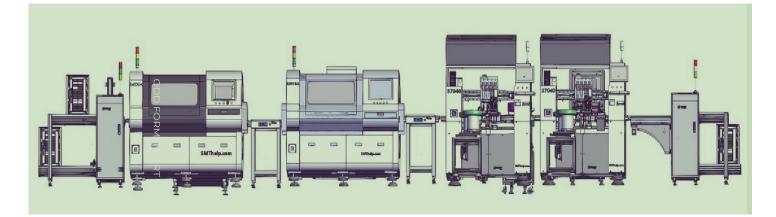


S7900 Odd Form SERIES

OPERATION MANUAL





Ver. : 01

Thank you for buying o u r odd-form insert machine. In order to use the device safely, you should read the relevant safety precautions and function instructions carefully before using the device to avoid accidents. odd-form insert machine is simulated and instead of original manual operation. The machine used multi-axis motion to insert the odd-form components into the PCB. Objects unrelated to production are not allowed to appear in the operating area during equipment operation; Therefore, all safety protection devices installed in the equipment are strictly forbidden to dismantle or short connect, etc, so please confirm whether the safety device is in place and effective before using the machine. When the safety device malfunctions, please stop and shut down the equipment before carrying out maintenance work. Please do not remove the safety warning signs of each part of the equipment at will. If there is any damaged, please contact us!

Spe	ecification Model	S7900-II	S7900-IV	Model S7900-IV-P	S7900-VI	S7900-VI-P
Si	ze (LxWxH)	1050×1680×1870mm	1300×1700×2000mm	1550×1900×2100mm	1300×1700×2000mm	1550×1900×2100m
51	Weight	1250 kg	1650 kg	1750 kg	1730 kg	1800 kg
Oper	ation System	1230 Kg	1050 Kg	Windows	1150 Kg	1000 Kg
	o. Of Door		Single Side	#THOWS	DoubleSide	Single Side
	Grating (Door)			Standard Configuration		Single Side
	ir Supply			0.5-0.65 MPa (ANR)		
	lax Power	4.5 KW	5.4 KW	6.6 KW	5.2KW	6. 3KW
R	Run Power	2 KW	3.3 KW		3.5 KW	
No. of I	nsertion Heads	2	4	4	6	6
Max Co	omponent Size		$\phi 50 (35 \times 35)$ mm		ϕ 30 (17 $ imes$ 17) mm	ϕ 50 (35×35)mm
Compo	onent Height	≤25mm	≤30mm	≤25mm	≤20mm	≪30mm
Componer	nt Feeding Type			Nozzle/Clamp		
Speed /	each Component	0.8 S	0.7 S	2S (with lead clinching)	0.6 S	0.6 S
Placemen	ntAccuracy CPK≥	\pm 0.06mm	\pm 0.06mm	\pm 0.05mm	\pm 0.06mm	± 0.05 mm
	sert Power	≤29. 4N	$\leq 98N$	≤29.4N	≤29.4N	≤29. 4N
Insert	ion Direction			0-360°		
Insert (ComponentObject	Connec	tor, Switch, Socket Tra	ansformer Coils, Ports,	Capacitors, Resistors,	IC, Etc
PCB	Size(LxW)	$70 \times 70 \sim 300 \times 500$ mm	70×70~410×500 mm	$70 \times 70 \sim 450 \times 400$ mm	$70 \times 70 \sim 410 \times 350$ mm	70×70~410×360 m
Carrie	er Size (LxW)	Max 350×500mm	Max 500×500mm	Max 500×550mm	Max410×350mm	Max 410×360mm
PCB	8 thickness			0.6-2.0mm		
	veyor Space	25 mm/20 mm	30 mm/20 mm	25 mm/20 mm	20 mm/20 mm	30 mm/20 mm
	PCB Weight		5 Kg		2 Kg	5 Kg
	uded side width		ž	≥5mm		
PCB	Fixed Type			Sero/Cylinder clamping	5	
Con	veyor Type		Chain		Belt	Chain
PCB	B Direction			Rto L/Lto R		
	eyor Section			3		
	yor Adjusting			Auto		
	veyor Height	750±20mm		900±	20mm	
Lead C	linching Unit	/	/	Standard	/	Option
MEC	SMEMA			Standard Configuration	1	
MES	Connection			1		
Vision	Mark CCD (Top) Component			1		
System	CCD (Bottom)	2	4	4	2	6
	201 Radial Tape					
	Feeder					
	218 Radial Tape					
	Feeder	4	6	6	10	6
	207 Radial Tape					
	90° Feeder					
	259 Radial Tape					
Max	Feeder	6	12	12	20	12
tations	254 Radial Tape	0	12	12	20	12
tations	Feeder					
	202 Axial Tape	4	6	6	10	6
	Feeder					
	222 Tube Feeder	6	12	12	20	12
	203 Tube Feeder	4	6	6	10	6
	205 Bowl Feeder	4	4	4	8	4
	Tray Feedei	l lifferent torre	1	1	2	1
	Rema	ark:11 different type	s reeders mixed using	, the num.of feeders an	re uepenaea on combina	auion.
*1 Air	source is atmosph	meric pressure Frost u	oint: −17°C or less.	particulate powder: p	article size 5µm or	less, and
				ne installation requir		
		ne conditions of use				
	ding on different					
		n foot bend module rep	laces the top plate	mechanism		

*4The use of the plug-in foot bend module replaces the top plate mechanism. *5Only provide the original factory setting information. Need to be customized to match the customer's system (optional items) Ver.:01 20 4 30-1



Catalogue

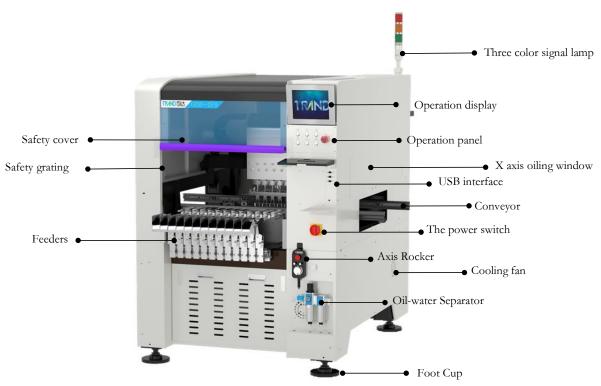
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1.Device profile

1.1Structure introduction



[Three color signal lamp] Equipment alarm prompt

[Visual display] Displays Mark & Part images

[Operation display] Display software interface parameters and parameter modification

[Operation panel] Controls device running/stopping status

A Start - Device running

B Pause - Stop in the middle of running, press start to continue running

C Dot - single step, discontinuous

D Lighting - Internal light switch

E Computer - Computer start switch

f Emergency switch - very stop, for use in dangerous situations

[X axis oiling window] Easy to oil X axis screw/slide rail during maintenance

[USB interface] Mouse/keyboard and offline data transfer

[Conveyor] Transportation of products

[The power switch] Total power control of equipment

[Cooling fan] Maintain the temperature inside the electrical box of the equipment

[Axis Rocker] Manual operation controls are used to move the X/Y/Z/R axis

[Foot cup] Load bearing and level adjustment

[Oil-water separator] Air filtration/display and adjustment

[Safety cover] Avoid touching the inside of the machine when the equipment is running, safety protection

[Safety grating] Avoid touching the inside of the machine when the equipment is running, safety protection

[Feeders**]** Feeding parts to equipment

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1.2 Precautions

(1) The equipment should be installed indoors in a dry and ventilated place and the humidity of the working environment should be between 30% and 80%.

(2) It is forbidden to open the safety cover during the automatic operation of the system. If you need to work inside the equipment, please be sure to press the emergency stop button before operating. Multiple users are prohibited to operate one equipment at the same time, so as to avoid danger.

③ Before shutting down the equipment, please send out the PCB safely, exit the operating software after confirming no error, turn off the computer, and switch off the general power supply of the equipment.

2. Equipment operation

2.1Software operation

2.1.1 Startup process

a.Ensure that the power supply /air source is connected

b.Turn on the main power switch to "ON"

c.Press the computer startup button to start the computer.

d.Double-click the software icon 🔟 on the desktop to start the operating software

e. The software default in operator grade authority. Click the operator position to pop up the user switching interface, select the user and enter the corresponding password to log in.

2PTN3同址	<u> </u>	Close the software
Automatic Production	System Information	
Program Edit	Machine Parameter	Turn off alarm sound
-C Adjust Machine	5 Machine Calibration	
Program File	Lincence	Program Edit Machine Parameter
System Log	设备编号: C0084	Adju Password Calibration
Main Form	25%	Program File

f.Click [Adjust Machine] - [Motion Control] - [Zeroing] Machine automatically return to zero position, then return to main page wait for production.

2PTN3同地	<u></u>		
Automatic Production	System Information		
Program Edit	Machine Parameter		
-C Adjust Machine	Machine Calibration	Error Confirmed 12	⊻ 🖳 🚸 >
Program File	Lincence	JOG Motion Control	
System Log	设备编号:C0084	IO Input Output	
Main Form	25%		

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											D创达
Num	Name	Туре	length[mm]	width[mm]	height[m	m]	СТ	00:00:00	Skip 0	CircleStop	ExitAuto
0	1000	Nozzle	10.00	10.00	76.00						
1	1002	Clamp	10.00	10.00	83.00						-
2	1003	Clamp	10.00	10.00	83.00						-
3	1004	Clamp	10.00	10.00	83.00			•			•
4	1005	Clamp	10.00	10.00	83.00		and the factor of the	or the startu	The second se		
5	1016	Clamp	10.00	10.00	83.00		waiting 1	or the startu	ip signal		
Pickup hold t	ime[ms]	100	+ Advance open d	listance[ms]	35, 00		Block		0	Run Time: Work Time:	0.00%
		50			50		Circle	Time:	0.00	Work Time:	00:00:00
Plug hold tim	e height[ms]	50	Vacuum breakin	ig time[ms]	50	-	Point	Pation	0.48%	Total Time:	00:46:27
Plug hold tim	e low[ms]	200	🗄 Vacuum failure	value[kpa]	-5.00	1	Politic	Katio.	0.408	fotal fille.	00.40.27

2.1.2 New programming

1.New program name

Open the **[**Program File**]** interface, click **[**New**]** to manually enter the program name, and return to the menu interface.

- C:	\Release\File\		
Number	Name	LastTime	Size
0	655M236V0.prj	2022年6月24日	101811 k
1	AGILE BDE2-1. prj	2022年6月30日	98239 k
2	cpk. prj	2022年5月8日	7095 k
3	eeee.prj	2022年5月31日	98731 k
4	training 7-1.prj	2022年7月3日	12884 k
5	TRAND. prj	2022年7月6日	62856 k
6	uuuu. prj	2022年6月1日	30 k
7	瑞兴. pr j	2022年7月4日	54888 k
8	端子.prj	2022年7月5日	24911 k
9	端子1. prj	2022年4月14日	32334 k
New	Delete	Load	Сорау
_]]	~~~~

2.Program editing

Open [Part Library] in [Program Edit] to add part data.

Error Confirmed 12	<u>⊮</u> ∎ € ×	Error Confirmed 12	<u></u>
Part Library	Plug Data Learn	Automatic Production	System Information
PCB Data Teach	Function Switch	Program Edit	Machine Parameter
Block Data Teach		-C Adjust Machine	Machine Calibration
Pickup Teach	Nozzle Library	Program File	Lincence
Array Data Teach		System Log	设备编号:00112
Program Edit		Main Form	

3. Parts data and editing

a.Click **[**Add**]** and enter the component name to confirm the new component name. Select the new component and click Edit or double click to enter the current component database.

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Num Naz	me Creat time	Nodification time	Num	Name	Creat time	Indification time
	e Creat time	Rodification time	0	MARK	2022/3/10 9:25:17	2022/7/5 15:22:45
			1	25V680UF	2022/3/10 9:37:44	2022/7/5 15:22:55
			2	25V680UF_1	2022/3/10 11:14:54	2022/7/5 14:51:56
			3	25V680UF 2	2022/3/10 11:15:11	2022/3/31 9:52:50
	·		4	25V680UF 3	2022/3/10 11:15:34	2022/7/1 20:26:24
	Please enter part name		5	C1	2022/7/5 14:37:28	2022/7/5 16:05:16
aterial Detail	s		Braid Long: 5.	feed Pickup pres D0 Width:5.00 Hei	sure:50 × Plug pressure:50) ght:13.47	X Ref. Stitch recognition

b.Open the **[**Take and Place Data**]** interface, configure the following function data (it is recommended to configure the nozzle first, do not move the other changes according to the actual situation).

> [suction nozzle name] Deploy an appropriate suction nozzle.

➤ 【Insert level】 Divides into four levels. A larger number gives the insertion priority. If the level is the same, the program allocates it automatically.

> [Feeder responding time] Defaults to 100ms, and the larger the value is, the longer the taking time.

- Camera Angle The default automatic allocation.
- > [Insert compensation] The actual insert is highly compensated.

> [Decelerate distance] Insert decelerates the distance between the component and the PCB. The larger the value is, the slower the insert speed. The default is **1mm.**

- > [Material confirmed or not] Discharge alert, allows by default.
- > [Feeder delay] Alarm time for lack of component default 2000ms .

[Insert pressure detection] Insert pressure detection - [Insert pressure] Default
 50N, which can be set according to the actual situation (Original manufacturer use only)

 Fickup pressure detection Take pressure detection - [Pickup pressure] Default

 SON, which is set according to the actual situation (Original manufacturer use only)

> [Orientation identification] Component orientation identification function -

[Orientation identification method] Default to I/O detection (Original manufacturer use only)

Nozzle Name	1	•	Last pickup	□ Eable	
Plug level	0Leve1	•	compensation Z[mm]	-2. 00	-
compensation X[mm]	0.00	÷	compensation Y[mm]	0.00	1
slow down [mm]	1.00	÷	Photo Angle[deg]	0. 03	
Test allowed	□ Eable		Feeding pressure[%]	50	2
detection allowed	□ Eable		Plug pressure[%]	50	1
Start position [mm]	20.00	÷	Start position [mm]	20. 00	-
start position [mm]	20.00	Ξ	Start position [mm]	20.00	

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c. Open the interface of **[**Feeder **]** to configure the corresponding parameters (it is recommended to select the feeding mode first)

- [feeder type] Select the type of feed
- > [Quantity in X-direction] Default 1, multi-row material for tray type (vendor
- permission to change)

Quantity in Y direction as above.

Feeding way	Tape feeder •	Behind the position	default
Pallet check	□ Eable	Quantity in X(PCS)	1
opening time[ms]	100 ÷	Quantity in Y(PCS)	1
haveornot tested	⊽ Eable	detection timeout[ms]	2000
Directional allowed	□ Eable	Direction mode	I0 check

d.Open the **[**Speed **]** interface, the default is high, can be changed according to the actual. The larger the multiple of the pickup hold and insert hold, the slower the speed.

Ref Speed	Height	Mid	Low
Plug Speed	Height	Mid	Low
Pickup Speed	Height	Mid	Low
Feeder Speed	Height	Mid	Low
Pickup hold	4Times	2Times	Std
Plug hold	4Times	2Times	Std

4.PCB data and MARK instruction

a.Open the interface of **[PCB** data Teach] to set the **MARK** parameters

Input board length and width (actual board width +1mm= conveyor width)

➢ Input the PCB or Fixture thickness. Irregular thickness of some PCB or Fixture will leads to clamping failure. The plate thickness can be adjusted appropriately (see step 8), Click 【Adjust track Width】 to pop up the confirmation dialog box. Click 【OK】 to automatically adjust the track to the set width.

Ver. : 01



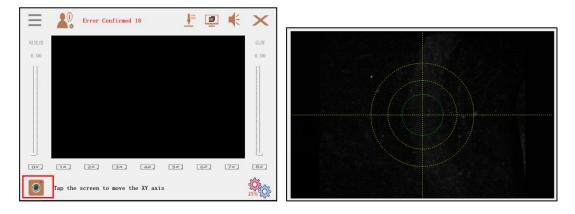
Board lenght[mm]	300.00	Board width[mm]	276.00 🛨	Board lenght[mm]	300. 00 🕂	Board width[mm]	276.00
Origin offset X[mm]	0.00	🗄 Origin offset Y[mm]	0.00 ÷	Origin offset X[mm]	0.00 👘	Origin offset Y[mm]	0.00
Board thickness[mm]	1.60	Hax height[mm]	5.00 🕂	Board thickness[mm]	1.60 🟥	Max height[mm]	5.00
MarkID	X[mm]	Y[mm]	Part Name	MarkID	Y[mm]	[mm]¥	Part Name
					Confirm	Cancel	

b.Select 【Add MARK】 in the part number bar, automatically jump out of the data line, select the data line and click 【Teaching Data】 to enter the **MARK** point teaching interface, put PCB into the conveyor, and click 【Enter Board】 to put the PCB in place

cate mode 🧉		Search Range	3 ≟		MarkID:0 Ref:	MARK			
Board lenght[mm]	300.00	Board width[mm]	184.00	÷			Name	X[mm]	Y [mm]
igin offset X[mm]	0.00	Origin offset Y[mm]	0. 00	÷	A STO	•	MARK_A	-30. 085	54. 626
ard thickness[mm]	19.00	Max height[mm]	5.00	1		E State	Previou	s	Next
MarkID	X[mm]	Y[mm]	Part Name			N		1	
0	-30, 085	54.626	MARK	*		\sim			
0	-152. 330	124. 100	none		1		Move	to photo pos	ition
			25V680UF		•	A start of the sta		1	
			25V680UF_1 25V680UF_2						
			25V680UF_3 C1		N.S. State			Ref edit	
			(CI		CALL ROOM			1	
								Teach data	

c.Press and hold down the start button and click [Move to photo position], then click the icon in the lower left corner to enter the movement interface. Click the axis of the circle to move **XY** axis.

The smaller the circle , the slower the speed. After finding **MARK**, continue to click back to **MARK** teaching screen.

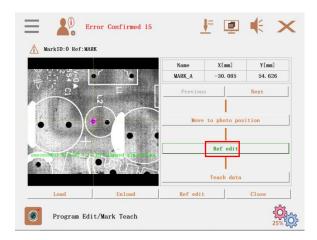


d.Return to the **MARK** teaching screen, click 【Ref edit】 to enter the recognition editing interface

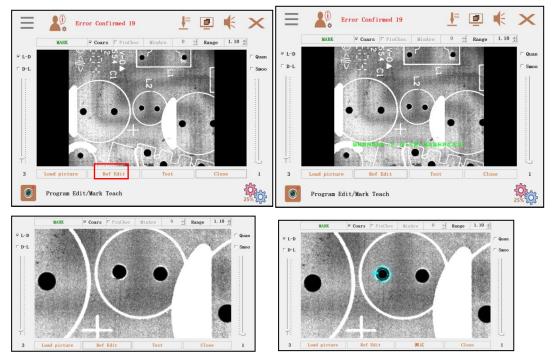
Ver. : 01

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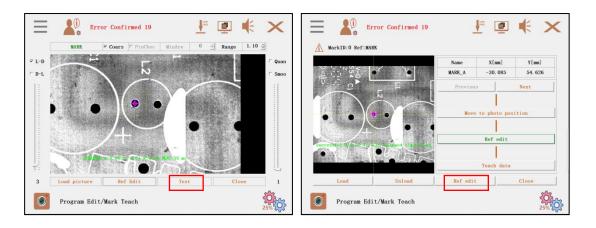


e.Enter the interface for identifying and editing the current MARK. Note on the left that [white and black] / [black and white] indicates the color difference between MARK and the PCB (for example: MARK is white, select white and black, MARK is black, select black and white) Click [Edit Template] and press the green text prompt, point the mouse to MARK, hold down the left button and drag the mouse to an appropriate size, and release the mouse template training successfully



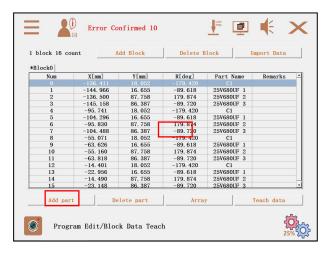
f.Click [Test] to identify the coordinate successfully and return to the teaching interface. Click
[Teach current data] to pop up the confirmation dialog box to save the current MARK data. Click
[Test] to confirm MARK identification again.



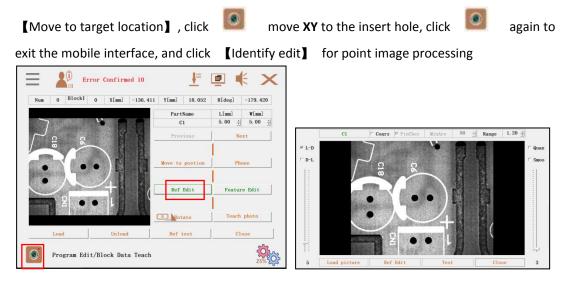


5.Block and Hole data instruction

a. Click 【Block Data Teach】 to enter the interface and add positions to be inserted



b. Click 【Teach Data】 to enter the block teaching interface, hold down the start button and click



c. After entering the recognition and editing interface, click 【Edit Template]】 to select the point box according to the green text prompt. If the message indicating that the training is successful, the recognition interface will be returned

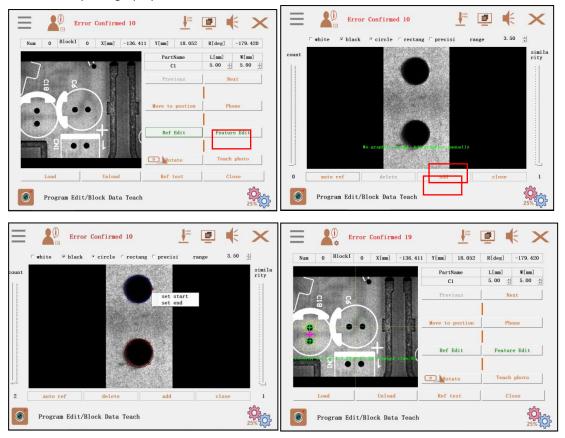
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d.Click 【The edit characteristics】 into the interface, based on green text, and then the right mouse button to choose start point and end point (note: the starting point and destination choice needs corresponding element to identify the direction, so please keep in mind that the current setting), back to the main screen click 【recognition test】 prompts recognition success click 【teach photograph position】 saves the current coordinates.



6.Feeding position and parts instruction

to configure suction nozzle and write data from right to left.

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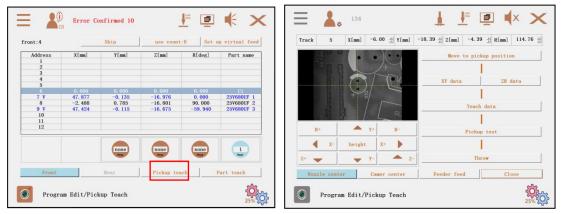
a. Click

30-11



	Skip	use count:	0 Set	up virtual fe
X[mm]	Y[mm]	2[mm]	R[deg]	Part name
				C1
	Please selec	t nozzle name		25V680UF
none				25V680UF
none			A	25V680UF
1000				
2054				
3056				
1 1				-
2			~	
-				
	Pest	Pert2	Petz	Port
				and the
	none none 1000 1054 2054 3056 4056 1	X(am) Y(am) Please selec none none 1054 2054 2054 4056	X(am) Y(am) Z(am) Please select nozzle name none 1000 1054 2054 12 1000 100	X(am) Y(am) Z(am) R(deg) Please select nozzle name • none • 1000 • 1056 1 2 [none] 1000 [none]

b.Corresponding choice position, choose corresponding component data click the part number column names, open [feeding position teaching] interface, press launch a click on the [move to the feeding position], at the same time, the use of the direction of the panel buttons or handle the work head moves to the corresponding position (Switch the illumination mode on front panel for adjustment).



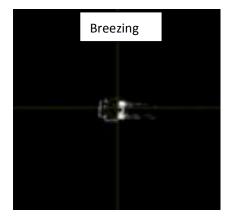
c.Adjust the material pickup position, select **XY** data and **ZR** data, and then click 【Teaching Data】 to save the current coordinate (note: before clicking 【Teaching Data】, you must first select XY data or ZR data, and select the axis changed. If you do not select it, no change will be made.)

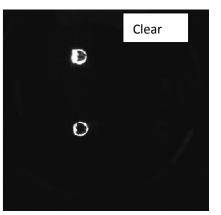




d.Click the pickup test, the machine is automatically pickup current component after confirmation, close the interface of [teaching material position].Click [Part Identification Instruction] to edit component identification data. Press the start button and click [Move to Photo Position] to adjust the image sharpness of the component using the direction key on the panel until the adjustment is clear.







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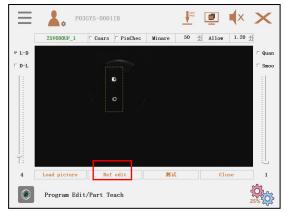
30-13



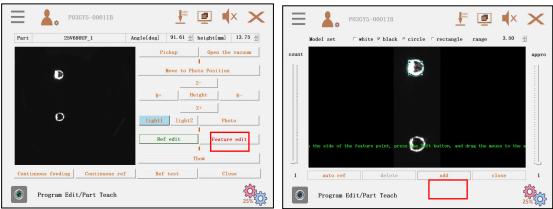
e.Click [Identify Edit] to edit the component image. According to the color of the component lead, select lead detection and write in proportion to the minimum recognition area and detection range.

P03GY5-0001IB		📃 🦾 P03GY5-00011B 🗜 💆 🏟	×
Part 25V680UF_1	Angle[deg] 91.61 📩 height[mm] 13.75 📩	25V680UF_1	0 📩
Ð	Pickup Open the vacuum Move to Photo Position	₽ L-D □ D-L	⊂ Quan ⊂ Smoo
Ū	Z- R+ Height R-	D	
0	Z+ lightl light2 Photo	D	
	Ref edit Feature edit		
Continuous feeding Continuous re	f Ref test Close	4 Load picture Ref edit Test Close	1
Program Edit/Part Teach	25%	Program Edit/Part Teach	25%

f.Click [Edit Template] to operate according to the green text prompt, select the lead to be identified in the box, indicating that the training is successful, and close the interface.



g.Click [Edit Features] and to add, operating according to the green text prompts. Point the mouse to one side of the feature point, press the left button, and drag the feature point to an appropriate size.



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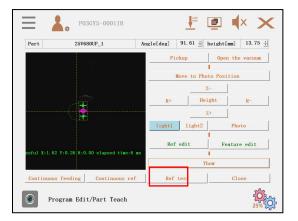


h.Select the starting point and ending point, right-click the mouse and choose [Set Starting point] & [Set End point] (note: the selection needs to correspond to the starting point and end point of the insert hole in [Block Data]). If the setting is successful, there will be change the color and the interface will be closed



i. Click 【Identification Test】 to test the current component. If the test fails (as shown in the figure), you need to check the definition of the component or enter 【Identification Edit】 to change the detection range until the test is **OK**. After the test is **OK**, you can 【continuous identification】 test.





7.Panel and bad board instruction.

a. Add line(s) of data same as the number of the panel in PCB. Add just one line for single PCB (no panel form) (note: insert data cannot be extended without adding this item)

8.Insert data with automatic learning

a. Open the 【Plug Data Learn】 interface, click the panel form extension to update the current insert location data, select the data bar and click 【No insert】 to skip the insert location. When the base board insert position has component interference and needs to dodge, click 【Dodge Setting】 to write the dodge distance according to the actual situation.

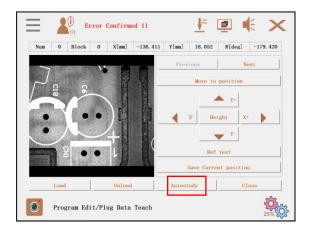
T				plug in	Up		Down	Plug:16	Skip:0	Red	is skip	The	plug in	Up		Down
Num Remark	X[mm]	Y[mm]	R[deg]	Part name	Block ID	Array ID	Stauts *	Num	Remark	X[mm]	Y[mm]	R[deg]	Part	Block	Array ID	Stauts
0	-136. 411	18.052	-179.420		0	0	Α	0		-136, 411	18.052	-179.420				
1	-144. 966	16.655		25V68	0	0		1		-144.966	16.655	-89.618	25V68	0	0	
2	-136. 500	87.758		25V68	0	0	A	-		100 500	07 750	170 074	051160	^	^	•
3	-145. 158	86. 387		25V68	0	0				17-						
4	-95.741	18.052	-179. 420		0	0	A		and any		Avo	id 🤗	Eable	Z[mm]	3.00	÷
5	-104.296	16.655		25V68	0	0				X	-					
6	-95.830	87.758		25V68	0	0	A				Y[m	.1 0	00 :	X[mm]	3,00	
7	-104.488	86.387		25768	0	0			2 100	8 B.	11.00	U V.		ALMAN	5.00	
9	-55.071	18.052	-179.420		0	0	A									
10	-63. 626	16.655 87.758		25V68	0	0					Confi		Cance	1		
	-55. 160	87.758		25V68			A				comr		Cance	1		
11 12	-63.818	86. 387	-89.720	25V68	0	0		10		-14, 401	18,052	-179, 420		0	0	
					0		A	12		-14. 401		-179.420	C1 25V68	0	0	A
13 14	-22.956	16.655 87.758	-89.618	25V68	0	0	Α	13		-14, 490	16.655 87.758		25V68	0	0	A
											87.758	119.814				

b.Select the first line of insert data to open the 【insert Data Teaching】 interface. Click 【Automatic Learning Position】 and the machine will automatically learn all insert holes. After learning, the machine will return to the interface.

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9. Function switches

A.Machine running mode selection and track running speed (Original manufacturer use only).

Pass Mode	close	
Test Mode	close	
Mark Recognition	close	
Bad Mark Recognition	close	
Barcode Recognition	close	
Convyer Speed	Low Speed Mid Speed He	eight
Work Order Number		

10.Suction nozzle data

a.Establish nozzle/gripper database, corresponding to input actual nozzle/gripper size data (note: input data must be correct)

> [Pickup holding time] the default is **100ms**. The longer the time, the slower the speed.

[Vacuum/Gripper advance opening distance] 35mm by default. The vacuum is broken or the gripper is opened in advance to prevent the possibility of the gripper bringing material.

> [Insert hold time high-speed] defaults to **200ms**, the insert hold time when the machine is operating at **100%** speed.

Vacuum value defaults to -80kpa, do not change.

> [Insert hold time low speed] the default is **200ms**, the insert hold time when the machine runs at **20%** and **50%** speed.

【vacuum detection failure value】 default -5kpa, the low vacuum alarm.



Num	Name	Туре	length[mm]	width[mm]	height[m	
0	1000	1906	10.00	10.00	76.00	
1	1054	吸帽	10.00	10.00	83.00	
2	2054	吸噓	10.00	10.00	83.00	
3	3056	195 195	10.00	10.00	83, 00	
4	4056	吸喘	10.00	10,00	83, 00	
5	1	吸嘴	10.00	10.00	83.00	
6	2	吸喘	10.00	10.00	83.00	
7	3	吸嘴	10.00	10.00	83.00	
8	4	吸嘶	10.00	10.00	83.00	
Pickup hold Plug hold tir Plug hold tir	me height[ms]	200 - 300 - 200 -	Advance open o Vacuum breakin Vacuum failure	ng time[ms]	5.00 50 -5.00	45 145 145
Flug hold th	ie iowimsj	200 🗉	vacuum failur	e valuelkpaj	5.00	
Copy	1	Paste	Add	T.	Delete	

11.insertion array

Insert point editing can be divided into two ways: **a**. General editing (applicable to single PCB and Panel form PCB, biased to single PCB); **b**. Array editing (for panel form PCB only).

Common editing mode: a. For single PCB, add all the hole positions for insertion, assign the part

- number, and directly show the hole positions.
- **b**. For panel form PCB,
- You can select the panel form mode in the PCB positioning mode (Multiple Mark coordination can be added only in the panel form mode);
- 2. Add corresponding Mark data to the parts database;
- 3. Add corresponding panel blocks;
- 4. Add the location data of insert holes in corresponding blocks and teach them;
- 5. The insert data is displayed automatically, and the hole position is edited.

Array editing mode:

- a. For example with two panel in PCB , establish two Mark data in the parts database (as shown in Figure 1);
- b. Select the panel form mode in the PCB positioning mode and add two groups of Mark coordinates (as shown in Figure 2);
- c. Add the insert position of the first panel to the block data and teach it (as shown in Figure 3);
- d. Add two rows of array data in the panel form demonstration, click the panel form demonstration and use Mark camera to locate the symmetry points of the first and second panel PCB (see Figure 4);
- **e**. In the insert data will automatic learning and the whole PCB data will automatic done.



						1.000	ate mode 🧉 🚬			ch Range		
Num	Name	Creat ti		Federal	tion time		Board lenght[mm]	300.00	-	Board width[mm]	184. 00)
0	MARK				15:22:45	Ori	gin offset X[mm]	0.00	🗄 Or	igin offset Y[mm]	0.00	
	25V680UF 5V680UF_1	2022/3/10 9 2022/3/10 11			15:22:55 14:51:56	Boa	rd thickness[mm]	19.00	쉬	Max height[mm]	5.00	
	5V680UF 2	2022/3/10 11			1 9:52:50		MarkID	X[mm]		Y[mm]	Part Na	
4 25	5V680UF_3	2022/3/10 11	1:15:34	2022/7/1	20:26:24		0	-30. 085		54.626	MARK	ame
5	C1	2022/7/5 14	:37:28	2022/7/6	16:24:23		0	-152. 330		124. 100	none	
Braid feed Long:5.00 W	l Pickup pressu lidth:5.00 Heigh	re:50 × Plug t:0.00	pressure:50	X Ref: datum	mark-•		Add 4	data.	2		25V680UF 25V680UF_1 25V680UF_2 25V680UF_3 C1	
Add		Delete	Edi	t	Сору		Add	Delete		Adjust width	Teach e	data
Prog	gram Edit/Par	t Library		Fig 1	(Open		Program Edit/F	PCB Data Tea	ach	Fig	2	250
Prop		t Library onfirmed 19		Fig 1	25% * ×	} []		CCB Data Tea		Fig	2	255
Prog	D Error Co		Delete E		et ata		2 2	Confirmed 1		Array	Barcode	25%
1 block 16 c *Block0	count X[mm]	onfirmed 19 Add Block Y[mm]	R[deg]	Horn In Stock In Part Name	Event Data		2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9	Array	Barcode	Blcok 0
1 block 16 c	Error Cc X[mm] -136.411	Add Block Y[mm] 18.052	R[deg] -179. 420	Part Name C1		Nu	2 2 m OX[mm] OY[mm]	Confirmed 1	9 BadX[mm]	Array BadY[mn] BarX[m	Barcode a) BarY[mm] 0.000	Blcok
1 block 16 c *Block0	count X[mm]	onfirmed 19 Add Block Y[mm]	R[deg]	Horn In Stock In Part Name		Nu	2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 0 1 2 3	Error Cc X[mm] -136, 411 -144, 966 -136, 500 -145, 158	Y[mm] 18.032 16.655 87.758 86.337	R[deg] -179, 420 -89, 618 179, 874 -89, 720	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 3		Nu	2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 0 1 2 3 4	X[mm]	Add Block Y[mm] 18.052 16.655 87.758 86.387 18.052	R[deg] -179. 420 -89. 618 179. 874 -89. 720 -179. 420	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 2 25V680UF 3 Cl		Nu	2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 0 1 2 3	Error Cc X[mm] -136, 411 -144, 966 -136, 500 -145, 158	Y[mm] 18.032 16.655 87.758 86.337	R[deg] -179, 420 -89, 618 179, 874 -89, 720	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 3		Nu	2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 1 2 3 4 5 6 7	X[mm] -136, 411 -136, 416 -136, 500 -145, 158 -95, 741 -104, 296 -104, 488	Add Block Y[mm] 18.052 16.655 87.758 86.387 18.052 16.655 87.758 86.387 18.052 16.655 87.758 86.387 18.052 19.052 10.055 10.052 10.0	R[deg] -179, 420 -89, 618 179, 874 -89, 720 -179, 420 -89, 618 179, 874 -89, 720	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 3 25V680UF 1 25V680UF 2		Nu	2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 Num 0 1 2 3 3 4 5 6 6 7 8	Xiam Xiam Xiam -136, 411 -136, 411 -136, 411 -144, 966 -136, 500 -145, 158 -95, 741 -104, 488 -95, 830 -104, 488	y(mm) 18.052 16.655 87.758 86.387 18.052 16.655 18.052 16.655 18.052 16.655 18.052 16.655 18.052 16.052 18.052 16.052	R[deg] -179. 420 -89. 618 179. 874 -89. 720 -179. 420 -89. 618 179. 874 -89. 720 -179. 420	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 3 C1		Nu	2 2 2 2 2 2 2 2 2 2 2 2 2 2	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 Num 0 1 2 3 4 5 6 7 7 8 9	X[mm] -136,411 -136,411 -136,413 -136,500 -136,500 -104,296 -104,488 -55,071 -63,626	Add Block Y[mm] 18.052 16.655 87.758 86.387 18.052 16.655 87.758 18.052 16.655 18.052 16.655 18.052 16.655 18.052 16.655 18.052 18.055 18.052 18.055 18.055 18.052 18.055 18.055 18.0	R[deg] -179. 420 -89. 618 179. 874 -89. 720 -179. 420 -89. 618 179. 874 -89. 720 -179. 420 -89. 618	Part Name Cl 25V6800F 1 25V6800F 2 25V6800F 2 25V6800F 2 25V6800F 2 25V6800F 2 25V6800F 2 25V6800F 2 25V6800F 1		Nu	2 2 2 2 2 2 2 2 2 2 2 2 2 2	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 Num 2 3 4 5 6 7 8 9 10	X[mm] -136, 411 -144, 966 -136, 500 -145, 158 -95, 741 -104, 239 -904, 489 -50, 071 -55, 160	Y (nm) 18, 052 16, 655 87, 758 86, 387 18, 052 16, 655 87, 758 86, 387 18, 052 16, 655 87, 758 86, 387 18, 052 16, 655 87, 758 87, 758 87, 758	R[deg] -179, 420 -89, 618 179, 874 -89, 720 -179, 420 -89, 618 179, 874 -89, 720 -179, 420 -179, 420 -89, 618 179, 874	Part Name Cl 25V680UF 1 25V680UF 2		Nu	2 2 m OX[mm] OY[mm 0.000 0.001	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
Num Num 0 1 2 3 4 5 6 7 7 8 9 10 11 10	X[mm] Frror Cc x[mm] -136, 411 -136, 411 -144, 966 -136, 500 -145, 158 -96, 7496 -96, 7496 -104, 488 -56, 071 -55, 071 -63, 626 -55, 160 -63, 818	Y[m] 18.052 16.655 87.788 86.387 11.652 11.653 11.652 11.652 11.655 87.758 88.387 11.655 87.758 88.387	R[deg] -179, 420 -89, 618 179, 874 -89, 720 -179, 420 -89, 618 179, 874 -89, 720 -179, 420 -89, 618 179, 874 -89, 618 179, 874 -89, 720	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 2 25V680UF 2 25V680UF 2 25V680UF 2 25V680UF 3 25V680UF 3		Nu	2 2 2 2 2 2 2 2 2 2 2 2 2 2	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
1 block 16 c *Block0 Num 2 3 4 4 5 6 7 8 9 10 11 12	Ximm] -136, 411 -136, 4961 -136, 4961 -144, 1961 -144, 1961 -155, 1160 -55, 1160 -	Add Block Y[mm] 18, 052 16, 655 87, 758 86, 387 16, 655 87, 758 86, 387 16, 655 87, 758 86, 387 16, 655 87, 758 86, 387 11, 052 18,	R[deg] -179.420 -89.618 179.874 -89.720 -89.618 179.874 -89.720 -179.420 -89.618 179.874 -89.720 -179.420	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 3 25V680UF 3 25V680UF 3<		Nu	2 2 2 2 2 2 2 2 2 2 2 2 2 2	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
Num Num 0 1 2 3 4 5 6 7 7 8 9 10 11 10	X[mm] -136, 411 -144, 966 -145, 158 -95, 741 -104, 296 -95, 830 -95, 830 -14, 488 -55, 620 -55, 620 -53, 818 -14, 401 -22, 956	Y[m] 18.052 16.655 87.788 86.387 11.652 11.653 11.652 11.652 11.655 87.758 88.387 11.655 87.758 88.387	R[deg] -179,420 -89,618 179,874 -89,720 -179,420 -89,618 179,874 -89,720 -179,420 -89,618 179,874 -89,720 -179,874 -89,720 -179,874	Part Name Cl 25V680UF 1 25V680UF 2 25V680UF 2 25V680UF 2 25V680UF 2 25V680UF 2 25V680UF 3 25V680UF 3		Nu	2 2 2 2 2 2 2 2 2 2 2 2 2 2	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0
Num 0 1 2 3 4 5 6 7 8 9 10 11 12 13	X[mm]	Nonfirmed 19 Add Block 18.052 18.052 18.053 18.053 18.053 18.053 16.655 18.053 16.655 18.052 16.655 18.052 16.655	R[deg] -179. 420 -89. 618 179. 874 -89. 720 -179. 420 -89. 618 179. 874 -89. 618 179. 874 -89. 618 179. 874 -89. 720 -179. 420 -89. 618	Image: Part Name Image: Part Name 25V680UF 3 25V680UF 3 25V680UF 2 25V680UF 3 25V680UF 2 25V680UF 3 25V680UF 2 25V680UF 3 25V680UF 3 CI 25V680UF 1 25V680UF 3		Nu	2 2 2 2 2 2 2 2 2 2 2 2 2 2	Confirmed 1	9 BadX[mm]	Array	Barcode	Blcok 0

2.1.3The machine parameters

1.Shaft control parameters

a.Click to open the [Axis Parameters] interface, which contains the Proper value of the axis data.

(Please do not modify it.)

Error Confirmed 11	×		Error	Confir	ned 11					ŧ	>
Axis Information		Total:2Card 16Axis	0Axis	lAzis	2Azis	3Azis	4Axis	5Axis	6Azis	7Azis	88.
		Home Direction	2	0	0	0	0	0	2	15	-
Machine Function		Return Reference P	1	1	1	1	1	1	1	1	
Machine Function		Home Offset	0	0	1.862	2.214	1.624	1.8	0	0	-
		Locating Offset	0	0	0	0	0	0	0	0	
		Home Waximum Speed	20000	20000	10000	10000	10000	10000	1000	1000	10
:= 🦽 Intrinsic Parameter		Home Acc dec time	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0
elle		Home Stop Speed	2000	2000	1000	1000	1000	1000	500	500	5
		Home Start Speed	2000	2000	1000	1000	1000	1000	50	50	1
Machine Seting		Manual Speed	20000	20000	10000	10000	10000	10000	500	1000	10
Machine Seting		Nanual Acc dec time	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0
		Manual Stop Speed	2000	2000	2000	2000	2000	2000	500	500	5
		Iid Speed	5000	5000	5000	5000	5000	5000	5000	5000	50
IO Input Output Seting		说明									
Machine Parameter	25%	Machine F	Paramet	er/Axi	s Infor	mation				2	

2. Function switches

a.Click to open the [Machine Function] interface, and you can set related functions (Original manufacturer use only).

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Soper Have or not	Open	Jacking motor	Open
Left to right	Open	Hand wheel	Open
Right to Left	Close	Distortion calibration	Close
Vacuum pump	Close	Up light	Open
Bender	Close	Dow light	Open
Orbital transfer	Open	Surface calibration	Close
Torque	Open	Mes Function	Close
Thermal compensation	Close	Pre drop switch	Close
Save all Image	Close	R axis common switch	Close

3.Basic and MES parameters

a.Click [Intrinsic Parameter] to change the corresponding parameters (Original manufacturer use only).

	Parameter MES Settings Torque Parameter Name	Numerical	
Num O	Visual coarse positioning through	23	Factory Seting
1	Substrate movement(low speed)[pul	25000	Seting
2	PCB fix delay time[ms]	900	Seting
3	PCB in place delay time[ms]	300	Seting
4	PCB out board delay [ms]	300	Seting
5	PCB board delay[ms]	15000	Seting
6	PCB unload overtime (mid speed)[ms]	5000	Seting
7	Delay out board delay[ms]	50	Seting

b.Click **[**Other Settings**]** to open **MES** connection and elevation detection. You can set the format and method of **MES** communication, and upload **MES** data after setting the **IP** and port of the communication.

MES communication test: MES communication test, which contains test information;

> MES update path: Path where the program MES information is saved;

> **MODUBUS** port: component floating detection servo communication port (the red mark of below figure is the servo communication parameter setting, which is generally set as the default);

> Device number: The device number contained in **MES** communication.



Other Parameters P	Postion Parameter MES Settings Torque Settings	٦.
MES Capture	° POST ∩ API	
MES URL	192. 168. 0. 1	-
WebServer	Api name	_
Post Type	application/json	
MES path	C:\Users\jjsu\Desktop\ALL-11-电感(1)\2\imgNG\101电感	
MES share		
Result		Test
Equipment Number	设备编号:C0112	Save
language	English	Save

4. Machine settings

a.Click [Machine Settings] to set the factory Settings of each signal node (Please do not modify

it.)	
Error Confirmed 11	L 🖳 👘 🗡
Total: lCoordinate 4Head 5Camer Node Configuration Node Configuration Note: Second Second Climbing Control Panel Signal Lamp Safety door Safety door Hand Wheel	Camera Parameters • Camer:1 • Camer:2 • Camer:3 • Camer:4
Detail	5 6 2
Machine Parameter/Machine Set	cing 25%

5.Input/output Settings

a.Click [Input/output Settings] to check out I/O interface.

IO module	Detail		
■ 10 Module:0	Address	Name	Polarity

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6.System logs

a.Click [System Log] to view the system information of the current machine, click Clear
[Historical Document] to delete the historical system information, and click [Open Historical Document] to view the previous system log information.

Number Type Item Time 0 E 父子根常 2022/7/7 8:16:51 1 E 父子根常 2022/7/7 8:16:51 2 ¥ 秋田根常 2022/7/7 8:16:51 3 ¥ 代日本報告 2022/7/7 8:16:51 4 E data error 2022/7/7 14:50:22			建型 文件夹		KingsoftData	组织 · 新建文件夹 一本地理量(D) ^ 更 武电局	. 🗜 🖳 🖡 🗙 🗙	st	ormation li	stem info
0 E 文作集営 2022/17 18:16:40 1 5 2022/24 20:10 2028 2 V 秋道県等 2022/17 18:16:51 3 V 使料着服幣 2022/17 18:36:46 4 E data error 2022/17 18:56:16		Time	文件夹	2021/12/30 14:50	Panasonic Corporation					
1 5 文字像作 2022/1/1 83:16:51 2 単 執道服务 2022/1/1 83:8:46 3 単 供料器服务 2022/1/1 83:8:46 4 5 data error 2022/7/7 14:50:22 正形器履(0) ■ 正形器履(0) ■ 正示器(0) ■ 正言(0) ■ [1] ■ [1]										0
2 1 取利用 ボブ 2022/1/1 8:36:46 3 1 ① 代表和 第 2022/1/1 8:56:16 4 E data error 2022/1/7 14:50:22 			交相关							
3 V 代料器版 7 2022/7/7 8:56:16 4 E data error 2022/7/7 14:50:22 本部語版() 本部語版() 本部語版() 本部語版() 本部語版() 本語版() 本語版() 本語版() 本語版() 本語版() 本語版() 本語版()										
3 n data error 2022/1/1/13:30:22 ************************************										
RKA identified an error 6号供料器卡料			546		eren [
					÷Ħ	6号供料器十		error	tified an	RKA iden
Clearing historical Open a history Clearing historical Op	Open a history	Op		torical	Clearing his		Open a history	aring historical	Cle	

7. Machine debugging

a.Click [Motion Control] to open the axis debugging screen, and click **JOG+/JOG-** to move the corresponding axis;

Error Confirmed 11	×	Ξ.	134		1		××
Machine Calibration		Click the	button to move	the selected a	xis T	hrow All	Home All
Machine Calibration		X轴	-357. 986	J0G+	JOG-	Home	Stop
* CPK Machine Validation		YM	140. 398	JOG+	JOG-	Home	Stop
		Z1	15.632	JOG+	JOG-	Home	Stop
		Z2	9. 996	JOG+	J0G-	Home	Stop
		Z3	9. 996	J0G+	JOG-	Home	Stop
		Z4	9. 992	J0G+	JOG-	Home	Stop .
		This inter	rface can contro is	l the uniaxial no other inte	movement, bei rference in th	fore moving to a ne device	ensure that there
Machine Calibration	25%	Ad	ljust Machine/	Motion Contr	rol		25%

b.Click [In-Out] to open the I/O information screen. Click the red dot to test the corresponding I/O signal.

Ξ,	134		××	≡	1 34		•× ×
Display I/	0 status information			Display	I/O status information		
Input Ou	tput			Input	Output		
0	启动按钮AUT	停止按钮STP 🥚	-	0	1#火爪ZJ1	2#火爪ZJ2	• <u> </u>
1	复位按钮RST	点动按钮SUT	0	1	3#夹爪ZJ3	4#夹爪ZJ4	•
2	1#真空檢測A-T	2#真空检测B-T		2	1#真空ZK1	2#真空ZK2	• -
3	3#真空检测C-T	4#真空检测D-T 🥚	6	3	3#真空ZK3	4#真空2K4	•
4	1#插件错误信号2W1	2#插件错误信号ZW2	<u> </u>	4	1#破真空ZQ1	2#破真空ZQ2	•
5	3#插件错误信号ZW3	4#插件错误信号ZW4	8	5	3#破真空ZQ3	4#破真空ZQ4	•
6	备用输入1	R轴到位RINP	e i i i i i i i i i i i i i i i i i i i	6	PCB相机触发信号TRCM3	R轴启动RQD	•
7	直连OUT14与OUT15	急停按钼EMG		7	元件相机触发1激光TRCM1	元件相机触发2条形TRCM2	•
Click the the	icon to change the status of linkage of the solenoid val	the output outlet. The status char ve. Please ensure safety before ope	nge will cause eration	Click t	the icon to change the status of the linkage of the solenoid val	the output outlet. The status ove. Please ensure safety before	change will cause operation
Ad	ljust Machine/Input Outpu	t	25%	۲	Adjust Machine/Input Outpu	t	25%

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2.1.4 Abnormal Mark handling

a. If PCB stuck in the conveyor, PCB did not reach the specified position, resulting in Mark position de viation;

b. Flux on the conveyor causes stuck of the fixture, leading to Mark identification error;

c. The **PCB** on the fixture is not properly placed, resulting in dislocation or reverse placement of the **PCB**, which also makes **Mark** failure;

d. Mark is blocked by foreign bodies or Mark itself is irregular, resulting in abnormal recognition.

Mark Process instance



- a. Normally to lead the target in the green box ;
- b. If Mark runs half out of the green search box, its position is offset and the camera cannot recognize it; It is necessary to exit the PCB from the conveyor, check and ensure the conveyor mechanism is normal, and also check whether there is foreign matter on the conveyor edge or fixture. If so, please clean it, and put the PCB into the conveyor again after confirmation;
- **c. Mark** is not in the display range, blocked or **PCB** reversed, so the camera cannot recognize it; The **PCB** needs to exit the conveyor, remove the shielding or change the direction of the **PCB** return to continue production.

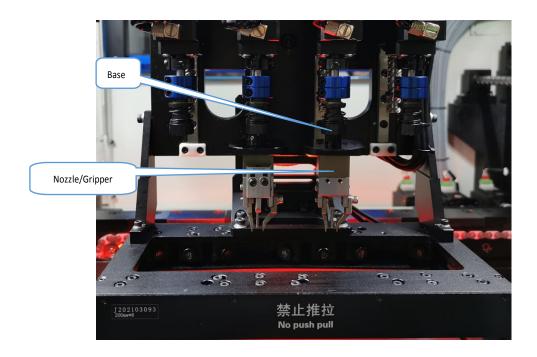
2.2 Insertion head structure

2.2.1 Nozzle/gripper replacement

The suction nozzle/gripper belongs to the quick disassembly mode, just need to push the base buckle, the suction nozzle/gripper will automatically disengage from the base; Also push the base buckle to attach the nozzle/gripper to the base. (No tools required)

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2.2.2Feeder installation

Pull the positioning buckle to align the positioning slot and install feeder on the feeder platform (the station position should be consistent with the program station position).



4. 3.Additional items

3.1Maintenance and maintenance 3.1.1Maintenance Tools preparation





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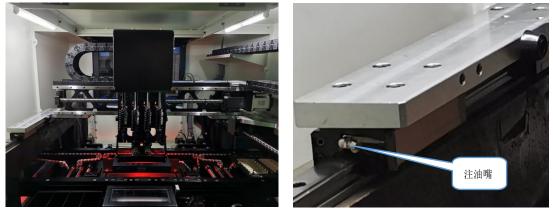






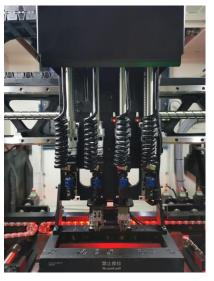
3.1.2 XY Screw & slide maintenance

XY screw & slider cleaning/refueling, add 2# butter monthly.



3.1.3 Z-axis mechanism maintenance

Z-axis mechanism cleaning/refueling, filling AFC or special high speed grease monthly (the protective cover of insert head needs to be removed before cleaning refueling)



3.1.4 Conveyor mechanism maintenance 1 Check whether the belt or chain is loose, clean and maintenance monthly.

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3.1.5 Conveyor mechanism maintenance **2**

Check whether the guide wheel is worn and stuck, clean and fill with chain oil monthly.



3.1.6 Conveyor width adjustment mechanism maintenance

Conveyor width adjustment mechanism/transfer mechanism cleaning/refueling, filling 2# butter monthly.



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3.2. Device Failure Handling

- a .The equipment alarm pressure is low, please check whether the total air input of the equipment is normal. The standard **4-6kg** anhydrous air source is normal. If the air source input is normal, the pressure controller and **I/O** control system need to be checked;
- b. After starting the software, each shaft control alarms. Please check whether the emergency switch is pressed;
- c. If the gripper takes abnormal material or the feeder has no material, it means that lack of the materials, the feeder need refill material;
- e. **Mark** handle failure and confirm whether **PCBA** is in place. If **Mark** point is fuzzy and incomplete, you can directly click **Mark** center with the mouse;
- f. When the emergency switch is pressed, the emergency switch on the operation panel or the operation handle is pressed, pull it up;

The command position of axis W H X/Y exceeds the limit, which can be divided into the following situations:

- 1. Check whether the signal of X-Y limit sensor is normal;
- 2. If the drive & motor is abnormal, reset it back to zero;
- h. The machine is not reset, please reset the machine to zero;
- i. When the safety door is open during operation, it means that the front and back safety doors are opened during normal operation of the machine and the machine stops running. The safety door can be closed to reset the machine;
- g. Trigger the safety grating, and the machine stops running. Confirm that there is no foreign body blocking on the front and rear safety grating, and the operator has left the machine. Press the reset button.

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