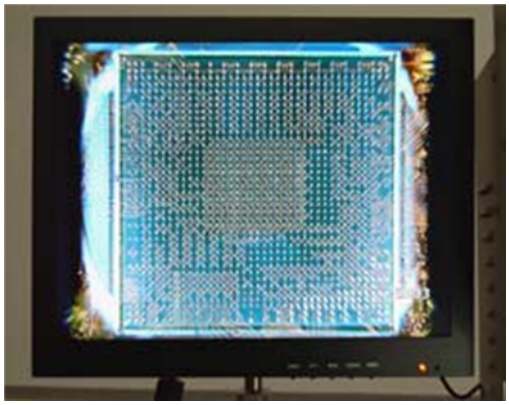
RW1210 SMT / BGA Rework Station

Quick Overview

Safe Removal, High-Precision Placement, and Perfect Soldering for Any SMD Repair Application

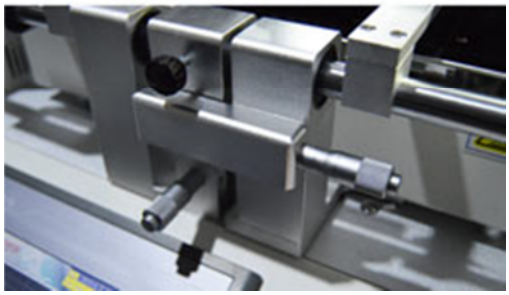
The versatile RW1210 is loaded with features that make it the industry's most reliable and affordable solution for the widest range of SMT repairs. High-definition, split-vision optics with joystick zoom control and fine micrometer X-, Y-, and Θ-axis alignment ensure ±0.01mm mounting accuracy for BGAs and other advanced SMDs. In addition, ultra-sensitive Z-axis height sensing allows gentle placement of delicate QFPs, while adjustable hot air flow control prevents even the smallest components from shifting during reflow.

Details



1.3 Million Pixel, High-Definition, Split-Vision Optics

Another of the RW1210's Manncorp-exclusive features is the superior quality of its 1.3 million pixel, split-vision CCD camera and 15" 1080p LCD display with HDMI input. 230x joystick-controlled zoom, and independent adjustment of high-brightness LED lighting for the component and PCB, allow ultra-clear, superimposed views of component leads and PCB solder pads. The RW1210 is the only rework system in its price range to include true high-definition vision that is on a par with the industry's most advanced, high-end rework systems.



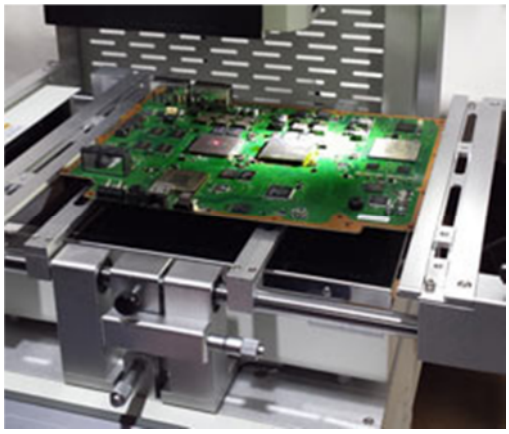
High-Precision X, Y, and θ-Axes Alignment Micrometers

With the RW1210's HD optics providing crisp, clear, superimposed views of the PCB and component, ultra-fine X- and Y- axis micrometers on the board holding fixture, and another on the pick-up head for the θ-axis, allow fast, easy, and precise alignment of leads to pads. In conjunction with the RW1210's extraordinary Z-axis precision and drift-free optical calibration,

these features ensure the alignment and ±0.01mm placement accuracy needed for 0.3 mm (0.012") lead pitch µBGAs and QFPs.

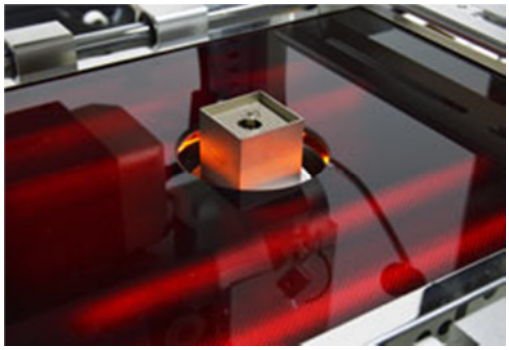
Exclusive Touchscreen User Interface and Ergonomic Design

The RW1210's user-friendly touchscreen control software is just one of many Manncorp-exclusive features that set it apart from other rework systems in its class. An ergonomically-designed instrument panel includes joystick control for both the alignment camera zoom and the up/down motion of the upper heater/placement head when in the manual mode. Dial adjustments are conveniently located for component and PCB lighting, as well as control of the upper heater hot air flow to prevent shifting of small chip components during reflow. The control panel also includes a built-in K-type thermocouple input and USB port for exporting temperature profiles to a flash drive.



Versatile PCB Holder Accommodates Wide Range of Boards

The RW1210's universal board holding fixture adjusts quickly and easily to provide a firm grip on virtually any PCB from 50 mm x 10 mm (2" x 0.4") to 430 mm x 360 mm (17" x 14.25"), and with a thickness from 0.8 mm - 3 mm (0.032" to 0.12"). Its high precision edge rails and slide bearings allow easy positioning of the component between the top and bottom heaters, while convenient thumbscrews securely lock the board in place when everything is set. An additional set of rails and adjustable pins provide positive support from the PCB's underside when needed.



"Rapid IR" Underheater Eliminates Thermal Stress

The RW1210's hot air bottom heater is surrounded by a 2700W, 350 mm x 250 mm (13.75" x 10") "Rapid IR" underheater that quickly and efficiently heats the bottom surface of the PCB. Raising the temperature of the entire board prevents board warpage and reduces stress on components and solder joints adjacent to the rework site. It also reduces overall cycle times and maximum temperature exposure. For operator safety and reduced maintenance, the infrared heaters are fully enclosed in a glass-shielded compartment that quickly dissipates heat, prevents debris from falling into the elements, and is easy to keep clean.

Easy PCB and Component Positioning with Convenient Laser Pointer

A handy laser pointer is mounted adjacent to the upper heater assembly and is targeted at the virtual intersection of the PCB surface and the RW1210's Z-axis. During setup, the operator simply positions the PCB in the board holding fixture so that the laser dot is centered over the component to be reworked. This ensures that the bottom heater, component, and upper heater are properly aligned and dramatically reduces setup time.

RW1210 Rework System Features

- 1.3 Million Pixel, High-Definition, Split-Vision Optics with 230x Joystick-Controlled Zoom
- High-Resolution 15" Full Color LCD Display for Simultaneous, Superimposed Viewing of Component Leads and PCB Pads
- Independent Upper and Lower LED Lighting Adjustments for Component and PCB
- Independent Top and Bottom Hot Air Heating with Eight-Zone Thermal Profiling
- Programmable Heating Rate, Target Temperature, Dwell Time, and Cooling
- Integrated Thermocouple Input for Real-Time Temperature Recording and Simplified Profiling
- Adjustable Hot Air Flow Control Through Top Heater Nozzle Prevents Disturbance of Small SMDs During Reflow
- Z-Axis Motion Control with Vertical Height Sensing for Automatic Removal and Placement of Delicate SMDs
- High-Precision, Linear Z-Axis Slide and Optical Calibration Check for ±0.01mm Placement Accuracy
- Ultra-Fine Micrometer Adjustments in X, Y, and Theta Axes for Fast, Easy, and Precise Alignment of Component Leads to PCB Pads
- Large 350 mm x 250 mm (13.75" x 10"), Rapid-IR Underheater Prevents Board Warpage and Thermal Stress
- Fully-Adjustable, Universal Board Holder for PCBs Up To 430 mm x 360 mm (17" x 14.25")
- Convenient Laser Pointer Allows Quick and Easy Positioning of Component/PCB Inline Between Top and Bottom Heater Nozzles
- Cross-Flow Fan for Rapid Solder Joint Cooling
- Touch-screen User Interface with Password-Protected User Privileges
- Screen Printing Functions via USB Port for Job/Lot Traceability
- Full Range of Heater Nozzles Available to Solder/Desolder Components from 2 mm x 2 mm to 55 mm x 55 mm (0.08" x 0.08" to 2.16" x 2.16")
- Internal Pump, Vacuum Generator, and Full Set of Vacuum Pick-Up Nozzles Included...No External Compressed Air or Vacuum Needed

RW1210 - Specifications	
PCB Specifications	
PCB Size (Minimum)	50 mm x 10 mm (2" x 0.4") w/ standard edge rails No appreciable minimum with edge-pin holders included
PCB Size (Maximum)	430 mm x 360 mm (17" x 14.25")
PCB Thickness	0.8 mm - 3 mm (0.032" to 0.12")
Component Specifications	
Component Size (Minimum)	2 mm x 2 mm (0.08" x 0.08")
Component Size (Maximum)	55 mm x 55 mm (2.16" x 2.16")
Minimum BGA Ball/QFP Lead Pitch	0.3 mm (0.012")
Placement Accuracy	±0.01 mm (0.0004")
Heating System	
Component Heater (Top Side)	Hot Air (1200 W)
Component Heater (Bott. Side)	Hot Air (1200 W)
Under-Heater	Rapid IR (2700 W)
Temperature Control	K-Type Thermocouple; Closed Loop PID
Utility Specifications / Facility Requirements	
Main Power Source	220 V ± 10%/ Single Phase, 50/60 Hz
Total Power Consumption	5.3 KW Max.
Machine Dimensions	640 mm L x 630 mm W x 900 mm H (25.2" L x 24.8" W x 35.4" H)
Net Weight	Approx. 68 Kg (150 lbs.)

Manncorp RW1210 SMT/BGA Rework System Includes:

- **1 pc.** RW1210 SMT/BGA Rework System with
  - Top and bottom hot air heating
  - Rapid IR underheater
  - Top heater hot air flow control
  - Automatic Z-axis motion with vertical height sensing
  - High-definition split-vision optics with 230x joystick-controlled zoom
  - Upper and lower LED lighting controls
  - Micrometer adjustment for X-, Y-, and theta alignment
  - Universal PCB holder for boards to 430 x 360 mm
  - Integrated thermocouple input
  - Laser pointer for bottom side heater/PCB setup positioning
  - Cross-flow cooling fan
  - LCD touch-screen controller and user interface
  - 15" high-resolution LCD display for alignment
- **1 pc**. 35 mm x 35 mm bottom heater nozzle
- **1 pc** 55 mm x 55 mm bottom heater nozzle
- **1 set** Vacuum pickup nozzles (2 mm, 4 mm, 8 mm, 10 mm, 16 mm)
- **4 sets** Heat-resistant suction tips for pickup nozzles (small, medium, large)
- **1 pc.** K-type thermocouple with connector
- **4 pcs.**Edge-pin PCB holders
- **1 set** Toolkit
- 1-Year Parts Warranty

Gross Weight: 100 Kg (220 lbs)
Shipping Dimensions: 760 mm L x 760 mm W x 1050 mm H (30" L x 30" W x 41.3" H)
Net Weight: 68 Kg (150 lbs)

RECOMMENDED OPTIONS

Item No.	Part Number	Description	Unit Price	QTY	Ext. Price
1	NOZ7x7	**Topside nozzle 7 mm x 7mm for BR series**			
2	NOZ8x8	**Topside nozzle 8 mm x 8 mm for BR series**			
3	NOZ9x9	**Topside nozzle 9 mm x 9 mm for BR series**			
4	NOZ12x12	**Topside nozzle 12 mm x 12 mm for BR series**			
5	NOZ15x15	**Topside nozzle 15 mm x 15 mm for BR series**			
6	NOZ18x18	**Topside nozzle 18 mm x 18 mm for BR series**			
7	NOZ20x20	**Topside nozzle 20 mm x 20 mm for BR series**			
8	NOZ21x21	**Topside nozzle 21 mm x 21 mm for BR series**			
9	NOZ24x24	**Topside nozzle 24 mm x 24 mm for BR series**			
10	NOZ26x26	**Topside nozzle 26 mm x 26 mm for BR series**			
11	NOZ28x28	**Topside nozzle 28 mm x 28 mm for BR series**			
12	NOZ31x31	**Topside nozzle 31 mm x 31 mm for BR series**			
13	NOZ34x34	**Topside nozzle 34 mm x 34 mm for BR series**			
14	NOZ36x36	**Topside nozzle 36 mm x 36 mm for BR series**			
15	NOZ38x38	**Topside nozzle 38 mm x 38 mm for BR series**			
16	NOZ41x41	**Topside nozzle 41 mm x 41 mm for BR series**			
17	NOZ44x44	**Topside nozzle 44 mm x 44 mm for BR series**			
18	NOZ48x48	**Topside nozzle 48 mm x 48 mm for BR series**			
19	NOZ50x50	**Topside nozzle 50 mm x 50 mm for BR series**			
20	NOZ55x55	**Topside nozzle 55 mm x 55 mm for BR series**			
21	NOZ60x52	**Topside nozzle 60 mm x 52 mm for BR series**			