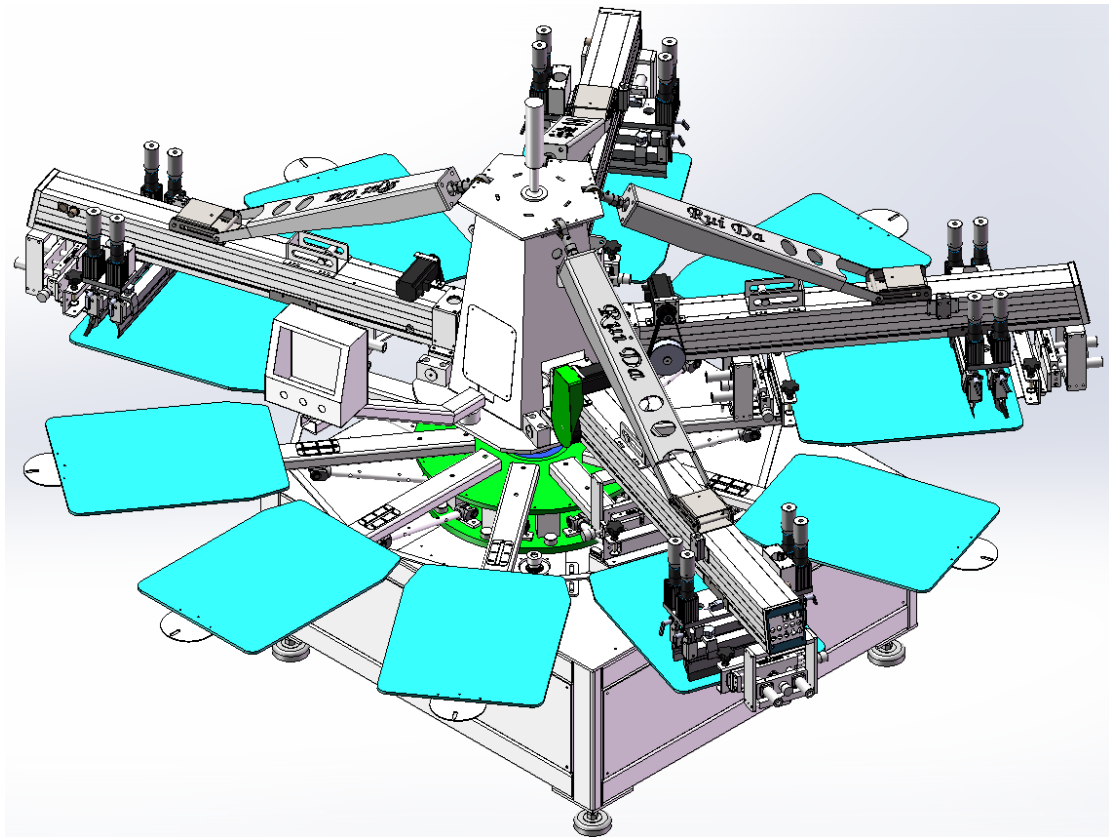


Dongguan Ruida Electromechanical Equipment Co., Ltd

Disc screen printing machine series

Product manual



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Precautions before starting

Precautions before starting

1. Personnel safety: please carefully confirm that no one is repairing the machine, and no one is under or above the machine.
2. Check the power supply: three-phase five-wire 380V AC, and whether the ground wire is properly connected (it is recommended to use 15kVA voltage stabilizer)
3. Check the air source: the air pressure is not less than 0.6Mpa/6kg, and the air source filter device operates normally.
4. Check the table top and printing head beam: the table top shall be free of other sundries, such

as screwdriver, screw, etc.

5. Check the oven: ensure that the height between the oven and the table is more than 2cm.

6. Check the press: ensure that the press plate is separated from the table.

一、 Machine structure

The disc screen printing machine of Dongguan Ruida Electromechanical Equipment Co., Ltd. is composed of four parts: control system, transmission structure, printing head group and trolley group

1. Electrical control system

The electrical control system of disc screen printing machine is mainly composed of large industrial human-machine touch screen, industrial programmable controller, large-scale integrated circuit and highly integrated valve island. The whole electrical control system is connected through high-speed communication network, and integrated circuit communication is

optimized to realize communication isolation and solve communication interference problems.

Highly integrated pneumatic valve island, precise control of solenoid valve action, no redundant wiring, simple and beautiful, convenient maintenance, safe and reliable.

Large-scale industrial human-machine touch screen is built with self-developed human-machine control engineering, and has a humanized interactive experience. It is the industry's first dual-screen control system, which perfectly solves the operating malpractice of large equipment, and the dual-screen control is seamlessly connected.

Powerful external equipment interface can access external equipment in real time, such as press press, flocking machine, digital printer, flash dryer, manipulator, etc.

2. Main drive and transmission system

The main drive is driven by the disk gear driven by the main servo motor gear. Make the trolley run faster and more stable. The main drive servo motor is equipped with high-performance planetary reducer. The accuracy is up to 5 arc minutes.

The main and auxiliary guide rails in the transmission structure are all optical axis guide rails with hardness of 58 to 62 Rockwell, and the diameter tolerance of optical

axis guide rail is controlled within minus 0.04mm. Ensure the accurate movement and positioning of the roller on the guide rail. The trolley connecting rod uses self-correcting structure, and the trolley structure is rigid. When the trolley is running, it will not shake, and the parking position is relatively accurate. The production efficiency has increased by more than 10%, and the defective rate of products has decreased significantly.

3. Printing group

Each printing head is independently driven by a servo motor, and the printing head guide rail uses high-precision low-assembly silent guide rail. It has the advantages of high speed, smooth walking and low noise.

The printing stroke can be adjusted according to the actual needs. The speed and times of scraping and inking can be adjusted. The printing force is controlled by high-precision pressure regulating valve. The printing head beam is lifted and lowered by adjusting the printing head lifting joint, which is simple to use and fast to operate.

4. Trolley set

The trolley set is connected rigidly, and the platen is made of high-strength, industrial-grade leveling aluminum plate, and the flatness can reach within 0.15mm. The aluminum platen has the characteristics of light weight, fast heating and cooling, and is more

optimized for the printing process, which can reduce screen blocking, reduce the number of screen wiping, and improve the output. In addition, adjusting screws are installed under the bedplate to make the level adjustment more accurate. After a long time of use, the bedplate level can be corrected by adjusting screws, and the production accuracy is higher.

二、 Key description of print head control panel



The button name is shown in the figure

1. Scraping Times: displays the scraping times of the current printing head beam. Up to 7.
2. Scraping Speed: Displays the current scraper speed of the print head beam, with a maximum of 7.
3. Laminating Speed: Displays the current inking speed of the print head beam, with a maximum of 7.
4. Frame up/down: control the lifting and lowering of printing head beam in manual mode
5. squeegee print: in the manual mode, the scraper and the ink covering knife operate in one step.
6. Setting: In any mode, set the switch between the number of scraping, the speed of scraping and the speed

of inking

7. - (SUB): In the setting mode, reduce the corresponding parameter to 1

8.+(ADD): In the setting mode, add the corresponding parameter, the minimum is 7

9. Forward rotation (FWD): single-step forward rotation runs for one cycle.

10. REV: single-step reverse operation for one cycle.

11. Auto Run: the machine runs automatically and circularly.

12. Stop: The machine stops after the machine runs for one process.

13. Print head switch (POWER ON/OFF): turn on/off the

function of print head beam

三、 Startup workflow

First check the precautions before starting the machine (Page 3))

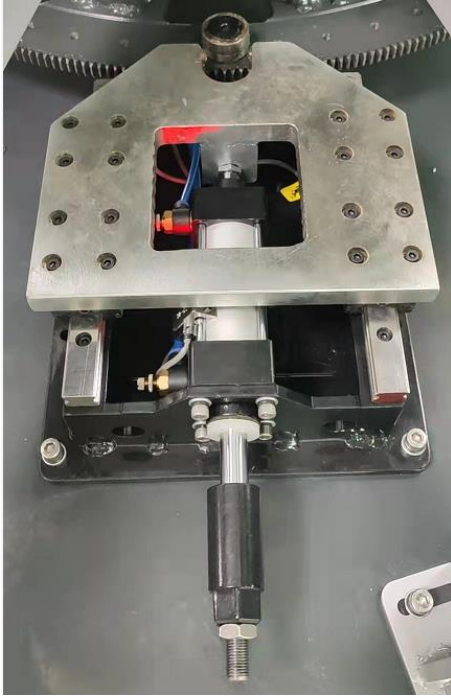
1 Power on



2. Connect the air pipe



3. Check the disc positioning group



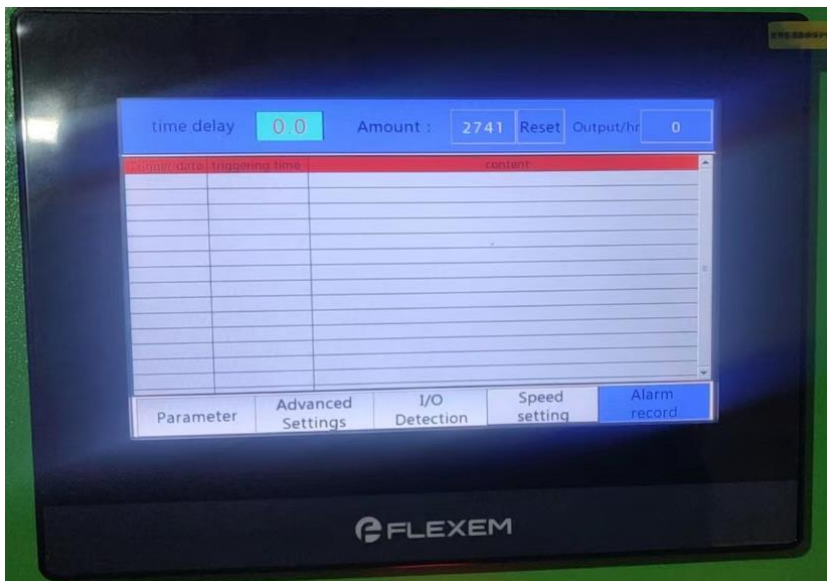
4. After the above check before starting the machine is correct, turn the key switch clockwise to officially start the machine ,



5. Check that the buzzer does not sound and the red light of the tricolor light is flashing



6. Check that there is no alarm record on the control interface



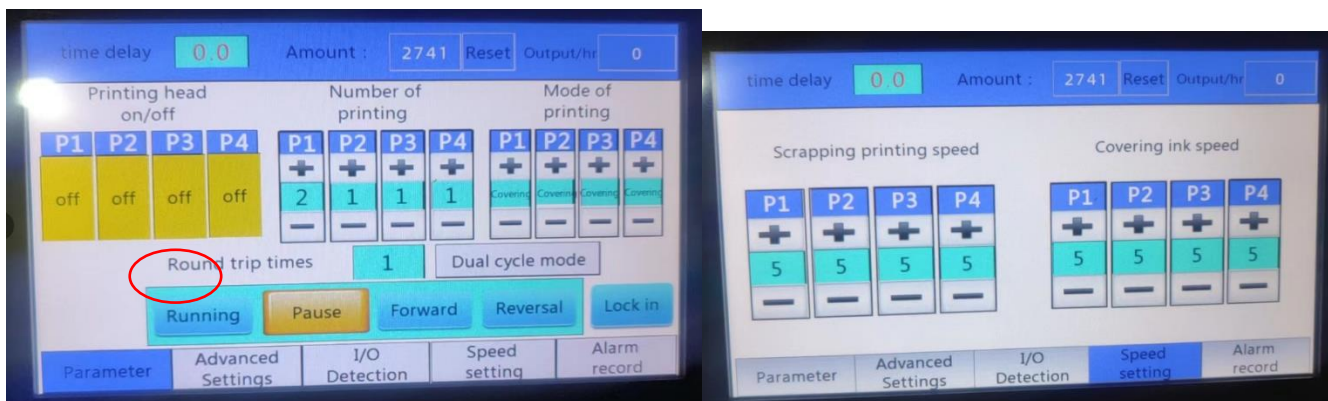
四、 Two operation modes of the machine

A: In automatic mode, the machine is turned on, there is no fault alarm, and all pause keys are not turned on. At this time, the machine is in automatic mode (note: no one is allowed to enter the machine body for maintenance in this mode)

B: Manual mode - the machine is turned on, there is no fault alarm, and one or more print head pause keys are turned on. At this time, the machine is in manual mode. In this mode, the open print head can be manually scraped, and the trolley cannot rotate.

4.1 Automatic mode operation process

A: First set the printing times (default 2) and printing mode (default slurry) in the printing parameter interface on the touch screen, and then set the scraping speed (default 5) and inking speed (default 5) in the speed setting interface (as shown in the figure)



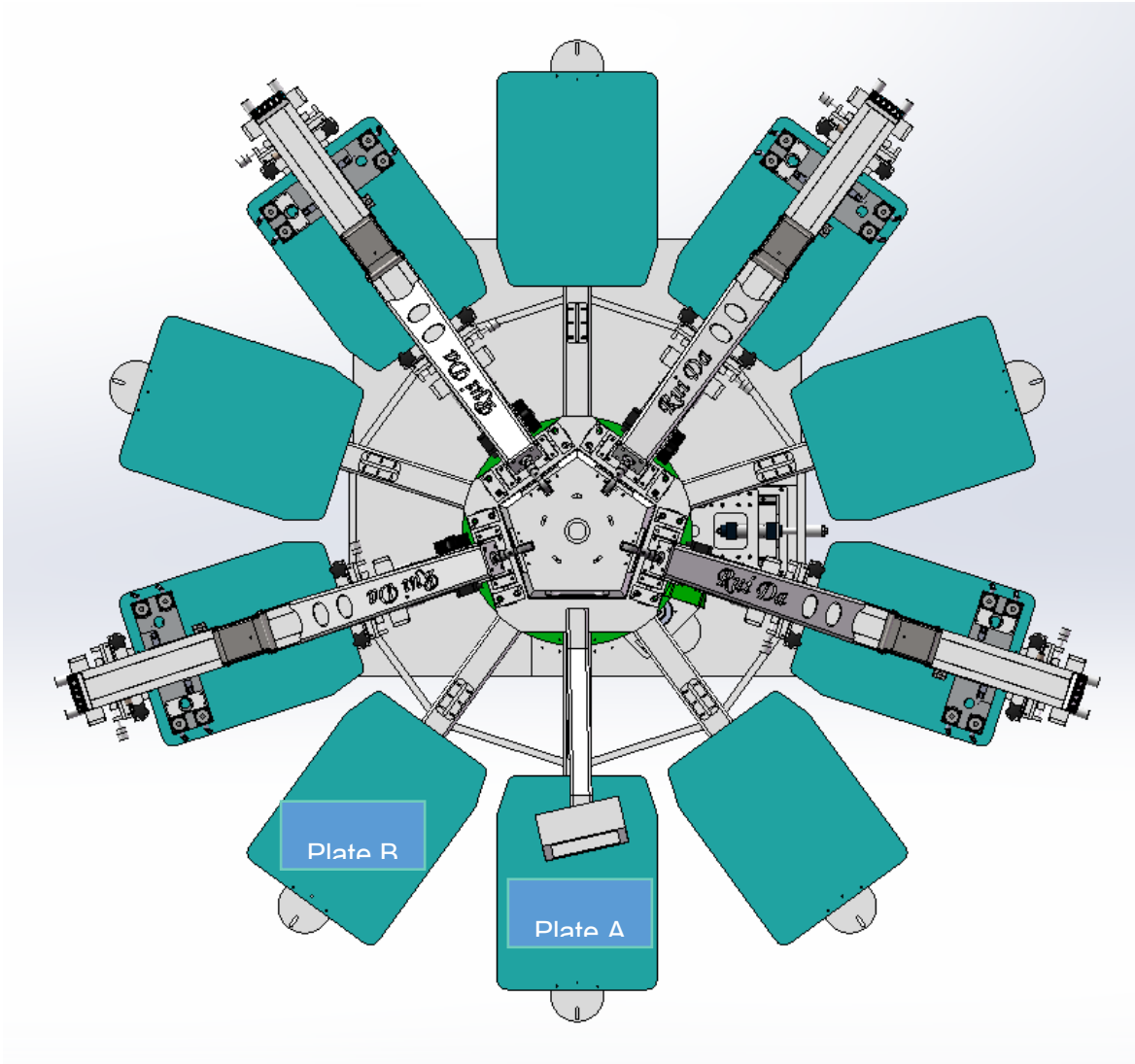


Plate A is the blanking table (referred to as plate A) plate B is the feeding table (plate B). After feeding at plate B, click the printing head switch P1 on the printing parameter interface and then click to run. The machine will automatically turn forward. Step on the foot switch. At this time, plate B moves to the lower part of the P1 printing head beam, and the P1 printing head will normally scratch. Continue to feed at the position of plate B, release the foot switch, and the machine will

automatically turn forward the feeding, so as to push forward, open the P2, P3, P4 printing head switch, When the B plate rotates one circle to the A plate, the product is formed and can be cut.

4.2 The manual mode is to control the single-step operation of a printing head beam from the printing head beam.



B1: Screen frame up and down: process: when in manual mode, click Pause - Print head switch (on) - Screen frame up and down, click the first lower screen frame up and down button, the screen frame will automatically drop, and click the second lower screen frame up and down button, the screen frame will rise.

B2: Scratch: Process: When in manual mode, click Pause - Print head switch (on) - Screen frame up and down (lower position) to scrape, click

the first lower scraping button to move the scraper inward, and click the second lower scraping button to move the scraper outward.

B3: Setting: Click the setting button to set in any state,

One button: decrease variable

Button: add variable+

Click the first setting button: the nixie tube of the scraping times will automatically flash, and the value of the - button will decrease (the minimum is 1), and the value of the + button will increase (the maximum is 7), and so on: click the second setting button, the nixie tube of the scraping speed will automatically flash, click the third inking speed nixie tube will automatically flash, and the fourth time will restore to the original state.

B4: Forward rotation button: When the machine is in manual mode, click the forward rotation button directly, and the machine will automatically rotate one platen forward and then stop waiting.

B5: Reverse button: When the machine is in the manual mode, directly click the reverse button, the machine will automatically reverse rotate a platen and then stop waiting.

5、 Common troubleshooting and solutions

Emergency stop switch fault: there is an emergency stop switch at the touch screen of the equipment. When the switch is pressed, the machine will stop immediately and cannot run;

resolvent:

1. Release the emergency stop switch.
2. Check whether the circuit of the emergency stop switch is normal.

Air pressure fault: When the air pressure is lower than 0.5Kpa, the printing effect of the machine will be affected, so the fault alarm will appear at this time.

resolvent:

1. Check whether the air compressor works normally.
2. Check whether the air source triplet is damaged.

Frame up/down timeout: the frame is not up/down in place in time.

resolvent:

1. Check whether the net frame lifting cylinder works normally.
2. Check whether the cylinder magnetic switch (sensor) works normally.

3. Check whether the corresponding PLC points work normally.

Positioning fault: positioning cylinder is not locked/loosened in place in time. resolvent:

1. Check whether the positioning cylinder works normally.

2. Check whether the cylinder magnetic switch (sensor) works normally.

3. Check whether the corresponding PLC points work normally.

Communication failure of printing head board: there is a problem in the communication between printing head control panel and PLC. resolvent:

1. Check the signal line. If there is no problem, replace the control panel.

Server fault: The servo driver/motor is faulty. Solution: check the fault code on the corresponding servo drive, and refer to the manual to solve the PLC communication failure: the communication between PLCs fails.

resolvent:

1. Check whether the communication line on the corresponding PLC is normal+

2. Check whether the corresponding PLC works normally.