R9100

Large multifunctional precision intelligent rework station

ZM-R9100 is a large-scale multifunctional precision intelligent rework station suitable for fully automatic rework of various surface mount devices on PCB boards. It adopts high-precision visual cameras and independent temperature control technology, and automatically aligns through the equipment vision system to achieve rework actions such as disassembly, desoldering, dipping solder paste, mounting, and soldering. It also includes functions such as automatic cleaning of desoldering suction nozzles, automatic collection of tin slag, and support for continuous and rapid work mode after fixing fixtures; The equipment can be integrated with MES software (optional) to achieve functions such as temperature curve analysis with S/N as the traceability condition.

Product Introduction

Non-Contact Tin Removal

Utilizing high-precision weight sensors and high-pressure gas assistance, non-contact solder removal is achieved, minimizing the risk of BGA damage or pad abrasion during the desoldering process. The system also supports rapid generation of solder removal paths without the need for Gerber files.

Large-Field High-Resolution CCD Visual System

Equipped with a 5-megapixel top camera and a 12-megapixel bottom camera, the resolution is 0.015mm/pixel with a field of view of 39mm x 29mm for the top camera and 0.015mm/pixel with a 49mm x 37mm field of view for the bottom camera. The system uses proprietary control software and algorithms, ensuring high alignment accuracy and a high degree of automation. For the same PCB and component positions, only the initial alignment is needed; subsequent repairs can be performed with a single-click rework.

Four Independent Preheating Platforms

The device features four independent preheating and heating platforms: an upper de-soldering platform, an upper solder removal platform, a lower heating platform, and a mobile temperature zone. Each platform is equipped with a heating and temperature control system, and all heating/preheating platforms and solder removal heads use closed-loop temperature control for stable and accurate overall temperature regulation

Safety Assurance

Strict standards are in place to ensure the yield of products and the safety of operators. The device is equipped with a secondary light curtain for safety, and each heating module has individual secondary protection. The downward pressing module is equipped with a weight sensor, and all doors are fitted with limit switches. Alarms are triggered in case of overheating, personnel entering the work area, or exceeding position limits.

Product Parameters

Model No.	ZM-R9100
Power	Total Power 22.8KW Upper heating zone(2KW) Lower heating zone(2KW) Desoldering head(1KW) Others(1.8KW)
PCB Size	700×635mm （Max） 10×10 mm （Min）
Compatible Chip Size	1mm*1mm （Min） 120mm*120mm （Max）
IR Heating Zone Dimensions	695mm*590mm
Positioning Method	L-shaped slots and universal fixtures (customizable for special-shaped fixtures)
Control System	Industrial PC + Servo Motion Control System
Servo Axis Precision	±0.025mm
Desoldering Head Heater Temperature	≤600℃ (Adjustable)
Tin Removal Residual Height	≤15%
Tin Removal Residual Amount	≤10%
Tin Removal Nozzle	Diameter ϕ0.2mm-ϕ3mm replaceable
Tin Removal Nozzle Height Control	Real-time adjustment via vacuum feedback
BGA Board Deformation	Flatness≤0.15mm
Solder Ball Size	0.2mm-0.76mm
Tin Removal Recovery	Replaceable filter core
Alignment System	Upper Camera: 5 Megapixels Lower Camera: 12 Megapixels Pixel Precision: 0.015mm/pixel Field of View:Upper: 39mm×29mmLower: 49mm×37mm
Pre-Configured Product Line Changeover Time	20min
Temp. Sensor	7PCS
Dimension	L1450×W1600×H1757mm
Weight	1205KG