

# LW~~Fix~~ 深圳市励维科技有限公司

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## 一. LV-10 BGA rework station overview;



## 二. LV-10 主要技术特点

- 1 Integrated hot air nozzle and placement head design featuring automatic placement, automatic soldering, and automatic disassembly functions.
- 2 Utilizing a Panasonic PLC as the core control unit, integrated with Panasonic servo motors and Leisai stepper motor control, ensures more stable and reliable equipment operation.
- 3 Split-type alignment lens prevents thermal expansion and contraction issues caused by prolonged exposure to infrared preheating zones during equipment heating.
- 4 The gantry structure, in conjunction with the lead screw and servo motor, enables precise, efficient, and stable rapid and slow movements of the upper and lower heating heads in all directions.
- 5 CNC automatic operation mode: A single device startup can remove up to 6 faulty chips, ensuring high efficiency and speed.
- 6 Top-mounted hot air rework system with oversized air outlet, capable of handling 99.99% of chip desoldering and rework applications on the market.
- 7 The bottom heating head utilizes gas heating, employing either nitrogen or compressed air as the gas source to heat the PCB motherboard, thereby significantly improving chip soldering yield rates.
- 8 The infrared preheating zone utilizes imported carbon fiber heating tubes for rapid temperature rise, enabling swift heating around the PCB motherboard. This reduces temperature differentials between the BGA and surrounding areas, minimizing PCB deformation and improving soldering yield. Preheating zone dimensions: 600 × 510 mm effective area.
- 9 The lower heating head features motorized vertical adjustment with configurable parameters, which are saved alongside the temperature profile. The second heating zone includes PCB support screws to prevent PCB warping during heating, thereby avoiding soldering defects.
- 10 The upper and lower heating zones achieve synchronized automatic movement, enabling automatic positioning to any location within the bottom infrared preheating zone. This allows the PCB to remain stationary on the fixture while the upper and lower heating heads move as a single unit to the target chip on the PCB, ensuring comprehensive preheating of the entire PCB motherboard.
- 11 Dual joystick control, alignment lens, and upper/lower heating platforms ensure positioning accuracy.
- 12 The R-axis of the equipment is adjusted using a miniature precision motor, offering greater convenience and speed.
- 13 The nozzle automatically detects pick-up and placement height, with pressure controllable within a 10-gram range. It features zero-pressure pick-up and placement capabilities, specifically designed for smaller chips.
- 14 The color optical vision system features manual X and Y axis movement, with dichroic dual-color, magnification, and fine-tuning capabilities. It includes a chromatic aberration detection device, auto-focus functionality, and software operation, supporting repair of BGAs up to 90 x 90 mm in size.

15 Multiple sizes of alloy hot air nozzles, easy to replace, with 360° rotation for precise positioning.

16 Equipped with 5 temperature measurement ports, featuring multi-point real-time temperature monitoring and analysis capabilities.

17 This machine features a 10-inch high-definition industrial touchscreen with an oversized true-color interface for simple and convenient operation.

18 Equipped with a 19-inch high-definition industrial display, enabling faster and more precise chip alignment.

19 The material loading and unloading device is equipped with material detection functionality.

### 三. LV-10 BGA rework station Specifications:

Total Power	8000W
Upper heating power	1200W
Bottom heating power	1200W
IR Heating Power	4800W (3200W controlled)
Power Supply	Two Phases 220V、50/60Hz
Positioning Method	V-shaped slots secure the PCB in place, laser positioning lights enable rapid alignment, and the joystick controls the motor for free movement along the X and Y axes.
Number of drive motors and control zones	7 axes (X/Y-axis movement of the side-control device heating head, X/Y-axis movement of the alignment lens, Z1 electric lift of the second temperature zone heating head, Z-axis vertical movement of the upper heating head, and R-axis electric rotation).
Temperature Control	High-precision K-type thermocouple (Ksensor) with closed-loop control, featuring independent upper and lower temperature measurement. Temperature control accuracy achieves $\pm 1^{\circ}\text{C}$ .
Electrical Material Selection	Touchscreen + Dalian University of Technology temperature control module + Panasonic PLC + Panasonic servo + Panasonic photoelectric sensor + Leisai stepper driver, featuring top-tier brands from both domestic and international markets.
Max PCB size	650*610mm (Effective coverage area, no blind spots for touch-ups)
Min PCB size	10*10mm
Number of temperature measurement interfaces	5pcs

Chip scaling range	2-50times
PCB thickness	0.5~8mm
Applicable chips	0.8*0.8~90*90mm
Minimum Chip Pitch	0.15mm
Maximum Placement Load	800g
Mounting accuracy	±0.01mm
Machine Dimensions	L995*W851*H1015mm (not include monitor or stand; requires 500mm clearance for movement in front and rear.)
Machine weight	About 170KG