PRECISETOOL

INSTRUCTION

NAME: Air Tightness Test Equipment

MODEL: JRQM-02

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GENERAL INFORMATION

This is an air tightness test equipment used for electrical connectors. The equipment contains four stations and each operates independently. It can be applied to connectors with different sizes and shapes by changing the sealing rubber and the mold.

STRUCTURE AND PRINCIPLE

1 Main Performance and Structural Characteristics

1.1 Operation Control Mode: Four stations. PLC control realizes independently operation of each station;

1.2 Air Source Control Mode: Use SMC precision pressure regulator. Adjustable pressure detection. Adjustment range: 0.2 ~ 0.6MPa. Set the pressure holding time according to the process requirements. Time adjustment range: 0 ~ 60min;

1.3 Human-computer Interaction Mode: Touch-type display which can directly set parameters and time, easy to operate. It has counting function that can directly observe the timing of each station;

1.4 Safeguard Mode: Independent station acrylic cover, alarm emergency stop function.

2 Technical Parameters

2.1 Applicable Connector Specification Range: connector interface outer diameter 40MM and below

2.2 Applicable Connector Test Pressure range: 0.2-0.6MPa

2.3 Power Supply: 220V 50Hz

2.4 Air Source: more than 0.7MPa to ensure stable air source output

2.5 Equipment Power: about 200W

2.6 Ambient Temperature: -10 ° C ~ 40 ° C ; Relative humidity: 20% ~ 80%

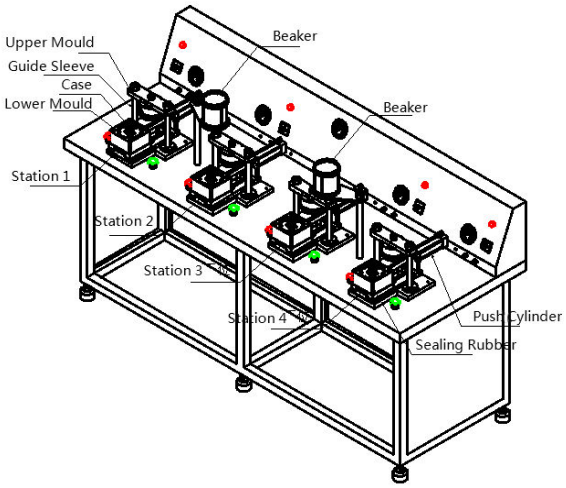
2.7 Noise: less than 65 decibels

3 Mechanical Structure Diagram

The functions of each key structure of the equipment are as follows:

A. Lifting Structure: Complete the pressing function of the mold, through the cylinder control

B. Positioning Structure: Positioning the airtight tooling through the positioning plate to ensure the pressing position



4 Working Principle

4.1 The equipment work process is:

Start - plate press down - delay after in position - ventilation - ventilation delay - gas break - gas break delay - plate rise - stop after in place - complete

4.2 Working Principle and Operation Process:

In the initial state, the plate is in the open position, and the intake hole is in the closed state.A. Manually put the connector into the positioning plate. Press the manual start button, push the cylinder to move down, press the plate down, reach the specified position, press the upper mold of the connector, and the sensor switch gets the signal (position control)

B. The PLC receives the model feedback, and the in-position delay is 0.5s (the purpose is to balance the cylinder pressure). After the delay is over, the cavity of the mold is ventilate(manual pressure adjustment), and the presence or absence of air bubbles in the beaker is observed. The ventilation delay begins and gas is cut after N minutes (Time adjustable). The gas-breaking delay starts. After a delay of 0.5 s, the plate rises and stops when it is in place.

After the action is completed, the connector can be removed.

5 Main Components

5.1 Equipment Layout: The equipment system layout is reasonable, overall coordination, and easy to operate and maintain. The bottom of equipment is equipped with casters and damping pads. The circuit and gas pipeline are located in the lower part of the machine, and are arranged neatly and fixedly. For some exposed circuits and gas pipelines, positioning and concealing treatment should be carried out to keep the machine neat and convenient to operate.

5.2 Equipment Structure: open structure, sheet metal spray, stainless steel countertop.

5.3 Equipment Safety: The equipment has reliable grounding lines, and it has safe and reasonable safety measures such as leakage prevention and mechanical damage prevention.

5.4 Equipment Size (approx.): 2000mm × 750mm × 1034mm (length × width × height)

Table 2 Main Components Selection

NO.	COMPONENT NANE	MODEL/SPECFICATIONS	QUANTITY	PLACE OF ORIGIN	REMARKS
1	Linear Guides		8		
2	Thin Cylinder	SDA80*50-S	4		AirTAC
3	Standard Cylinder	SC32*150-S	4		AirTAC
4	Pressure Regulating Valve	AR2000JN1	4		AirTAC
5	Barometer	GF-60 PT1/4	4		AirTAC
6	PLC		1		Xinjie

OPERATION AND INSTALLATION INSTRUCTION

1 Operation

Firstly, turn on the air supply, and then turn on the power supply, and confirm that the equipment can work normally. The equipment is divided into four independent stations. Use one of the stations to open the station power switch. Manually load and gently place the connector into the rubber mold. There must be no inclination, no position, etc. After confirming that it is safe, press the green start button to complete all actions at once. Confirm the product removal each time you load. In case of accident, press the emergency stop button to stop the machine.

2 Operation Interface

2.1 Main Interface

a Debug: go to the next interface, manually test interface

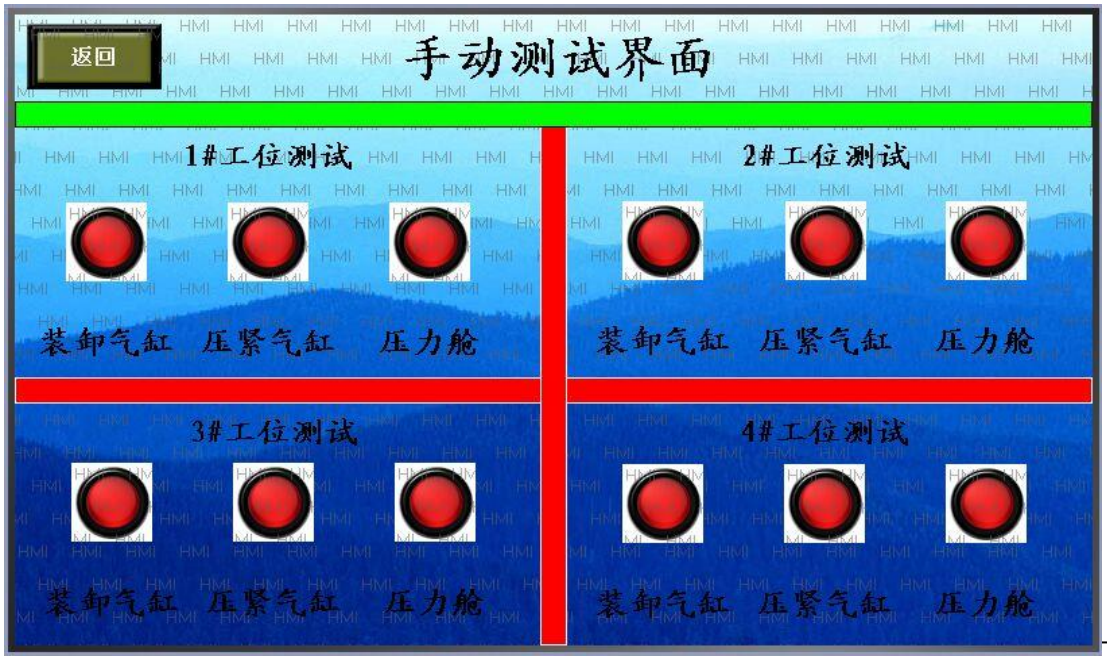
b Run: enter the next interface, running settings interface

c Settings: enter the next interface, password input interface

2.2 Manual Test Interface

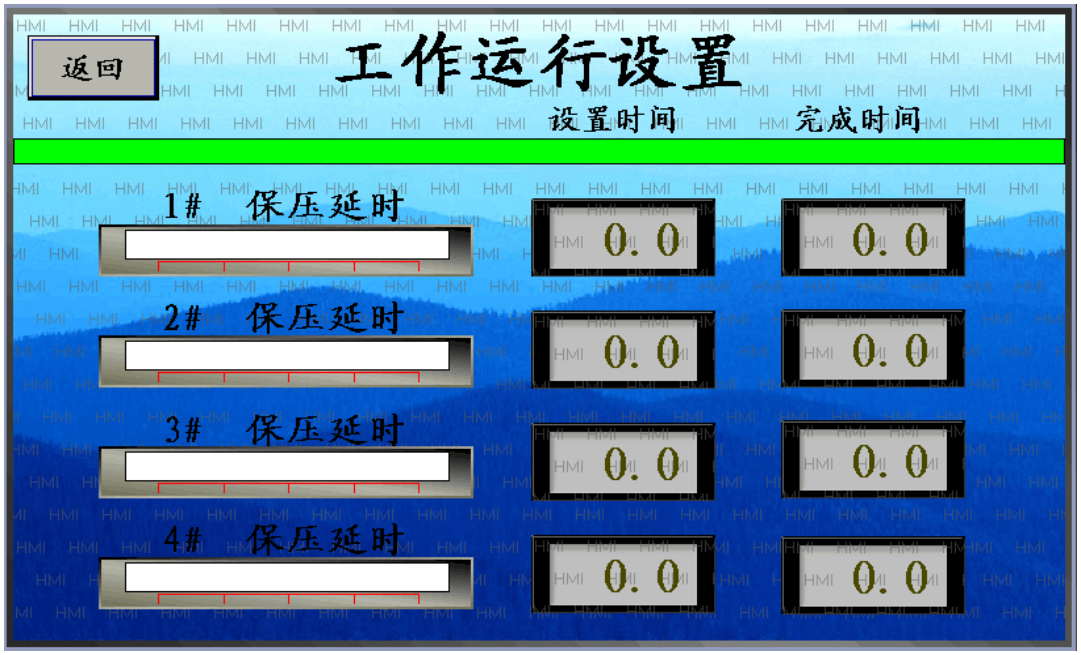
The debugging operation interface is divided into 4 stations, each station is independently controlled, and each action can be independently controlled.

Note: When the press cylinder is pressed, do not operate or load/unload the cylinder to avoid equipment damage and safety hazards.



2.3 Running Settings

The equipment needs to be adjusted to this interface when running, and the air ventilation time of each station can be set.

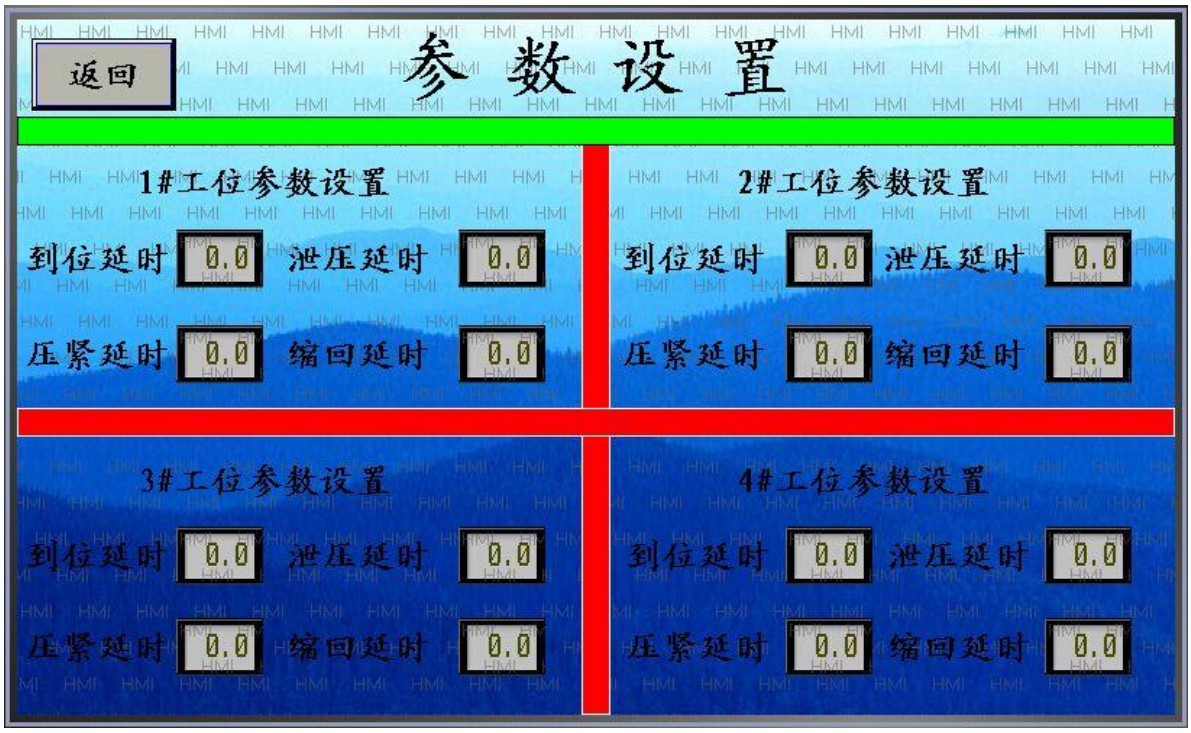


2.4 Enter the Settings Interface

Password of setting interface: 170808

2.5 Parameter Setting Interface

Delay setting of the action completion time of each cylinder of each station



3 Installation

Position the equipment in a fixed position and turn on the air supply and power.
Guaranteed gas source 0.65-0.8Mp, power supply 220V. Ensure reliable grounding.

4 Notes

1) Regular periodic rail lubrication and overhaul
2) Non-professionals are strictly prohibited to open the electrical cabinet
3) It is strictly forbidden to open the protective cover and remove it
4) Take the emergency stop button or cut off the air source and power supply when changing the mold to avoid pinching and ensure safe operation

ATTACHMENT

1 Supporting Tools
2 Technical Drawings