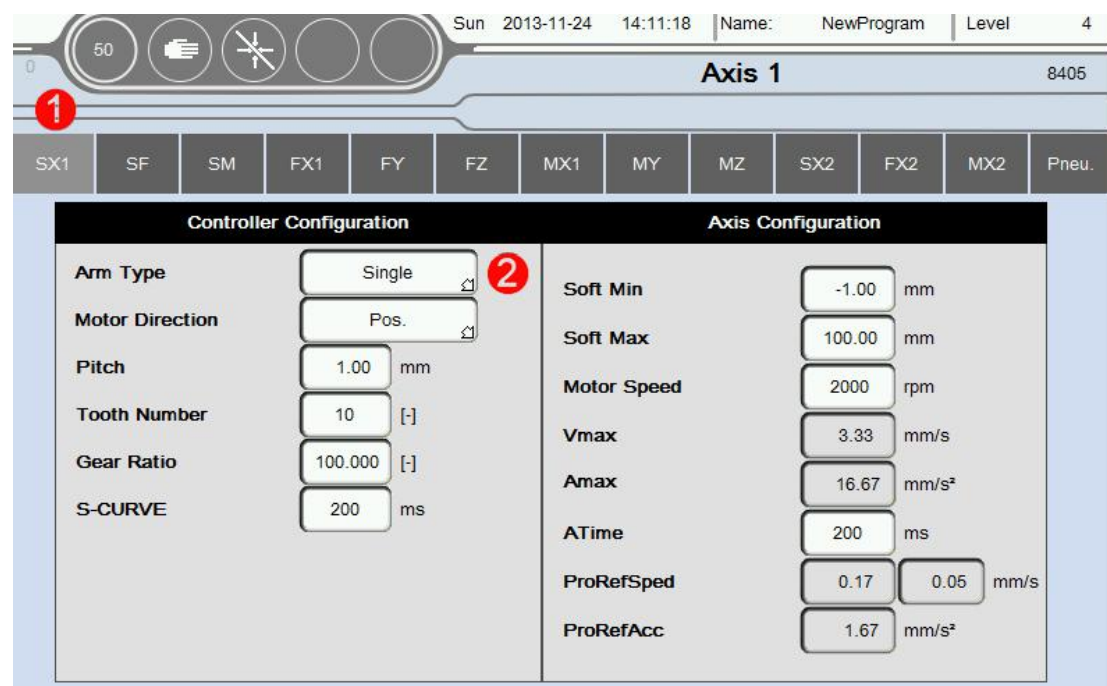
Uncontrolled:Can't control the action;

Other error:

1.15 Servo axis running parameters Settings(Axis)

Return to the **Function** page,Choose **Servo axis running parameters Settings** screen(This page needs level 10 of the administrator password),as the picture below

1.3.19:



(Picture 1.3.19)

1. Axis selection,Choose need to configure the parameters of axis,servo axis and pneumatic axis;
2. Servo axis configuration screen as shown in note 2,there are more parameters need to be configured,Mainly is divided into two parts,As a control parameter configuration and the servo parameters configuration;

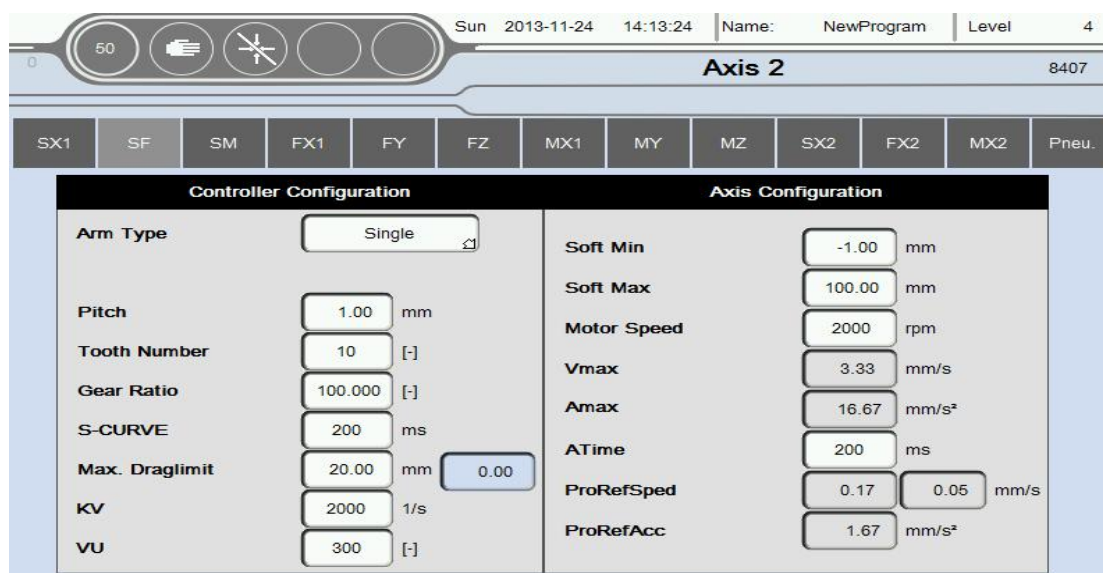
Click“**SX**”,Shown above 1.3.19 (Sigmatek Drive set mode).

Specific set rules can be seen in the table below:

Control parameter configuration		
Arm Type	[-]	Can choose the arm is single or double,According to the actual situation
Motor Direction	[-]	Can choose Positive or Negative.Only when using Sigmatek drive,This setting effective;When Opposite the forward direction and the actual, can choose Positive/Negative correction;
Pitch	mm	Distance between the two tooth dividing of the circles Synchronous round of reducer
Tooth Number	[-]	The number of reducer of axis synchronous gear(Multiplied by the pitch is the circumference)

Gear Ratio	[-]	Connect the motor reducer reduction ratio.
S-CURVE	ms	Affecting the host sends pulse waveform curve.The greater the numerical,Accelerate to maximum speed longest, Run smoother
Servo parameters configuration		
Soft Min	mm	Mechanical minimum position allowed,Suggest to set-1.00。
Soft Max	mm	Mechanical maximum position allowed,According to the actual mechanical dimensions.
Motor Speed	RPM	Set motor rated speed,Please refer to the motor nameplate rated speed setting.
Vmax	mm/s	Motor speed automatically calculates the maximum output value,Users do not need to self-assess.
Amax	mm/s ²	Motor to accelerate from standstill to maximum speed, the maximum acceleration
ATime	ms	Motor accelerates from zero to maximum speed the time required
ProRefSped	mm/s	The speed of the motor back to zero
ProRefAcc	mm/s ²	The accelerated of the motor back to zero

Click “SF” ,Show as the picture below 1.3.20 (Non Sigmatek drive setup) :



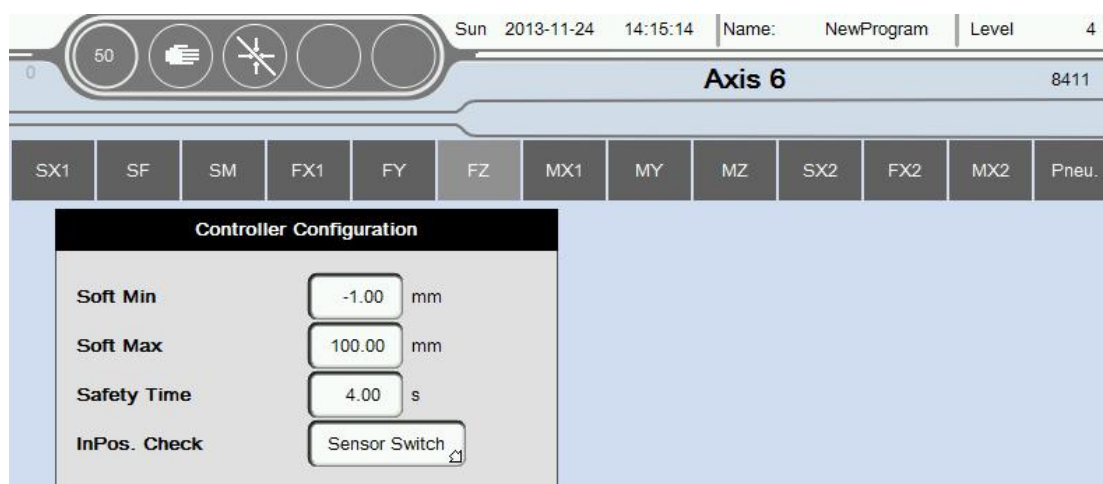
(Picture 1.3.20)

Control parameter configuration		
Arm Type	[-]	Can choose the arm is single or double,According to the actual situation
Pitch	mm	Distance between the two tooth dividing of the circles Synchronous round of reducer
Tooth Number	[-]	The number of reducer of axis synchronous gear(Multiplied by the pitch is the circumference)
Gear Ratio	[-]	Connect the motor reducer reduction ratio.
S-CURVE	ms	Affecting the host sends pulse waveform curve.The greater the numerical,Accelerate to maximum speed longest, Run smoother
Max.Draglimit	mm	Deviation between instructions position and motor actual running position
KV	1/s	Proportion factor

VU	[-]	Integrating factor
Servo parameters configuration		
Soft Min	mm	Mechanical minimum position allowed,Suggest to set-1.00。
Soft Max	mm	Mechanical maximum position allowed,According to the actual mechanical dimensions.
Motor Speed	RPM	Set motor rated speed,Please refer to the motor nameplate rated speed setting.
Vmax	mm/s	Motor speed automatically calculates the maximum output value,Users do not need to self-assess.
Amax	mm/s ²	Motor to accelerate from standstill to maximum speed, the maximum acceleration
ATime	ms	Motor accelerates from zero to maximum speed the time required
ProRefSped	mm/s	The speed of the motor back to zero
ProRefAcc	mm/s ²	The accelerated of the motor back to zero

Specific set rules can be seen in the table below:

Click“FZ”,Show as the picture below 1.3.21(Pneumatic axis setting).



(Picture 1.3.21)

Specific set rules can be seen in the table below:

控制参数配置		
Soft Min	mm	The minimum stroke with cylinder run(Can set indented state to the minimum position,Also can set out of state to the minimum position). Note⑤
Soft Max	mm	The minimum stroke with cylinder run(Can set indented state to the maximum position,Also can set out of state to the maximum position). Note⑥
Safety Time	s	Show as InPos.Check
InPos.Check	[-]	Which method you choose determines detection in place, Sensor Switch/Safety Time 1: Sensor Switch:If the feedback signal beyond the safety of the set time has not yet been detected then alarm timeout. 2: Safety Time: Pneumatic axis motion set safety time has elapsed,The system will default to run in place. Note⑦

Click “Pneu.axis” ,Show as the picture below 1.3.22.

	SX1	SF	SM	FX1	FY	FZ	MX1	MY	MZ	SX2	FX2	MX2	Pneu.
FC	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
MC	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
RF	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
RM	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
FC2	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
MC2	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
TTL	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
SE1	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	
SE2	Software	Min	<input type="text" value="0.00"/>	°	Max	<input type="text" value="100.00"/>	°	Safety Tim	<input type="text" value="4.00"/>	s	InPos. Che	<input type="text" value="Sensor Switch"/>	

(Picture 1.3.22)

Specific set rules can be seen in the table below:

“FC”“MC” are Pneu.Axis.The specific set of rules,as list in the following table.

Controller configuration		
Soft Min	°	As the above-mentioned Note⑤
Soft Max	°	As the above-mentioned Note⑥
Safety Time	s	As the below inPos.Check
inPos.Check		As the above-mentioned Note⑦

1.16 OUTPUT SETUP

Return to the function page,select output setup,as show in the below picture of 1.3.20.

Please Set these Values In Program Mode			
Output 1	Output 2	Output 3	Output 4
Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>
Output 5	Output 6	Output 7	Output 8
Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>
Output 9	Output 10	Output 11	Output 12
Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>
Output 13	Output 14	Output 15	Output 16
Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>
Conveyer Belt	Static	Vacuum Pump	
Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	Off After Out Cyclern <input type="checkbox"/>	

(picture 1.3.20)

Function : The tick is indicating that when it exit cycle run, it's corresponding output point (already output when it works automatically) will be off automatically.

Attention: The input setup need to set in the teaching module. The output setup can be changed under the page in the teaching module ;

2. JOG

2.1 Jog work

Click "manual" button, as shown in the below picture of 1.4.1 :



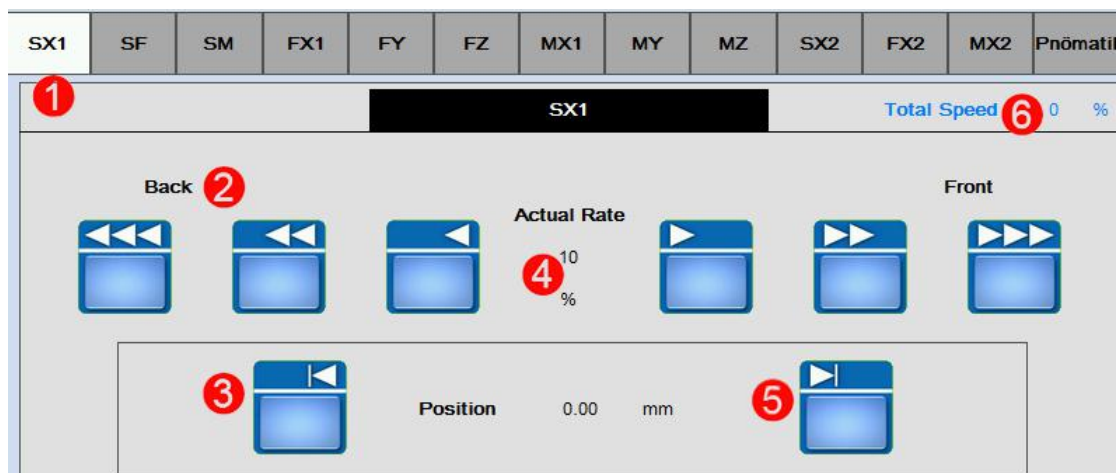
(picture 1.4.1)

1. Enter the page of function .
2. Enter the page of Pneu.Opera .
3. Enter the page of manual output.
4. Enter the page of vacuum.
5. Enter the page of AirBlow.
6. Enter the page of Euromop.
7. Enter the page of single Servo Axis/Pneu.Axis's jog working.

2.2 Servo Axis JOG work

Under the page of JOG, click the Servo Axis icon. As shown in the below picture

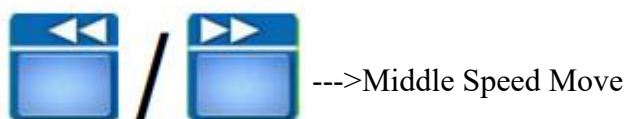
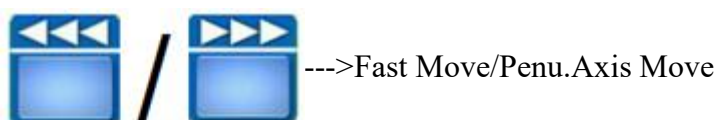
of 1.4.2:



(picture 1.4.2)

1. Select the Servo Axis of manual working.
2. Run the speed button and arrowheads denote the direction of running .

Left indicates backing of f, right indicates going ahead.



3. Across in fine tuning, under the module of relative work , is applying after finishing the revert. And entry inching can run the setting distance at the current position. Run to the target. (current position - setting position);

Clicking button means axis works; undoing button means axis stops.

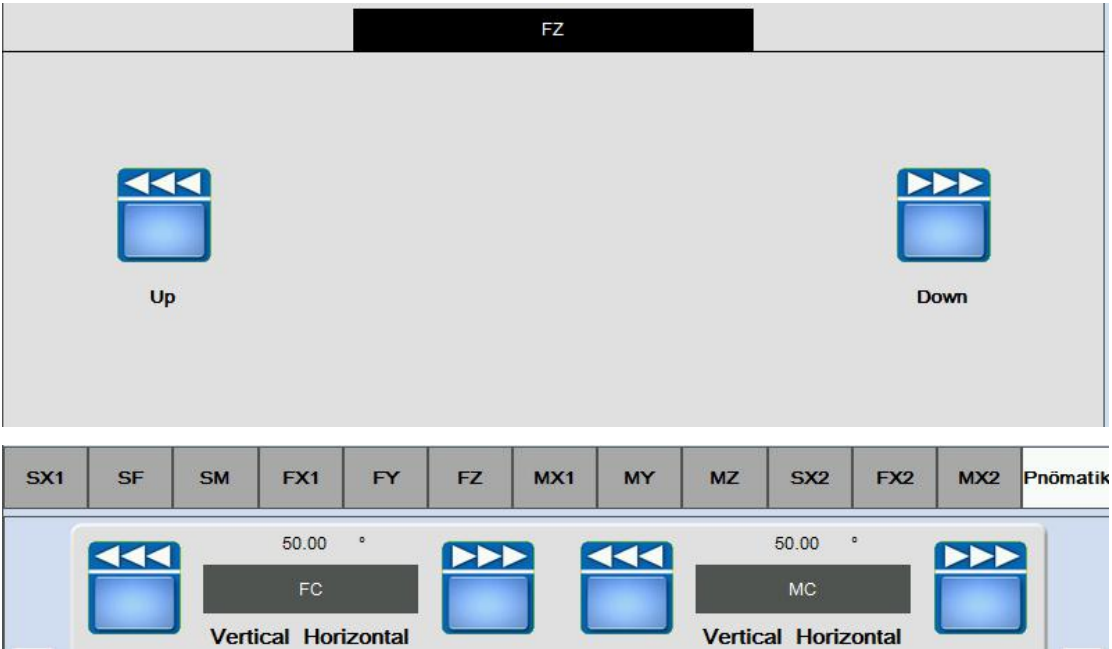
4. The table of speed is the setting of current speed, as percentage that full speed is 100%;

5. Across out fine tuning, under the module of relative work, is applying after finishing the reset . And exit inching can run the setting distance at the current position. Run to the target. (current position + setting position);

Clicking button means axis works; undoing button means axis stops.

6. The total running speed is indicated by percentage .

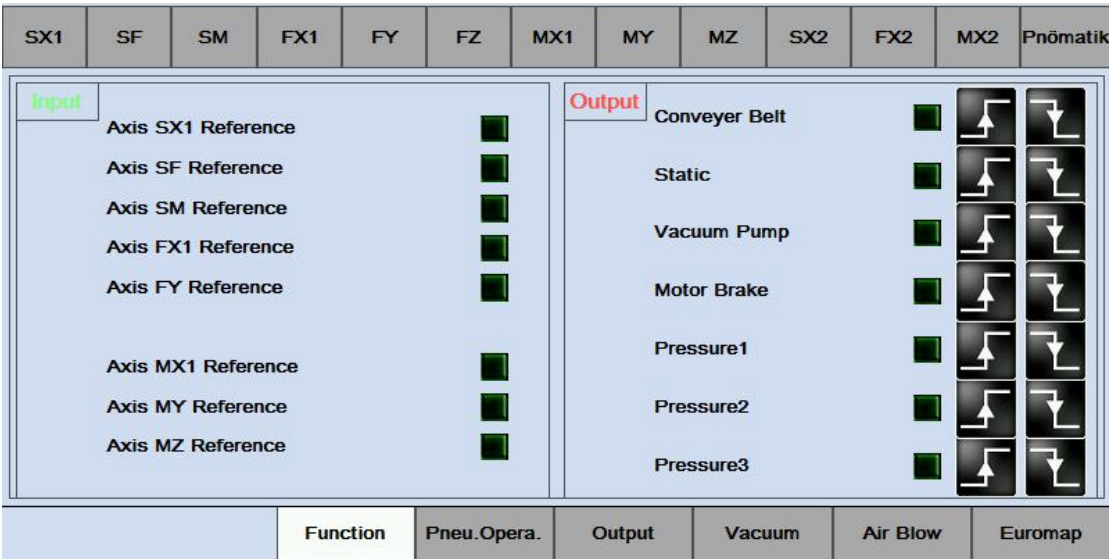
When Pneu.Axis is selected, the manual debugging page is changed.As the below picture:



This includes two motions,as that left indicates backing and right indicates going ahead.

2.3 Function

Return to JOG page,click function icon.As the below picture 1.4.3:





(Picture 1.4.3)

Input: Check the order of each signal in the input function, as for signal inputs or

signal does not input











































Output: Show and debug the order of output function.

 → Force Output Set.

 → Force Output Reset.

2.4 Pneu.Opera

Return to JOG page,click function icon.As the below picture 1.4.4:

SX1	SF	SM	FX1	FY	FZ	MX1	MY	MZ	SX2	FX2	MX2	Pnōmatik
Input			Backward End		Forward End		Output					
FC							FC	50.00 ° Hori.				 Vert.
MC							MC	50.00 ° Hori.				 Vert.
RF							RF	50.00 ° Pos.				 Neg.
RM							RM	50.00 ° Pos.				 Neg.
FC2							FC2	50.00 ° Hori.				 Vert.
MC2							MC2	50.00 ° Hori.				 Vert.
TTL							TTL	50.00 ° Pos.				 Neg.
			Function		Pneu.Opera.		Output		Vacuum		Air Blow	
											Euromap	

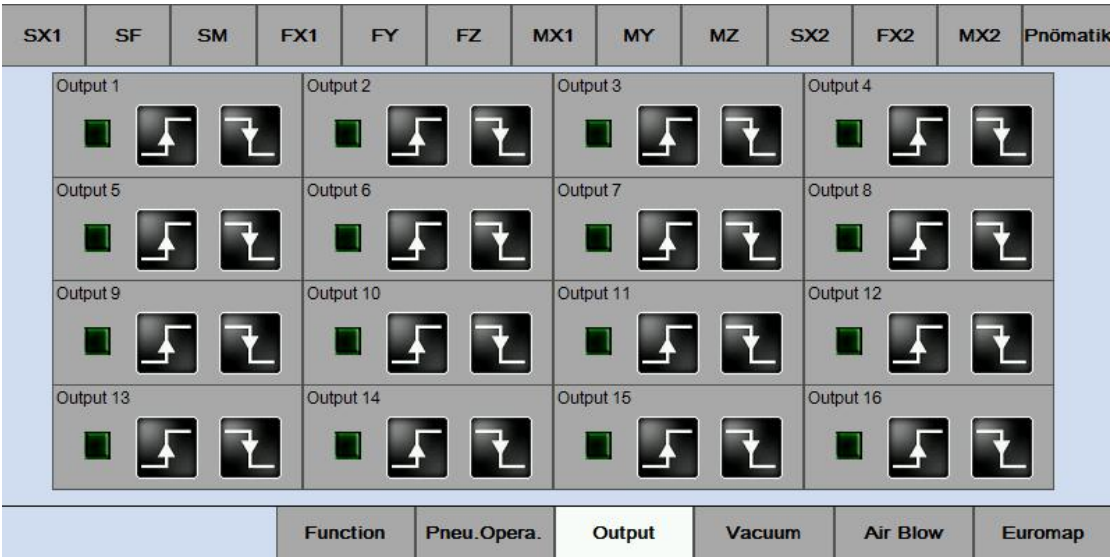
(Picture 1.4.4)

Input:View the state of each function of input signal, A signal input Or no signal input

Output:Display and output signal state test function

2.5 Output

Return to JOG page, click output icon.As the below picture 1.4.5:

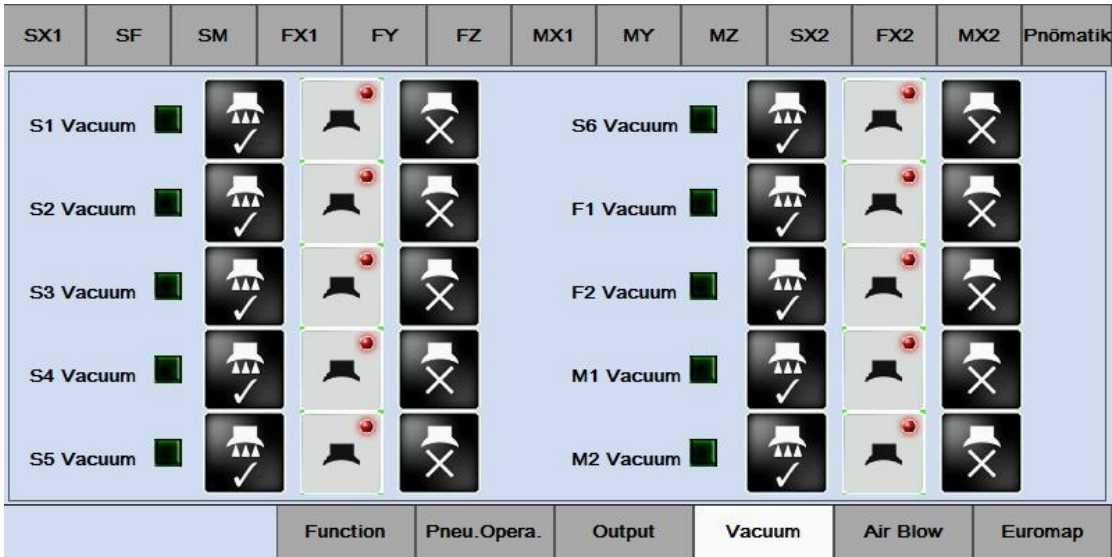


(Picture 1.4.5)

Output Show and debug the order of output function.

2.6 Vacuum

Return to JOG page,click Vacuum button.As the below picture 1.4.6:



1. Vacuum

Vacuum outputs the order of off

Vacuum outputs the order of on

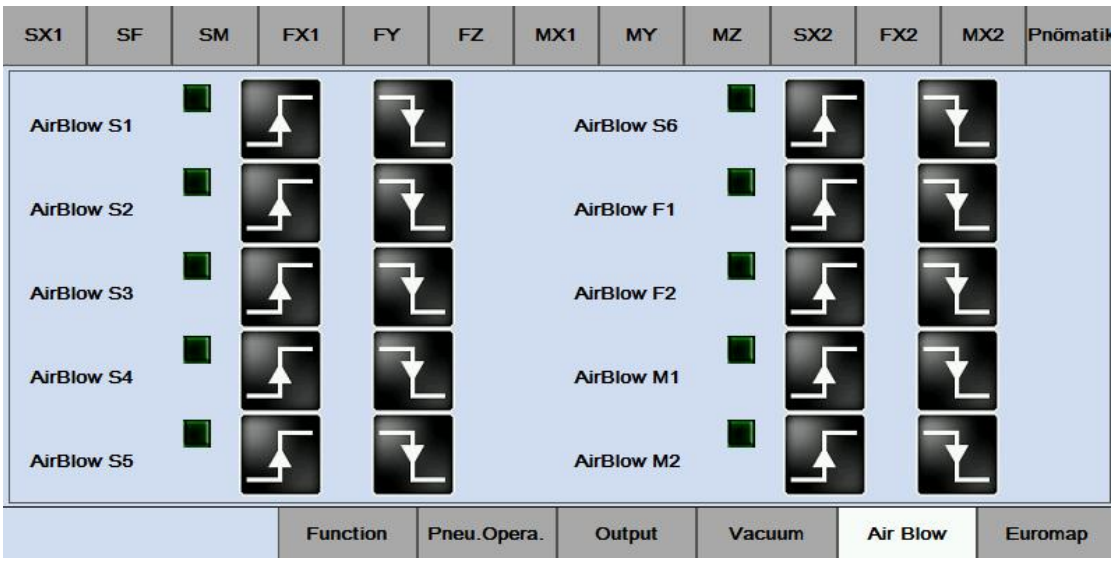
2. Button of turn-on in the vacuum

Click it to turn vacuum on .When the vacuum turns off,it's feedback signal does not feed back.This indicates vacuum has been turned off; This icon means that the vacuum has sucked the good part. If not ,the icon does not change.Button of

turn-off in the vacuum, Click it to cut off the order,and click it again to turn the vacuum off;

2.7 Airblow

Return to JOG page, click Airblow icon.As the below picture 1.4.6:



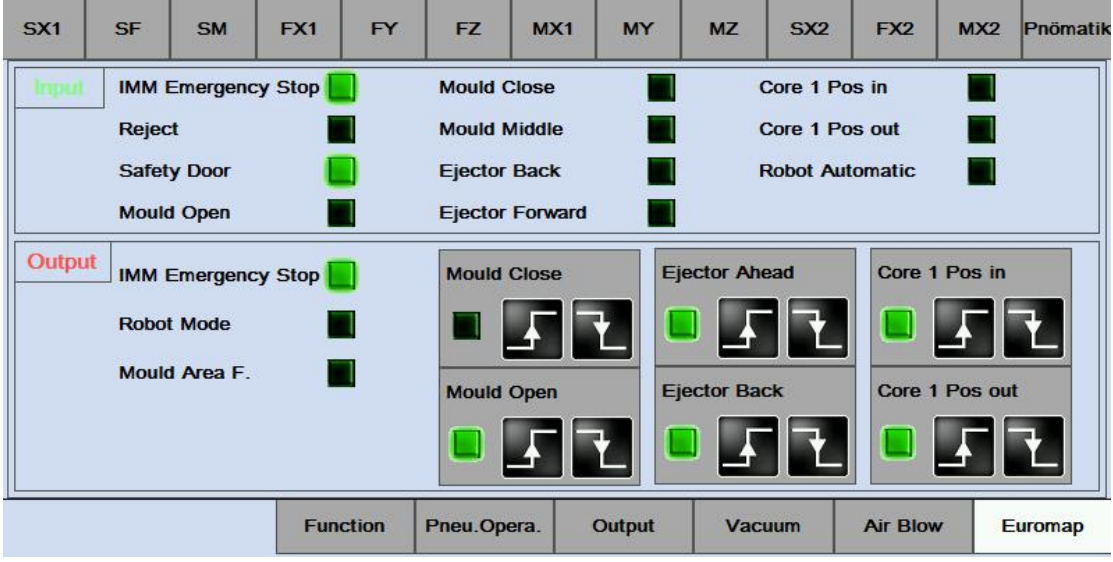
(picture 1.4.6)

1. Order of Airblow

- Turn-off order of Airblow
- Turn-on order of Airblow

2.8 Euromap

Return to JOG page, click Euromap icon. As the below picture 1.4.7:



(picture 1.4.7)

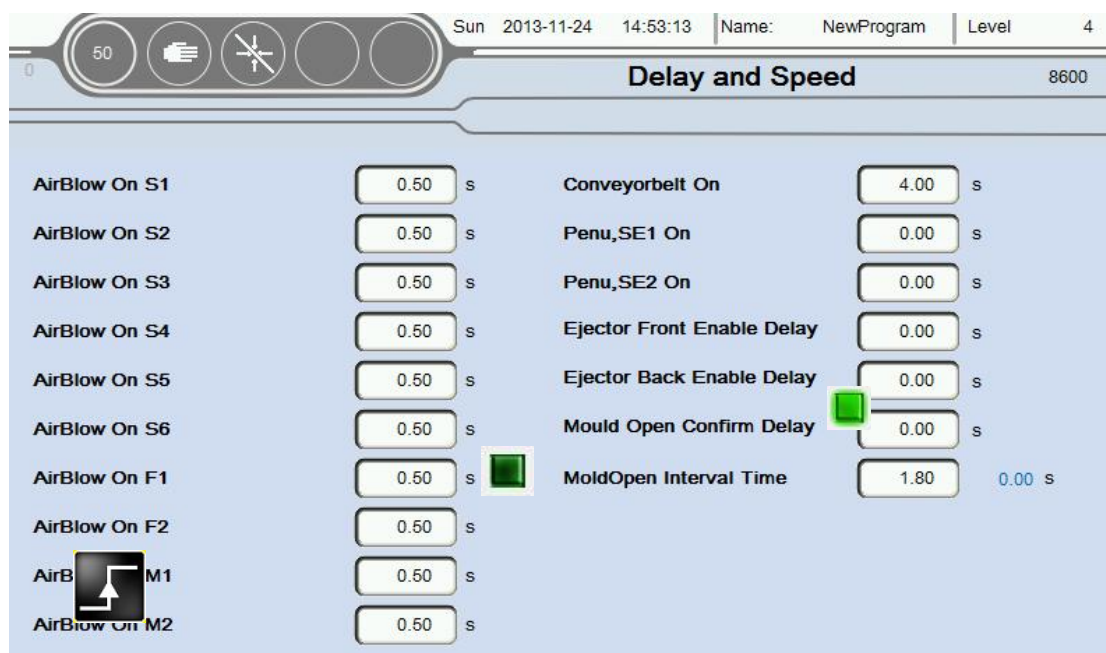
input: Check each signal order of Euromap.Signal inputs Or signal does not input

output: Show and debug the order of function output .

3. Delay and speed

3.1 Delay and speed

Click Time button , entry into the page of Delay and speed. As shown in the below picture 1.5.1 :



(Picture 1.5.1)

AirBlow ON: The continuous time for the AirBlow. The AirBlow will be cut off automatically when the continuous time reaches the setting time;

Conveyor belt ON: The continuous time for the Conveyor belt outputs. The Conveyor belt will be cut off automatically when the continuous time reaches the setting time;

Ejector Front Enable Delay: Ejector front enable delay.The module will not output instructions to machine until it reaches the setting delay time when program output the ejector enable instruction;

Ejector Back Enable Delay: As the above description;

Modulo Open Confirm Delay: The machine will not receive the order of input until it reaches the setting time when machine outputs the order of Modulo Open Confirm

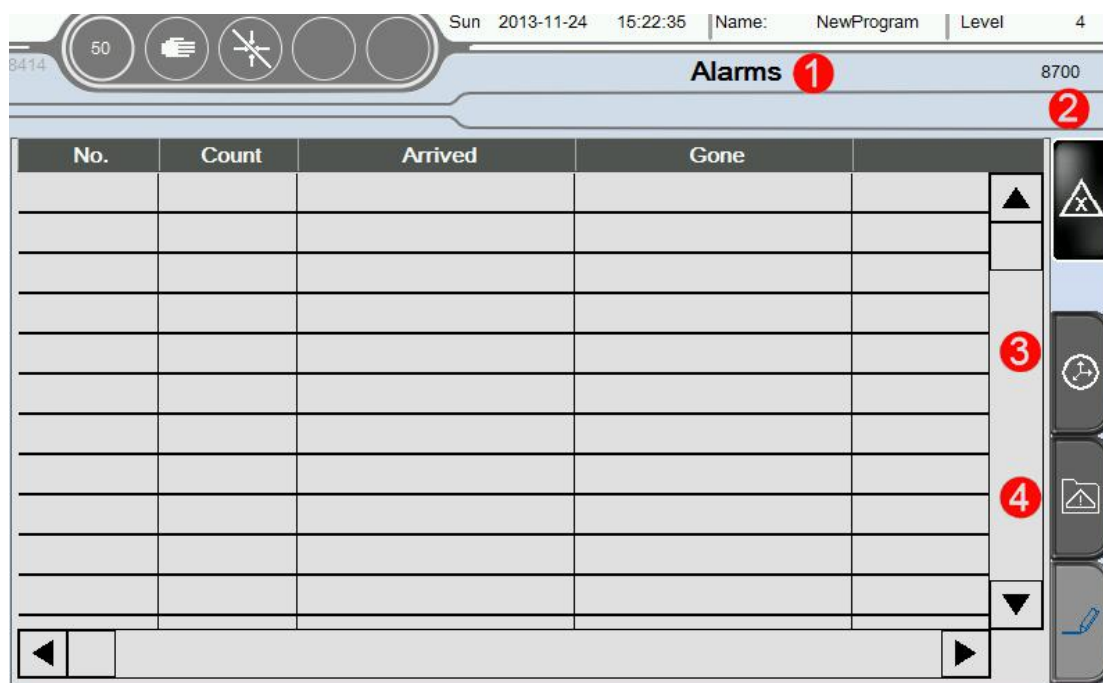
Delay;

Module Open Interval Time: The interval time between modulo receives two signals of Module Open .When the actual interval time is below the setting time,the modulo will give an alarm signal to prevent us to make a true estimate from interferential signals.

4. Alarms and history record

4.1 Alarms

Click Alarms button. As shown in the below picture of 1.6.1 :



(Picture 1.5.1)

- 1.The specific Classification of the Alarms information .Include:No .,Count , Arrived,Gone and the specific description of the alarms' causing reason.
2. Clean the happened alarms.If these alarms have been cleaned,we can delete these alarms in the table. Notice:The red color means that the alarms are still activated.The pink color means that this kind of alarms have been cleaned.
3. Entry into the page of alarms information about principal axis.
4. Entry into the page working record .

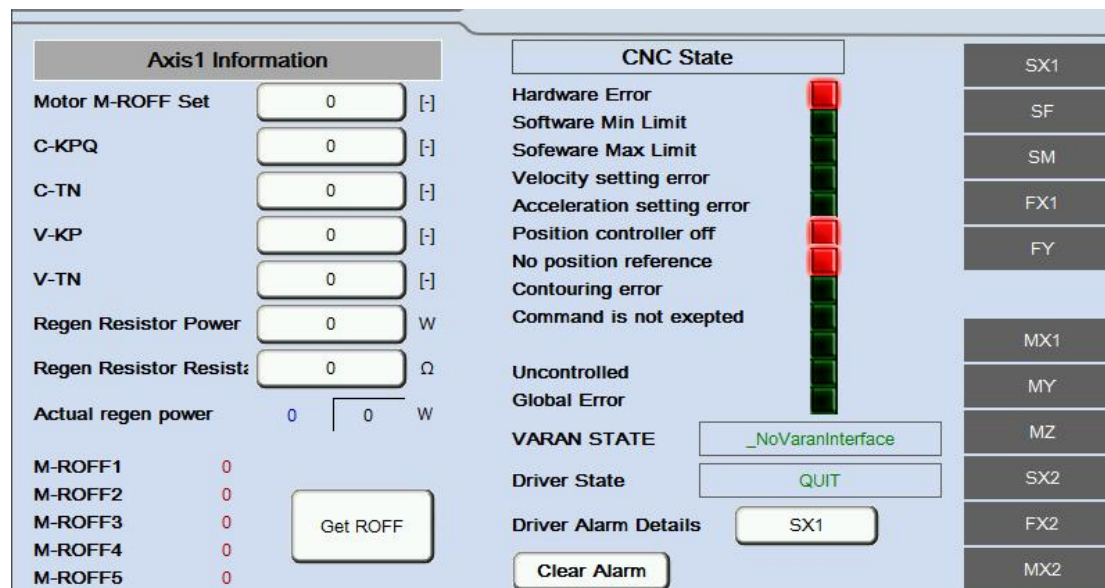
A 004 to A 015	Axis interior Min limit	Indicates current actual limit is less than the set Min limit.	In the manual page, remove this axis to Min Limited Function/Servo Setup/Axis/**/Axis Assignment->Max Limited in program , actual limited must be more than this set value, suggestion for -1.00 mm
A 021 to A 032	Axis interior Max limit	Indicates current actual limit more than the set Max limit.	In the manual page, remove this axis to Max Limited Function/Servo Setup/Axis/**/Axis Assignment-> Max Limited in program , actual limited must be less than this set value.This value is depended on the Mechanical Dimensions
A 041 to A 052	Axis position limit	Indicates axis' motion can not follow the speed of CNC instruction	- Function/Servo Setup/Axis/**/Axis Control Assignment->Max limited deviation , the first value is set 10 mm more than the second.The second show the current actual deviation, suggested to adjust driver's rigidity to decrease deviation. - Function/Servo Setup/Axis Assignment/**/Axis Control Assignment-> advance the value of KV、V U ,suggested to advance 50 each time - adjust accelerated speed, Function/Servo Setup/Axis Configuration
A 061 to A 072	Axis Alarms	Indicates breakdown happens in the current axis**	- Axis control module(CST 022/CNC 305/CNC 115 and so on)has not been tested - +24 V/+5 V power supply of Axis control module is abnormal - alarms signal of servo amplifier is abnormal
A 081 to A 092	Axis position Min limit	Indicates that there is signal inputting in the Minimum limit sensor of current axis.	- mechanical hand is located in the position beyond limit.Check machine - misdescription happens in the transducer.Check transducer -Check the corresponding limiting point configuration of IO
A 101 to A 112	Axis position Max limit	Indicates that there is signal inputting in the Maximum limit sensor of current axis.	-mechanical hand is located in the position beyond limit.Check machine - misdescription happens in the transducer.Check transducer - Check the corresponding point configuration of IO
A 121	Emergen cy stop button Pressed down	Emergency stop of machine active on the Control panel.	-rotate the Emergency stop of machine clockwise to loosen it/System Setup. Reboot to Clear Emergency function is ON , so this Emergency will not appear until Reboot; if check OFF , Emergency disappear automatically. -If Button Stop of hand controller virtual key is pressed down , reset this virtual key
A 122	Pressure abnormal	pressure abnormal	Check pressure.Check wether or not pressure test has been turned on.
A 123	Emergenc y stop of machine active	checked Emergency stop of machine put down	- Check the Emergency stop of machine - Check the connection - Check the corresponding point configuration of IO
A 124	Safety equipmen t is abnormal	Machine safety door open	-Check the order of safety door - Check the connection -Check the corresponding point configuration of IO
A 125	Quantity	Set quantity has been finished	function/produce setup page-> Quantity Setup

	accomplished		
A 126	Reject part reaches setting limit	Amount of reject part has reached the number of set alarms.	function/produce setup page-> Reject Alarm Interval
A 127	Cyclic time overtime	Cyclical time exceeds the safety time scope.	function/produce setup page-> motion monitor time; 0 do not means monitor.
A 128	Fixture abnormal	Fixture motion beyond the set time of monitor	-function/signal setup -> fixture*test*.**s -Check the fixture situation in the point configuration of IO
A 129	Module Open/Close signal abnormal	Conflict between Module Open and Module Close.	-Check the output signal of machine -Check the corresponding point configuration of IO
A 130	Vacuum abnormal	Motion of Vacuum exceed the set monitor time.	-function/signal setup-> Vacuum*test monitor time*.**s -Check the fixture situation in the point configuration of IO
A 131	Division by zero error	Set parameter has been divided by 0.	Check whether set parameter has been divided by 0. Set parameter is too small.
A 133	Module Open Interval Time	Interval is too short between two Module Open.	-Check the output signal of Module Open -Check the corresponding point configuration of IO -Time/Module Open Interval Time > Right Interval Time
A 141 to A 149	Baseboard slot module error	The order error in the second module Baseboard ... the order error in the ninth module Baseboard	-Check whether the module in slot is selected rightly -Check whether the module is normal ,power supply is normal -Check whether corresponding slot in baseboard is normal
A 150	CIV 512 module error	Order of CIV 512 module tests wrong.	-Check whether CIV 512 is normal, power is normal -Check whether corresponding slot in baseboard is normal -Check whether varan bus connection is right,varan in pilot lamp is bright
A 151 A 152	Driver module	Order of Driver SDD/MDD tests wrong. Driver 1:PLC varan bus connects with the driver firstly; Driver 2: bus connects with this driver secondly	-Check whether varan bus connection is right: varan in means bus entry ; out means bus exit , after connecting the network cable,corresponding LED will be bright. -Check whether power supply of driver is normal -Check whether varan bus is normal -Check whether bus entry of driver is normal
A 161	Module Open pattern Interval abnormal	Interval between the two Module Open receive signal is too short	-Check whether or not Following Move Type in System Setup selects the Module Open Switch -Check the corresponding point configuration of IO -Time/Module Open pattern Interval>Right Interval

A 162	The label paper shortage	System receives the signal of label paper shortage	-Check the point about label paper shortage configuration of IO -Check the signal of label paper test sensor
A 163	VBC error	The order of VBC module is tested wrong.	-Check System Setup>Whether Control of the third party is on(VBC alarm effects after be turned on) -Check whether VBC is normal, power supply is normal -Check whether the bus connection of VBC varan is normal(machine connects with varan in 2; Mechanical hand connects with varan in 1)
A 171 to A 203	Motion overtime	Automatic running,the motion time of corresponding axis exceeds safety time.	- Set the safety time in the teaching module correctly -Check whether axis act or not.Machine still can give out overtime alarm if axis does not act or act badly. -Check whether there are compiling errors of corresponding steps in teaching module.

4.2 History record

Click the notice 3 in picture 1.6.1.This button indicates Axis Alarms Information, enter into the page of Driver information.As shown in the below picture 1.6.2:



(图 1.6.2)

- 1.The information of Servo Axis and the order of CNC can be checked in this page;
2. Motor feedback offset can be measured by clicking the **Get ROFF** button in this page.
- 3.Clicking the **Clear Alarm** button is used to clear the alarms of this axis(currently it

is only applied to the Sigmatek drivers);

4.Clicking the corresponding axis's button ,such as “SX” ,is used to enter into the



(Picture 1.6.3)

These information of alarms in the above picture only can be used in Sigmatek drivers.The specific alarms' reasons and resolvent are listed in the below table:

Alarms Name	Hand controller display	Reasons and resolvents	Breakdown reason and elimination methods
Phase lack alarm	SDD_OnePhase	Motor starts without three phase power supply	-Check whether motor lines connects with the three phase of UVW with the right manner. -Check whether three phase input 380 is normal.
Dynamic voltage alarm	SDD_MainError	The main power supply is not normal when motor starts.	-Check whether motor lines connects with the three phase of UVW with the right manner. -Check whether three phase input 380 is normal.
Overvoltage (Regenerative resistor deficiency)	SDD_DCOver	DC bus voltage is higher than safety value.This value is depended on the parameter G-VMAINS(driver parameter).	Motor produce the back EMF in running and the EMF will increase with speed of revolution increases.This problem occurs when speed is too fast.Motor can not run normally if the power supply voltage is too slow.Check Whether three phase power supply meets the requirement.For example.system of 400 V connects with the power of 200 V.

Low voltage	SDD_DCUnder	DC bus voltage is lower than set value of parameter when motor starts.	DC bus voltage is lower than the safety scope. There are 3 notices: firstly, whether three phase power supply is normal; secondly, slow down the speed when the back EMF is too high; thirdly, the overall power is not enough, the ability of output is not enough as a result of the too big motor
Brake error	SDD_BrakeError	Brake closed is tested abnormal when close the brake, such as lines of brake is short, temperature exceeds the limit and so on.	-Check whether the brake of motor is normal -Check whether point of brake output 24 V when test driver.
Brake switch error	SDD_BrakeSwitchError	The connections of brake is abnormal, short or broken when open the brake.	-Check whether the brake of motor is normal -Check whether point of brake output 24 V when test driver.
Motor overheating	SDD_MotorOverTemp	Resistance of motor temperature transducer I-TEMPM is higher than the maximum resistance M-RTEMP	Estimate the temperature with hands. There are problems in motor lines, encoder line or interior resistance if the temperature of motor's surface does not reach the overheated degree.
Drive bad heat	SDD_AmbientOverTemp	Interior temperature I-TEMPPE exceeds the set value G-MTEMPPE.	Drivers abstract heat bad and improve the airiness.
Drive the radiator overheated	SDD_HeatSinkOverTemp	The thermal temperature I-TEMPPK exceeds the set value G-MTEMPPK	Fasten the heat dissipator to the baseboard to enhance abstracting heat.
Encoder feedback abnormally	SDD_FeedbackError		-Alarms will be given out if the increment of encoder's feedback signal exceeds the scope after motor starts. -The encoder line is abnormal
Abnormal communication	SDD_CommutationError	When the motor running direction and I - NFILT in opposite directions, if the acceleration of more than 300 upm/s or I-NFILT > NMAX/4, Alarm	
Motor speed exceeds limit	SDD_OverSpeed	Motor speed exceeds the maximum speed of driver.	This problem may occur if encoder is abnormal with normal motor speed.
Position deviation is too large	SDD_PEMax	Alarms will be given out when the actual position deviation exceeds	Try again after slowing down the speed. It is possible that the

		the maximum .	mechanical properties were changed.
Command acceleration exceeds limit	SDD_PCmdError	Alarms will be given out when speed produced by exceeds 10000/minute.	
The main control communication abnormalities	SDD_HostComError	PC control failure	
Driver interior error E 2	SDD_DriveError_E2	Drive internal circuit breaker , The operation timed out , or analog-to-digital convert is abnormal	-Check whether motor is normal, whether there occurs high-frequency vibration -Change the driver
Driver interior error E 1	SDD_DriveError_E1	Driver motherboard, as problems occurs in the internal storage	Change the driver
Safety input abnormally	SDD_EnableLockedError	Safety signals do not input, or safety device is abnormal	Check safety signal input of VAC
Dynamic voltage abnormal	SDD_DriverVoltageError	IGBT power supply is too low to start.Please check whether input 24 V of IGBT is normal.	Check safety signal input of VAC
Regenerative resistor deficiency	SDD_MaxRegenPower	Alarms will be given out when The regenerative resistor I-PBAL > The maximum regeneration resistor G-MBAL	-Reduce load, reduce dynamic , slow speed down -The maximum regeneration resistance power Regenerative resistor calculation options : resistance (Eur) $\Omega_{EM} = \frac{A * B}{C * 0.8}$ Capacity(w) $P_{EM} = \frac{(C * 0.8)^2 * \Omega_{EM}}{10}$ For A : The highest speed of the motor(rpm); B : The back EMF (V*min); C : The maximum motor current (A);
Power supply 24 V of brake is abnormal	SDD_Brake24VError	24 V power supply or brake is bad.Signal of brake open loses.	
Motor overload	SDD_I2TError	Alarms will be given out when load	This problem occurs when encoder

		rate I-I2T>=100% at the start of motor.	is abnormal, also when motor oscillate frequently.
Motor temperature alarm	SDD_MotorTempWarn	Alarms will be given out when actual temperature I-TEMPM > (maximum temperature M-RTEMP*motor alarm temperature A-TEMPMW/100)	Check the connections in the temperature sensor line of motor encoder lines. Touch motor's surface with hands to estimate whether there exists problems of overheating. Change a motor if everything is normal
Motor parameters do not match	SDD_MotorObjectError	Set parameter is not matching with motor. It is only adapted with using End at or Hiperface encoder.	Load the wrong document of parameter. It needs to update program.
Resolution ratio of encoder do not match. Motor information do not match	SDD_MutiPosError	The type of encoder is different from set type, or the precision of encoder is different from set one.	-Load the wrong document of parameter. It needs to update program. (Non absolute motor) -Set Machinery 0 (absolute motor) Axis revert > motor set current point as 0
Excess load	SDD_MaxSumPowerLimit	The maximum output power limitation	

Record of manipulation. As shown in the below picture 1.6.4:

Type	No.	Count	Arrived	Gone	
Protocol	P 002	----	24.11.13 15:22:33	----	Menu ▲
Protocol	P 006	----	24.11.13 15:21:59	----	
Protocol	P 006	----	16.09.13 11:45:03	----	
Alarm	A 047	1	16.09.13 11:44:42	----	
Alarm	A 054	1	16.09.13 11:44:42	----	
Alarm	A 052	1	16.09.13 11:44:42	----	
Alarm	A 049	1	16.09.13 11:44:42	----	
Alarm	A 061	1	16.09.13 11:44:42	----	
Alarm	A 060	1	16.09.13 11:44:42	----	
Alarm	A 058	1	16.09.13 11:44:42	----	
Protocol	P 005	----	16.09.13 11:44:42	----	▼

(Picture 1.6.4)

1. The specific data classification of Detailed record. Include record types (alarms/manipulation instruction), manipulation No./Alarms No., Count, the last record of arrived, the last record of gone and specific description about alarms/manipulation. Drag the scroll bar at the bottom of this picture to right hand. As shown in the below picture 1.6.5:

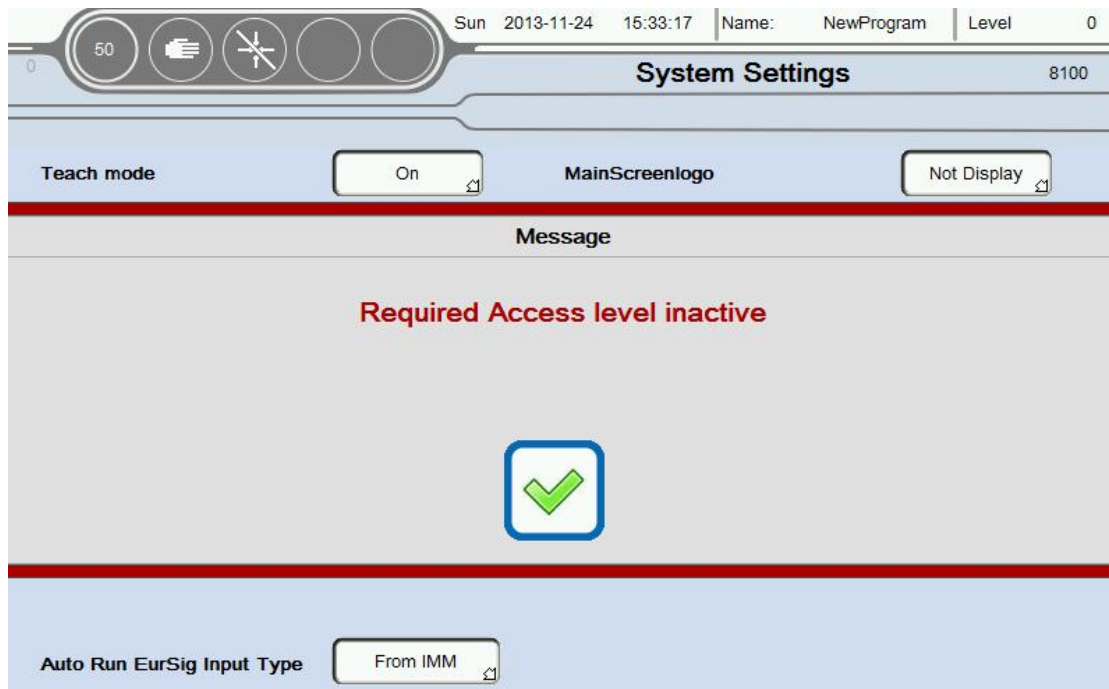
Alarm text	
Menue: Change Language --> Old Value: Deutsch, New Value: English	▲
Access Level: Old Value: 0, New Value: 4	
Access Level: Old Value: 0, New Value: 4	
Hardware end switch Minimum Axis MY, check state of switch	
Hardware end switch Maximum Axis FZ, check state of switch	
Hardware end switch Maximum Axis FX1, check state of switch	
Hardware end switch Maximum Axis SX1, check state of switch	
Safety Door not safe	
Emergency Stop of Machine active	
Robot Emergency Stop active	
User Message: Loading program failed	▼

(Picture 1.6.5)

4.3 Suggestive information

It will give out alarm signal when the password's level is not applied to the

popedom of this page .As shown in the below picture 1.7.1:

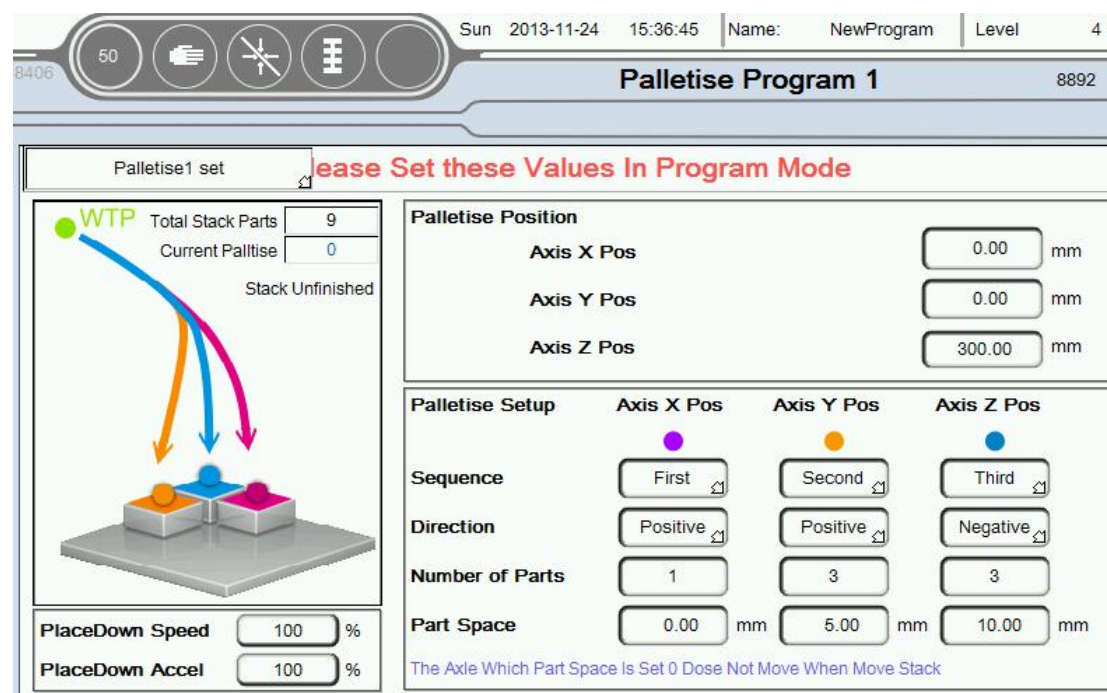


(Picture 1.7.1)

Appendix 1 Stacking

Attention:Parameters of stacking need set in the teaching module.

The program sustains 2 groups of different setting Move stacking program , so user can make programs freely by selecting any kind of groups in the teaching module.



For example:

The first position of production: X/0.00 mm、Y/0.00 mm、Z/300.00 mm

Order: X/No.3、Y/No.2、Z/No.1;

Direction: X/Pos.、Y/Pos.、Z/Neg.;

Quantity of stacks: X/1、Y/3、Z/3;

Size: X/0.00、Y/5.00、Z/10.00。

Stack running

The first production lays at this point $(X, Y, Z) = (0.00, 0.00, 300)$; (Y stacks the first one,Z stacks the first one)

The second production lays at this point $(X, Y, Z) = (0.00, 0.00, 290)$; (Y stacks the first one,Z stacks the second one)

The third production lays at this point $(X, Y, Z) = (0.00, 0.00, 280)$; (Y stacks the first one,Z stacks the third one)

The forth production lays at this point $(X, Y, Z) = (0.00, 5.00, 300)$; (Y stacks the second one,Z stacks the first one)

The fifth production lays at this point $(X, Y, Z) = (0.00, 5.00, 290)$; (Y stacks the second one,Z stacks the second one)

The sixth production lays at this point $(X, Y, Z) = (0.00, 5.00, 280)$; (Y stacks the second one,Z stacks the third one)

The seventh production lays at this point $(X, Y, Z) = (0.00, 10.00, 300)$; (Y stacks the third one,Z stacks the first one)

The eighth production lays at this point $(X, Y, Z) = (0.00, 10.00, 290)$; (Y stacks the third one,Z stacks the second one)

The ninth production lays at this point $(X, Y, Z) = (0.00, 10.00, 280)$; (Y stacks the third one,Z stacks the third one)

Move stacking end

Notice: When the size of axis production is set to 0,the axis does not take part in the motion of Move stacking.

Appendix 2 Teaching compiling

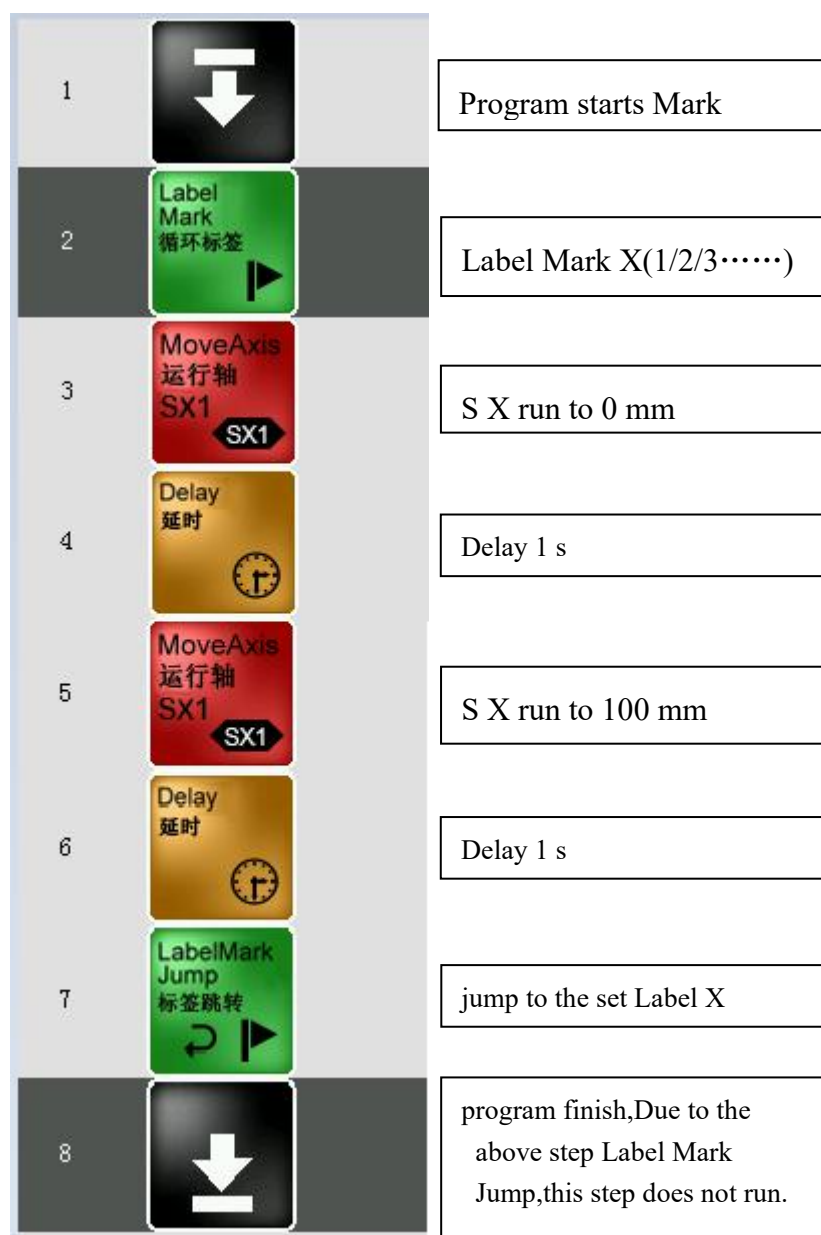
Programs run from the top down ; they can jump to the corresponding label part when they need to jump, or they run from the top down.

Example 1: Uniaxial running cyclically :

Motion logic: SX1 run to 0; delays 1 s, SX1 run to 100 mm, delay 1 s, SX1 run to 0…… Repeatedly like this manner

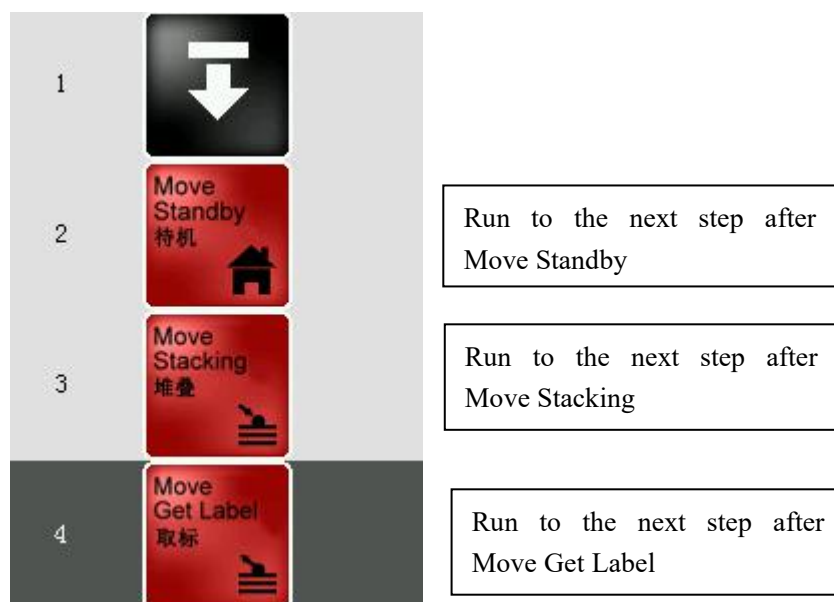
Key icon: Label Mark、SX1 run、Delay、Label Mark Jump

Program can be compiled as the below picture:



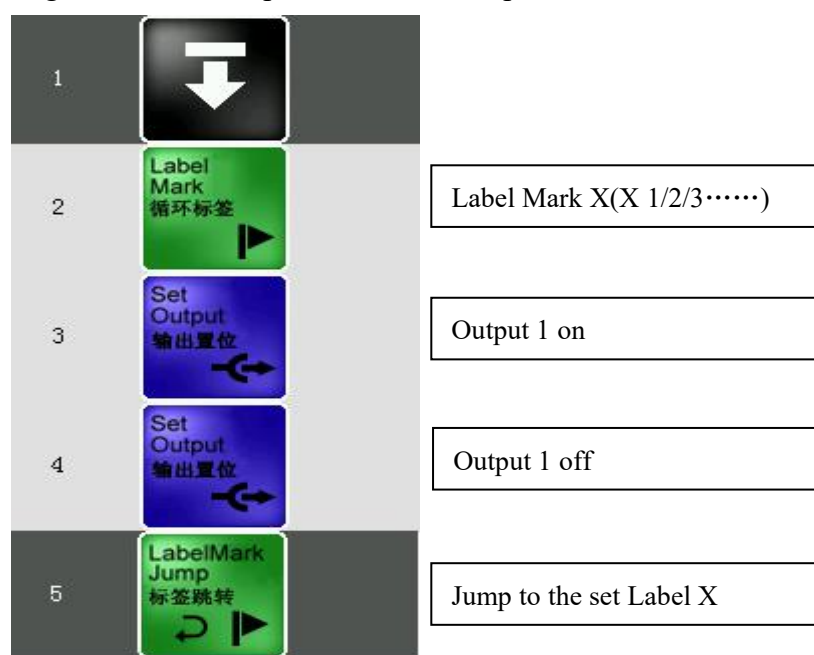
Example 2: Standby/Stacking/ Get Label

For the reason that the corresponding parameters about Standby/Stacking/ Get Label need to be set in single page, it just need to drag the relative icons to the teaching compiling.As shown in the below picture:

**Example 3:** Output cyclically/Cut off the first output:

Motion logic: output 1 on; output 1 off; output 1 on……repeatedly like this manner Key icon: Label Mark、Set Output、Label Mark Jump

Program can be compiled as the below picture:

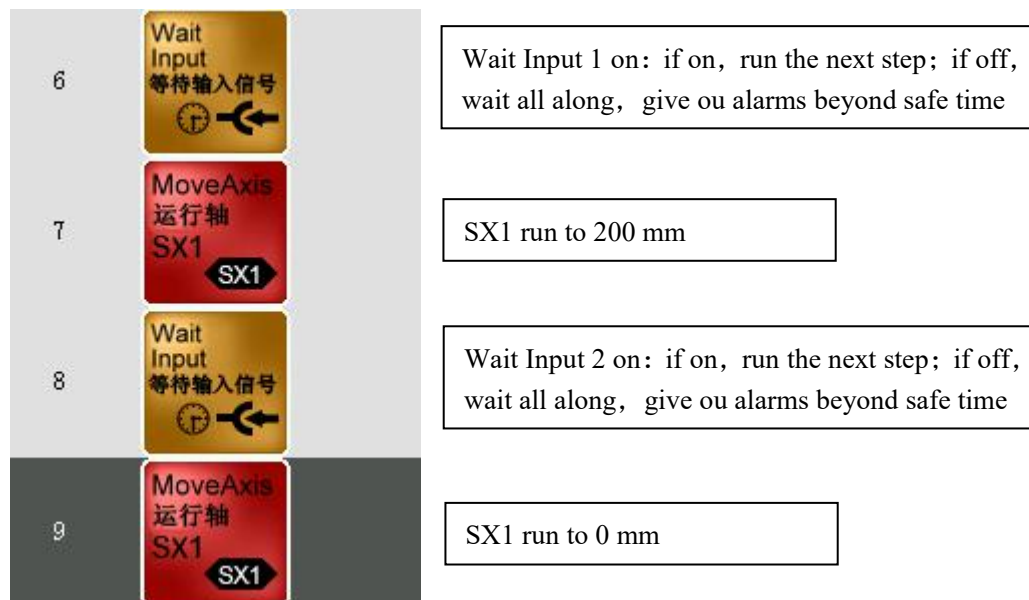


Example 4: Wait Input 1 on/off, then run the next step:

Motion logic: Wait Input 1 on, SX1 run to 200 mm; Wait Input 2 off, SX1 run to 0 mm

Key icon: Wait Input、SX run

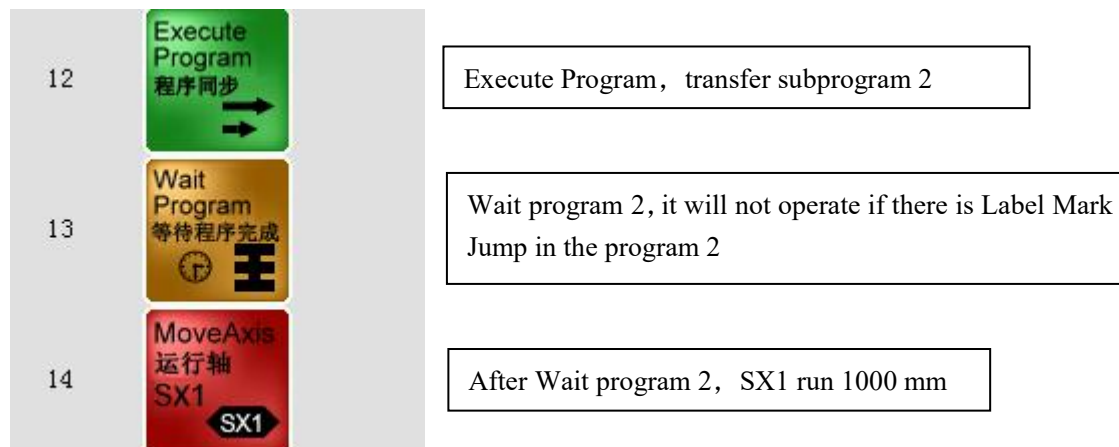
Program can be compiled as the below picture:

**Example 5:** Transfer subprogram, Wait subprogram, Run the next step:

Motion logic: Transfer subprogram 2, wait subprogram 2, then SX1 run to 1000 mm

Key icon: Execute Program、SX1 run、Wait Program

Program can be compiled as the below picture:










Example 6: The former 3 groups of production, lay by the Stacking 1; the rest production, lay by the Stacking 2

Motion logic: Estimate the amount of variable 1 whether or not more than 3; if more than 3, label mark jump to the program of Stacking 2; if less than 3, run the next step straight(Stacking 1 program); after finishing stacking, variable 1 increases 1(as 0 former,increasing to 1; as 1 previously ,increasing to 2); program will jump to Label Mark after variable increasing, or it will run the next step continue.

Key icon: Label Mark、Variable Jump、Stacking、Variable Increase(enumerative effect)、Label Mark Jump

Program can be compiled as the below picture:

16		Label Mark 1
17		Variable Jump.estimate variable of variable 1 whether or not more than 3; if more than 3, label mark jump to the program of Stacking 2(step 21); if less than 3, run the next step straight(Stacking 1 program);
18		Move Stacking 1(The former 3 groups of production, lay by the Stacking)
19		Stack 1 time,and variable increase 1.This indicates productions have been made 1 module, or productions stay in the former 3 modules continue.
20		Stacking/ Counting finished, program jumps to Label 1 to restart new steps.If not jump,program will go on running the program of Stacking 2.
21		Combining step 1,program jumps to this Label 2 if there are another 3 groups of productions.
22		Move Stacking 2(laying the rest production exclude the former 3 groups of production)
23		As the rest productions lay by the step 22 manner, variable does not need to increase 1.Program jumps to Label Mark 1 to restart straight.




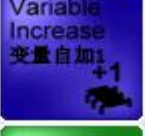




Example 7: Stacking lays 10 productions firstly, and it will lay another 10 productions more when the conveyor goes ahead 10 s. Then goes on as the above method....

Motion logic: Estimate the amount of variable 1 whether or not more than 10; if more than 3, label mark jump to the program of conveyor; if less than 10, return to restart the new steps;

Notice: If program needs stacking renewedly at the begin, variables need to be cleared into 0 before the cyclical motion. If not, these variables will base the former scale on counting when the program restart. This situation can result in the amount of production will not reach 10 at the first time of conveyor belt run.

Key icon: Label Mark、Stacking、Variable Increase(Count effect)、Label Jump Mark

Program can be compiled as the below picture:

25		The variables in the main program need to be cleared into 0.Because program runs among the Label Mark continuously.The program outside the Label Mark runs 1 time at
26		Label Mark 1
27		Stacking
28		Stacking count
29		Stacking counting jumps.When the quantity of stacking is less than 10, combining step 29, program jumps to step 26 and restart; if more than 10, conveyor belt runs to continue the next step.
30		Conveyor belt runs 10 s
31		Variables need to be cleared after conveyor belt finishes running.If not,conveyor belt will run at any time latter.(Because without clearing, counting of variable is more than 10)
32		Jump to step 26, restart new steps, or program will only run 10 times.