Ersa Hybrid Rework System HR 600/2

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High-End Rework: automated assembly repair – flexible, efficient, reliable!

Technical Highlights

- Automated component placement
- Automated desoldering and soldering process
- Hybrid heater head with two heating zones for effective heat transfer
- Extensive, powerful IR-bottom side heating cassette with 3 zones
- Non-contact temperature measurement with digital sensor
- Two K-type thermocouple inputs
- Accu-TC sensor
- Effective assembly cooling with compressed air

Ersa HR 600/2 – optimized, automatic component placement and precise temperature process control for all SMDs.

The task formulated for the Ersa HR 600/2 Hybrid Rework System was to offer professional, automated rework of sub-assemblies for the electronic industry. With the system now at hand, almost all high pin-out components that may be found on modern board assemblies, and of virtually any shape, can be reliably reworked. The core competencies of this universal rework system are the placement of components, their lifting off and their controlled setting down, as well as the soldering process.

Special attention was placed on the automation of the individual process steps. All operations can be controlled in a step-by-step mode by the operator himself, or they can be combined to automated operation, requiring very few interventions by the operator.

To preheat the complete board area of the assembly mounted in the board holder, the system utilizes highly dynamic IR-heating elements in the lower heater cassette. A hybrid heating head combines the heat transfer method of IR radiation with that of convection heating for a targeted, and therefore highly efficient, warming of the components to be worked on. Applying this method, quick and top-quality desoldering and soldering result are being achieved. An optional Reflow-Process-Camera (RPC) with LED illumina-tion is available for process monitoring and documentation. Placement of the components is a largely automatic process; the integrated image processing software assesses data of images generated by the two cameras installed. The required component position is automatically calculated, and the component is placed, independent of an operator, using a vacuum pipette mounted on an axis-system.
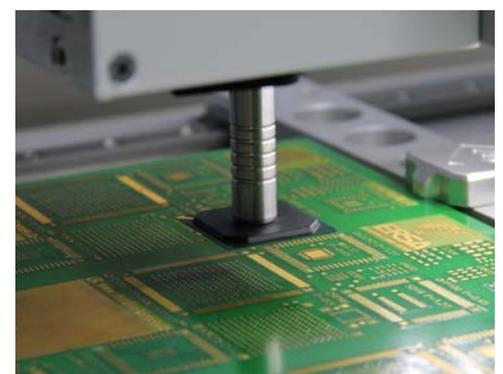
The system is prepared for the mounting of the Ersa Dip & Print frame. Printing the solder paste onto the component takes place externally on the Dip & Print Station; dipping the component into the flux depot is equally a fully automated process.
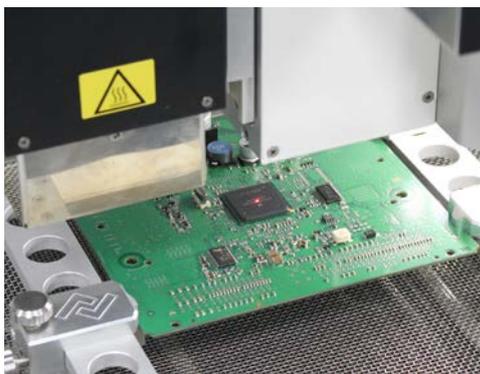
Laser marking of the targeted position

Automatic desoldering

Automatic component placement

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Technical Data:

Dimensions (Width x Depth x Height):	850 x 660 x 620 mm
Weight:	appr. 57 kg
Voltage:	230 V AC, single phase, 50 Hz, 16 A
Air supply:	Compressed air, 6 bar (Free of oil), ¼ Inch quick connect (Required to generate the vacuum for the component gripper and for bottom side cooling)
Volume of air Cooling:	between 50-100 l/min (adjustable)
Bottom emitter data:	380 x 250 mm, 3 zones with each 800 W, 2400 W total
Bottom emitter technology:	medium wave, reactive, ceramic IR emitters
Upper emitter data:	60 x 60 mm, 2 zones with each 400 W, 800 W total, aperture attachments 40 x 40 mm, 30 x 30 mm, 20 x 20 mm
Upper emitter technology:	hybrid emitter with medium wave length IR heaters combined with convection, motorized height adjustment, integrated motorized pipette (to hold components)
Temperature sensors:	integrated digital non-contact IR sensor (pyrometer), two K-type thermocouple inputs, one AccuTC sensor
Board cooling:	Hybrid blower on top, compressed air pipe (400 mm) on bottom
Board dimensions:	390 x 285 (+x) mm [area exceeding (+x) is not fully preheated]
PCB thickness:	up to 6 mm
Component dimensions:	1 x 1 up to 50 x 50 mm
Usable working distance (typ.):	40 mm, adjustable
Axis system:	Precision guidance, stepper motors (X, Y, Z, Rotation)
Placement accuracy:	up to +/- 25 µm
Placement nozzles:	10 mm, 4 mm (magnetic mounting)
Placement camera, upper:	1.3 MP color camera, USB 2.0, LED illumination, dimmable
Component camera, lower:	1.3 MP black-and-white camera, USB 2.0, LED illumination, dimmable
Reflow process camera (option):	10 MP high-resolution color camera, USB 2.0, LED illumination, dimmable
Interface:	USB 2.0
Operating software:	Ersa HRSoft for Microsoft™ Windows operating system

Computer specification:	PC is not included in the scope of supply, for details, please contact Ersa.
CPU	CPU Intel Pentium 4, 3 GHz or better (recommended: Core 2 Duo) AMD Athlon XP 64, 3000+ or better (recommended: Athlon X2)
RAM	min. 1 GB (Windows Vista™ / Windows® 7: 2 GB or more)
Graphic	ATI Radeon™ Series or NVidia® Geforce® Series, TFT screen / monitor min. 7" (better 19")
Interface	USB 2.0 or better

Ordering Information:

Order Number	Description
0HR600/2	**Ersa HR 600/2**, Hybrid Rework System
0HR600/2BHL	**Ersa HR 600/2**, Hybrid Rework System with lowered bottom heater
0HR600/2L	**Ersa HR 600/2**, Hybrid Rework System with PCB holder 300 x 535 mm
Options:	
0HR610P	**Reflow Process Camera** for HR 600/2
0PR100	**Dip & Print Station,** complete

Dip & Print Station with "MLF32" stencil

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