Preface

- This operating instruction is included with machine. Please keep this manual for reference at any time.

- Please read this manual carefully before operating this equipment.

- Due to the technical update and the special requirements of the product, the product may be partially different from the manual description, please in kind prevail, we will add additional instructions as much as possible.

- When the equipment is in normal use, please keep a certain space in front and behind the equipment, as necessary space for operation and maintenance. In addition, please do not obstruct the setting of the heat emission space for this equipment.

- Equipment operating environment: temperature: 5 ~ 25 ℃, relative humidity: 20% ~ 95%, free from direct sunlight, no dew, no splashing water, no oil, no chemical liquid.

- The machine's technician who operates and maintains it must have computer operation skills.

- The computer configured on this machine can only be used for this machine, it is strictly forbidden to carry other movable storage device which can bring virus into the machine, so as to protect the control system.

- The U disk is properly configured to prevent the invasion of virus, and it is strictly prohibited to be used on other computers.

- For personal safety, when the equipment is running or standby, please do not open the front door or chains or the station head cover without taking safety measures, clothing and limbs must not get near the mechanical parts, otherwise, may incur body injury accidents.

- Repeated switching power supply on and off can be one of the reasons for equipment failure. After the power is turned off, please wait for at least 20 seconds before you turn on the power again.

- Do not expose the device to shock or strong vibration, otherwise it may cause malfunction.

- When cutting off the power, proceed the system exit / shutdown process in the following order. If you cut off the power supply or restarted it without following this process, the data can not be saved completely and the hard disk can be

damaged. Exit / Shutdown Procedure: Exit the application → exit Windows → disconnect the device from power.

● If the equipment is suspended, store the equipment in the proper environment: ambient temperature (0-40) ℃, relative humidity (20 ~ 95)%, free from direct sunlight, no dew condensation, no splashing water, no oil and chemical liquid. Protective measures(such as covering cloth) can be taken to prevent dust and moisture.

● Please contact us in case of any questions, please do not operate blindly.

Note: Please note above mentioned matters!

Machine overview:

S-7000 Odd form insertion machine for high-speed, high-precision, high-performance equipment, is specifically developed for odd form components insertion such as large electric capacity and resistor, which integrates three bowel feeders to achieve three Material Selective insertion. Its insertion head grips the odd form components by moving the X, Y units with high insertion precision in the PCB board area, insertion angle is controlled by the steering wheel. The series of control software and operating software is developed by our company independently, all operations are controlled by a computer.

This Odd Form Radial insertion machine has following major advantages:

△ Full computer control, English version operating system, based on the Windows platform, easy to operate, fast, simple, easy to learn.

△ Machine vision technology applied, online automatic programming, automatic correction, automatic identification of the MARK point, highly automotive.

△ AC servo system provide stable line operation, excluding the instability caused by line failure, to achieve a stable high-speed, energy saving.

Software Operation

1、 Safety check before operation.

Please be aware: the machine for the new installation or long-term idle state, before supply the machine with power and compressed air and operation, we must do following security checks carefully:

1) Check whether the power supply is the specified rated voltage.

2) Check whether the main power supply is connected to the machine, and the fuse is intact, branch circuit breaker is closed.

3) Whether the equipment is properly grounded.

4) Ensure no unrelated objects remain in the electronic control box and the machine movable parts.

5) Check if conveyor belt and synchronous belt fall off during transportation.

6) Check if the lead screw, slide track, insertion shaft and other heavy-duty, high-speed operational units are properly connected.

7) Push and pull X, Y, R1, R2, F units to see if they can move smoothly.

8) Check the limit detector and limitation are dislocated or not.

9) Check whether the emergency switch is pressed down, check the overall gas source, the power switch is at the OFF state.

10) Check wiring plug and air pipes between the computer, electric control box, the main and auxiliary parts are properly connected.

2、 Operation interface description, divided into the following three areas:

Fig. 1

1) Production operation area: This area is for the operation of the machine and the control of production(as shown above):

Button and selection explanation:

Start: start the insertion program, each part of the machine co-operate and complete insertion task.

Stop: The machine stops and enters standby mode.

Zero: Place the table and turntable to the starting zero. This is the first step before any movement and insertion.

Alarm reset: when the machine encounters insertion error in the production

process, it will stop working, and display error message in the shutdown information, when the repair completes, you can click the alarm reset and then continue to produce.

Production Running Mode:

1. Continue: execute insertion continuously until production complete.

2. Step: Complete a complete insertion cycle action.

3. Step by step: the insertion action is separated into several steps to perform, take one step a time.

Loading PCB board:

1. Load the PCB board: according to the normal process to ask for Board and transport board.

2. Do not load the PCB board: skip the process of loading PCB board and start insertion directly, suit for manual placement of board.

3. Only board: no insertion action, only PCB board moves through.

Insertion status detection:

1. Detection: during the insertion, detect the insertion of components real-time, if error detected, stop and alarm.

2. No detection: during the insertion, no detection of the components insertion.

Feeding options:

1. Feeding and insertion: the head first grip the material and then insert.

2. Not feed demo: insert without material.

Mark point detection

1. Detection: when the insertion sequence command contains MARK point correction, then MARK point correction will be performed.

2. Do not detect: Do not execute the MARK point correction command.

1. Support gripping different kinds of components simultaneously : insertion head 1-3 can grip and insert different components simultaneously which improves work efficiency.

2. No support for simultaneous material gripping: Insertion head can only take a single material and then insert, can not take more components at the same time.

Worktable movement speed

Moving speed of the table manually.

Running speed

1. Adjust the speed of each axis during insertion process.

Fig. 2

2) Insertion sequence list

When not reading insertion data, display previous company log;

When insertion data is available, display insertion data;

The CCD image is displayed when the MARK point is corrected in production;

3) Operation information area

This area displays the current production information.

停止

运行信息

程序名称：　　　　　　　　　　　　　预设产值：　[1000]

已完成：　　　　　　　　　　　　　　实时速度：

版本信息

F4000-3-01 ver1.0.0.1

Fig.3

Power Off information

Show the breakdown/stoppage reason in the production process, it can be alarm information, or the production tasks which have been completed.

Program name

The name of the program that is about to be run or have ran. It depends on which program is "open".

Production quantity setting

That is, the number of PCB's to be inserted in production. Machine will stop automatically once the quantity is reached.

Production quantity counting

Count the number of components inserted after each successful insertion.

Real-time speed

Display the actual insertion speed of the machine. Unit: piece/ hour.
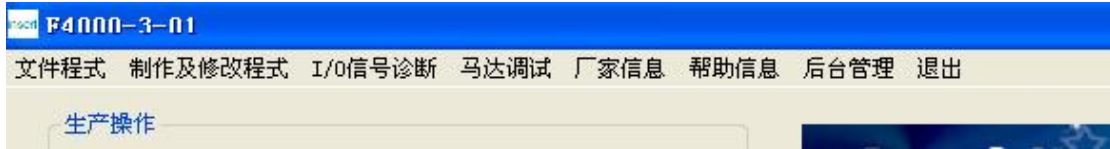
1. Toolbar Description
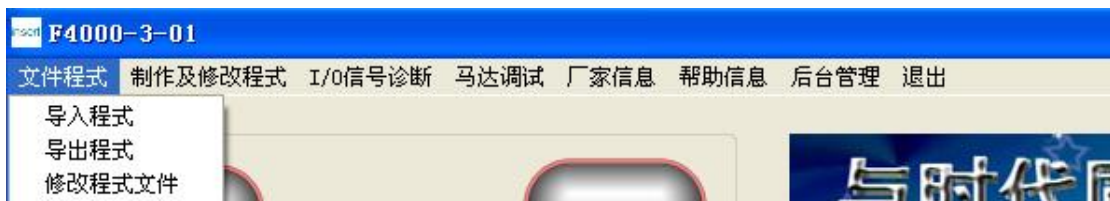

Fig.4

1) File program

Import the program

Fig.5

Click on the file program → import program, a dialog box will pop up displaying all the file names (as shown below), and then click the program name that you need to "open", and then click "open", the machine will accept the implementation of the program "task" and cover the previous program.

Fig.6

Export the program

Click on the file program → import program, It will pop up a dialog box that ask you to choose the file names (as shown below), or you can type in the file name as your wish, Then click "Save".
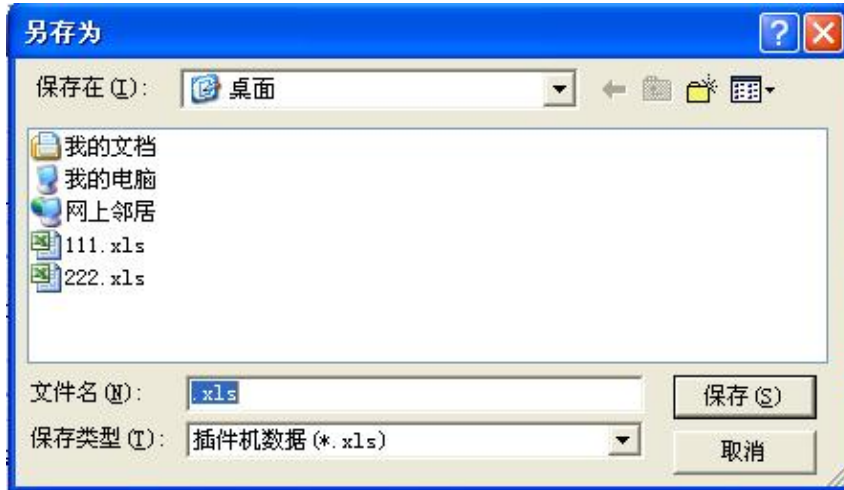

Fig. 7

Modify the program file

Click on the file program → modify the program file, a dialog box will pop up asking you to select the file name (Figure 6), then click the program name that you need to "open", and then click "open", it will open in. Xls format.
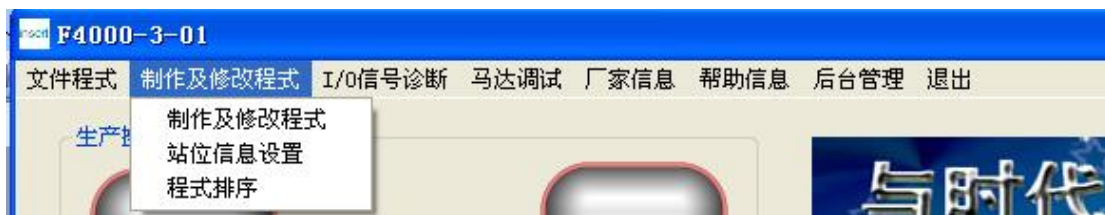
2) Make and modify programs

Fig. 8

Make and modify the program: to generate or modify the insertion data with the help of camera

Click to create and modify the program → create and modify the program,
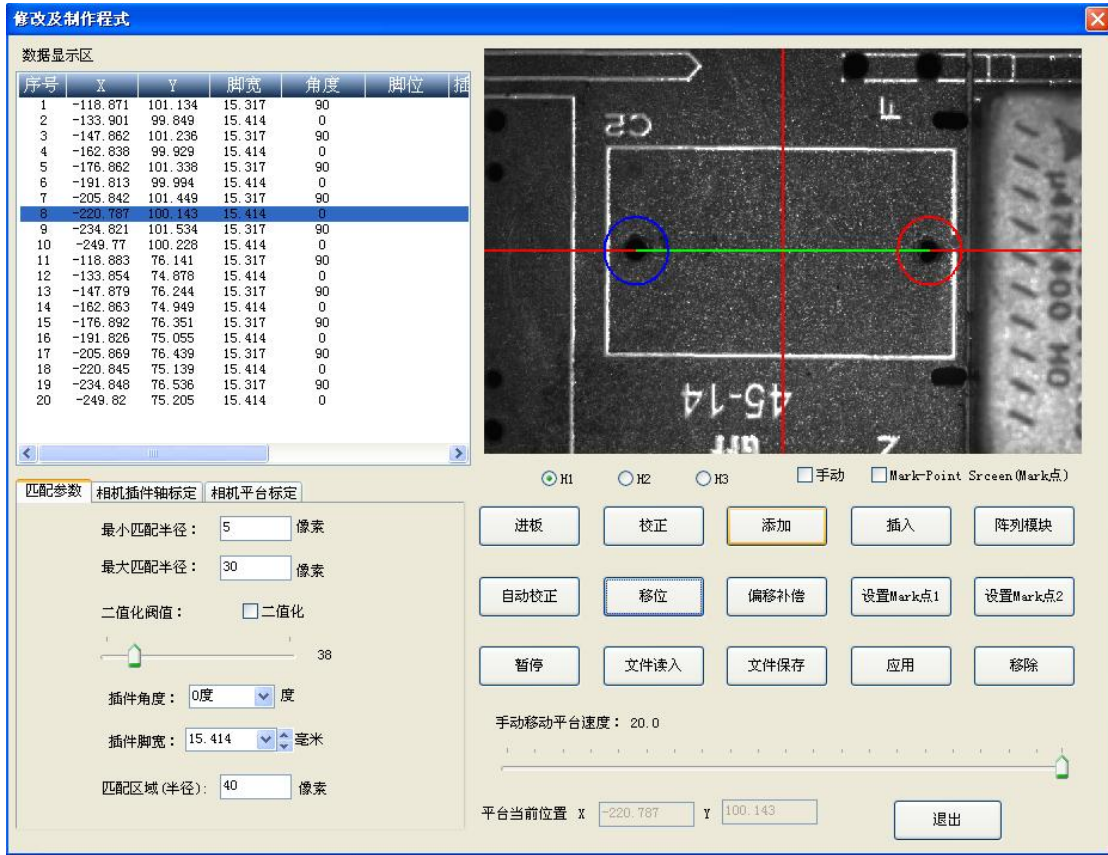
then following dialog box will pop up:

Fig. 9

Ⅰ   Data display area: Displays insertion data generated.

数据显示区

序号	X	Y	脚宽	角度	脚位	插
1	-118.871	101.134	15.317	90		
2	-133.901	99.849	15.414	0		
3	-147.862	101.236	15.317	90		
4	-162.838	99.929	15.414	0		
5	-176.862	101.338	15.317	90		
6	-191.813	99.994	15.414	0		
7	-205.842	101.449	15.317	90		
8	-220.787	100.143	15.414	0		
9	-234.821	101.534	15.317	90		
10	-249.77	100.228	15.414	0		
11	-118.883	76.141	15.317	90		
12	-133.854	74.878	15.414	0		
13	-147.879	76.244	15.317	90		
14	-162.863	74.949	15.414	0		
15	-176.892	76.351	15.317	90		
16	-191.826	75.055	15.414	0		
17	-205.869	76.439	15.317	90		
18	-220.845	75.139	15.414	0		
19	-234.848	76.536	15.317	90		
20	-249.82	75.205	15.414	0		

Fig.10

II CCD Image Area: the camera captures the area that have been inserted which helps generate the insertion data; when modify the matching difference, the image will update real time
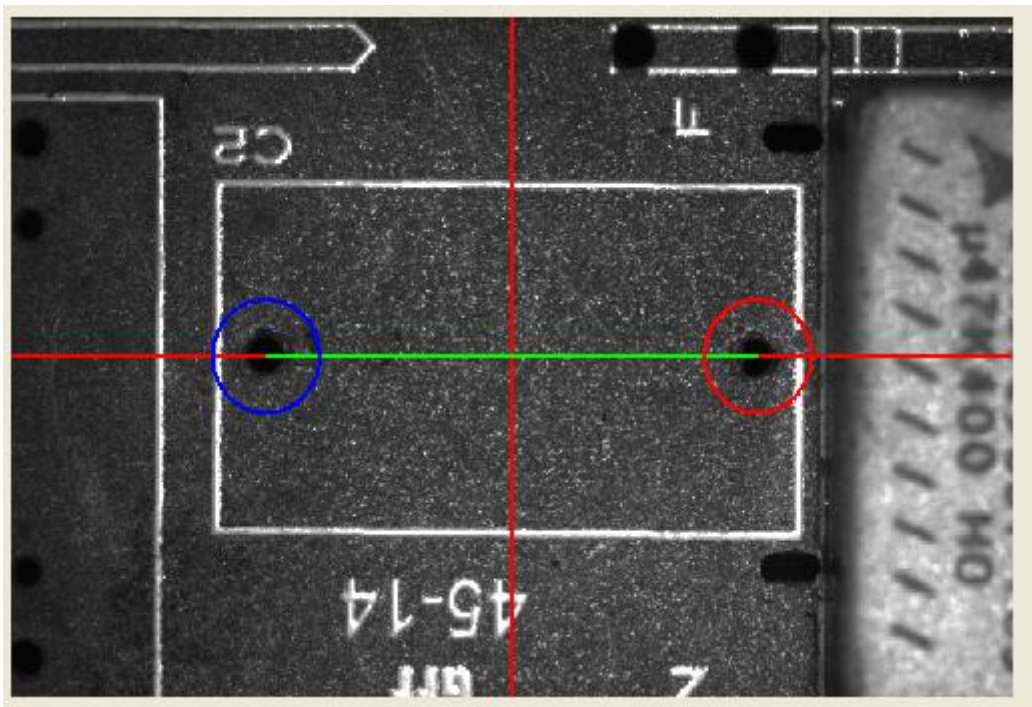
Fig. 11

III Matching parameters setting area

This area has three pages: matching parameters settings, camera insertion axis position calibration, camera TABLE platform calibration.

1. Matching parameters setting

Fig.12

Minimum radius

Found the minimum target size radius in the matching ROI area.

Maximum radius

Found the maximum target size radius in the matching ROI area.

Binarized image

Separate the image according to threshold value, generate black and white gray-scale map.

Image binarization threshold

Adjust the value of the threshold for the split graph.

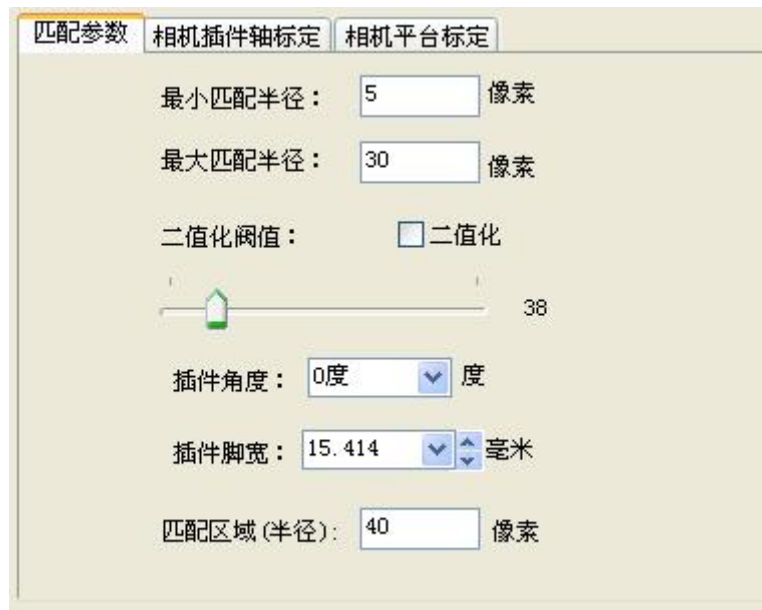Match the lead width of the components

According to the two leads span, the span of this machine range 5mm-20mm.

Adjust the size of Match box (circle / radius)

Adjust the range of the ROI area.

Match components angle

Two insertion angles: 0 degrees and 90 degrees.

2. Camera insertion axis position calibration

Fig.13

Calibrate camera position

Move the insertion location of a component to the ROI area of the camera image, click to calibrate the camera position, match the program and record the current location of the platform.

Calibrate insertion axis position

Move the insert position for the camera position under the insertion axis,

fine-tune the XY axis, and manually move H so that H can insert at this position, and click on the calibration insertion axis to record the current position of the platform

Complete Calibration

Complete the camera position calibration and the insertion axis position calibration, then click to complete the calibration, the program will calculate the relative distance between insertion location and insertion axis in camera image, and then fill in the distance to the two edit slots at right side.

Test

First move the insertion position to the camera image ROI area, click on the test, program will first modify the specific location of the ROI area, and then automatically move under the insertion axis, then you can see whether the data is accurate.

3. Camera TABLE platform calibration

Fig.14

4. Calibrate Camera TABLE platform

Select the area that contains only one matching target on the matching panel, as shown in Fig.15

Fig.15

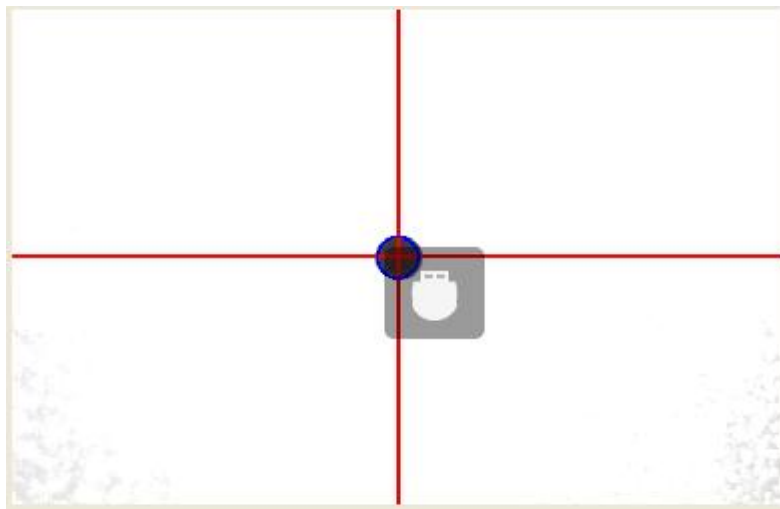The program will calculates the number of pulses, and the pixel data of the XY axis moving on the image, then determines the ratio between the distance on the image and the actual distance.

Test Camera TABLE

Move the matching target to any position within the image, and if it can automatically return to the center of the camera, then it proves that the calibration is successful.

IV Match the operating area:

Manual coordinates

Move the insertion coordinates to the image ROI area and record the XY coordinates directly. This is to acquire the insertion location in case the PCB board image is extremely irregular and can not match.

Correction

Replace the data of the selected row with the insertion data obtained in the current image ROI area

Add to

Add the insertion data from the current image ROI area to the end of the insertion data list

Missing pieces inserted

Insert the insertion data from the current image ROI area into the position of the currently selected row

Shift

If the current platform position does not reach the corresponding position of the focus line, then move to the corresponding position;

If the current platform position is at the corresponding position of the focus line, move to next line of the focus line.

Remove

Remove rows that can be rotated in the list of insertion data (can remove several sequential rows also).

Set Mark point 1 and Mark point 2

Add position correction for MARK1, MARK2 in the program

Browse correction

Starts browsing and corrects the insertion data for the insertion data list from the focus line.

Pause browsing

Temporarily stop browsing the insertion data.

Offset compensation

Select a line, and then click on the shift, move to the corresponding position of the focus line, click on the offset compensation, you can fine-tuning the data of several lines until rotation command or stop command.

Array module

After editing an area, you can array out a few similar modules by this command.

Match one location within the first module with the same location in the last module, and then enter the number of modules in X direction and Y direction, you can generate insertion data of several modules combined.

Read the file

Similar to the command import program in the menu toolbar, read the insertion data from file to the insertion data list.

Save document

Similar to the command import program in the menu toolbar, save the insertion data in the list to disk file, if the list does not have "stop" or "continue" command, then add "stop" command automatically.

Application

Save the matching parameters to the disk file so that it will load automatically the next time it starts.

List of station information

Here you can select the component name.

You can change the feed station of component

3) I/O information diagnose

IO诊断

DI

[IN01 -01] 1号插件原位
[IN02 -01] 2号插件原位
[IN03 -01] 3号插件原位
[IN05 -01] 1号插件到位
[IN06 -01] 2号插件到位
[IN07 -01] 3号插件到位
[IN09 -01] PCB到位
[IN10 -01] PCB定位
[IN11 -01] 启动
[IN12 -01] 停止生产
[IN13 -01] 紧急停止
[IN01 -02] 1号底座原位
[IN02 -02] 2号底座原位
[IN03 -02] 3号底座原位
[IN05 -02] 1号底座到位
[IN06 -02] 2号底座到位
[IN07 -02] 3号底座到位
[IN08 -02] 1号轨道物料到位
[IN09 -02] 2号轨道物料到位
[IN10 -02] 3号轨道物料到位
[IN11 -02] 1号插件检测
[IN12 -02] 2号插件检测
[IN13 -02] 3号插件检测
[IN25 -01] 左升降台PCB感应1
[IN26 -01] 右升降台PCB感应1
[IN17 -01] 左升降台PCB感应2
[IN18 -01] 右升降台PCB感应2
[IN19 -01] 左升降台原位
[IN20 -01] 左升降台到位
[IN21 -01] 右升降台原位
[IN22 -01] 右升降台到位
[IN24 -01] 接收下一段要求送板

DO

OUT01 -01] 插件气缸1
OUT02 -01] 插件气缸2
OUT03 -01] 插件气缸3
OUT04 -01] 夹爪气缸1
OUT05 -01] 夹爪气缸2
OUT06 -01] 夹爪气缸3
OUT07 -01] 底座气缸1
OUT08 -01] 底座气缸2
OUT09 -01] 底座气缸3
OUT10 -01] PCB定位
OUT07 -02] PCB限位
OUT11 -01] 工作台皮带传送马达
OUT12 -01] 相机灯
OUT01 -02] 压料气缸1
OUT02 -02] 压料气缸2
OUT03 -02] 压料气缸3
OUT04 -02] 轨道1吹气A
OUT05 -02] 轨道2吹气A
OUT06 -02] 轨道3吹气A
OUT13 -01] 左升降台气缸
OUT14 -01] 左升降台皮带
OUT15 -01] 右升降台气缸
OUT16 -01] 右升降台皮带
OUT17 -01] 通知上一段送板
OUT19 -01] 工作台灯
OUT20 -01] 红灯
OUT21 -01] 黄灯
OUT22 -01] 绿灯

夹料气缸放料时间： 80 ms
夹料气缸夹料时间： 80 ms
工作台载板延时： 80 ms
插件与底座气缸动作时间： 500 ms
压料气缸动作时间： 500 ms
轨道物料信号持续时间： 1000 ms

气缸动作间隔时间： 100 ms

动作模式
⊙ 气缸单击动作一次
○ 气缸单击连续动作

DI

#1original insertion position the initial position of #1 insertion cylinder.

#2original insertion position the initial position of #2 insertion cylinder.

#3original insertion position the initial position of #3 insertion cylinder.

#1l insertion position the insertion position of #1 insertion cylinder.

#2l insertion position the insertion position of #2 insertion cylinder.

#3l insertion position the insertion position of #3 insertion cylinder.

#1 original base position the initial position of #1 base cylinder.

#2 original base position the initial position of #2 base cylinder.

#3 original base position the initial position of #3 base cylinder.

<u>#1 base position</u>   #1 base cylinder extension position.

<u>#2 base position</u>   #2 base cylinder extension position.

<u>#3 base position</u>   #3 base cylinder extension position.

<u>#1 track material at position</u>：#1 vibration plate vibrates and transports the material to the end of track, it is position signal that insertion head can grip material now

<u>#2 track material at position</u>：#2 vibration plate vibrates and transports the material to the end of track, it is position signal that insertion head can grip material now

<u>#3 track material at position</u>：#3 vibration plate vibrates and transports the material to the end of track, it is position signal that insertion head can grip material now

<u>PCB at position</u>：work platform detects the position of PCB to ensure PCB is ready for insertion

<u>PCB located</u>：cylinder locates the position signal of PCB

<u>Start</u> when press the Start button on the outer shell, the status changes from high to low, vise versa.

<u>Stop</u> when press the Stop button on the outer shell, the status changes from high to low, vise versa.

DO

<u>Switch of camera light</u>   camera light source.

<u>Green/Yellow/Red Light</u>   warning light on the outer shell

<u>Base cylinder</u>   the ascend and descend signal of driver base cylinder

Insertion cylinder the signal of driver insertion axis bring down the component and insert

4.1)Motor calibration

Set the move distance and speed of each axis, then move each axis according to the direction shown by the arrow on the button, check if the moving direction of each axis is in line with the arrow; test if the positive and negative limit unit is effective or not, is it installed correctly.

Test whether each axis can return to original point, and whether the position of the original point is correct.

Positive/Negative limit the abbreviation of the optoelectronic switch signal for maximum limit position in positive/negative direction of each axis.

Original point detect signal of "zero point" set

Platform board in/out X:after worktable returns "zero", the actual position of axis X，in front of "zero" position, closer to operator.

Platform board in/out Y:after worktable returns "zero", the actual position of axis Y，in front of "zero" position, closer to operator.

Axis F receive and release position of material: position where axis F receive and release material.
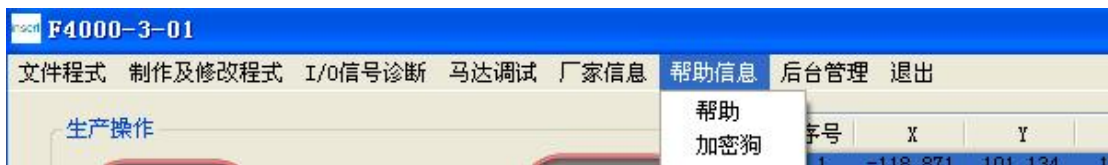
R_Up_0°和 R_Up_90°： compensate between the material transport angle and angle of image captured by camera on PCB

4) Factory Information

Click Factory Information, you will open the file FactoryInfo.pdf under the program index.

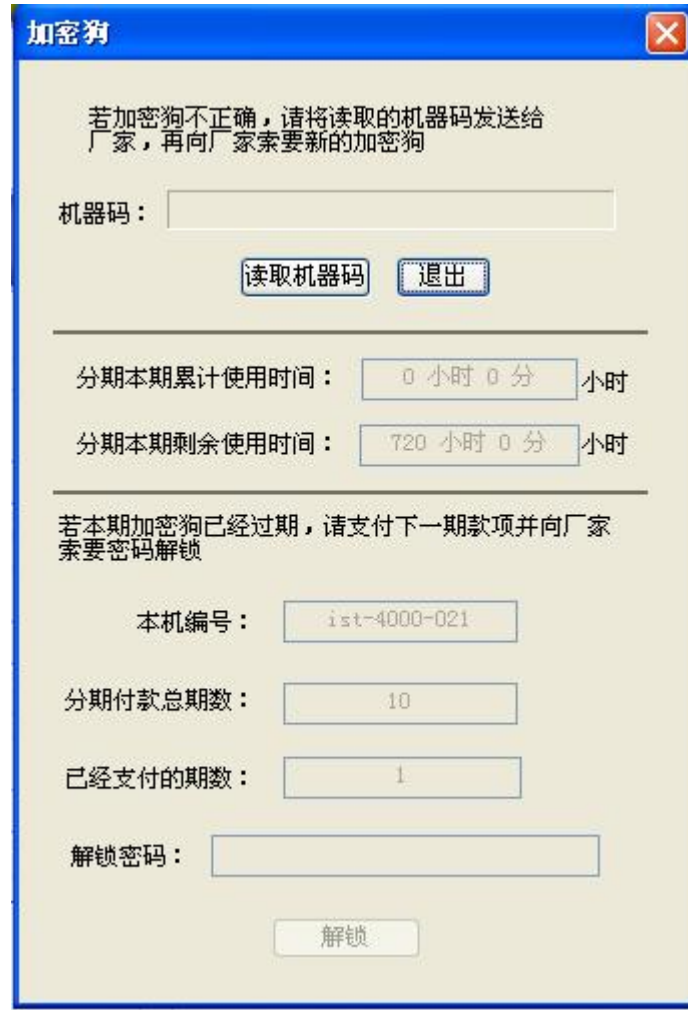A notice will pop out if the file does not exist.

5) Help

Help

Click Help, will open the file F4000-HELP.pdf under the program index.

A notice will pop out if the file does not exist.

Encryption dog

Click Help, a dialogue box will pop out,

If current encryption dog of the machine is wrong, please read and send the machine code to factory, and ask for new encryption dog.

If you choose installment plan, when the effective use time expires and encryption dog is locked, please send machine code and number of installment to factory, and ask for unlock password.
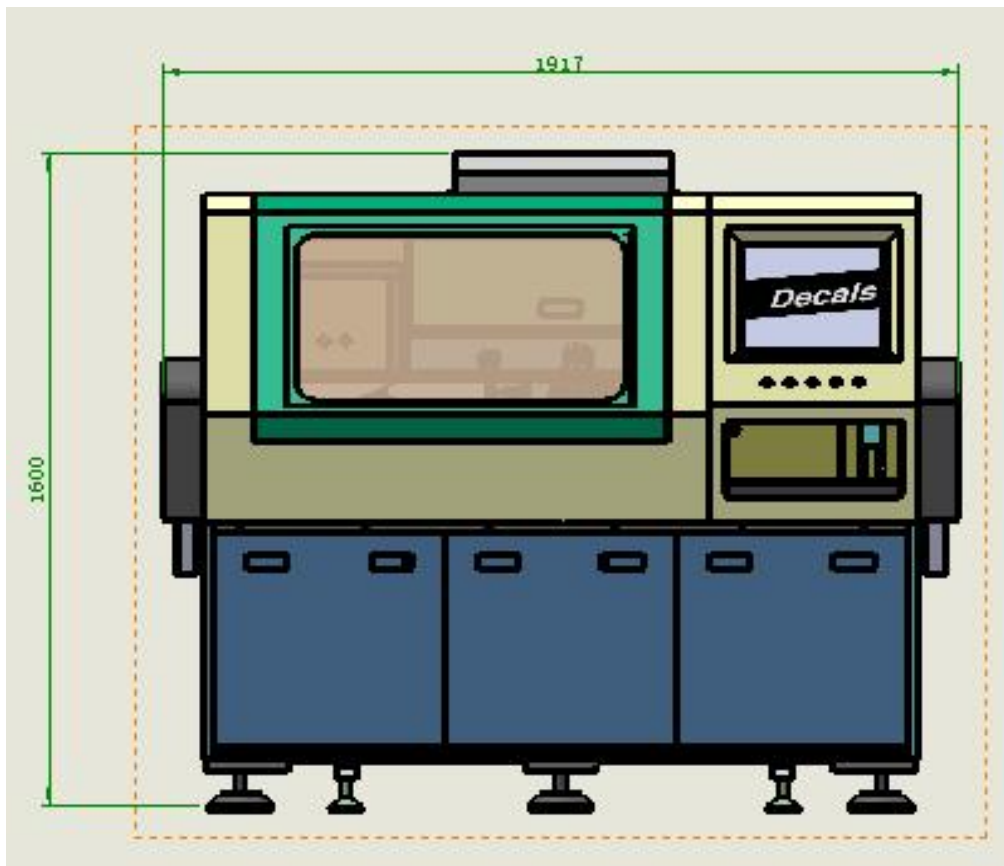
6) Back-stage management
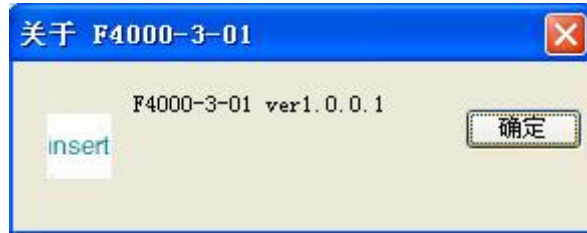
7) Statistics

Display the statistics of completed production data and efficiency

8) Exit

Click Exit, exit from the program.

S-7000 Odd Form Insertion Machine
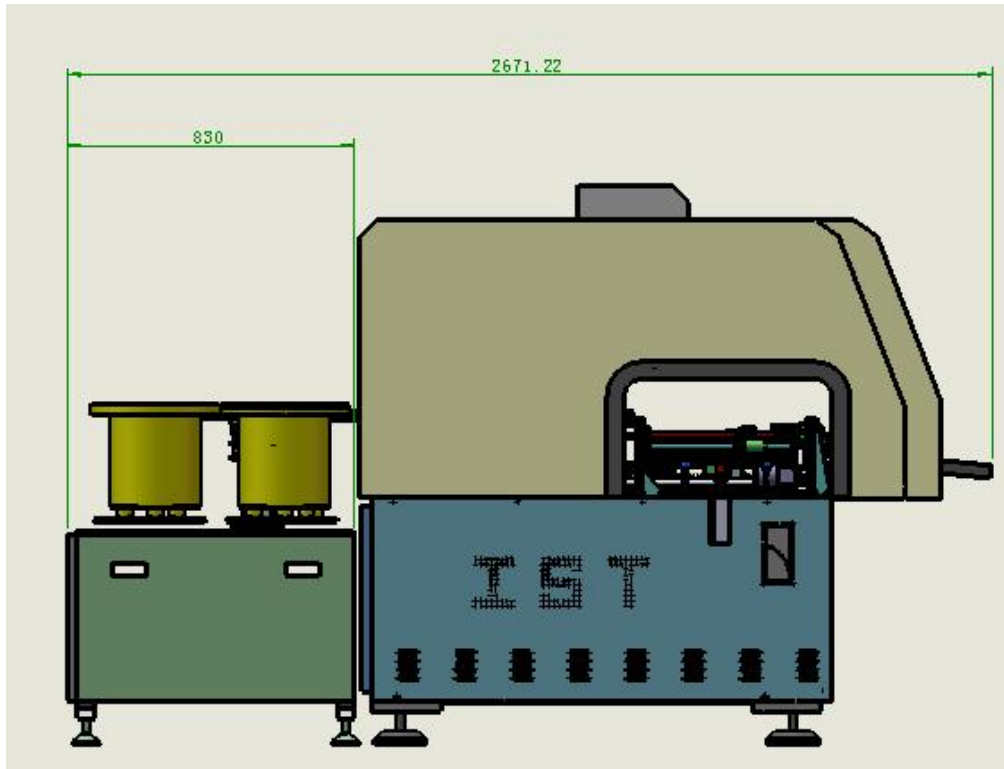
BOM of Head Unit
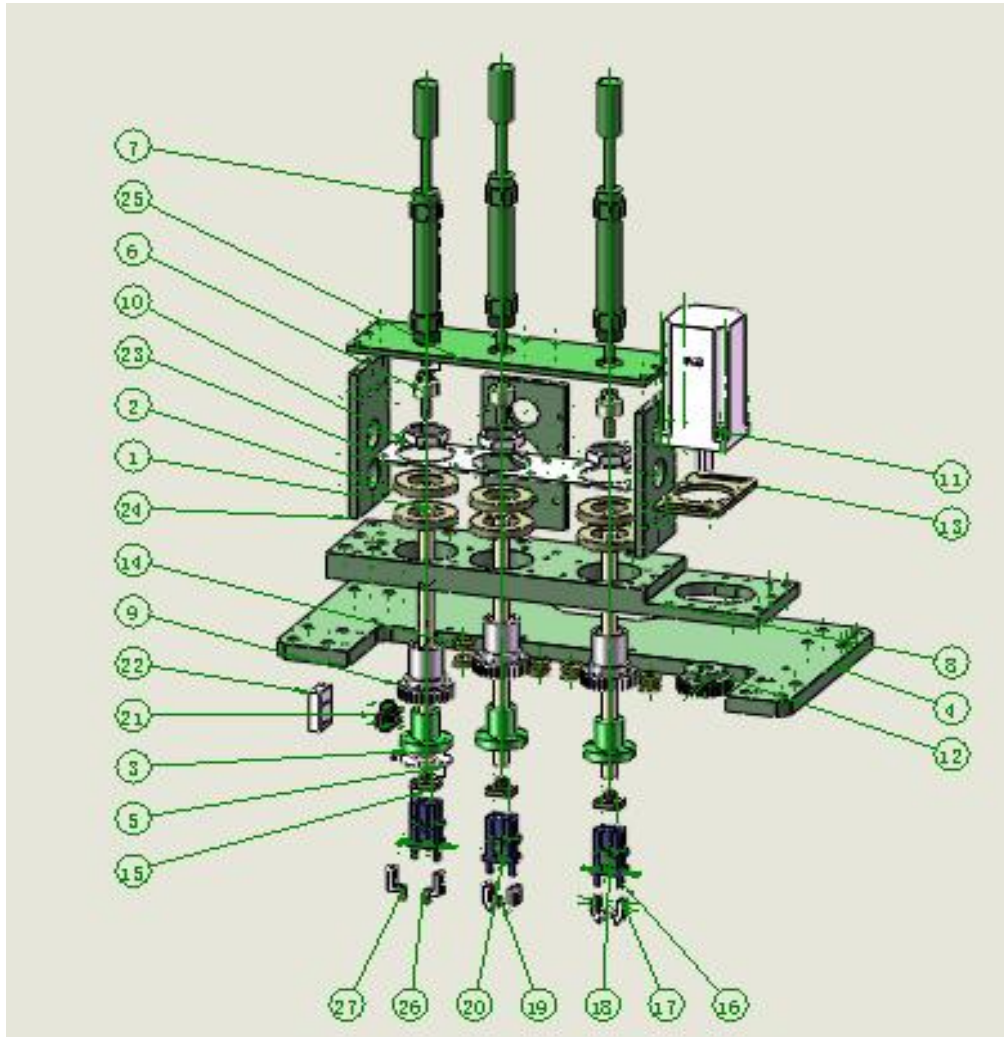
No.	Part No.	Qty
1	Insertion main shaft	3
2	Bearing 16006	6
3	SLF013 housing	3
4	Head bearing installation block	1
5	Sensor plate 1 move to original point	1
6	M8 floating connector	3
7	MAJ20-50-30	3
8	Head bearing seat	1
9	30-XL insertion main shaft swiveling wheel	3
10	Rotating belt pulley nut	3
11	400W motor.	1
12	30-XL swerving belt pulley	1
13	Rotating motor	1

Installation shelf

14	606Z bearing	8
15	Gripping air cylinder lid	3
16	Cylinder HFTZ10	3
17	104 side gripper	2
18	T04	1
19	103 side gripper	2
20	T03	1
21	SX671 sensor	2
22	Swerving sensor Installation board	1
23	Head bearing cover	1
24	Head cylinder installation board 1	3
25	Head cylinder installation board 2	1
26	Terminal side claw 1	1
27	Terminal side claw 2	1
28	Terminal	1

BOM of base frame
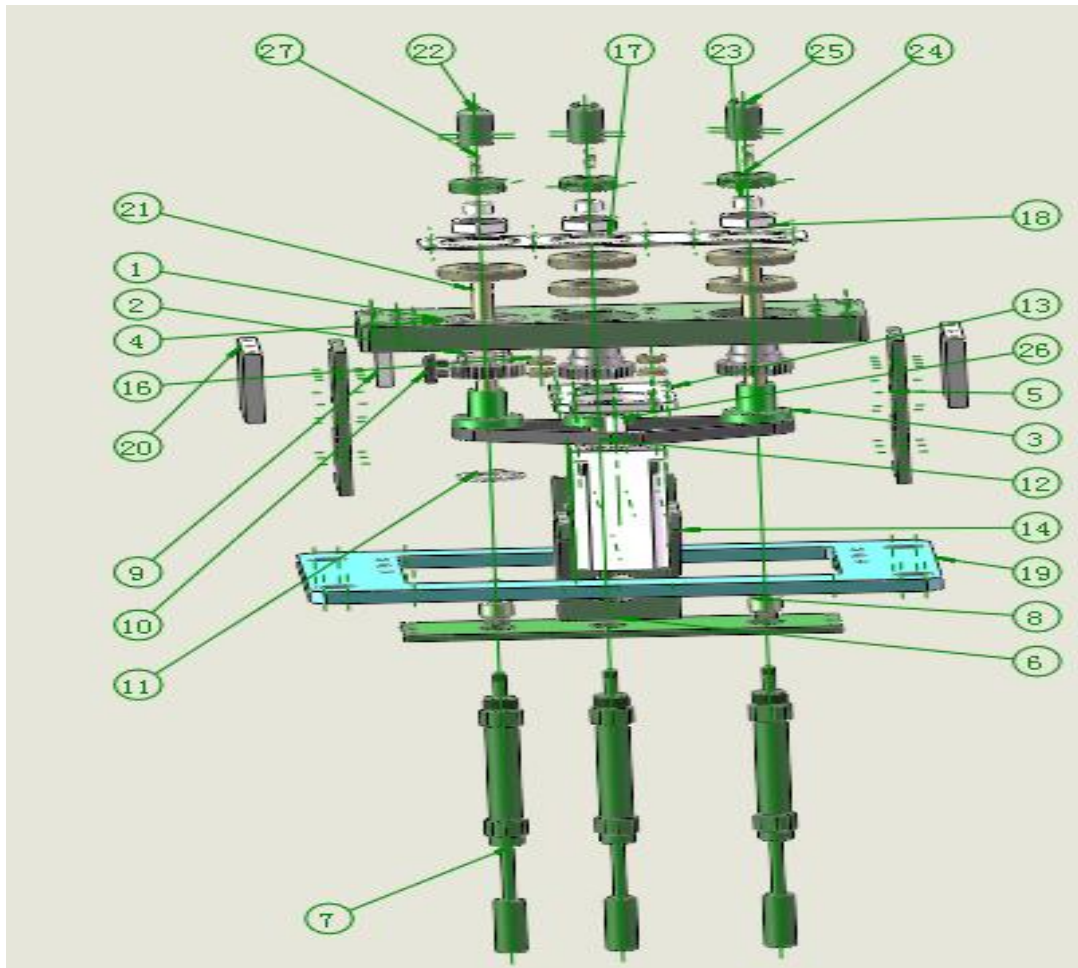
No.	Part No.	Qty
1	Base frame bearing seat	1
2	30-XL insertion main shaft Swiveling wheel	3
3	SLF013 stand	3
4	Bearing 16006	6
5	Head cylinder installation board 1	3
6	Head cylinder installation board 2	1
7	MAJ20-50-30	3
8	M8 rotating connector	3
9	Swerving sensor installation board	1
10	SX671 sensor	2
11	Move to original point sensor tab 1	1

12	400W motor.	1
13	Base housing swerving motor installation board	1
14	Base housing swerving motor support plate	2
15	30-XL swerving belt pulley	1
16	606Z bearing	4
17	Head bearing gland cover	1
18	Rotating belt pulley nut	3
19	B housing installation board .	1
20	Housing padding block	2
21	Housing main shaft	3
22	Sensor bar	1
23	POM isolation sleeve	3
24	Sensor ring	3
25	Bottom die A	2
26	Housing belt	1
27	Diameter 6 spring	3

BOM of Upper Frame
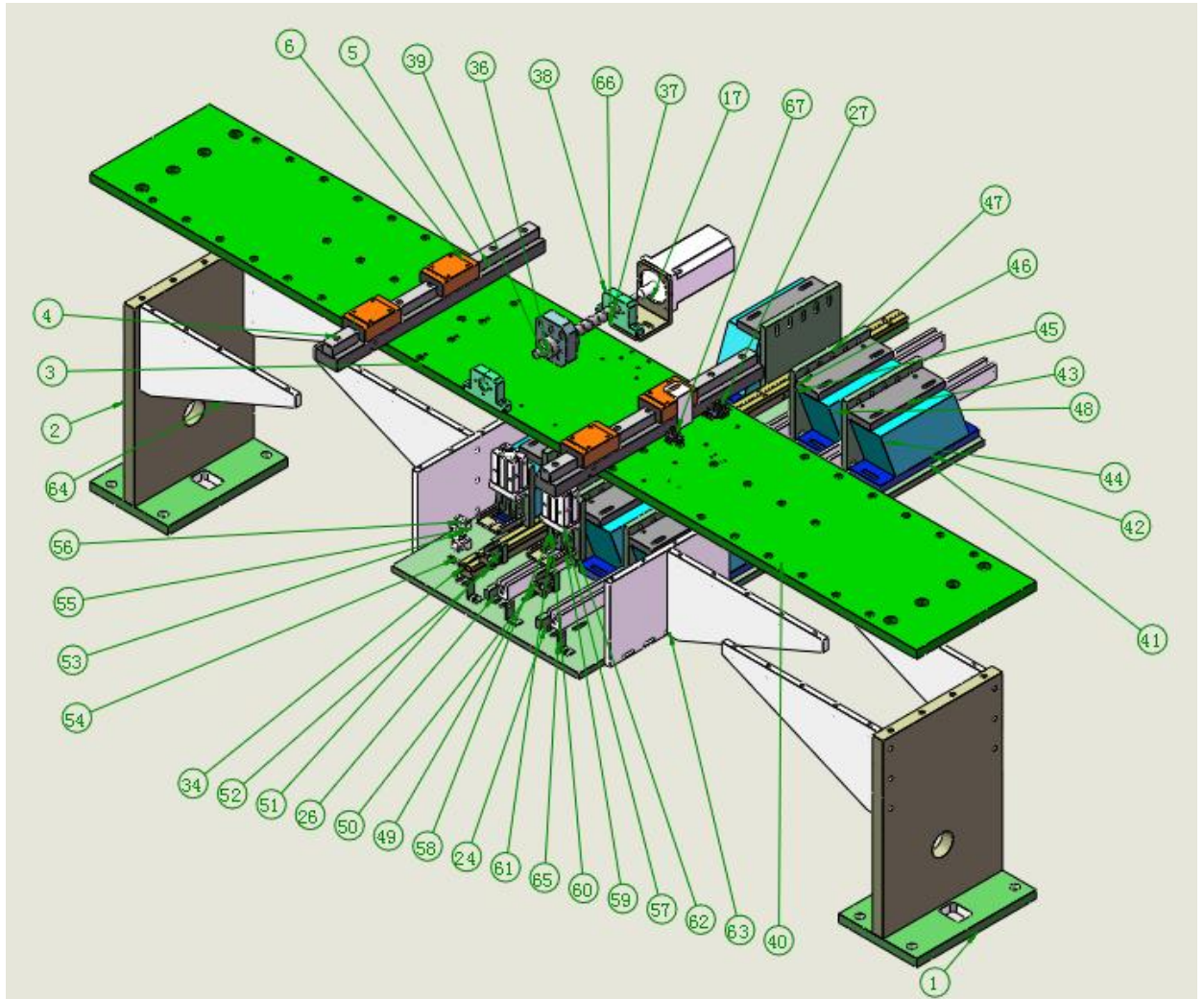
No.	Part No.	Qty
1	Machine stand installation board 1	2
2	Upper Machine stand installation board 2	2
3	Middle main diaphragm board	1
4	TRH20VN guide rail	2
5	Guide rail installation board	2
6	Slider TRH20VN	4
7	Head A	1
8	Z lead screw nut sleeve	1
9	Z shaft lead screw SFU1610	1
10	Z lead screw bearing seat	2
11	Lead screw nut	1
12	Middle flat installation board	1
13	Vibration absorber assembly B	6
14	T104 guide rail	2

15	Insert vibration board 1	2
16	Insert adjusting board 1	4
17	Vibration drive board A	6
18	T103 guide rail	2
19	Stop position unit	1
20	T103 Stop position unit	1
21	Insertion tab	2
22	Insertion tab stop block	1
23	Insertion tab material stop block	1
24	Terminal guide rail auxiliary plate	1
25	Terminal guide rail auxiliary plate 2	1
26	T104 reforming BOM	2
27	T04	1
28	Middle lifting board	2
29	Beam reinforce block	6
30	Sensor 1 material ready	3
31	T03	1
32	400W motor.	1
33	Feeding motor base	1
34	SX671 sensor	3
35	Sensor plate of feeding original point	1

Board Lead Track

比例 1：6
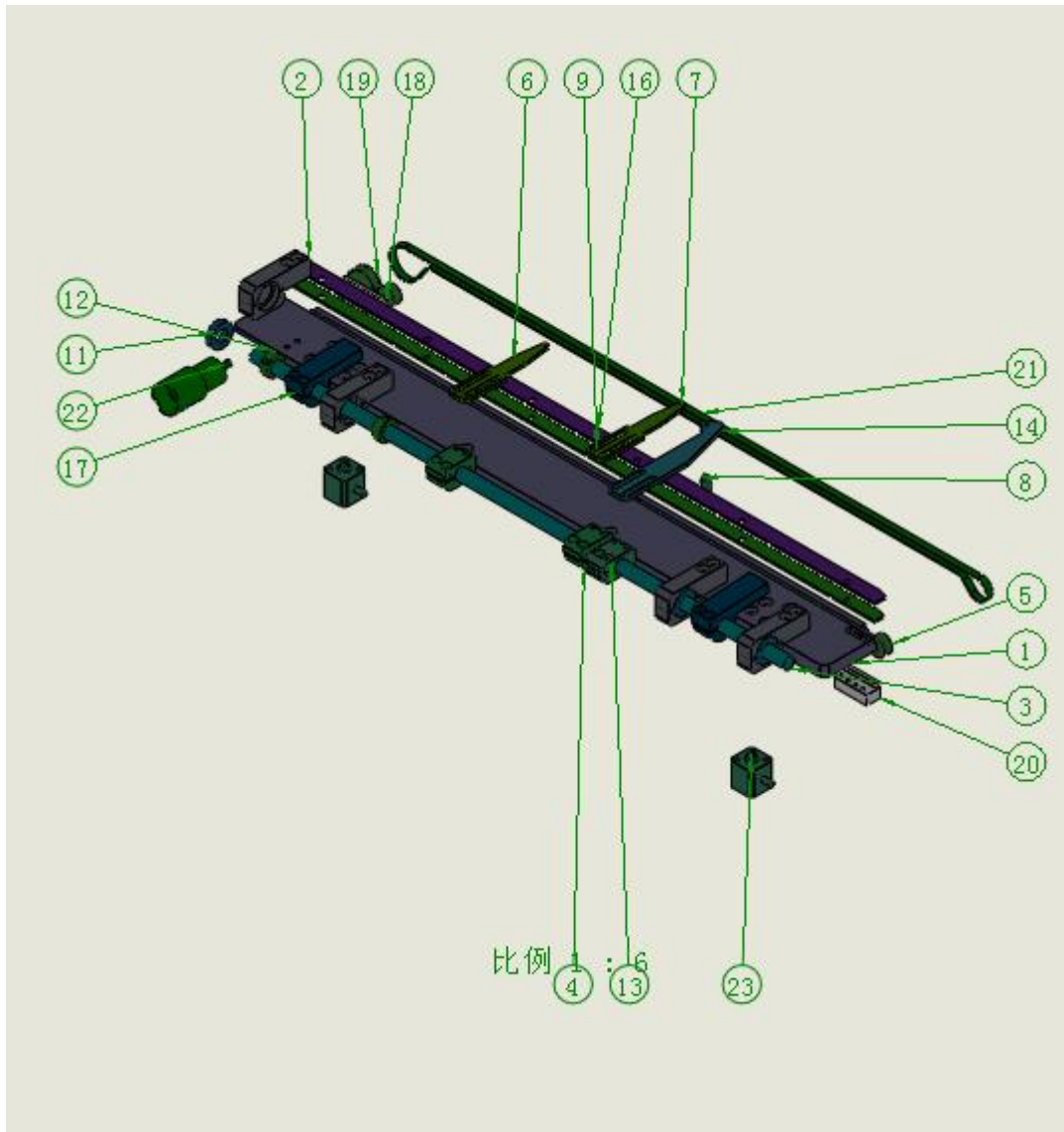
No.	Part No.	Qty
1	Front lead plate A..	1
2	Clamp block B..	4
3	12 optical axis..	1
4	Clamp block 4..	2
5	Small belt pulley..	3
6	Locating plate ..small hole 09	1
7	Locating plate ..09	1
8	Material fixing column.	1
9	Stainless Steel Plate F Upper	1
10	Locating PIN--universal	1
11	Bearing 6901..09	3
12	Clamp ..09	3
13	IST-clamp block AA..09	1

14	IST-adjusting block ..09	1
15	Turntable locating PIN..09	1
16	Stainless Steel Plate A Below.	1
17	Upwarp clamp block ..09	2
18	Belt pinch roller installation board F Front	1
19	Small belt pulley..	1
20	Belt compress installation board F	1
21	Belt 1-6	1
22	TG-47C--FU-16-CKA(24V electric motor）	1
23	Cylinder SDA 12-15.	2

Lifting Platform Left
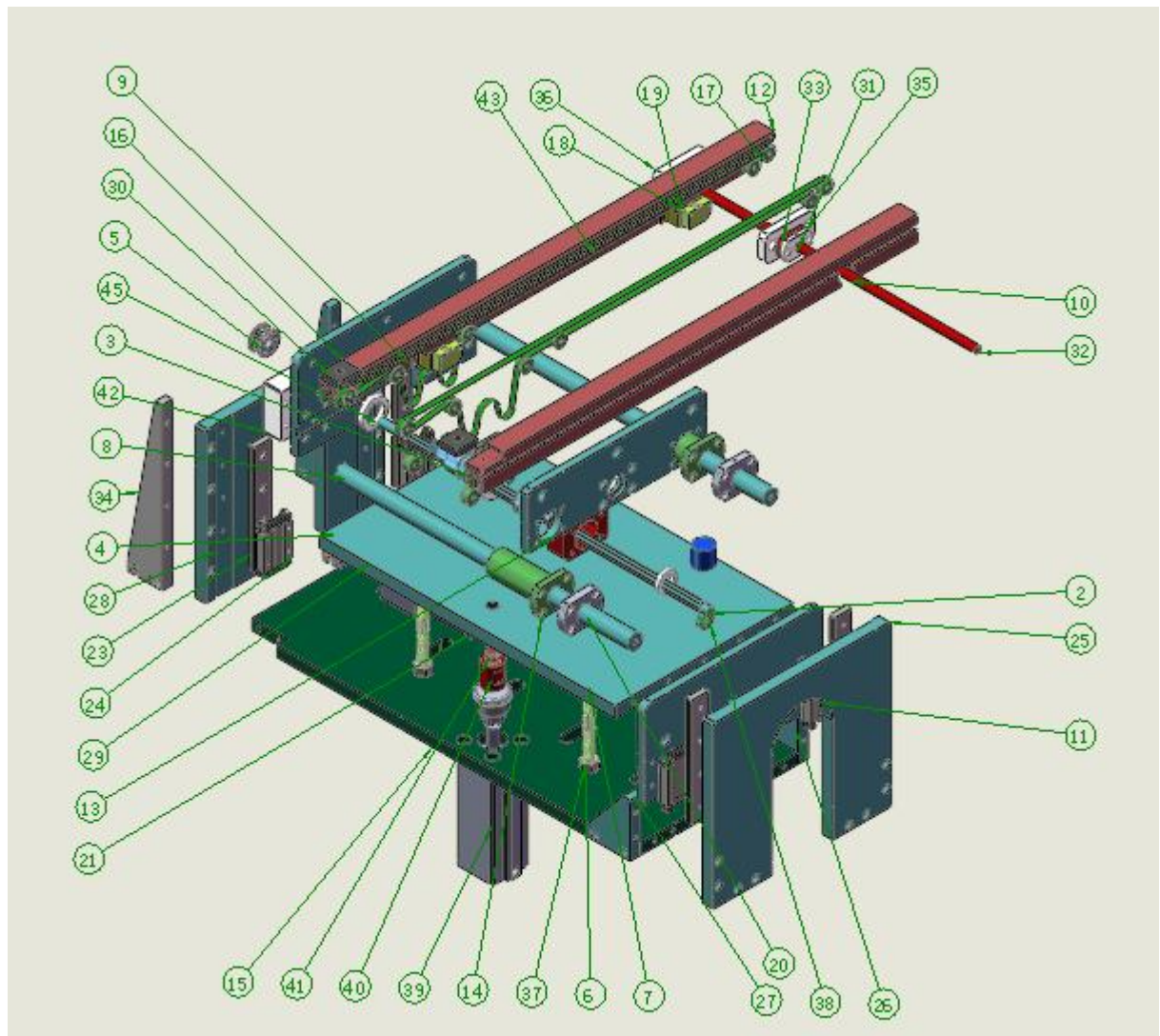
No.	Part No.	Qty
1	IST-motor installation base -05Y.	1
2	Transmission shaft Y.	1
3	Swiveling wheel AY Rear.	2
4	IST synchronizing wheel-01Y Right.	1
5	Synchronizing wheel Y.	1
6	M12 bolt Y.	4
7	Rubber sleeve Y.	4
8	20 optical axis Y.	2
9	Aluminum fixed plate Left Front.	1
10	Aluminum Y Left Front.	1
11	Aluminum fixed plate Y Left Rear.	1
12	Aluminum Y Left Rear.	1
13	Width adjusting plate Left.	1
14	Flange LM20UUY.	2
15	Cylinder installation board 改 Y.	1
16	IST-POM-01Y.	1
17	IST-POM-01Y.	1
18	Small belt pulley Y.	15
19	IST-sensor base 01Y.	2
20	Sensor 02Y.	2
21	IST-flange cushion block -01Y.	2
22	Motor 2GN 3K-TY.	1
23	Belt pulley padding block.	2
24	Rail_SELBWZL14_130Y.	4
25	SELBW14-110Y.	4
26	Sliding rail anchor block Y.	1
27	Track fixed plate reinforcing rib BY.	1
28	Track fixed plate reinforcing rib Y.	1
29	Sliding rail fixed plate BY.	1
30	Track support plate Y Left.	1
31	Track fixed plate reinforcing rib CY.	1
32	Optical axis stop block Y.	1
33	Diameter 10optical axis Y.	1
34	LHFCD10（LMH6-13）Y.	1
35	Track fixed plate reinforcing rib DY.	1
36	Shaft sleeve fixed plate Y.	1
37	Shaft sleeve fixed plate BY.	1

38	GB_FASTENER_NUT_SN AB1XY M12X1.25-N	4
39	Bearing 61800Y.	1
40	Cylinder SDAS40-75-B Right.	1
41	JS40-14-150(0)Y.	1
42	Air cylinder extension bar Y.	1
43	Slider Padding block Y.	2
44	Belt 5-1.	2
45	Bearing 61803 17 26 5	2
46	61805 bearing 25 37 7	2

Lifting Platform Right
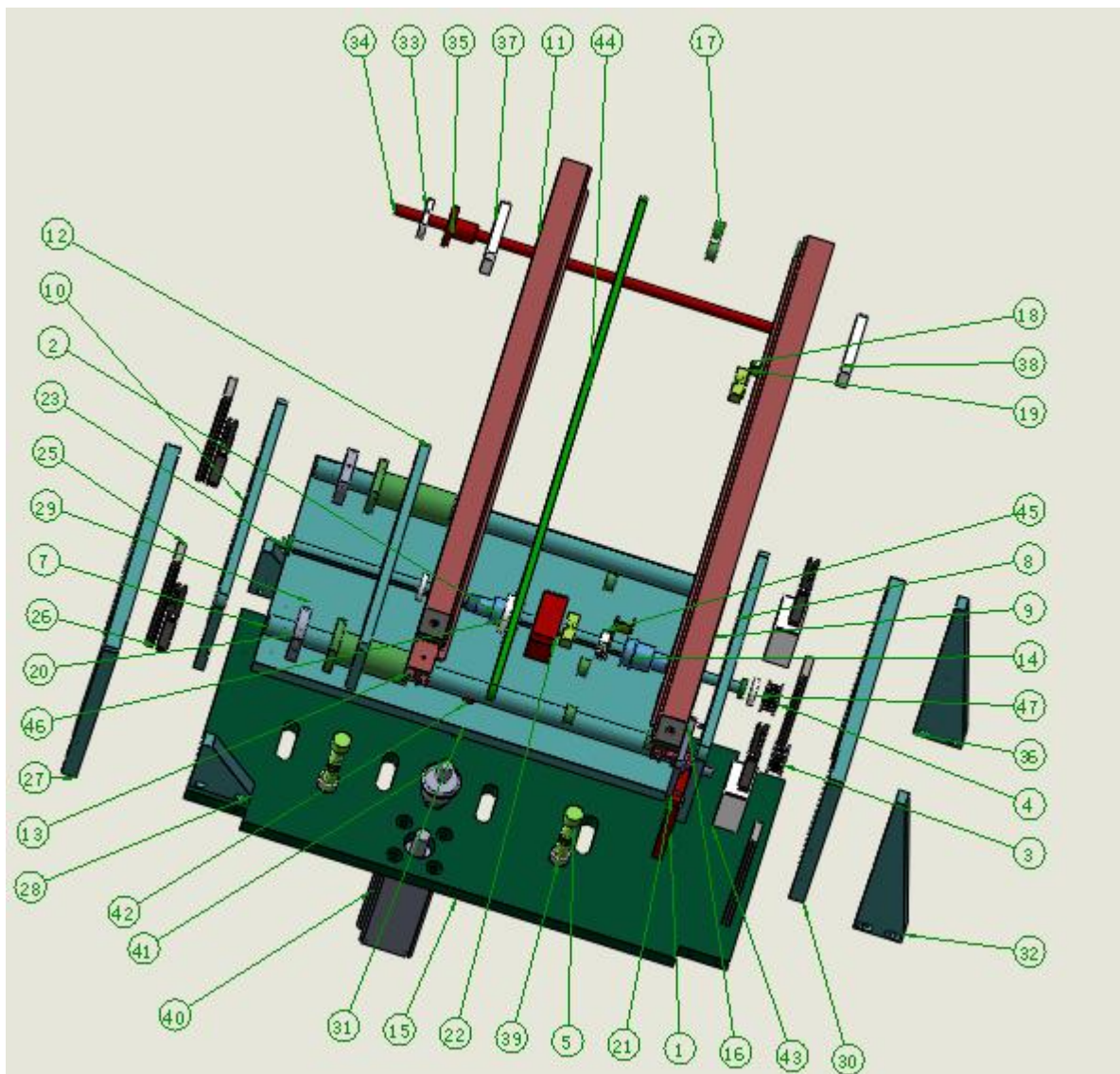
No.	Part No.	Qty
1	IST-motor installation base -05.	1
2	Transmission shaft.	1
3	IST synchronizing wheel-01 Right.	1
4	Synchronizing wheel.	1
5	M12 bolt.	4
6	Rubber sleeve.	4
7	20 optical axis.	2
8	Aluminum fixed plate Left Front.	1
9	Aluminum Left Front.	1
10	Aluminum fixed plate Left Rear.	1
11	Aluminum Left Rear.	1
12	Width adjusting plate Left.	1
13	Flange LM20UU.	2
14	Swiveling wheel A Rear.	2
15	Cylinder installation board.	1
16	IST-POM-01.	1
17	IST-POM-01.	1
18	Small belt pulley.	14
19	IST-sensor base 01.	2
20	Sensor 02.	2
21	IST-flange cushion block -01.	2
22	Motor 2GN 3K-T.	1
23	Belt pulley padding block.	1
24	Bearing 61800.	2
25	Belt pulley padding block B.	1
26	Rail_SELBWZL14_130.	4
27	SELBW14-110.	4
28	Sliding rail anchor block.	1
29	Track fixed plate reinforcing rib B.	1
30	Track fixed plate reinforcing rib.	1
31	Sliding rail fixed plate B.	1
32	Track support plate Left.	1
33	Track fixed plate reinforcing rib C.	1
34	Optical axis stop block.	1
35	Diameter 10optical axis.	1
36	LHFCD10（LMH6-13）.	1

37	Track fixed plate reinforcing rib D.	1
38	Shaft sleeve fixed plate .	1
39	Shaft sleeve fixed plate B.	1
40	GB_FASTENER_NUT_SN AB1XY M12X1.25-N	4
41	Cylinder SDAS40-75-B.	1
42	JS40-14-150(0).	1
43	Air cylinder extension bar.	1
44	Slider Padding block.	2
45	Belt 5-1.	1
46	Diameter 12 clamp	1
47	61805 bearing 25 37 7	2
48	Bearing 61803　17 26 5	2