



## HR 600P

Automated Rework precision  
for best results



GLOBAL. AHEAD. SUSTAINABLE.

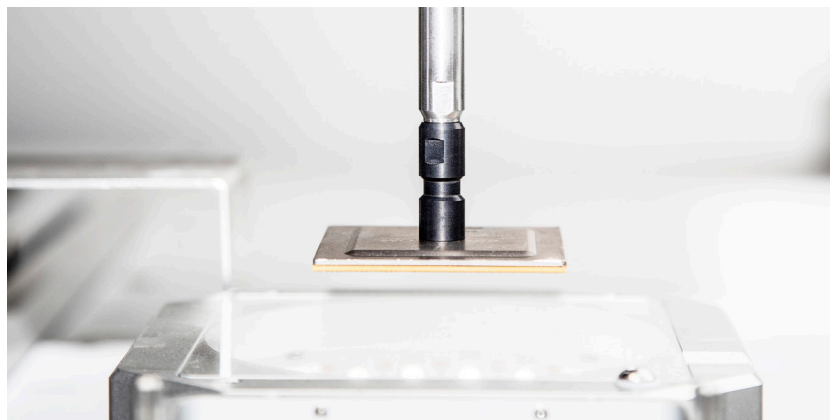


# HR 600P HYBRID REWORK SYSTEM

**Automated Rework processes right with the first board**

## Technical Highlights:

- High-precision axis system and high-resolution camera
- Automated component placement and soldering and desoldering process
- Hybrid heating head with two heating zones
- Process monitoring with Reflow-Process Camera
- Powerful large-area IR bottom-side heating in six zones
- Three K-type thermocouple inputs for AccuTC sensor
- Effective assembly cooling with compressed air
- Optional residual solder removal with AUTO SCAVENGER (retrofitable)

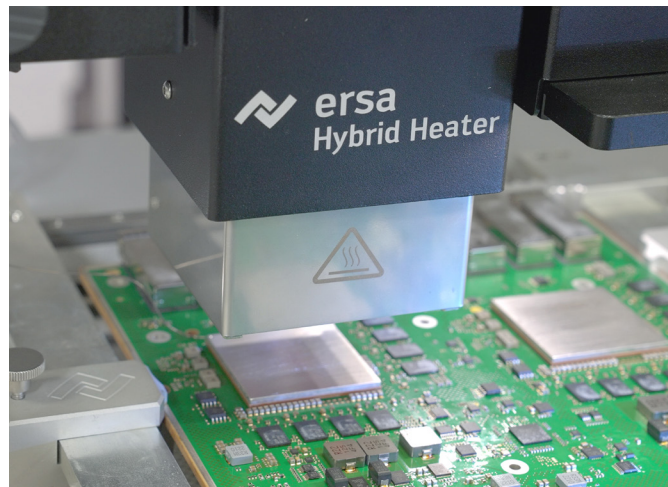
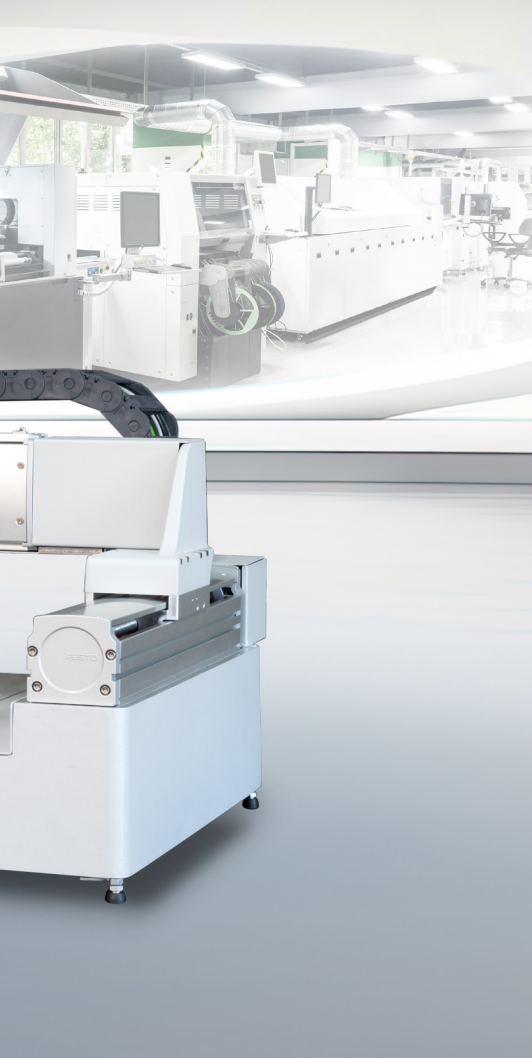


*Metallic BGA above the light dome to detect the component connections*

With the HR 600P Ersas takes the next technological step in professionalizing and automating the repair of electronic assemblies. A solid and highly accurate machine frame forms the basis for precise component placement and reliability.

For reliable soldering results, HR 600P features the proven infrared heating elements in the bottom-side heater, which provide for a homogeneous heating of the assembly.





*Homogeneous and reproducible component heating thanks to the hybrid heating head*

The highly dynamic hybrid heating head combines infrared radiation and convection heating for targeted and efficient top-side component heating.

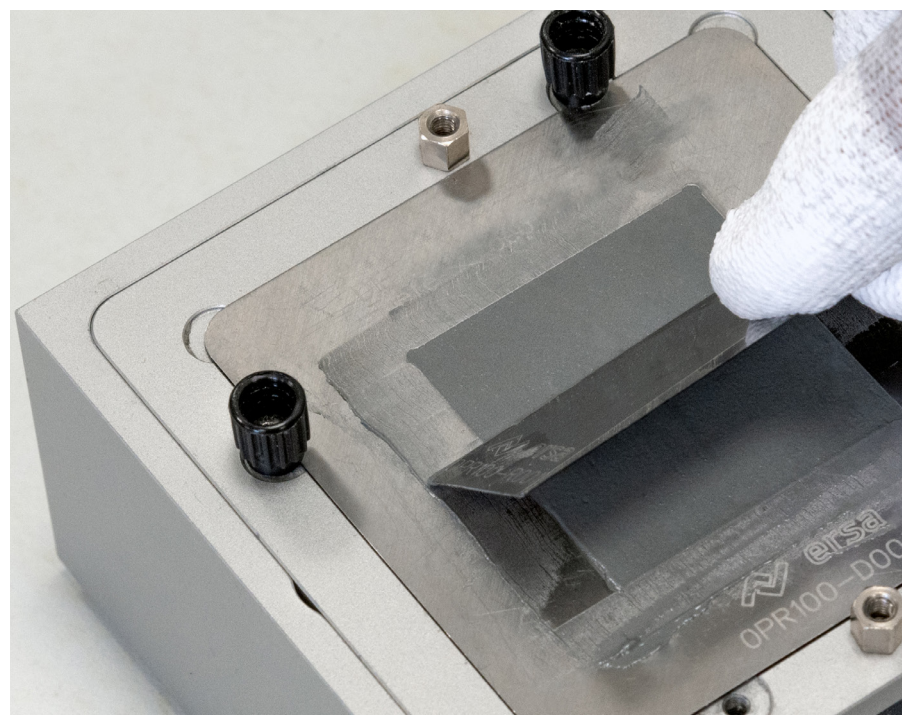
For the component placement the exact calculation of the component position is performed automatically. After the position has been calculated, the component is placed by means of a vacuum gripper via a precisely operating axis system.

A powerful Reflow Process Camera with LED illumination is available for process monitoring and documentation. The HRSoft 2 operating software (for Windows™) accompanies the user during all work processes and documents them.

The HR 600P is available in different versions and can be optimally adapted to the customer's needs in the processing of electronic assemblies. In the version with the large PCB holder, significantly larger assemblies can be operated. A version with a lowered heating cassette creates ad-

ditional free space on the underside of the assembly in case of high superstructures. Both versions can be combined.

The HR 600P is prepared for use with the Ersma Dip&Print Station, with which defined application of flux or solder paste to the components are possible.



*Solder paste application with Dip&Print Station*

Profiling with HRSoft 2 - Full-surface heating with increased heat output in the edge zone



# ERSA HRSOFT 2

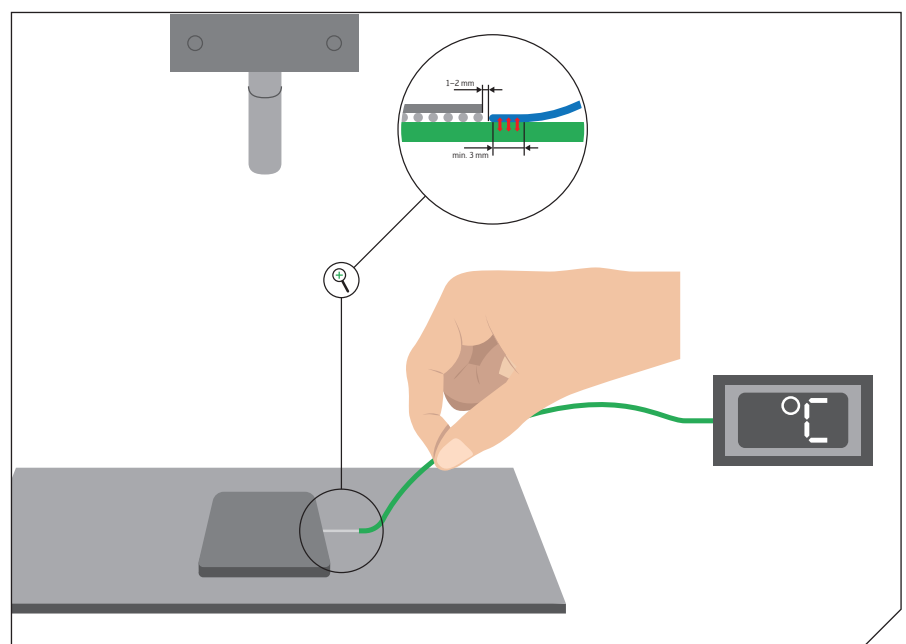
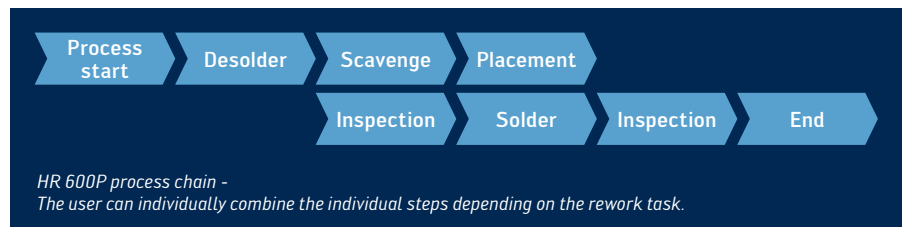
## Transparent user guidance in the rework

The HR 600P is controlled and operated by the Ersa HRSoft 2 software. Even untrained users will quickly find their way around the structured and clearly laid out software. Predefined soldering and desoldering profiles with steps for removing residual solder and placing new components are easy to select.

Intuitive pictograms and easy-to-understand instructions guide the user through the automated process steps.

All process results are documented, so that proof is available at all times for every rework carried out.

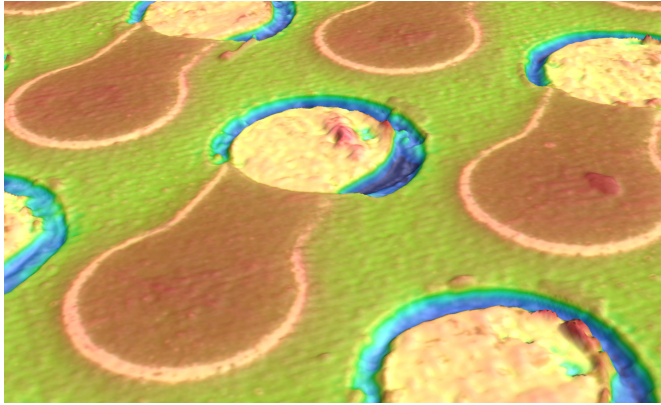
HRSoft 2 is the modern operating platform for Ersa rework systems.



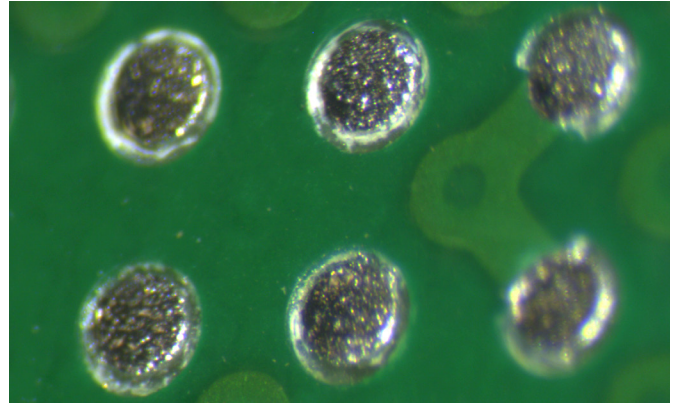
Correct application of the temperature sensor before starting the process







*Cleaned pads with less than 20 µm residues (3D image)*



*Scavenger results on a 1 mm pitch BGA pattern*

# SC 600 SCAVENGER MODULE

## Automatic residual solder extraction

Before a new component can be soldered onto a circuit board, the solder remaining on the PCB after desoldering must be removed.

The scavenger gently removes the residual solder from the connection surfaces on the PCB in an automated process. The module can also be retrofitted and is fully integrated into the HRSoft 2 software.

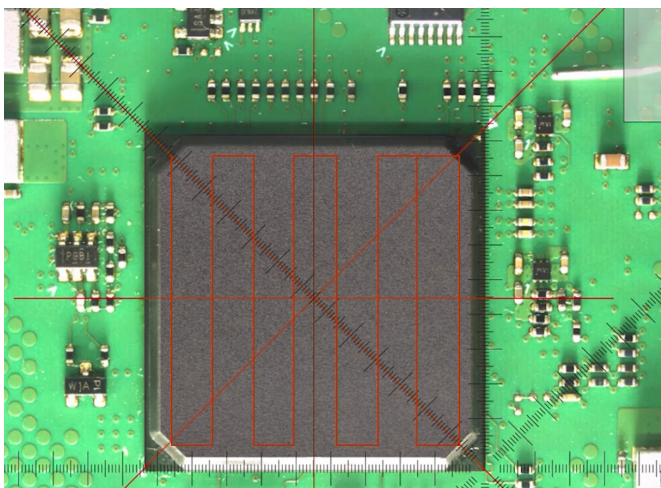
And this is how the process works:  
The bottom heater of the rework system automatically keeps the assembly at the

right temperature. The hot gas head on the top gently melts the residual solder so that it can then be extracted via the interchangeable nozzles using a vacuum. An automatic height control ensures that the solder is extracted without the nozzle touching the PCB surface.

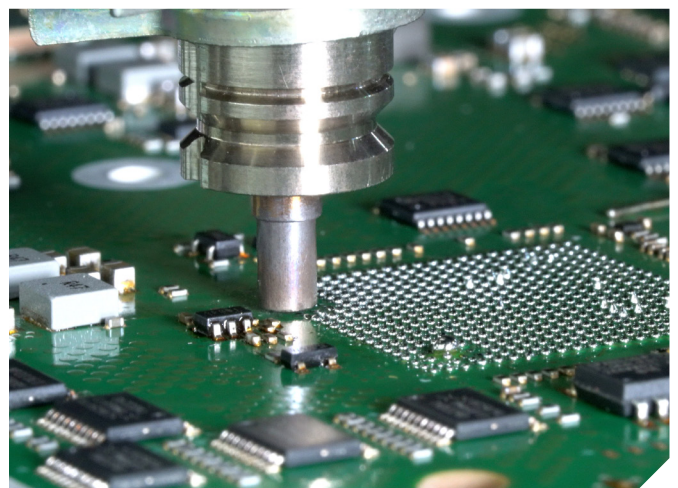
For optimum extraction results, the user sets the extraction parameters individually for their application. Once the remaining solder has been removed, the assembly is ready for the installation of a new component.

### Technical Highlights:

- Automatic height adjustment
- Automatic path definition
- Individual adjustment of the suction parameters
- Operation with N<sub>2</sub> as shielding gas
- Available as an option or retrofit kit for all HR 600P systems

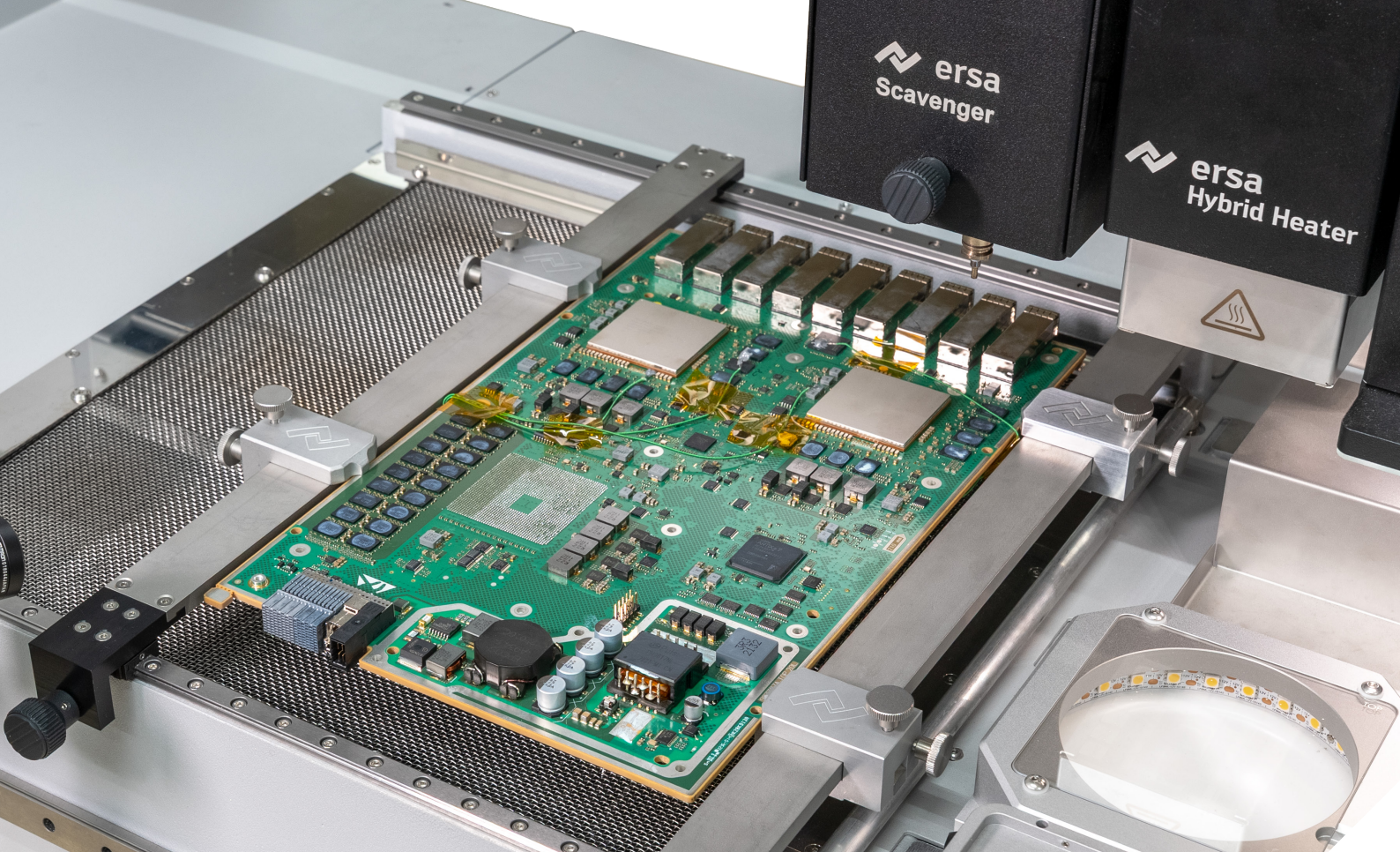


*Automatic path definition on a BGA component*



*Process step: Extract residual solder*





HR 600P bottom heater with nine radiant heaters. Optional: can be lowered (for high components on the underside) and with enlarged PCB holder

# 6-ZONE BOTTOM HEATING

## Powerful and adjustable

The HR 600P provides bottom heating with a total output of up to 5,400 W for its highly automated soldering processes.

For medium-sized to large assemblies, the bottom heating (380 x 380 mm) can be configured in a total of 6 individually controllable heating zones.

Depending on the application, the active heating zones are selected and the power is individually preset.

In zones 1 to 3, one of the nine installed medium-wave IR radiators is controlled and configured in each zone.

In zones 4 to 6, the radiators are control-

led in pairs. This flexible control makes it possible to optimally preheat assemblies according to their size and thermal requirements.

The HR 600P thus ensures optimum preheating of the assemblies while saving energy at the same time.

>			
>	50	50	90
>	25	25	80
⏻	⤴	⤴	⤴

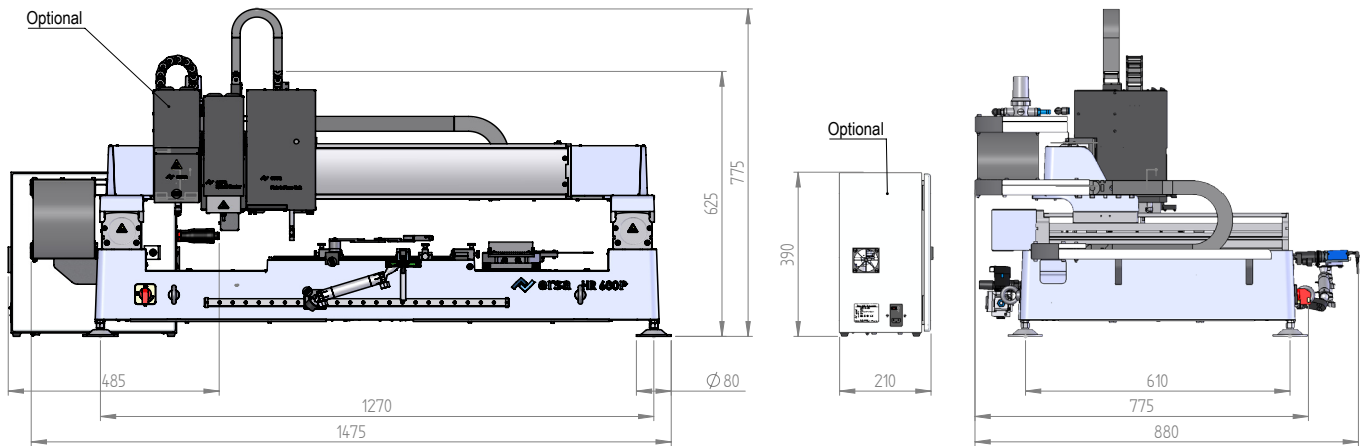
Segmented heating with full-surface heating, increased heat output in the edge zone and "cold spot"

>	75	75	100
>	50	50	90
>	25	25	80
⏻	⤴	⤴	⤴

Full-surface heating, increased heat output in the edge zone and "cold spot"

# HR 600P CONFIGURATION

Flexible and extendable



## HR 600P Reworksystem, complete with:

- Heating head 60 x 60 mm
- Light dome with component camera 60 x 60 mm
- Reflow Process Camera RPC for HR 600P
- Setup nozzle Rework
- AccuTC sensor with TE holder, standard (2 segments)
- Nozzle Ø 5 mm with silicone suction cup ø 3,5 mm
- Nozzle Ø 10 mm with silicone suction cup ø 8 mm

## Options:

- Auto Scavenger Module: automatic residual solder removal for HR 600P
- Lowered bottom radiator - 65 mm free space
- PCB holder L (620 mm x 420 mm)
- Circuit board rail movable with 2 holders
- Additional PCB holder (1 pc.) new clamping
- Thermocouple supply line extension 500 mm
- Dip & Print Station (configurable)
- Solder fume extraction Easy Arm 1 (configurable)
- Ersa i-CON 1 MK2, 230V (or: Ersa i-CON 1, 115V)



For the configuration of the HR 600P the basic system offers several options to adjust and extend it to your individual needs.

Please contact our sales department to get your personalized offer.





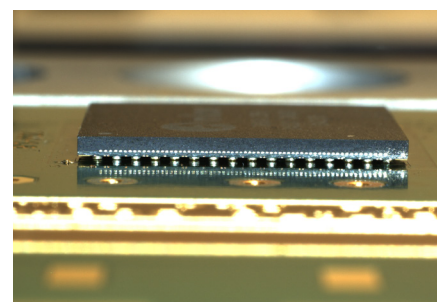


## Technical data HR 600P & Auto Scavenger

Rework System (HR 600P)	
Length:	1.450 mm
Width:	800 mm
Height:	600 mm
Weight:	110 kg (128,5 kg incl. SC600)
Antistatic:	yes
Test symbol:	CE
Nominal power	6.300 W (incl. Scavenger 6.700 W)
Supply voltage	400 V 3 L/N/PE
Frequency:	50 - 60 Hz
Fuse:	3 x 16 A
Preheating, top:	Hybrid emitter, 800 W, with two zones, 60 x 60 mm
Preheating, bottom:	IR emitter, 380 x 380 mm
Measuring channels:	3 x K-Typ, 1 x IRS
PCB size:	up to 380 x 300 mm (+x), option: up to 642 x 423 mm (+x)
Component size:	1 x 1 mm up to 60 x 60 mm
Axis accuracy:	up to +/- 25 µm
Working distance (typical):	30 - 60 mm to top heating, 35 mm to lower heating
Placement camera (top):	5 MP GigE colour camera
Component camera (bottom):	5 MP GigE monochrome camera
Reflow process camera:	6.3 MP, CMOS GigE colour camera, 50 mm focal length, lighting 2 x LED, adjustable
Compressed air connection:	to be provided by the customer, oil-free, 1/4 inch, 6 - 10 bar
Operating software	HRSoft 2
Compatibility:	Windows 10 and 11

Auto Scavenger (SC 600, option)	
Length:	300 mm
Width:	210 mm
Height:	420 mm
Weight:	18,5 kg
Antistatic:	yes
Test symbol:	CE
Nominal power	400 W
Nominal voltage:	220 - 240 VAC
Frequency:	50 - 60 Hz
Power consumption (max.):	400 W
Secondary voltage	30 VAC
Fuse:	2,5 A-T
Upper heating:	Hot gas
Compressed air connection:	to be provided by the customer, oil-free, 1/4 inch, 6 - 10 bar
Compressed air consumption	60 l/min
Nitrogen connection:	to be provided by the customer, oil-free 1/4 inch, 6 - 10 bar
Nitrogen consumption:	30 l/min
Nitrogen volume demand, oil-free, l/min	Classe 5.0, Purity level (1:2:1) acc. ISO 8573-1
Cleaning performance:	up to 5 mm/s
Component size:	all common SMD pad formats

Environmental data	
Temperature range (constant)	18 - 26 °C
Air humidity (non-condensing)	40 - 60 %



Process visualization with the RPC process camera

further  
information  
online:

