

User Manual

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Overview of the manual

1.1 Scope of use

The current version of the operating manual is applicable to the intelligent version of the software models from 2018 onwards. The operator must read the manual in detail before using the machine and ensure that he understands the instructions and precautions contained therein to ensure safe production. Enjoy your work!

Equipment acceptance

2.1 Description

Once you have received the equipment, please open the box and inspect it.

Please check the appearance of the equipment for any abnormalities, e.g. paint loss, deformation and other special conditions.

If there are any abnormalities, please contact your dealer in good time and open the box to take pictures of the equipment and keep them.

2.2 Preparation

The Pick and Place machine and other production line equipment needs to be placed according to the layout of the line scheme.

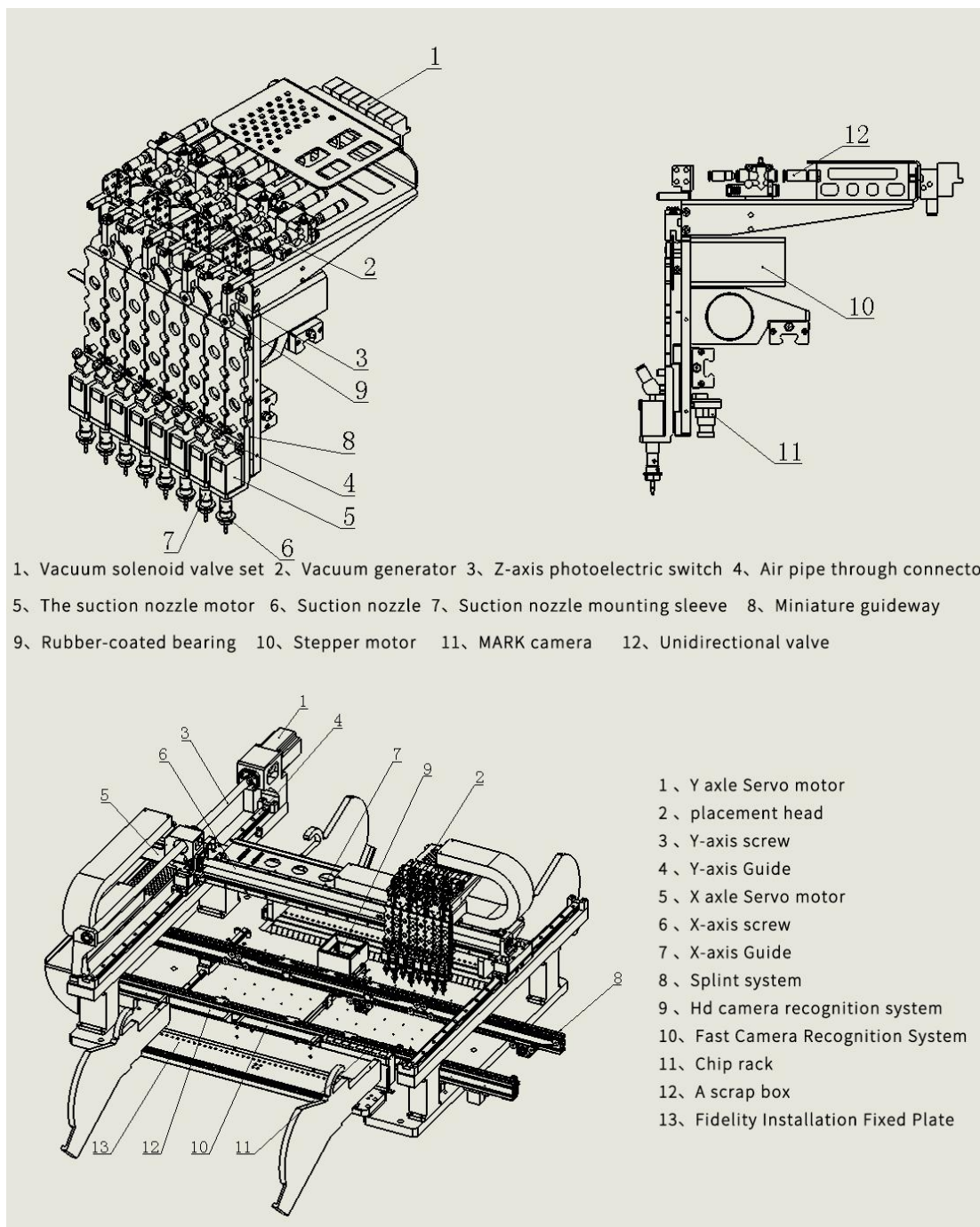
Alarm lights are mounted, ground feet are adjusted, the cover, front and rear handles, brackets for the computer and keyboard are mounted (screws are in the mounting holes of the equipment). Please find the power cable from the accessory box and connect it to 220V AC (it must be reliably earthed).

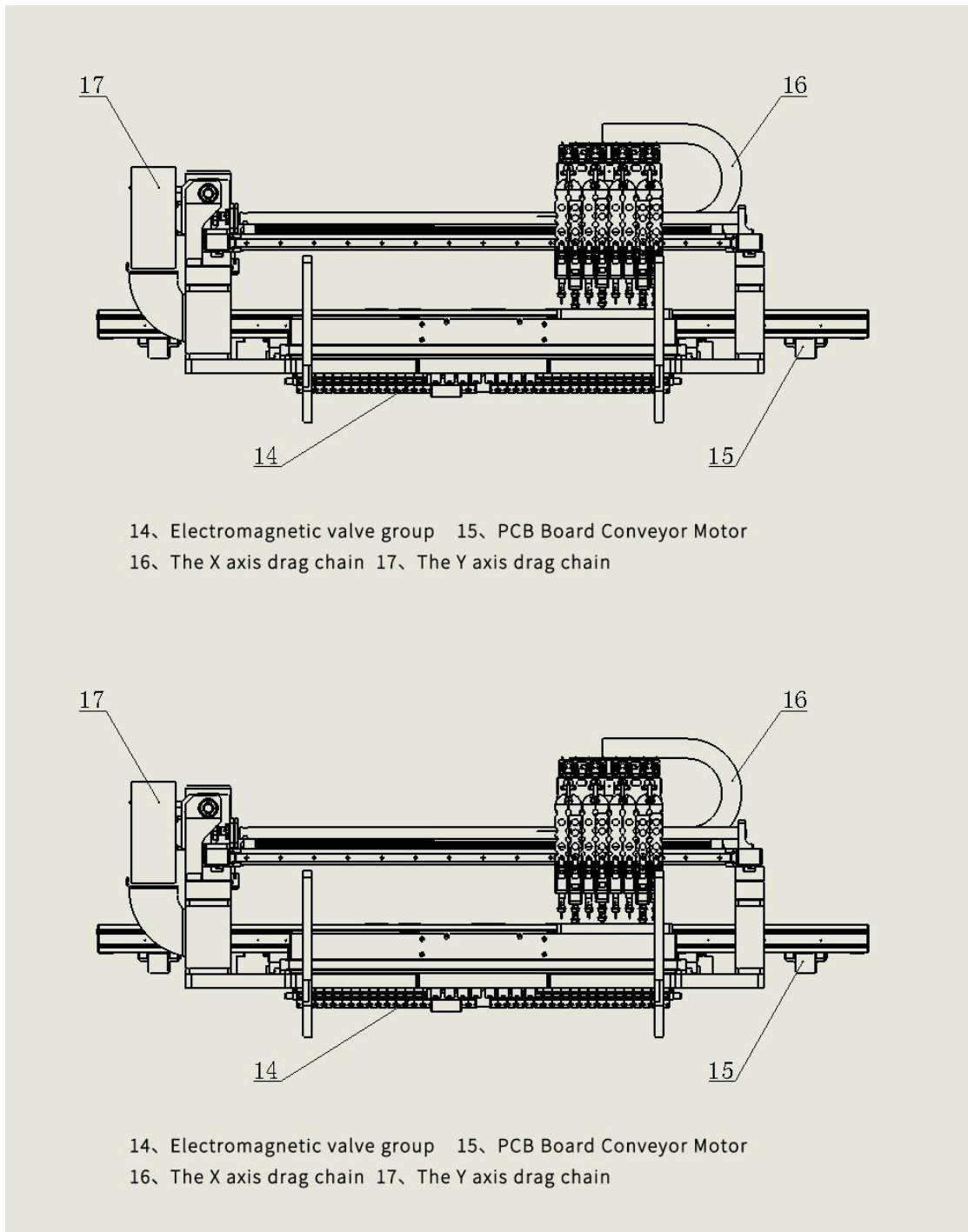
The Pick and Place machine has an oil and water separator in the air inlet and its air pressure is 0.6 Mpa. Its factory air pressure value defaults to 0.6 Mpa (it is normally adjusted at the factory).

The four-head bench-top Pick and Place machine models do not have an oil/water separator and are supplied with their own).

The Pick and Place machine has a 10mm air hose for the air inlet, and an 8mm air hose for the semi-automatic screen printer, top plate machine and bottom plate machine.


2.3 Overview of the shape structure










Accessory Description

3.1 Description of the suction nozzle

Model number	External diameter	Inner diameter	Exterior appearance	Applicable pick-up components
501	Φ0.4mm	Φ0.2mm		0201

502	Φ0.7mm	Φ0.4mm		0402
503	Φ1.0mm	Φ0.6mm		0603
504	Φ1.5mm	Φ1.0mm		0805, 1206, 1210, SOT23
505	Φ3.5mm	Φ1.7mm		sop8, sop14, 1812, 2220 Size 15*15mm Pin 64 below
506	Φ5.0mm	Φ3.2mm		10*10mm or more QFN, TQFP, BGA

*Please consult your local dealer for original nozzle purchase

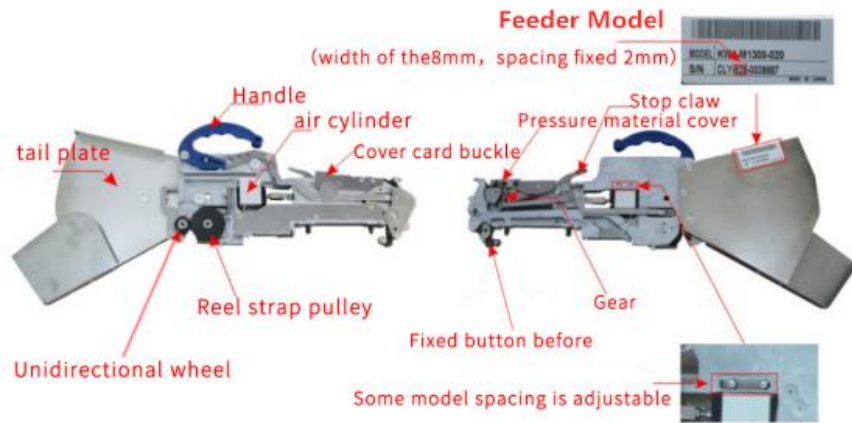
3.2 Description of the belt feeder

Feeder Specifications.

Types	Apply	Specifications	Takes up mounting holes	Total number of mounting holes
Ribbon feeders	Electric powered	8mm	1	44-120
		12mm	2	
		16mm	2	
		24mm	3	
Vibrating feeder		3-5 tubes	7	Non-occupying
IC material tray		Matching to the actual situation	Non-occupying	

*Please consult your local dealer for original Fidelity purchase




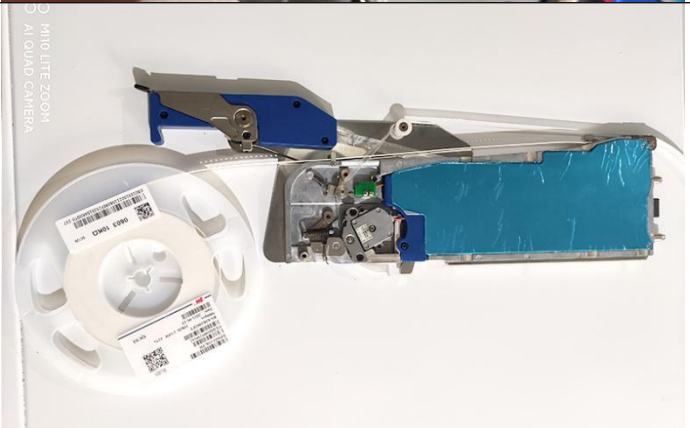
Note: Depending on the width of the Feeder, the range of mounting holes on the feeder frame varies. As an example, an eight-headed 80-position feeder, so an 8mm feeder can be fitted with up to 120, while a 12mm feeder can have up to 40.






picture 1-7 tape feeder (feeder)

Feeder loading operation.

No.	Elements	Pictures
1	Place the feeder on the platform.	
2	Loosen the pawl.	
3	Open the material cover.	

4	Load the material tray and place the material belt into the guide slot.	
5	Strip the sealing tape to the proper length and the tape snaps properly into the gear hole in the guide slot.	
6	Stretch the sealing tape and secure it.	
7	A picture of the finished installation.	

8	Push the NXT electric feeder into the feeder slot.	
9	Push to the bottom and place the discharge belt.	
10	The result after installation to the pick and place machine.	

Software Programming Guide

4.1 Project import

CONNECT	SYSTEM	PROJECT	DU800_96F Trail	64	Close
---------	--------	---------	-----------------	----	-------

Click the button.



Wenzhou Yingxing Technology Co., Ltd Smt Machine 2018 Intelligent Version

CONNECT SYSTEM PROJECT DU800_96F Trail 64 Close

PROJECT:
 Noz1 Noz2 Noz3 Noz4 Noz5 Noz6 Noz7 Noz8

Loading...

	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8
Height	00000	00000	00000	00000	00000	00000	00000	00000
Angle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

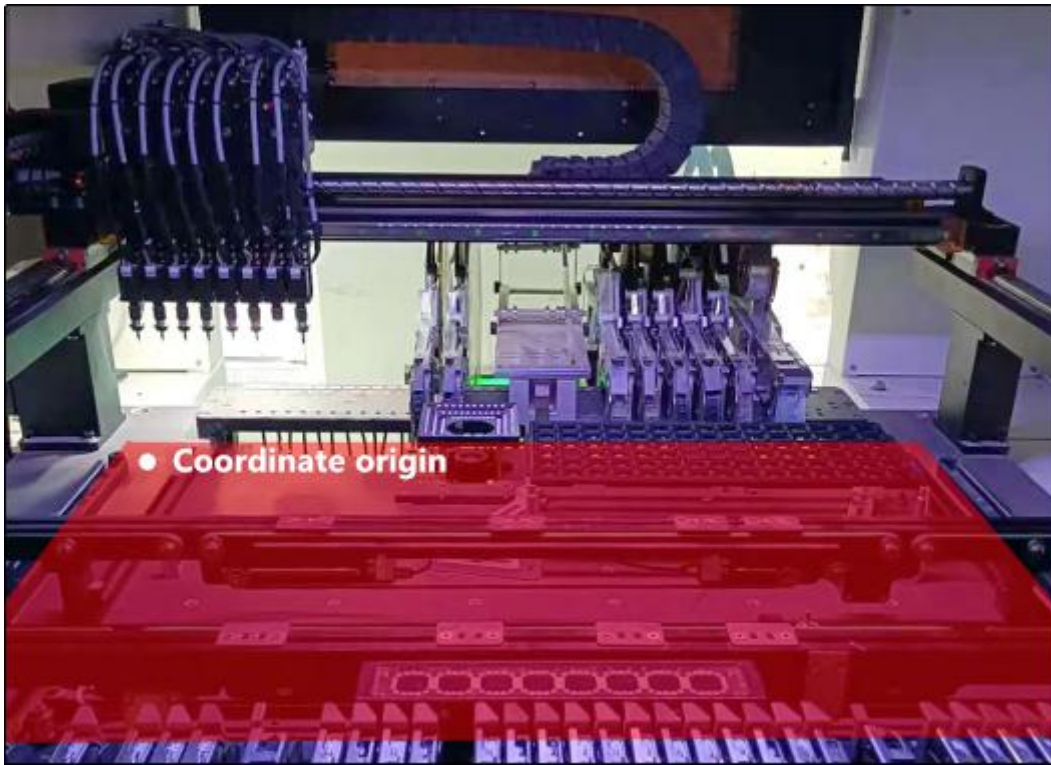
Mark-Cam Light-On Led-On Mark-Camera: Color-1
Fast-Cam Light-Off Led-Off Camera Setting
High-Cam

PCB-In Vacuum-On Transfer-delay(s)
PCB-Out Vacuum-Off 0.7
PCB-Fix Rail- Transfer-speed
PCB-Rls Rail- 8
Throw

XY Move Step 1 Speed 53 Color Tick Standard
Z Move Step 500 Speed 64 Chip Tool Algo
A Move Step 90.0 Speed 64 Chip Tool2 Visual Algo
Rail Move Step 64 Speed 64 L 0.00
W 0.00

Visual Test

Status of the device in connection



MARK camera back to machine coordinates home


Wait for the device to be zeroed, while the XY axis will move to the coordinate origin of the device in the upper left direction at the same time, and the operation button and the text will change from gray to black, the device is zeroed successfully.

4.2 PCB editing



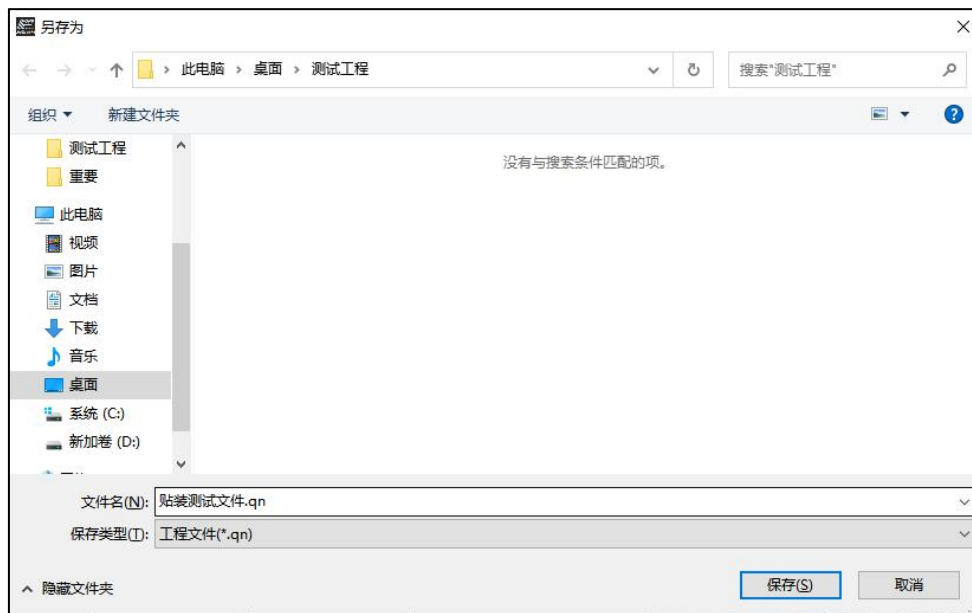
Click the button. 

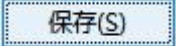


Click  the button for initial use. To use the same project more than once, just



use the button and continue with the already programmed patch project.



Create the project, change the project name, and click  the button. Save the project file with a .qn extension.

A pop-up screen for selecting the "Manual Edit Coordinate Method" or "Import Coordinate File Method" will appear.



At this point it is necessary to place the user's target PCB into the device track for coordinate matching.

Adjust the width of the board feed track according to the size of the PCB board, put the PCB

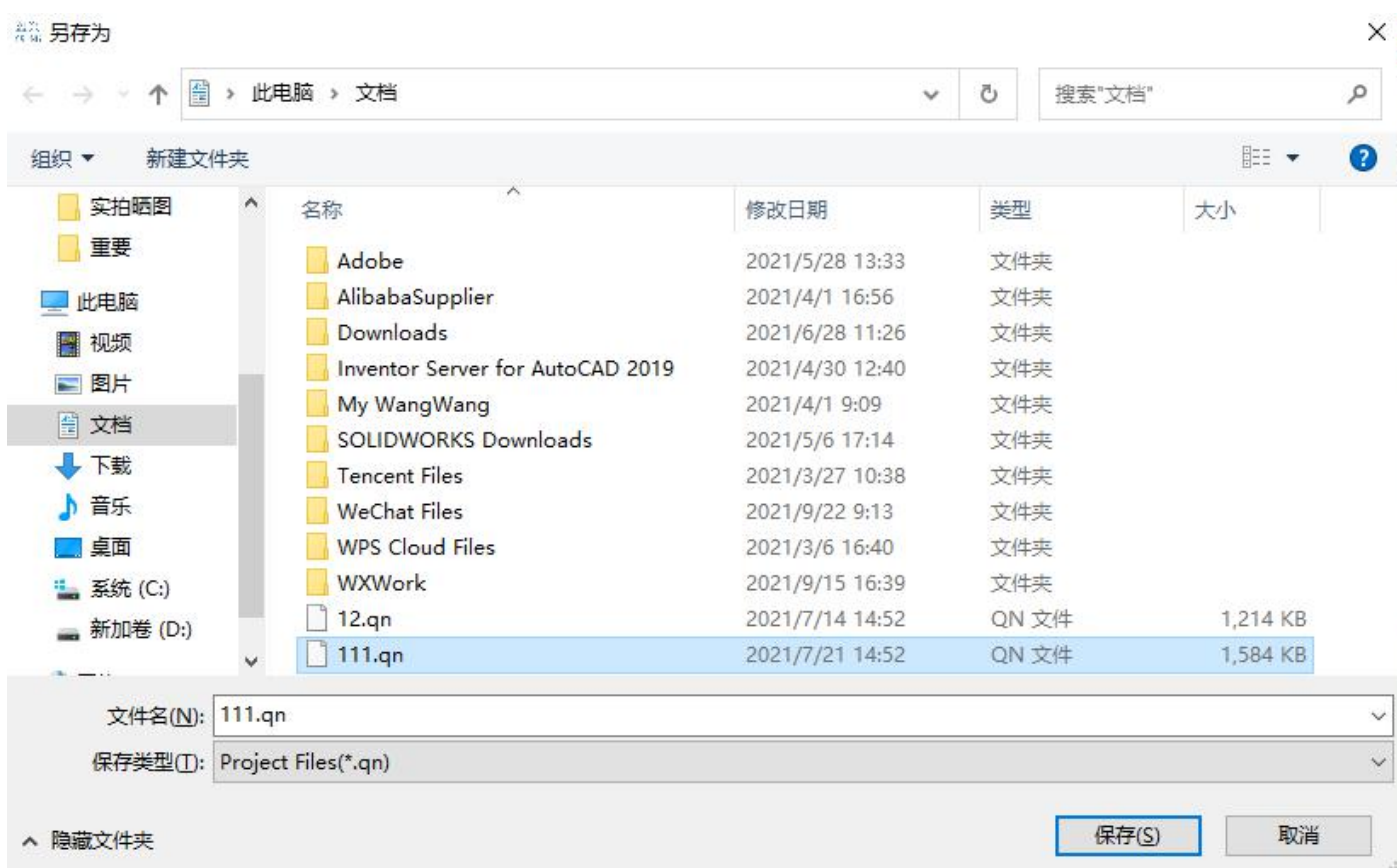
into the track and click on the board feed. The board feed track is divided into three sections to feed the board from left to right in order (from right to left needs to be customized).

4.2.1 Importing coordinates (first board use settings)

Import coordinates: the software is used to automatically process the mapped coordinates function, i.e. the engineering coordinates of the PCB board are mapped to the machine coordinates of the mounter.



Click the button.



According to the actual situation: click the button and select the required project coordinate file to import, supporting TXT text format, CSV format.

Click on the menu bar "n" right mouse button to label the bit number, package, model, X-axis, Y-axis and angle of the component.

IMPORT PCB CHIP LIST															
IMPORT FILE...		Import BOM File		0/50		SEARCH		View		Check		Angle		Enter PCB Edit	
	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
▶	X3	FY5032A	54.588	24.046	T	0	49.152M								
	X2	FY5032A	44.238	24.046	T	0	45.1584...								
	X1	FY5032A	34.788	4.846	T	90	24M								
	U6	U-DFN2...	18.488	2.946	T	0	AP3428								
	U4	SOT95...	33.238	21.546	T	270	LP5907								
	U3	QFP100-4	49.488	10.996	T	0	EPM240								
	U2	SOIC12...	21.438	21.546	T	0	W25X40								
	U1	QFN40...	26.188	12.496	T	270	XU208								

Note: No tagging, no marker points can be set by default. It is important to make sure that the imported coordinate file has complete and accurate information.

If the board is a front and back panel, the file needs to be divided into two coordinate files, front and back. Create two projects to import these two files separately.

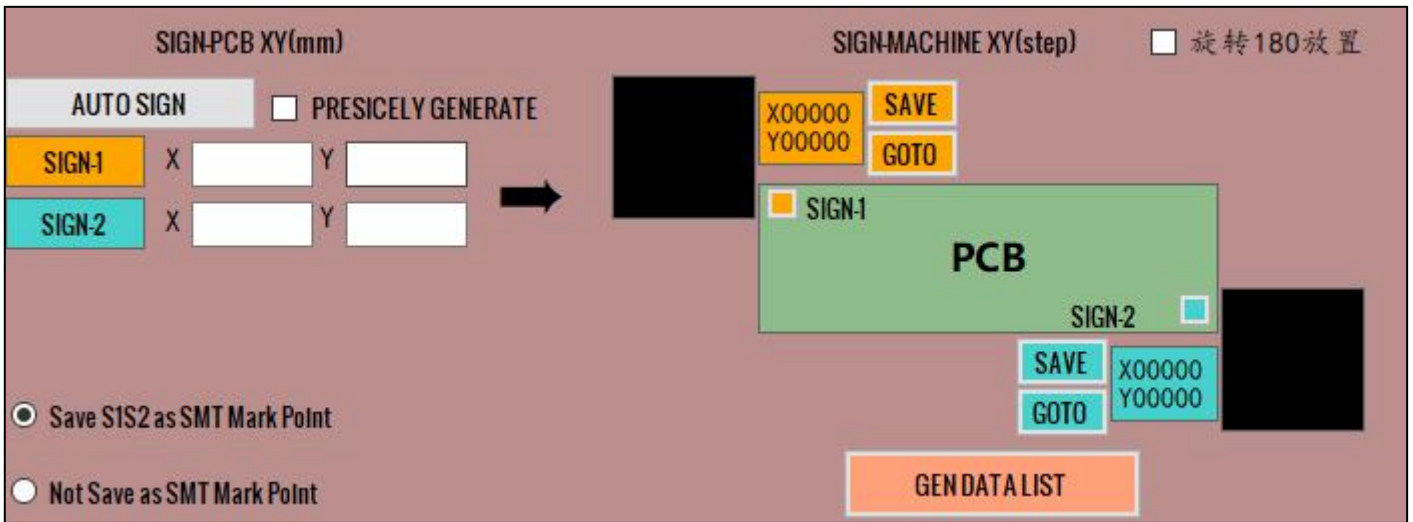
If the drawing software is Altium Designer, the reverse side needs to be mirrored before exporting the coordinates, so that the X-axis coordinates are processed in the opposite direction.

4.2.2 Setting marker points

Accurate generation: It is recommended to enable 4 marker points if the PCB is too large, sparring, irregular PCB or too many precision components, which will improve the accuracy of placement.

Four-point positioning interface

Example: Take the example of setting two marker points.



Two-point positioning interface

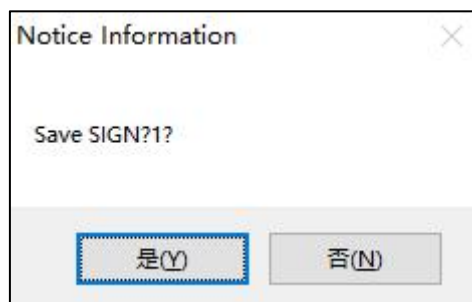
Mouse click on **AUTO SIGN** the button. The marker points S1,S2 get the two component bit numbers.

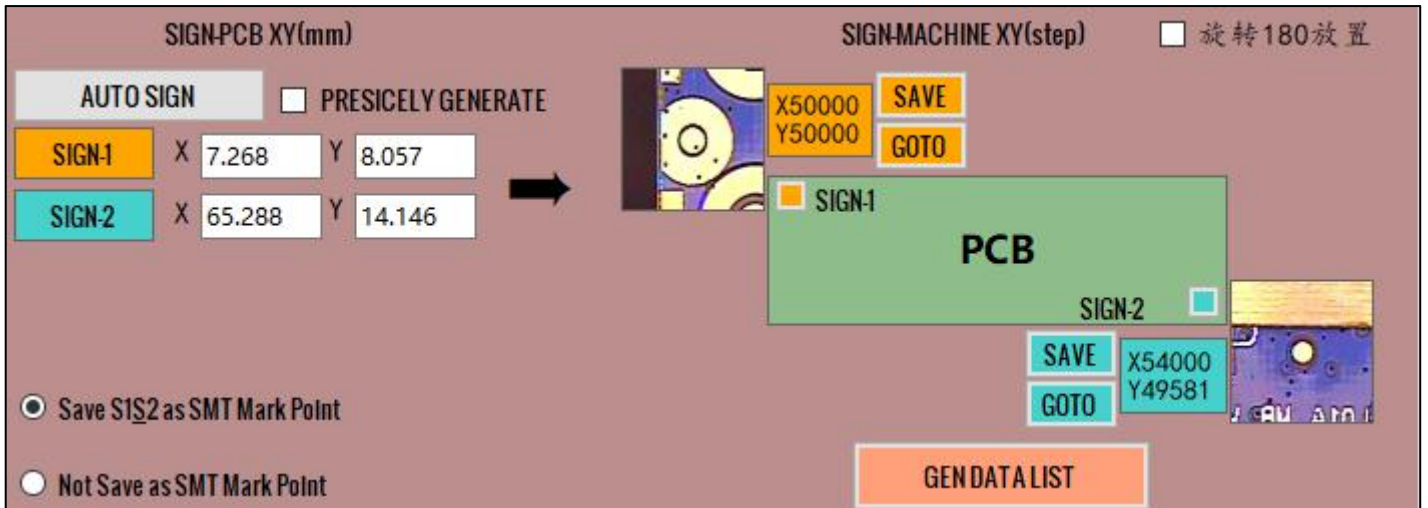
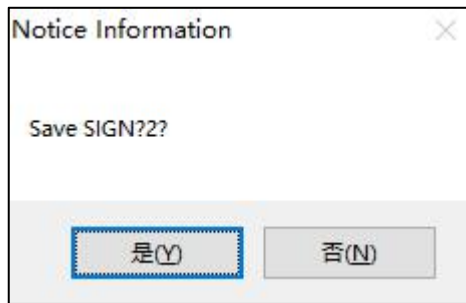
	Label	Footprint	X	Y	Angle	Chip Value	n	n	n	n
S3	JP1	CAPC2_	60.388	25.296	270					
S2	J4	HEADER_	65.288	14.146	270					
S1	J2	USB.B	7.268	8.057	270					
	C9	603	19.288	13.996	180	104				
	C8	CAPC2_	36.538	21.796	270	2.2UF				
	C7	603	26.388	6.396	270	104				

Click on the marker **SAVE** point S1 to find the corresponding marker point of the PCB via the MARK camera and click on the button. **GOTO**

The coordinates of marker point S2 are saved in the same way as marker point S1.


As shown in the picture.




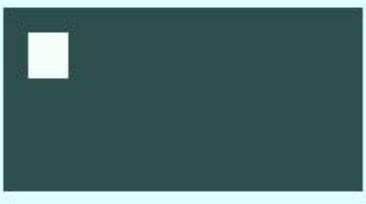


The two-point marker is saved successfully. The same applies to the four-point marker.

4.2.3 Generating coordinate maps

Click  the button and the system will automatically convert the PCB coordinates to machine component placement coordinates.

When the pop-up dialog box appears, confirm that the PCB is placed in the same direction as the imported coordinate file, and then click the button. 



PCB Direction is same as imported file!

Continue

PCB DATA EDIT

DEL	Goto	PREV	NEXT	Export List			VIEW	Place Test	Back to Import
NEW	SAVE XY	PCB ARRAY	MARK	➔	OPTIMIZE ORDER	FEEDER/NOZ PLUG-IN	ANGLE CHECK	➔	SMTRUN

ALL
 All
 Search
 Order-PCB
 Order-SMT
 All XY add
 Edit
 1/50

	Valid	Group	PCB Array	Label	Chlp Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camer
▶	<input checked="" type="checkbox"/>	1	1-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	2	1-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	SOT95P...	51790	49074	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	6	1-1	U3	EPM240	QFP100-4	52911	49799	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	7	1-1	U2	W25X40	SO1G12...	50977	49074	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	8	1-1	U1	XU208	QFN40P...	51305	49696	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	9	1-1	R9	33R	603	52032	49858	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	10	1-1	R8	10K	0603_R	53662	49083	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	11	1-1	R7	33R	0603_R	53666	50077	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	12	1-1	R6	33R	0603_R	53666	49967	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	13	1-1	R5	43.2R	603	50829	49710	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	14	1-1	R4	33R	0603_R	53666	49857	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	15	1-1	R3	4.7R	603	51811	49913	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	16	1-1	R2	33R	0603_R	53666	49747	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	17	1-1	R14	10K	0603_R	51339	50415	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	18	1-1	R13	10K	603	50694	49253	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	19	1-1	R12	47K	0603_R	50626	50339	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	20	1-1	R11	30K	0603_R	50622	50112	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	21	1-1	R10	10K	603	50656	49600	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	22	1-1	R1	10K	0603_R	51887	48813	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	23	1-1	LED		805	51718	48806	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	24	1-1	L1	2.2UH	IND-SM...	50877	50112	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	25	1-1	JP1		CAPG20...	53662	48815	270.01	F...	0	0	

Coordinate mapping generation interface

4.2.4 Manual editing

	Valid	Group	PCB Array	Label	Chp Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camera
▶	<input checked="" type="checkbox"/>	1	1-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	2	1-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	SOT95P...	51790	49074	270.01	F...	0	0	

PCB editing page

Manually determine if the component coordinates and angles are correct by selecting a serial number XY and clicking 定位 the button or right mouse button to move to that coordinate to view (use HD camera vision for large chips, fast camera vision for 0201, etc.).

You can also click to position the next entry (space shortcut), you need to check the angle after importing, the angle is based on the rotation of the feeder loading.

If there is a problem click the right mouse button and make the correction.

▶	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	SOT95P...	51790	49074	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	6	1-1	U3	EPM240	QFP100-4	52911	49799	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	7	1-1	U2	W25X40	S01G12...	50977	49074	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	8	1-1	U1	XU208	QFN40P...	51305	49696	270.01	F...	0	0	

Or select a component and double click with the mouse to enter the unit part edit page. (Figure below)

ARRAY 1-1 SMT GROUP 3

EDIT

LABEL X1
 VALUE 24M
 FOOTPRINT FY5032A

EDIT

CAMERA
 VISUAL - Open Loop
 PROVIDER Feeder

NOZZLE 0
 FEEDER 0
 LOW SPEED


X 51898 ISMOUNT
 Y 50223
 ANGLE 90.01

SAVE CANCEL

Component editing page

Manual programming: The mapped coordinates function is used for manual processing, i.e. the project coordinates of the PCB board are mapped to the machine coordinates of the mounter.

*This function is commonly used for projects where individual components are entered.

Center the MARK camera cross on the center of the PCB pad, click  the button, click the newly added coordinates, and follow the prompts to modify the bit number, model, package, and other various data.

	Valid	Group	PCB Array	Label	Chp Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camera
	<input checked="" type="checkbox"/>	28	1-1	C9	104	603	50829	49593	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	29	1-1	C8	2.2UF	CAPC20...	52018	49057	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	30	1-1	C7	104	603	51319	50116	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	31	1-1	C6	104	603	52804	50460	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	32	1-1	C5	104	603	51349	49246	90.01	F...	0	0	

ARRAY 1-1 SMT GROUP 51

EDIT

LABEL VALUE 104 FOOTPRINT 603

EDIT

CAMERA VISUAL - Open Loop PROVIDER Feeder NOZZLE 0 FEEDER 0 LOW SPEED

X 50000 Y 50000 ANGLE 0.01 ISMOUNT

SAVE CANCEL

Component editing page

Update Coordinates: If there are inaccurate coordinates after generating the data list, you can correct the updated coordinates by Marking the camera cross center.

The software intelligently optimizes the assignment of the level suction nozzles. Simply enter the bit number, model, package, and angle.

4.2.4 Patchwork

Apply to PCBs with a piecing process . Skip this step if there is no pieced board.

General plywood

After generating the data list, if you need to put together the board, first set up the board.

PCB DATA EDIT

DEL Goto PREV NEXT

Export List VIEW

Place Test Back to Import

NEW SAVE XY PCB ARRAY MARK

OPTIMIZE ORDER FEEDER/NOZ PLUG-IN ANGLE CHECK

VALIDITY CHECK SMT RUN

ALL
ALL ▼
Search
Order-PCB
Order-SMT
All XY add
 Edit
5/5

	Valid	Group	PCB Array	Label	Chip Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camera
	<input checked="" type="checkbox"/>	1	1-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	2	1-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
▶	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	SOT95P...	51790	49074	270.01	F...	0	0	

Veneer coordinates page before plywood generation

PCB
ARRAY

Click PCB
ARRAY the button to enter the puzzle screen.

Example: Find any component coordinates of the upper left PCB board as the starting point, here 3 rows and 1 column to put together the board, you need to find the PCB board upper left, lower left, upper right, lower right, the same bit number coordinates and save. Click

RUN

the button to generate a normal PCB. Single row and multi-column or single column and multi-column PCB will have two same datum coordinates. (Four datum points are available for Mark point numbering)

PCB EDIT		SMT RUN		PCB1 描述								Feeders	
PCB DATA EDIT													
DEL	Goto	PREV	NEXT	Export List		VIEW		Place Test		Back to Import			
NEW	SAVE XY	PCB ARRAY	MARK	⇒	OPTIMIZE ORDER	FEEDER/NOZ PLUG-IN	ANGLE CHECK	⇒	VALIDITY CHECK	SMT RUN			
<input type="checkbox"/> ALL	All	▼		Search	Order-PCB	Order-SMT	All XY add	<input type="checkbox"/> Edit	1/30				
	Valid	Group	PCB Array	Label	Chp Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camera
	<input checked="" type="checkbox"/>	1	1-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	2	1-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
▶	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	S0T95P...	51790	49074	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	6	1-2	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	7	1-2	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	8	1-2	X1	24M	FY5032A	51898	50223	90.01	Feeder	0	0	
	<input checked="" type="checkbox"/>	9	1-2	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	10	1-2	U4	LP5907	S0T95P...	51790	49074	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	11	1-3	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	12	1-3	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	13	1-3	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	14	1-3	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	15	1-3	U4	LP5907	S0T95P...	51790	49074	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	16	2-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	17	2-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	18	2-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	19	2-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	20	2-1	U4	LP5907	S0T95P...	51790	49074	270.01	F...	0	0	

The page with the coordinates of the puzzle after the puzzle is generated

Mandarin duck board spelling board

First confirm the nature of the PCB board: horizontal mandarin, vertical mandarin.

PCB DATA EDIT

DEL Goto PREV NEXT

Export List VIEW

Place Test Back to Import

NEW SAVE XY PCB ARRAY MARK

OPTIMIZE ORDER FEEDER/NOZ PLUG-IN ANGLE CHECK

VALIDITY CHECK SMT RUN

ALL

Search
Order-PCB
Order-SMT
All XY add
 Edit
5/5

	Valid	Group	PCB Array	Label	Chip Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camera
	<input checked="" type="checkbox"/>	1	1-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	2	1-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
▶	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	SOT95P...	51790	49074	270.01	F...	0	0	

The veneer coordinates page before the generation of the mandarin board

Click PCB ARRAY the button to enter the puzzle screen.

PCB ARRAY X

Aix Array

Step1: Set the XY of Aix PCB

Horizontal

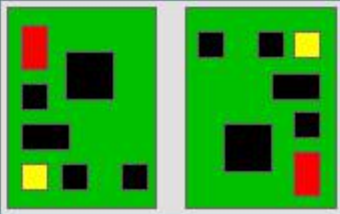
Vertical

X45000
Y45000

X48000
Y48000

Save XY

Goto XY



X51000
Y51000

X54000
Y54000

Delete Aix

Aix Run

Step2: PCB Array Based on Aix

COL

ROW

XO
YO

PCB

PCB

PCB

XO
YO

XO
YO

XO
YO

Save

Goto XY

RUN

Delete Array


	Valid	Group	PCB Array	Label	Chp Value	Footprint	X-Coord	Y-Coord	Angle	Provider	Feeder No	Nozzle No	Camera
▶	<input checked="" type="checkbox"/>	1	1-1	X3	49.152M	FY5032A	53262	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	2	1-1	X2	45.1...	FY5032A	52549	48902	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	3	1-1	X1	24M	FY5032A	51898	50223	90.01	F...	0	0	
	<input checked="" type="checkbox"/>	4	1-1	U6	AP3428	U-DFN2...	50774	50353	0.01	F...	0	0	
	<input checked="" type="checkbox"/>	5	1-1	U4	LP5907	SOT95P...	51790	49074	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	6	*1-1	X3	49.152M	FY5032A	45738	50098	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	7	*1-1	X2	45.1...	FY5032A	46451	50098	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	8	*1-1	X1	24M	FY5032A	47102	48777	270.01	F...	0	0	
	<input checked="" type="checkbox"/>	9	*1-1	U6	AP3428	U-DFN2...	48226	48647	180.01	F...	0	0	
	<input checked="" type="checkbox"/>	10	*1-1	U4	LP5907	SOT95P...	47210	49926	90.0...	F...	0	0	


The coordinate screen after the generation of the mandarin board

Using the example of the horizontal mandarin duck.

1. Mandarin board veneer.

① Find the same coordinates of the red and yellow dots, upper left and lower right (take the red dot in the figure as an example) Lower left and upper right (take the yellow dot in the


figure as an example). Click  the button to save the four corner coordinates.


② Click  the button to confirm the generation of the mandarin duck. The generation of the mandarin board veneer is completed.

2. mandarin duck board combination puzzle board

① Find the same coordinates of the red and yellow dots, upper left and lower right (take the red dot in the figure as an example) Lower left and upper right (take the yellow dot in the

figure as an example). Click the button  save the four corner coordinates. Click the

button to  confirm the mandarin duck generation. The generation of the mandarin duck veneer is completed.


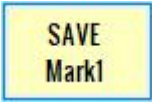
- ② Use a pair of mandarin boards as a whole to make a common pieced board.
- ③ Find the coordinates of any component on the upper left PCB board as the starting point, here the board is assembled in 5 rows and 6 columns, you need to find the PCB board upper left, lower left, upper right, lower right, the same bit number coordinates and save. Click  the button to generate a common PCB. Single row and multi-column or single column and multi-column PCB will have two same datum coordinates. (Four datum points are available for Mark point number). The generation of the mandarin duck board combination is finished.

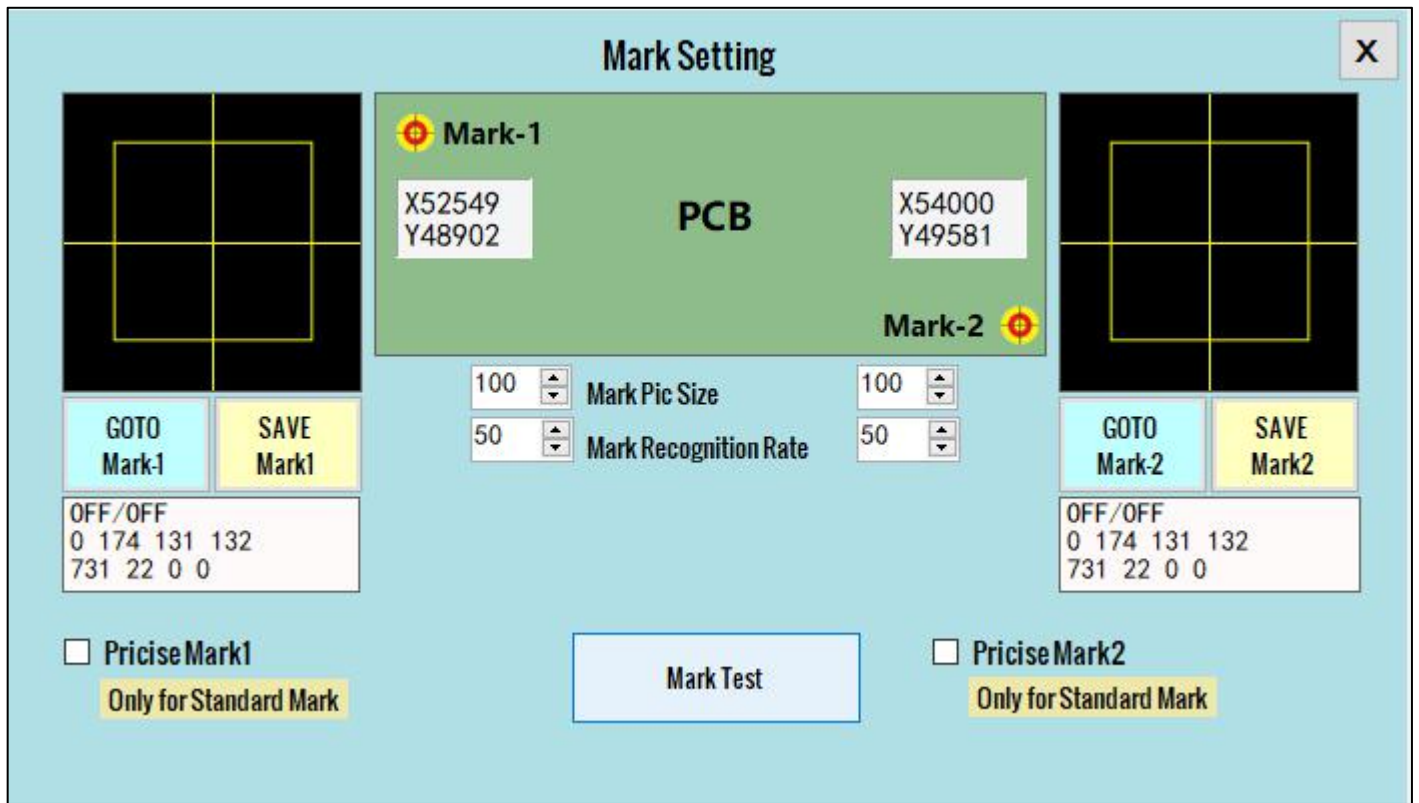
4.2.5 MARK points

MARK point: Position identification point for PCB application on automatic placement machine in circuit board design.

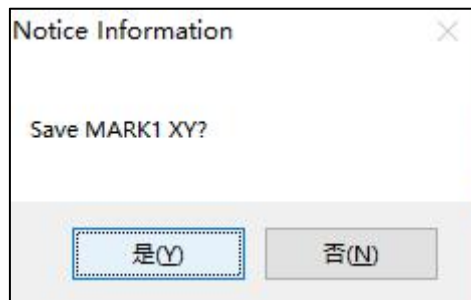
The accuracy of the MARK point setting directly affects the placement accuracy and recognition efficiency of the automatic placement machine.

MARK point first set

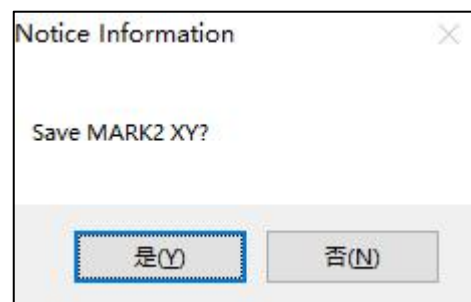
Click the button , center the MARK camera cross with the center of the MARK point you want to set, and click the button. 



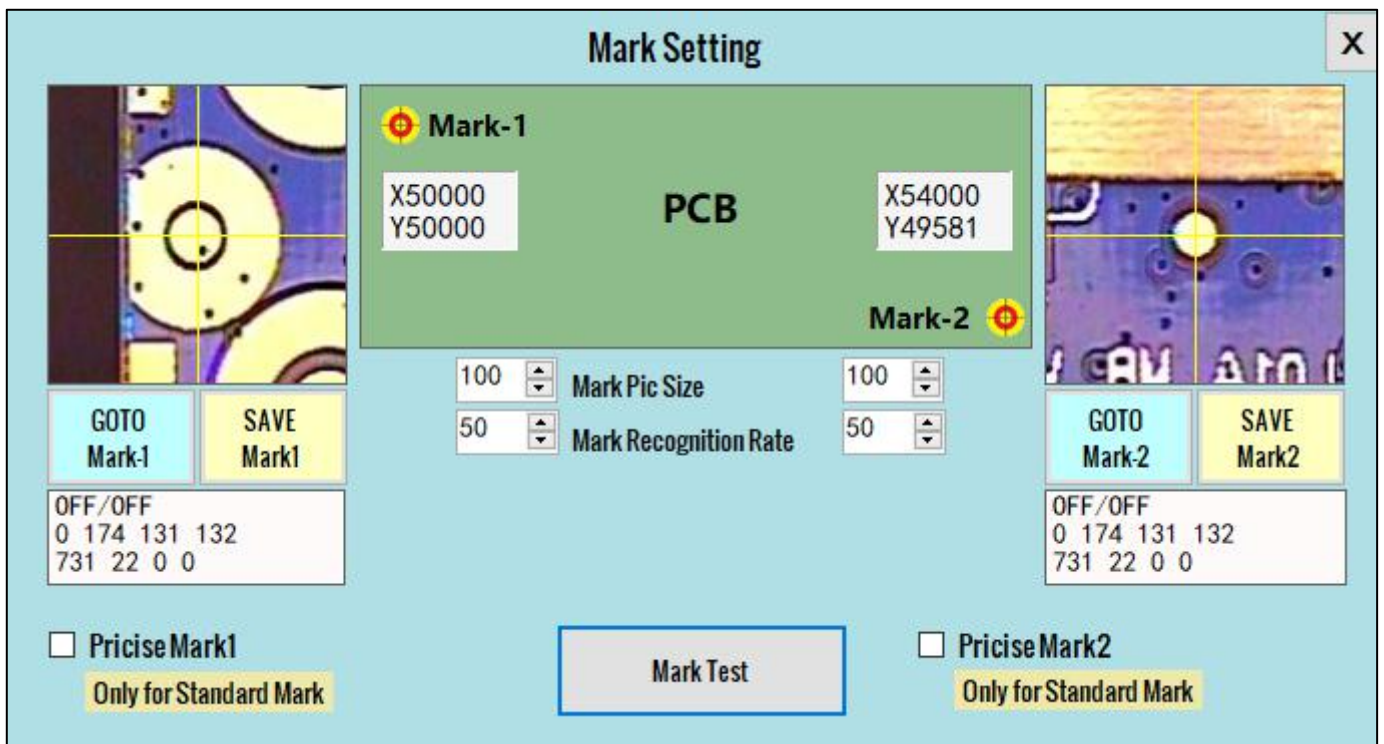
MARK2 is set up in the same way as above.



Save MARK1



Save MARK2

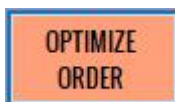


MARK points are set.

Note: "Enable MARK precision recognition" is used for PCB boards with too high precision or density concentration of components, for precise acquisition of MARK image recognition.

4.3 One-Click Optimization

Classification optimization of different placement components for feeders, nozzles, cameras, vision algorithms, same-take tolerances, recognition patterns, placement speed.



Click the button.

Pops up a list of optimally generated placements.

Perform manual filling of parameters or from a wrapper library.

Note: The right side machine is optimized in the same way as the left side.

SAVE/EXIT

CHIP CATEGORY SETTING AND SMT TABLE

封装库	SLOT/NOZZLE DISABLE				GENERATE SMT LIST	
来自封装库	OVERIDE TO STACK/PLATE PARA	保存为本地料站库				
DELETE	Import feeder list from...	1/5		Optimize Result		

Chip Value	Footprint	Count	Provider	Multi Providers	Feeder No	Noz	Pick Delta (mm)	Camera	Visual	Loop Mode	Low Speed	Scan R	hreshol	Length (mm)	Width (mm)	Height (mm)	Size Rec	Size Rec Rate	Pik H Offset	Pt St
49.152M	FY5032A	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
45.1584M	FY5032A	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
24M	FY5032A	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
LP5907	SOT95P28...	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
AP3428	U-DFN2020...	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	

Category optimization interface

4.3.1 Manual completion

Hand-completed.

CHIP CATEGORY SETTING AND SMT TABLE

封装库	SLOT/NOZZLE DISABLE				GENERATE SMT LIST	
来自封装库	OVERIDE TO STACK/PLATE PARA	保存为本地料站库				
DELETE	Import feeder list from...	1/5		Optimize Result		

Chip Value	Footprint	Count	Provider	Multi Providers	Feeder No	Noz	Pick Delta (mm)	Camera	Visual	Loop Mode	Low Speed	Scan R	hreshol	Length (mm)	Width (mm)	Height (mm)	Size Rec	Size Rec Rate	Pik H Offset	Pt St
49.152M	FY5032A	12		1	AUTO		0			Open L	<input checked="" type="checkbox"/>	0	0	0	0	0	<input checked="" type="checkbox"/>	0	0	
45.1584M	FY5032A	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
24M	FY5032A	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
LP5907	SOT95P28...	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
AP3428	U-DFN2020...	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	

Notice Information

You are going to delete 49.152M etc. 1 items

① Delete the components that do not need to be mounted.

② Fill in the feeder type, nozzle type, same pickup tolerance, camera, vision algorithm, whether to lower the speed of handling (multiple feeds must be the same component) according to the component type size. Select the blank item of the component to be filled, click the right



mouse button, and click the button after filling.

Chip Value	Footprint	Count	Provider	Multi Providers	Feeder No	Noz	Pick Delta (mm)	Camera	Visual	Loop Mode	Low Speed	Scan R	hreshold	Length (mm)	Width (mm)	Height (mm)	Size Rec	Size Rec Rate	Pik H Offset	Pi St
49.152M	FY5032A	12		1	AUTO		0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
45.1584M	FY5032A	12					0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
24M	FY5032A	12					0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
LP5907	SOT95P28_	12					0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
AP3428	U-DFN2020_	12					0			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	

(Example) Fill in feeder type

Chip Value	Footprint	Count	Provider	Multi Providers	Feeder No	Noz	Pick Delta (mm)	Camera	Visual	Loop Mode	Low Speed	Scan R	hreshold	Length (mm)	Width (mm)	Height (mm)	Size Rec	Size Rec Rate	Pik H Offset	Pi St
49.152M	FY5032A	12	CL82	1	AUTO	500	500			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
45.1584M	FY5032A	12	CL82	1	AUTO	501	501			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
24M	FY5032A	12	CL82-02_	1	AUTO	502	502			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
LP5907	SOT95P28_	12	CL82-02_	1	AUTO	503	503			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
AP3428	U-DFN2020_	12	CL82-02_	1	AUTO	504	504			Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	

(Example) Fill in the nozzle type

Chip Value	Footprint	Count	Provider	Multi Providers	Feeder No	Noz	Pick Delta (mm)	Camera	Visual	Loop Mode	Low Speed	Scan R	hreshold	Length (mm)	Width (mm)	Height (mm)	Size Rec	Size Rec Rate	Pik H Offset	Pi St
49.152M	FY5032A	12	CL82	1	AUTO					Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
45.1584M	FY5032A	12	CL82	1	AUTO					Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
24M	FY5032A	12	CL82	1	AUTO					Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
LP5907	SOT95P28_	12	CL82	1	AUTO					Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	
AP3428	U-DFN2020_	12	CL82	1	AUTO					Open L	<input type="checkbox"/>	0	0	0	0	0	<input type="checkbox"/>	0	0	

(Example) Vision algorithm for selecting suitable components

Selection of common vision algorithms.

Triode → Ordinary open loop

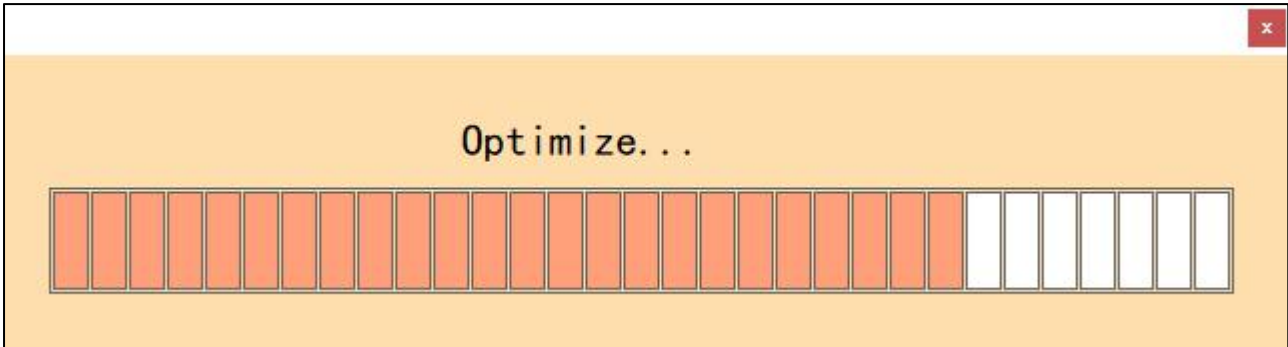
Monolithic → Standard gauge awareness, precision closed loop

Most other components are basically → second order closed loop + standard gauge sense

Note: Manual filling requires the operator to have some production experience, otherwise it can cause placement problems.

GENERATE SMT LIST

Click the button when the refresh is complete.



Optimization result: optimization successful!

A screenshot of a software window titled "OPTIMIZATION RESULT". The window has a standard Windows-style title bar with minimize, maximize, and close buttons. Below the title bar, there is a yellow banner with the text "OPTIMIZE SUCCESSFUL!!". Underneath the banner is a table with the following data:

CHIP TYPE	BEFORE OPTM	AFTER OPTM RESULT	
Feeder 49.152M FY5032A	AUTO	AUTO	Optimize OK Keep
Feeder 45.1584M FY5032A	AUTO	AUTO	Optimize OK Keep
Feeder 24M FY5032A	AUTO	AUTO	Optimize OK Keep
Feeder LP5907	AUTO	AUTO	Optimize OK Keep
Feeder AP3428	AUTO	AUTO	Optimize OK Keep

Optimize the success screen

4.3.3 Feeder/nozzle/tray mounting

NOZZLES/FEDERS PLUG TABLE								
Feeder View		Export	Search	Refresh Table		0/4		
Nozzle No	Type	Provider	Feeder No	Feeder Type	Chlp Value	Footprint	Count	Insert Tap
Noz1	501	Feeder	18	CL8-2	45.1584M	FY5032A	1	<input type="checkbox"/>
Noz2	501	Feeder	20	CL8-2	49.152M	FY5032A	1	<input type="checkbox"/>
Noz3	-	Feeder	26	CL8-202...	24M	FY5032A	1	<input type="checkbox"/>
Noz4	-	Feeder	30	CL8-202...	AP3428	U-DFN2020...	1	<input type="checkbox"/>
Noz5	502							
Noz6	-							
Noz7	505							
Noz8	-							

Follow the interface prompts to install: the feeder, tray, and nozzle corresponding to the model and station.

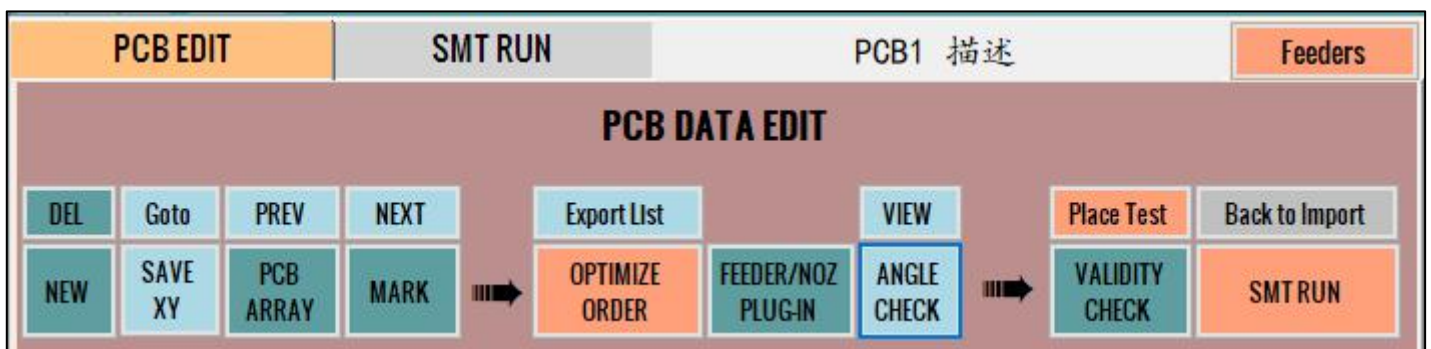
4.4 Commissioning of material station parameters

The material station contains: normal feeder (electric/pneumatic), pallet and vibrating feeder

4.4.1 General Feeder parameters setting

I. Positioning pickup coordinates

1. Manual positioning of pickup coordinates



① Click **Feeder** the button. Enter the material station parameters screen.

Feeder

Plate

Vibra

Provider Setting

SAVE AS DEFAULT

FROM PROJECT...

X

FEEDER

18

Pik XY

SAVE

Goto Next Valid

X22818
Y72662

GOTO

Goto Next Valid

Pick To FastCam

Test-Standard Algo

Throw

Vacuum-On

Feeder-On

Pick To HighCam

Visual Test

PIC

Vacuum-Off

Feeder-Off

Para Bulk-Copy

Run Visual

Chlp Info

45. 1584M FY5032A

Chlp Size

0. 00 x 0. 00

Chlp Size(Pixel)

0. 0 x 0. 0

Special Size

Check LW

Delta%

0

Pik-Pik Provider Delay(ms)

0

Nozzle En	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8	
Threshold	127	127	127	127	127	127	127	127	Sync

Pick Height Set

Feeder Base Height

Offset(mm)

0. 0

Gen Pik H

NOZZLE GOTO XY

	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8	
Pik Height	456	458	455	459	457	457	456	458	SAVE-H
Dn Speed	64	64	64	64	64	64	64	64	GOTO-H
Up Speed	64	64	64	64	64	64	64	64	Sync
Pik Delay	5	5	5	5	5	5	5	5	Sync

Mount Height Set

Chlp H(mm)

0. 00

Offset(mm)

0. 0



Gen MntH

	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8	
Mnt Height	466	468	465	469	467	467	466	468	SAVE-H
Dn Speed	64	64	64	64	64	64	64	64	GOTO-H
Up Speed	64	64	64	64	64	64	64	64	Sync
Mnt Delay	10	10	10	10	10	10	10	10	Sync

Feeder Settings Panel

② Mouse click or   Position button to jump to the next valid material station.

Manual calibration of coordinates

③ Click the button in MARK camera mode  to manually move the center of the vision camera cross to coincide with the center of the trough where the first feed is taken, and click the button. 



Second, set the pickup Z-axis and placement Z-axis parameters

1. Manual setting of pickup parameters

18

Plk XY
 X51000
 Y48000
SAVE Goto Next Valid
GOTO Goto Next Valid

Pick To FastCam
Pick To HighCam

Test-Standard Algo
Visual Test

PIC
Throw

Vacuum-On
Vacuum-Off

Feeder-On
Feeder-Off

Para Bulk-Copy
Run Visual

Chlp Info: 45. 1584M FY5032A Special Size
 Chlp Size: 0.00 x 0.00
 Chlp Size(Pixel): 0.0 x 0.0 Check LW Delta% 0

Plk-Pik Provider Delay(ms): 0

Nozzle En	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8	
Threshold	127	127	127	127	127	127	127	127	Sync

Pick Height Set
 Feeder Base Height: 0.0 Offset(mm): 0.0
Gen Plk H

NOZZLE GOTO XY

	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8	
Pik Height	456	458	455	459	457	457	456	458	SAVE-H GOTO-H
Dn Speed	64	64	64	64	64	64	64	64	Sync
Up Speed	64	64	64	64	64	64	64	64	Sync
Pik Delay	5	5	5	5	5	5	5	5	Sync

Mount Height Set Chlp H(mm): 0.00 Offset(mm): 0.0 Gen MntH

	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8	
Mnt Height	466	468	465	469	467	467	466	468	SAVE-H GOTO-H
Dn Speed	64	64	64	64	64	64	64	64	Sync
Up Speed	64	64	64	64	64	64	64	64	Sync
Mnt Delay	10	10	10	10	10	10	10	10	Sync

Downward pressure offset pickup recommendation 0.3-0.5mm

Downward pressure offset placement recommended around 0.5mm

Example: -0.5 suction nozzle up

0.5 Downward pressure of the nozzle (only for resistive parts and thinner components)

Generally speaking, the resistive capacitance 0402-0603 mount pull up for 64 can, 0805 above the resistive capacitance and other components pull up speed is recommended for 62, fast speed is easy to bring up cause standing tablet.

The newbie operation only needs to modify the pickup and placement downward pressure offset. Speed according to the system default 55, 50, slowly skilled after speed up. Note: Thick material need to set the height separately.

3. Vision parameter tuning

Quick Camera

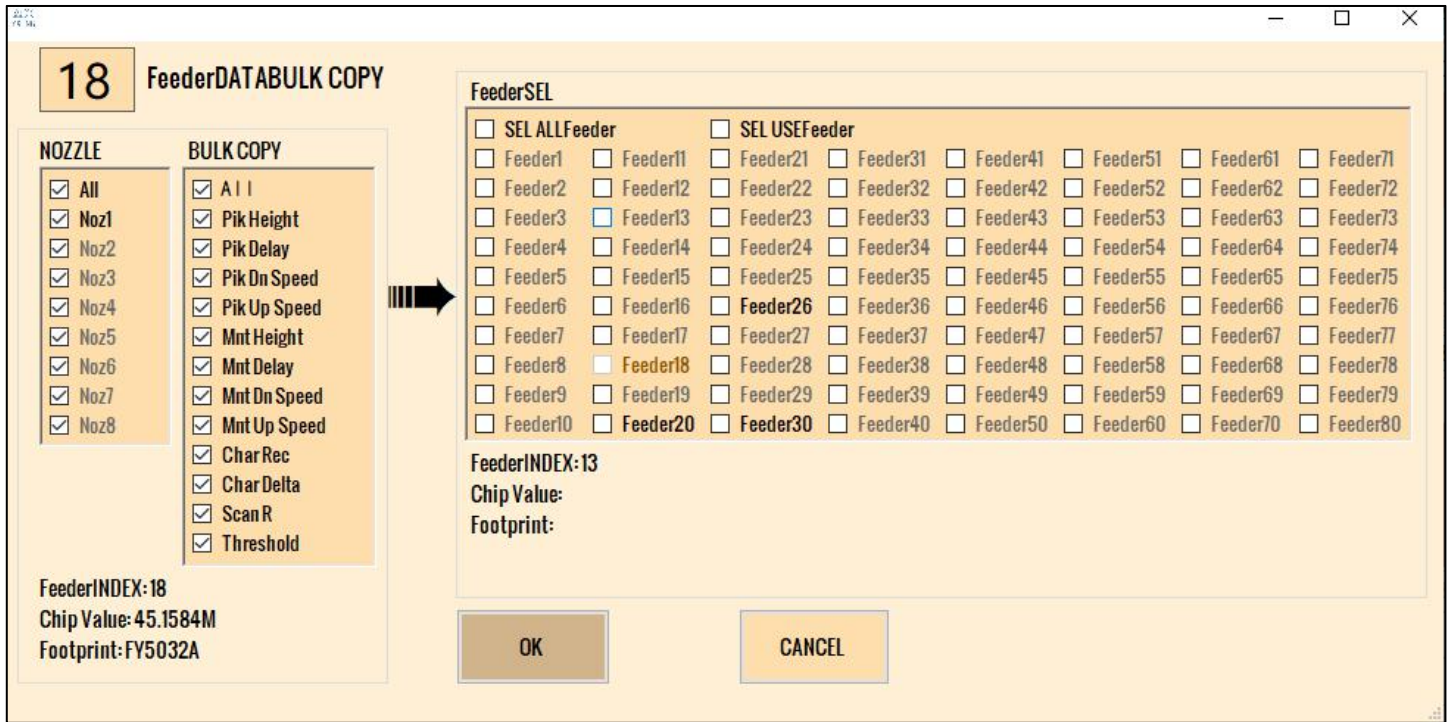
Brightness and identification range. (This project)

Pick up the component to the fast camera or HD camera to see if the recognition picture light source is normal and the component should be within the recognition range.

You need to click on the camera light source parameter to adjust the brightness.

Double-click the need to adjust the radius suction nozzle value fast camera maximum 360 (recognition range can be adjusted in the algorithm scan radius one by one) circle for the recognition range. After picking up the component to the camera, the component brightness recognition test reference (fast camera reference value 0402-1206 | | 130-260 brightness value)

4. Parameter Batch Copy



The number of actual placement feeder is high and this function can be used in order to quickly adjust the feeder parameters.

How to use: First set all nozzle pick-up height, Z pull-up, Z pull-down, pick-up delay, parameters of a certain material station and save them (the setting of placement parameters refer to the same as above)

Select Copy to All Stations or Current Use Station and click OK.

If there are special components that require separate settings for the feeder pick and place parameters.

4.4.2 Disc parameter setting

PLATE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Chlp Info: Special Size AUTO PUT
 Chlp Size: x PUT TIME(S)
 Chlp Size(Pixel): x Check LW Delta%

Nozzle En	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8
Threshold	0	0	0	0	0	0	0	0

Pick Height Set

 Offset(mm)

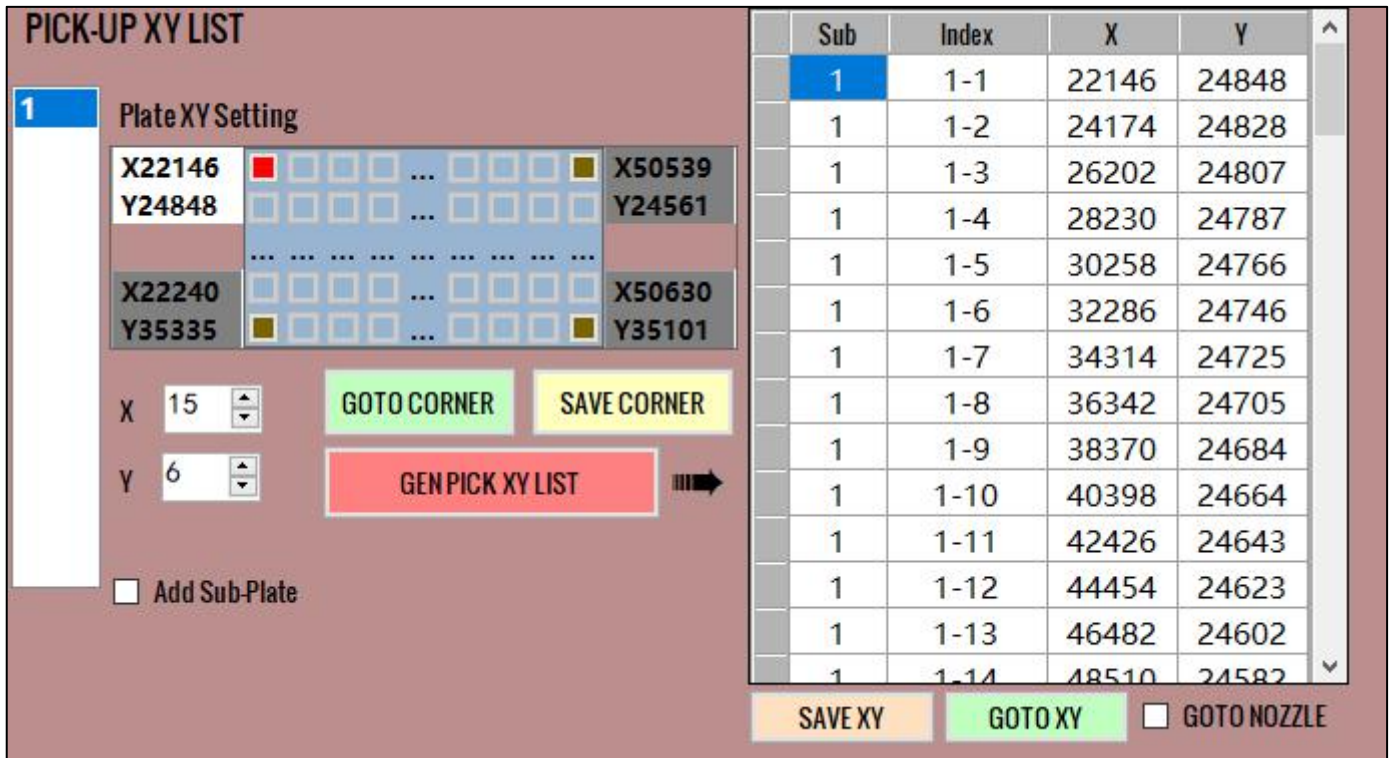
	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8
Pik Height	6933	7175	7073	6864	7100	6910	6983	7131
Dn Speed	64	64	32	64	64	64	64	64
Up Speed	64	64	64	64	64	64	64	64
Pik Delay	10	10	500	10	10	10	10	10

Mount Height Set
 Chlp H(mm)
 Offset(mm)

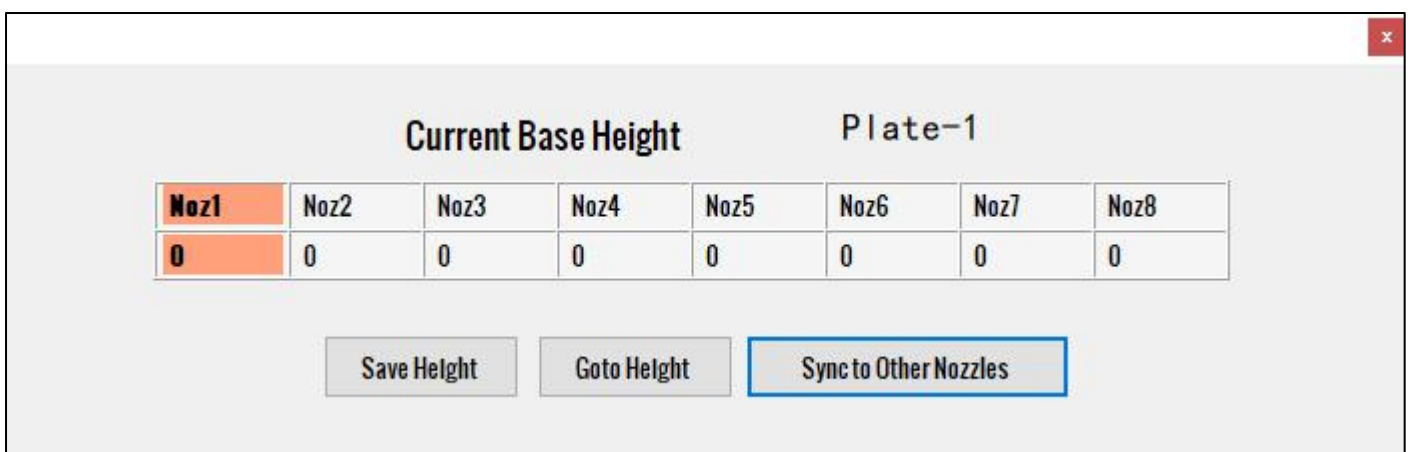
	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8
Mnt Height	0	0	0	0	0	0	0	6426
Dn Speed	64	64	64	64	64	64	64	64
Up Speed	64	64	64	64	64	64	64	64
Mnt Delay	10	10	10	10	10	10	10	10

Pallet tray parameter setting interface

Click the button.



Locate the coordinates of the four corners of the material tray by the MARK camera cross center and **SAVE CORNER**, enter the tray row and column, click **GEN PICK XY LIST** the button. Mouse click on any column XY coordinate list first click to confirm that the generated coordinates are accurate, click the corresponding nozzle will be on top of the material, close the list of coordinates of the material tray pickup.



Click **Current Base Height**, to set the pick-up height by lowering the manual operating area, and click after the suction nozzle touches the material **Save Height**.

Set the appropriate lower extension and pull-up delay according to the actual material size, and

you need to do a material test.

Once set up, the next step is to see if the light source is appropriate.



The chip IC picks up to the HD camera to see if the light source is appropriate (you can see the chip pins clearly).

Camera Para - Project

FastCam
HighCam

High Camera Led Level

Pricise mode angle delta
0.09

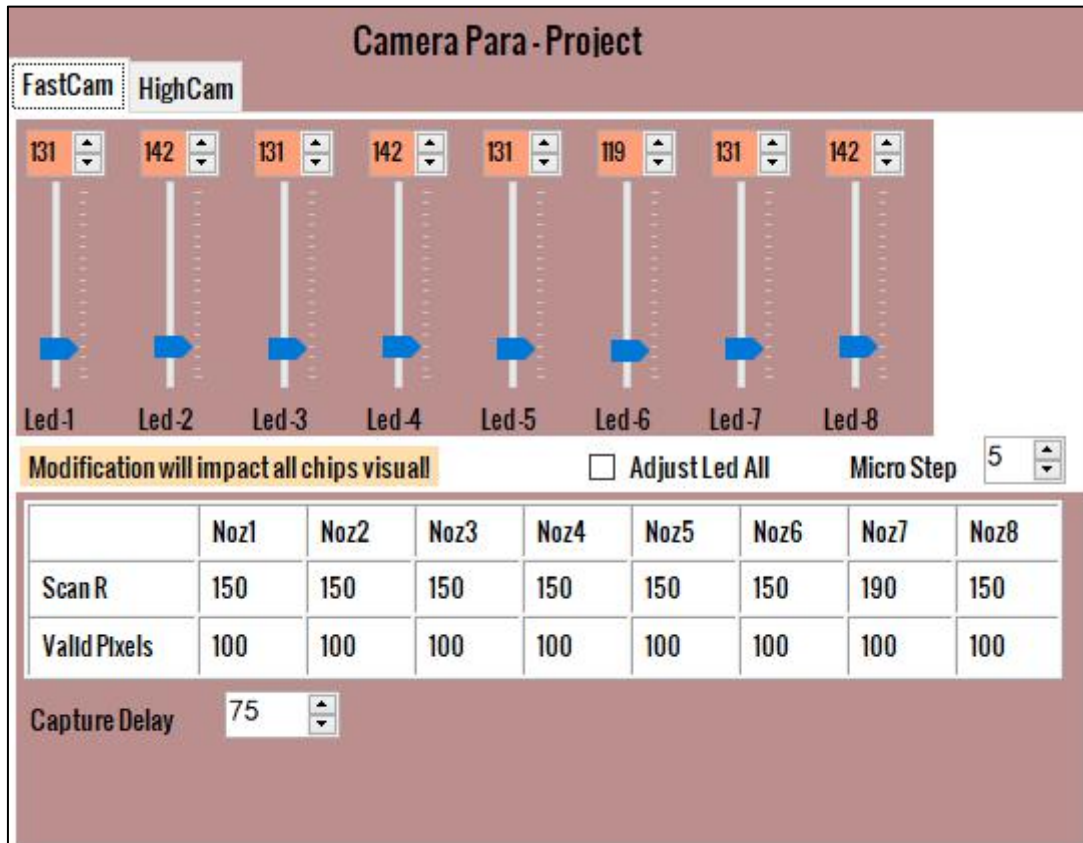
Pricise Mode XY delta
1.50

Pricise mode retry times
50

Notice: Change light will impact visual recognition of all chips!

	Noz1	Noz2	Noz3	Noz4	Noz5	Noz6	Noz7	Noz8
Scan R	150	150	150	150	150	150	150	450
Valld Ptxels	100	100	100	100	100	100	100	100
Capture Delay	100	100	100	100	100	100	100	50

HD camera light source parameters



Fast camera light source parameters

Click to identify the test, the component picked up must be within the identification range.

It is mainly tuned by adjusting the light source and scanning radius.

The HD camera scan radius is the same as the fast camera settings, with a maximum range of up to 900 precise closed-loop angular tolerance sticker IC recommendation of 0.2-0.35.

Default 0.09 It is possible that it will not be recognized. The Scan Radius column can be modified by double-clicking on it to modify the scan range for the entirety of the project The HD camera scan radius is the same as the fast camera.

After confirming all the parameters are set, finally confirm that the component mount angle can be modified in batch or individually. Double click the component angle you need to change, then right click to modify according to the actual situation, and save.

Instructions to change the angle of the plywood batch: open the dialog box in the Angle column

to enter the value of the angle to be changed to save, modify the current plywood or modify other plywood at the same time.

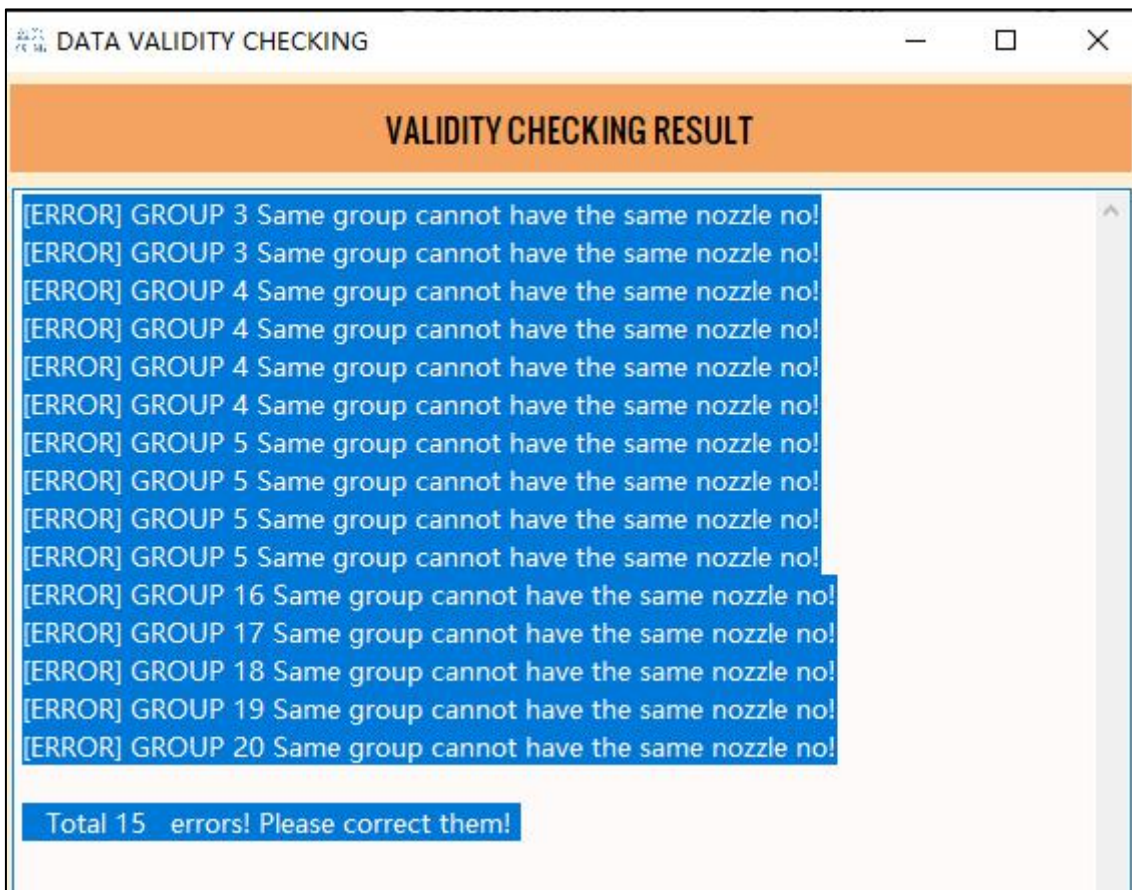
Once the other processes are set up, you can proceed to the diagnostic test. Perform the first board test posting.

4.5 Diagnostic tests

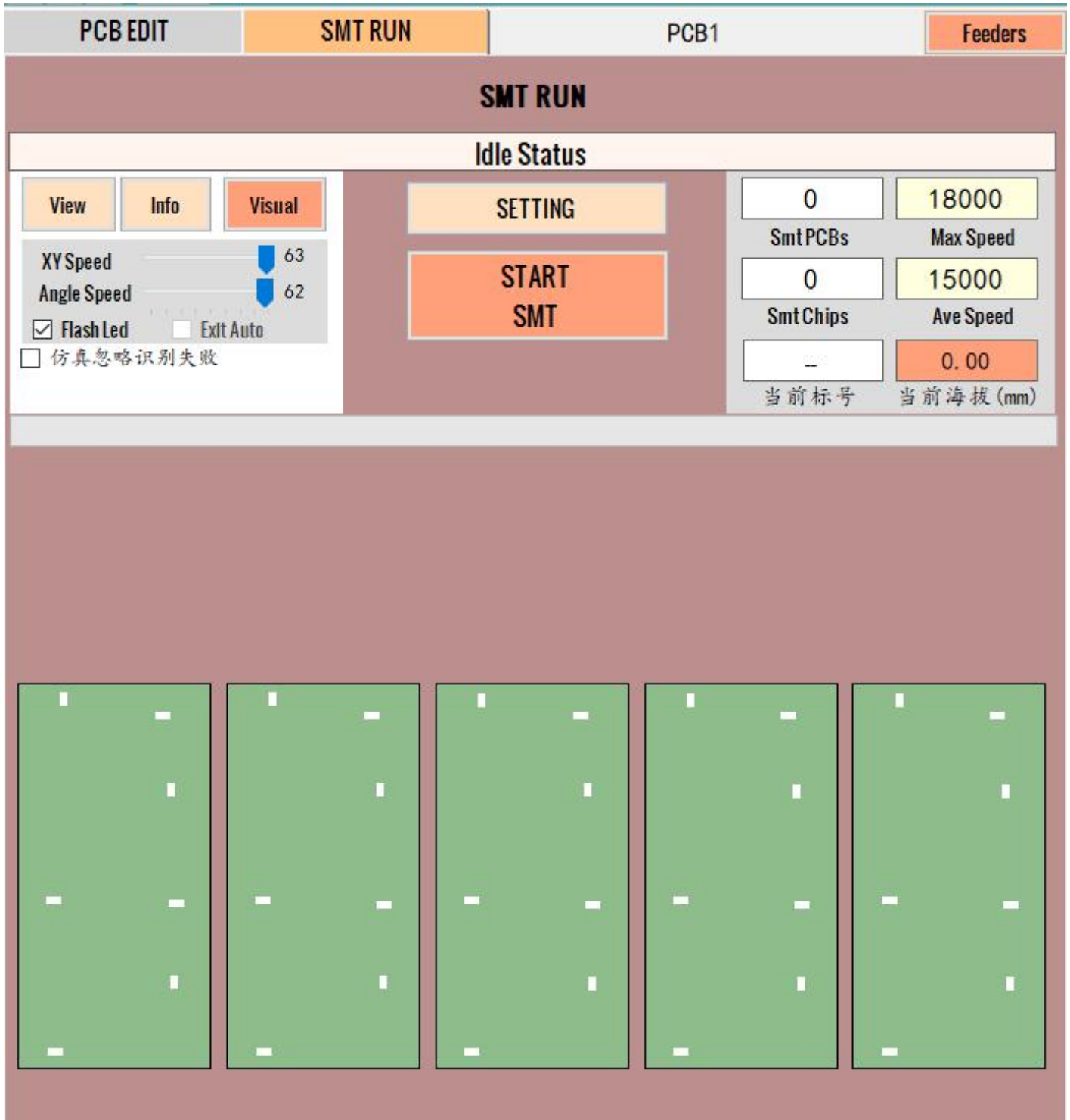
**VALIDITY
CHECK**

Click on the button: 0 for normal production.

If there is an error, the system will prompt for the error and modify it according to the error prompt.



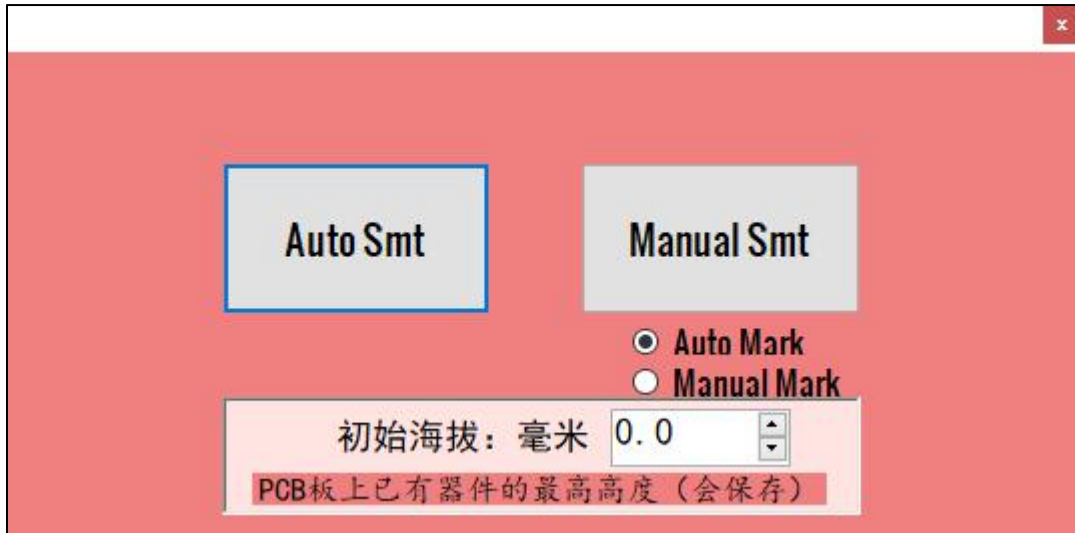
4.6 First board test posting



SMT Placement Interface

Click the button.





Click the button.

Maintenance - Inspection

Inspection items

Daily and periodic inspections should be carried out according to the following essentials.

Standardize the maintenance of the machine to extend the life of the equipment and improve productivity.

Types	Inspection cycle	Inspection items
Daily inspections	Every day	<ul style="list-style-type: none"> Use a clean cotton cloth to plot the dust on the machine surface and display. Cleaning of debris inside the machine Use a clean cotton plot machine Feeder platform Clean waste tape boxes Confirm the use of temperature, humidity, dust, foreign objects, etc. Whether there is abnormal vibration and noise Is the power supply voltage normal Ventilation openings are clear

		<p>Plot condition of the camera lens</p> <p>Is the wiring damaged</p> <p>Is there a loose link between the device and the equipment?</p>
Periodic inspections	Every week	<p>Cleaning and replacing bad nozzles</p> <p>Cleaning and replacing filters on the suction head</p> <p>Cleaning and lubricating air units</p> <p>Cleaning and lubricating XYZ tables and PCB clamping devices</p> <p>Cleaning suction head</p> <p>Cleaning and lubricating air units</p> <p>Clean substrate detection sensor</p> <p>Cleaning cameras</p> <p>Checking safety devices</p>
Periodic inspections	Every month	<p>Cleaning and replacing bad nozzles</p> <p>Cleaning and replacing filters on the suction head</p> <p>Cleaning and lubricating air units</p> <p>Cleaning and lubricating XYZ tables and PCB clamping devices</p> <p>Cleaning suction head</p> <p>Cleaning and lubricating air units</p> <p>Clean substrate detection sensor</p> <p>Cleaning cameras</p> <p>Checking safety devices</p> <p>Cleaning and lubricating suction and placement devices</p> <p>Cleaning and lubricating conveyor tracks</p> <p>Cleaning and lubricating the nozzle changer</p> <p>Cleaning and lubricating the cam unit</p> <p>Check the internal wiring, cut off the power and check the internal wiring for abnormalities</p>

○ Electrical inspections

All electrical parts are forbidden to be disassembled by private parties. For maintenance, turn off all power before opening the case cover. There are many complicated lines inside the chassis, if there are foreign objects

or dust entering, use a brush to sweep or a wet cloth to wipe or use a vacuum cleaner to absorb.

○ Maintenance of guide rails

The guide rail is an important moving part of the step, and frequent movement, must ensure that the monthly replacement of new special lubricants (linear guide rail special oil preferably white kind of high and low temperature grease).

Before refueling all the rails, remove the old grease with a dust-free cloth, then pinch the grease gun nozzle into the oil injection nozzle in the slide pit of the rail, fix it and then inject the lubricant into the slide pit until the oil overflows from the slide pit, then slide the slide pit back and forth a few times by extending the rail, then wipe the black grease clean again and re-inject the oil into the slide pit with the grease gun nozzle until it overflows. If the existing conditions can not be met, there is no special oiling gun can also be used to wipe clean the original black grease with a dust-free cloth, and then coated with a thin layer of rail oil on the surface of the guide, about an hour after the production, and then stop the machine to repeat the wipe off the grease that has just been polluted and become black and then start the production from a new thin layer of rail oil can be completed.

○ Vacuum generator maintenance

Vacuum generator is all placement smoothly completes the very important link, therefore not three months should check the vacuum generator filter cotton inside whether has the dust or other foreign matter, the operation method: Now will vacuum generator's white air tube even part to press hard inward, at the same time the other hand will pull down the filter, then use the same method to pick down the other end of the filter. Blow in the opposite direction with the air gun, if there is more solder paste inside the case can be cleaned with ultrasonic plus wash board water or alcohol, and then blow dry with the air gun.

Parts Replacement

Product Name	Category	Standard replacement cycle	note

Quality assurance

Shelf life

The product quality guarantee period is 1 year after purchase.

Warranty Contents

In the event of a failure during the warranty period under normal use as required by these applicable instructions, the product can be repaired free of charge.

In the following cases, repair costs will be charged even if the warranty period is extended.

When damage is caused by improper use methods, and improper repair and modification by yourself.

Upon arrival, in the event of damage due to dropping as well as shipping.

When damage is caused by use outside the scope of product specifications.

In the event of natural disasters such as fire, earthquakes, lightning strikes, chlorinated corrosion, voltage anomalies and other damage caused by external forces.

In case of damage caused by water, oil, metal fragments, or other foreign objects intrusion.

In addition, standard life spans are recorded as missing, except in cases where the respective life spans are exceeded.

The guarantee is limited to the main body of the delivered equipment and damage caused by the failure of the delivered equipment is not covered by the indemnity.

Repairs - Inquiries

Repair

Questions about repairs should be directed to the seller.

Information

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