



Shenzhen Southern Machinery Solder Paste test report

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1、 Equipment introduction



S-D5

Technical Features:

- Positioning accuracy: $\pm 30\mu\text{m}@4\sigma$;
- Repeatability: $\pm 15\mu\text{m}@4\sigma$;
- Support range: 350*550*40mm
- Piezo valve non-contact jet dispensing/screw valve
- High speed, jetting speed up to 1000 dots/second, minimum dispensing volume 2nL
- Small size, occupying an area of only 1m²
- 3C industry applications such as mobile phones, smart wearables, and PCB boards

2、 Introduction of the valve body-- needle valve



GZ50

Technical characteristics of high-precision dispensing machine to deal with viscosity changes

- Control mode: timing mode/manual control mode
- Discharge pressure setting range: 0.030 ~ 0.500MPa
- Dispensing time setting range: 0.001 ~ 9999.999s
- Vacuum pressure setting range: 0 ~ -0.020MPa
- The smallest point diameter of spot tin is 0.15mm
- Main functions: automatic compensation of liquid level difference, automatic prevention of liquid leakage, automatic remaining volume warning, vacuum pressure correction

2、 Valve Body Introduction--Holding Tin Piezoelectric Valve



In response to the dispensing application of solder paste in SMT placement technology, Nanfang Machinery has developed a high-precision, cost-effective, and stable performance piezoelectric valve for solder paste.

- Technical Features:
- Injection frequency: max 500Hz (can be set)
- Minimum spot diameter: 0.22 mm (6#)
- Dispensing accuracy: $\pm 5\%$
- Applicable solder paste range: 5#/6#/7#/8#--- solder paste powder
- Parts can be replaced online
- Seal maintenance cycle: 7-15 days

2、 Valve Body Introduction--Screw Valve



SAC-100

Southern Machinery Screw Valve:

SAC-100 Features: high control precision, fast response to glue output, suitable for contact dispensing process with tight glue output.

- Maximum speed: 800r/min
- Minimum glue output: 0.2ml
- Minimum point diameter: 0.15mm
- Glue volume accuracy: $M \pm 5\%$
- Runner quick release structure

Seal maintenance cycle: about 30 days

It has the function of reverse rotation and suction, and is widely used in solder paste, Medium and high viscosity fluids such as red glue, silver paste, thermal conductive silicone grease, etc.

3、 Application Scenario

Application Scenario	application glue type	
Precision instruments, electronic equipment precision glue control	Conductive silver paste	✓
Can be used for surface mount of PCB/FPC in SMT industry	Washable Flux Paste	✓
Tin filling of solder joints of electronic components such as IC modules	Die Bonding Solder Paste	✓
Lens bonding in the LED industry	Laser Solder Paste	✓
Component Repair	Stainless steel solder paste	✓
Spray glue in the gap of special-shaped products	Other special solder paste/silver paste for dispensing	✓

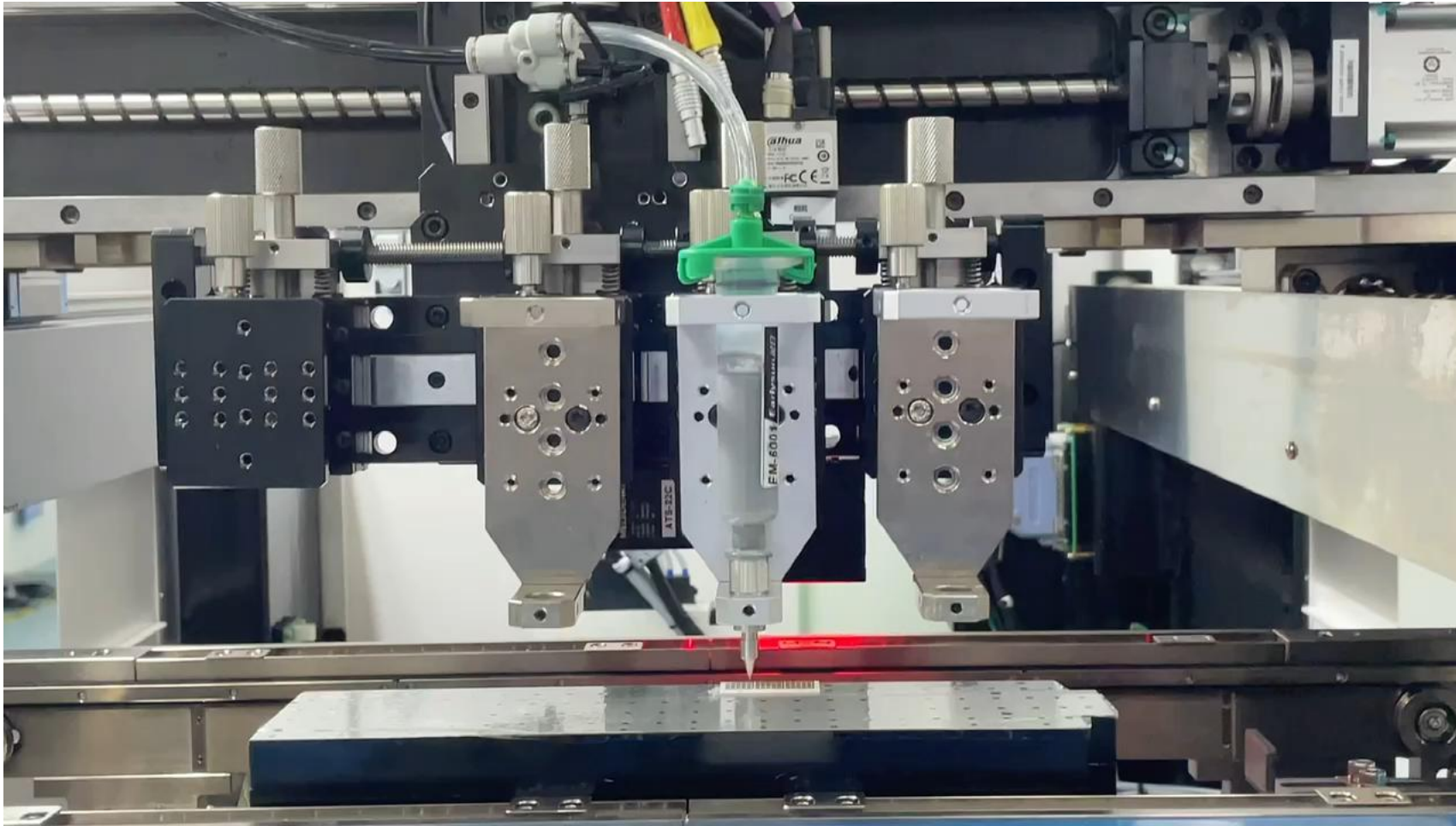
4、 Comparison of Valve Types

Point diameter requirements	Solder Paste Type	valve type	applicability	Advantages and Disadvantages
0.15-0.3mm	5#、 6#、 7#Power	GZ50 needle valve	High-value products with high tinning requirements	Moderate speed, good solder paste forming, small dot diameter, medium cost
0.2-0.5mm	6#、 7#、 8# Power	Piezoelectric tin spray valve	High requirements on point diameter and wire diameter, and fast speed	Fast speed, small spot diameter, high cost of use
>0.5mm	4#、 5# Power	screw valve	Common applications that do not require high tin points	Slow speed, poor molding, low cost of use, and simple maintenance

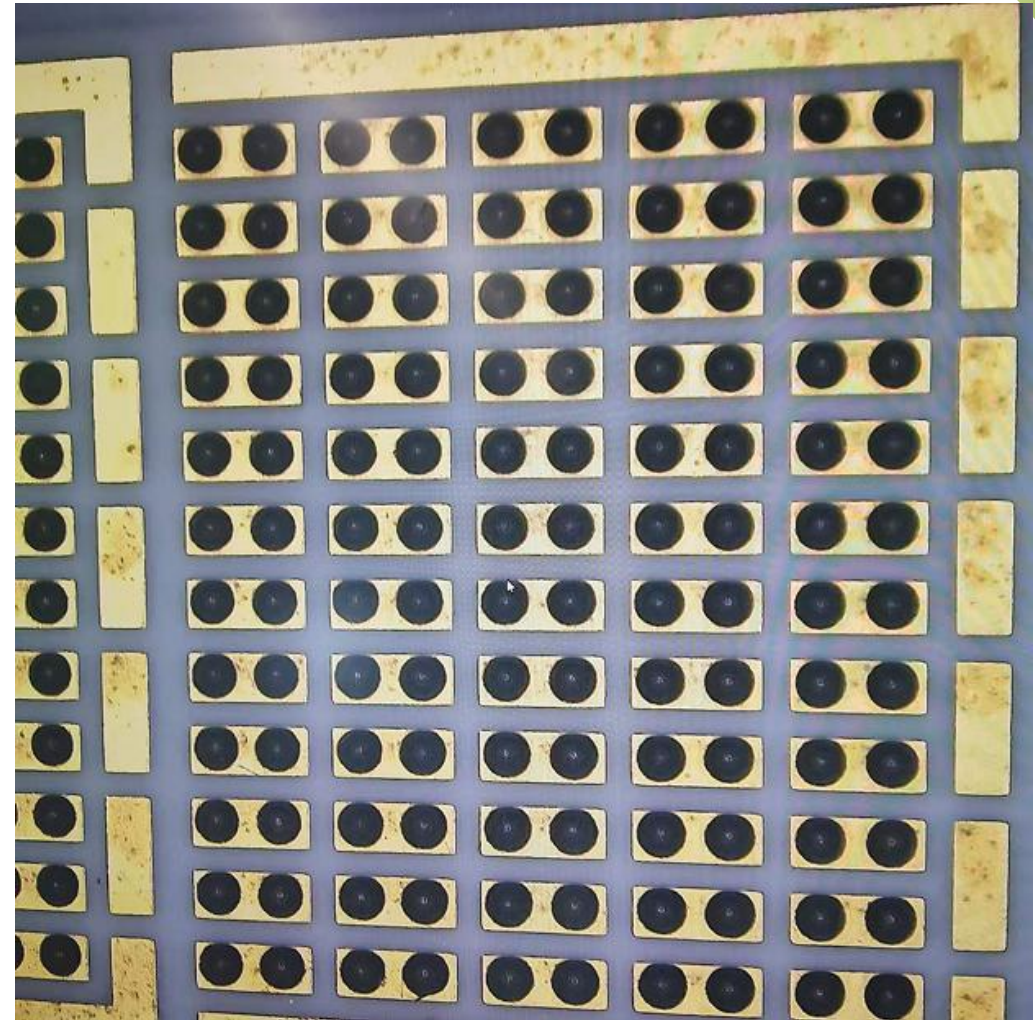
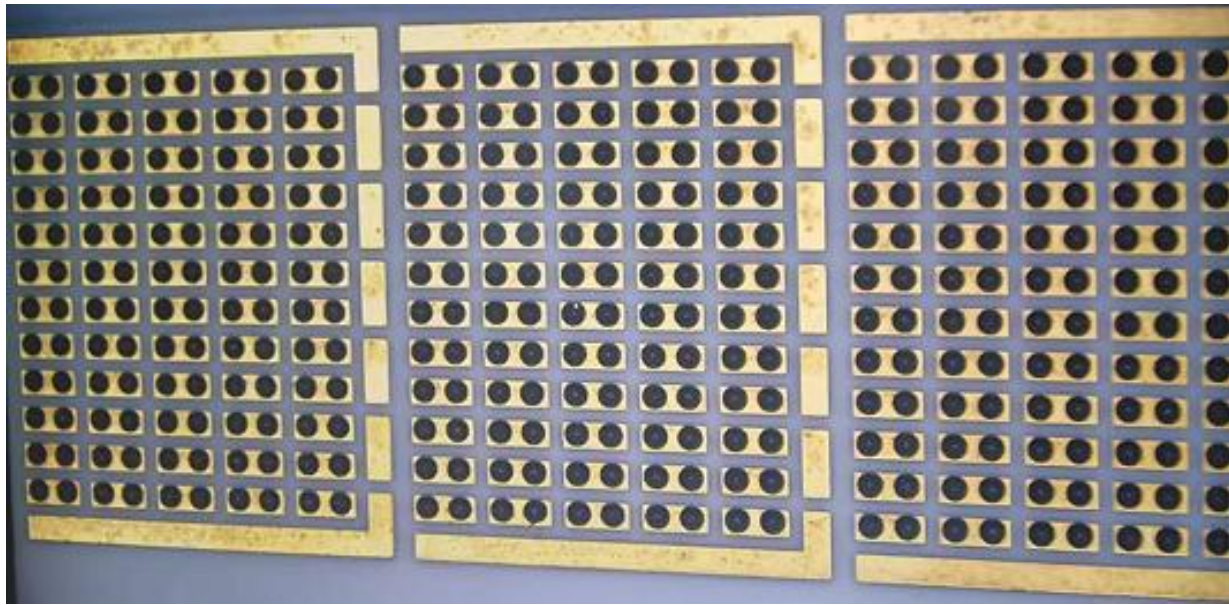
5、 Test data

	Test Methods	Needle needle 0.15mm	Piezo valve nozzle 0.1mm striker 1.0mm	Screw valve needle TE20G
5# powder	Point: The minimum dot diameter is 10*10 dot matrix, stable tin production	N/A	N/A	0.50mm-0.55mm
	Square wave: minimum diameter, height 6mm, width 3mm square wave	N/A	N/A	0.51mm-0.55mm
	Keel type: minimum wire diameter, segment length 15mm, interval 2mm*10	N/A	N/A	0.53mm-0.55mm
6# powder	Dot: minimum dot diameter 10*10 dot matrix, stable tin	0.24mm	0.22mm-0.25mm	N/A
	Square wave: Minimum wire diameter, 6mm high, 3mm wide square wave	N/A	0.45mm-0.52mm	N/A
	Keel type: minimum wire diameter, segment length 15mm, interval 2mm*10	N/A	0.37mm-0.39mm	N/A
7# powder	Dot: minimum dot diameter 10*10 dot matrix, stable tin	0.2mm	0.20mm-0.23mm	N/A
	Square wave: Minimum wire diameter, 6mm high, 3mm wide square wave	N/A	0.41mm-0.50mm	N/A
	Keel type: minimum wire diameter, segment length 15mm, interval 2mm*10	N/A	0.35mm-0.38mm	N/A

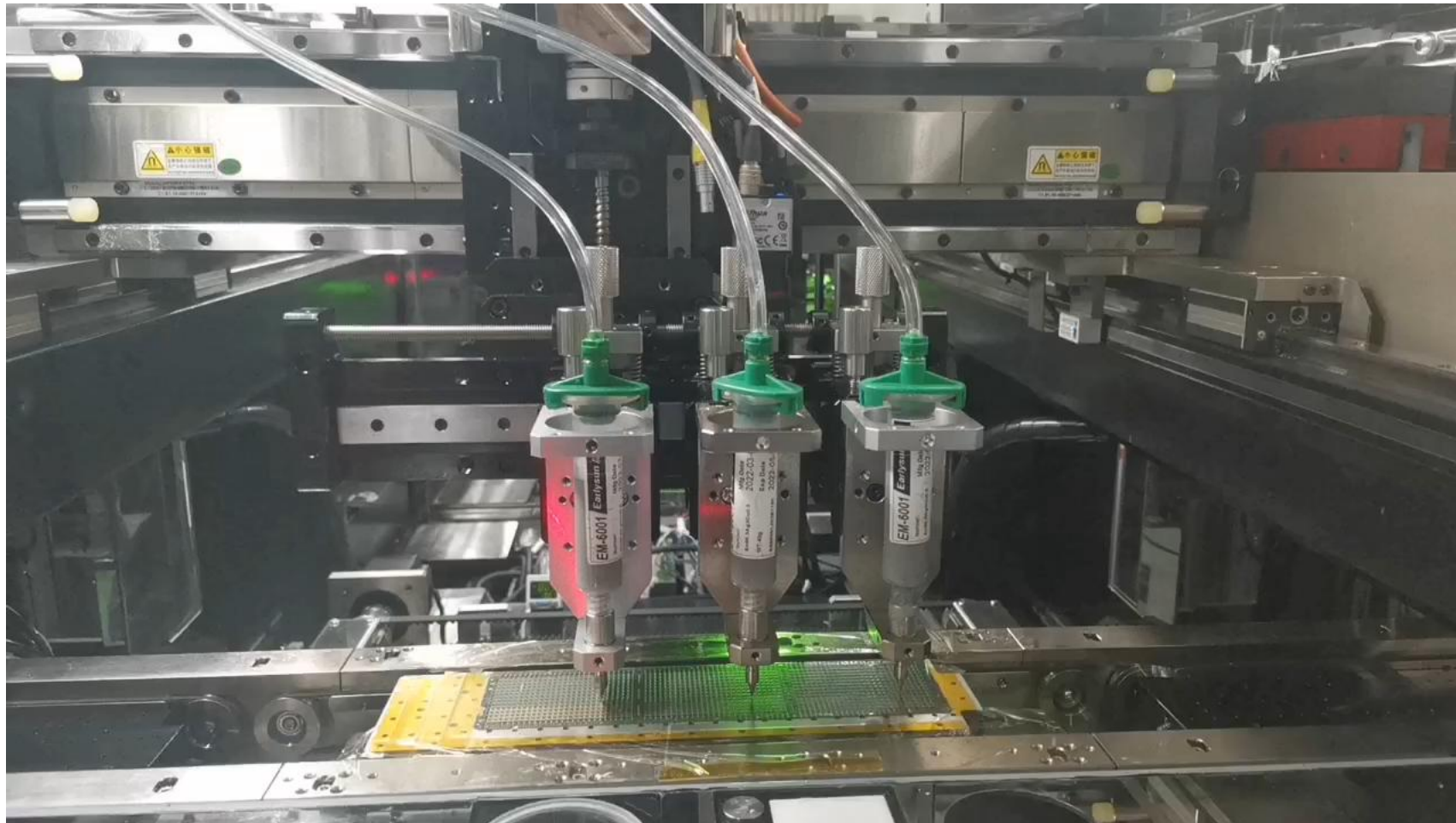
6. 0.2mm point diameter test video of 7# powder 6.1



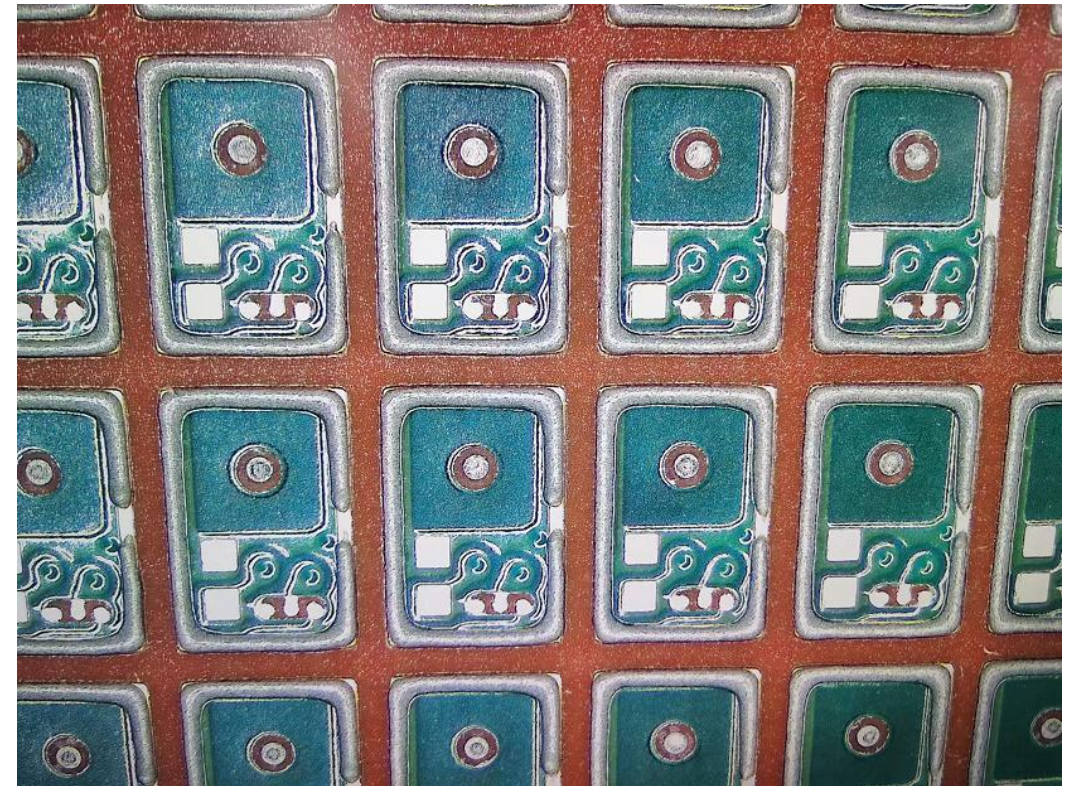
6、 Effect picture 6.2



6. 6# powder 0.2mm wire diameter test video 6.3

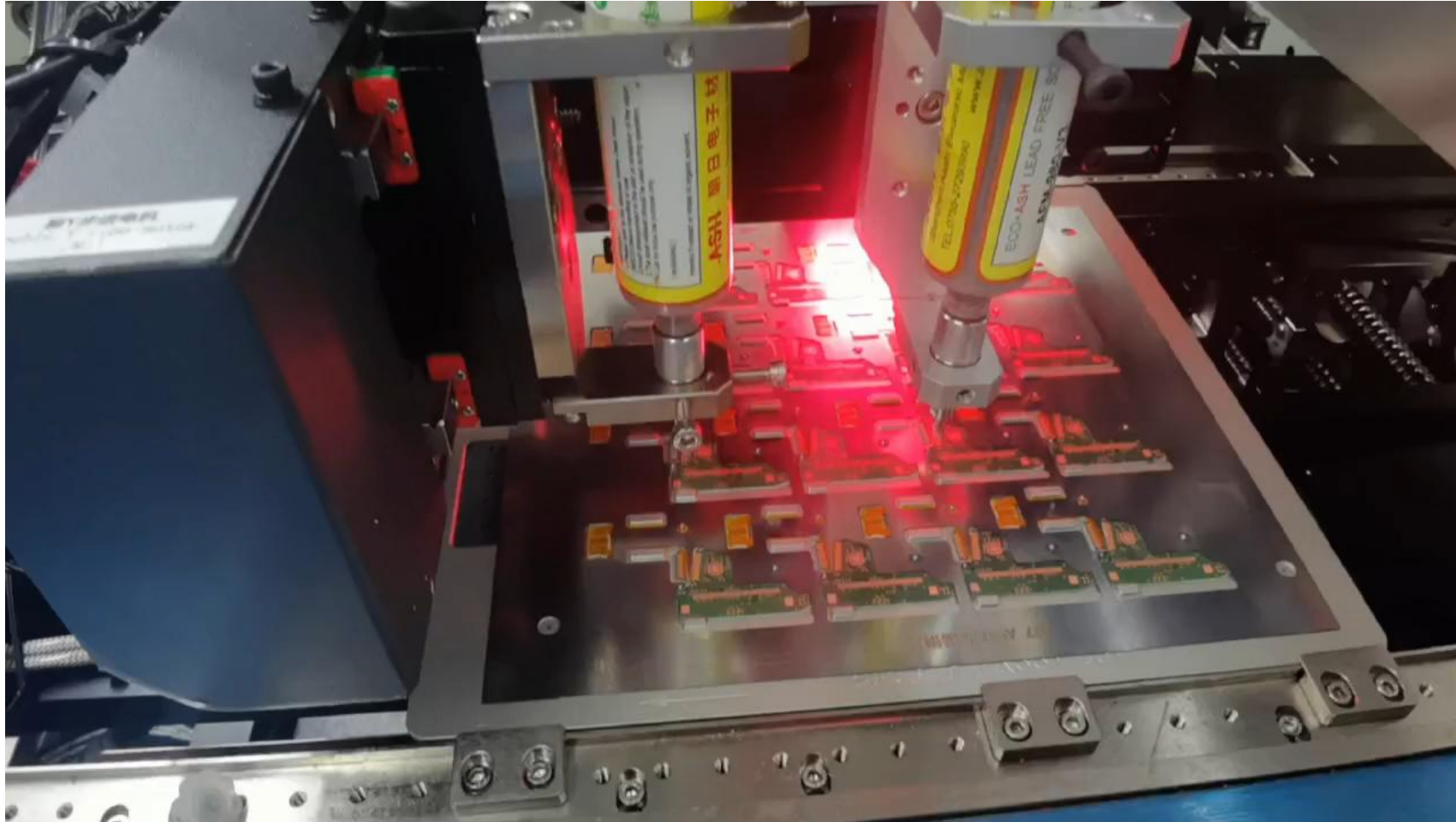


6、 Effect picture 6.4

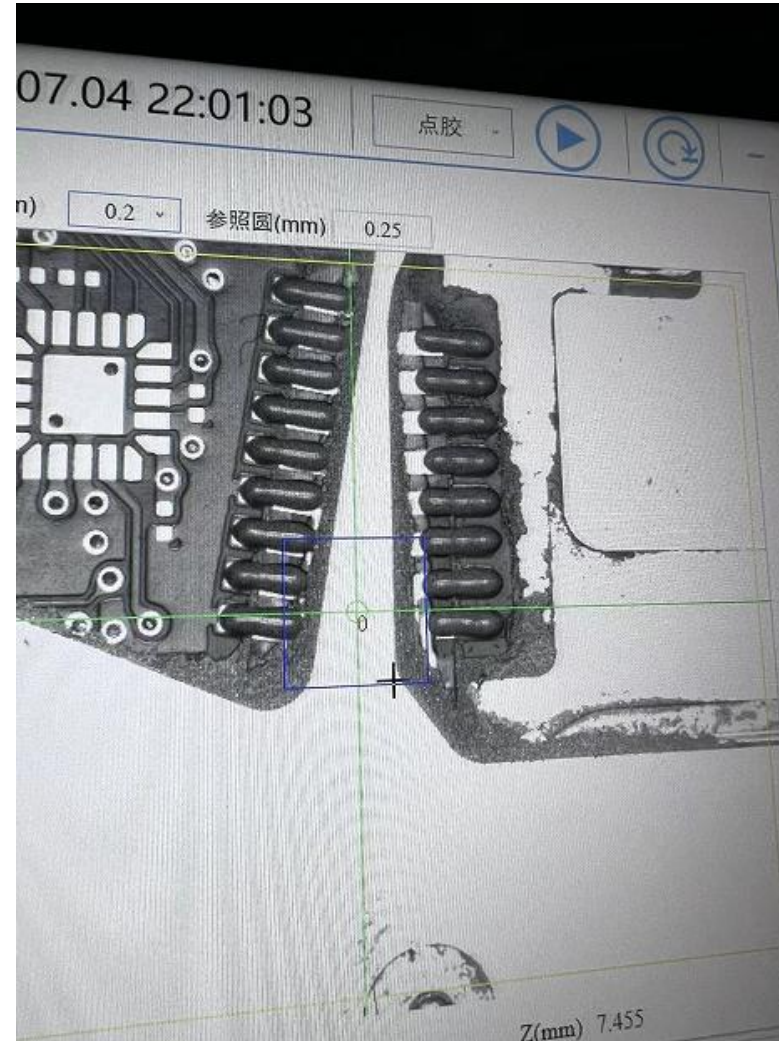


0.2mm Wire diameter

6. 5# powder 0.3mm wire diameter test video 6.5



6、Effect picture 6.6



0.3mm Wire diameter

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- **7x24 Worldwide Support**



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