kurtz ersa

# REWORK- & INSPECTION SYSTEMS

For all applications from micro to mega!

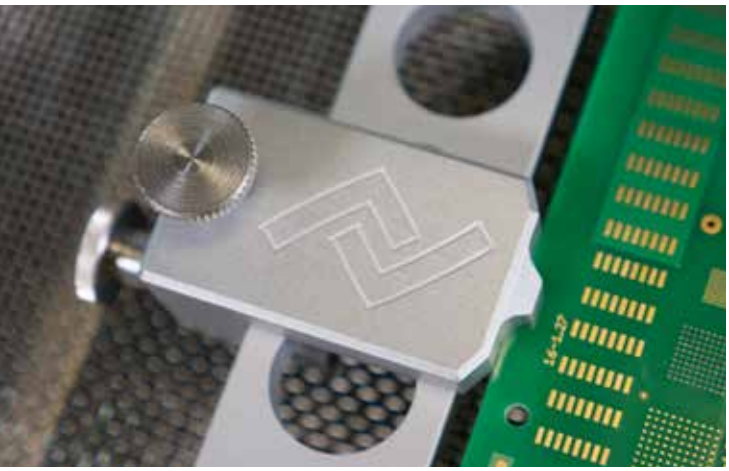
100 years ersa 1921 – 2021

GLOBAL. AHEAD. SUSTAINABLE.

# CONTENTS

## Ersa Rework Systems





## Ersa Inspection Systems



# ERSA REWORK AND INSPECTION SYSTEMS

## Award-winning and a class of its own!

Over the past two decades, rework and repair of electronic assemblies has been one of the most exciting and challenging undertakings in the industry. The increasing complexity of the PCBs, as well as the advancements in packages has put additional demands on both rework specialists and their equipment. Applications-oriented, innovative solutions are the key to success in this demanding field.

Ersa took on the rework challenge almost twenty years ago as it introduced its first patented medium wavelength infrared rework system, the Ersa IR 500. Today, we have one of the world's largest installed equipment bases of over 6,000 systems ranging from smaller benchtop units to larger fully automated machines.
Ersa rework systems have proven themselves to be the undisputed leaders in handling the largest variety of rework applications. From the smallest 01005 up to the largest SMT connector (120 mm), from SMT Flip Chips to THT Pin Grid Arrays, from BGA on flex circuit to stacked BGAs and from metal shields to plastic processor sockets: the Ersa rework technology handles it all.

Now recognized as one of the market leaders in the rework field, Ersa is happy to present its most complete range of products in this catalog.

For more than twenty years, thousands of users worldwide have been benefiting from the ability to inspect hidden solder joints with the patented and award-winning ERSASCOPE inspection technology. Industry experts, incl. the IPC, recognize the critical importance of using ERSASCOPE technology for the inspection of hidden solder joints. In combination with x-ray inspection equipment, the ERSASCOPE provides the most complete view of potential problems.

ERSASCOPE remains to be the undisputed industry standard for optically inspecting BGAs and other hidden solder joints! Whether for inspection under Flip Chips or for inspection where other microscopes cannot see, ERSASCOPE technology offers a significant added value to any quality assurance program.


## Our rework portfolio at a glance

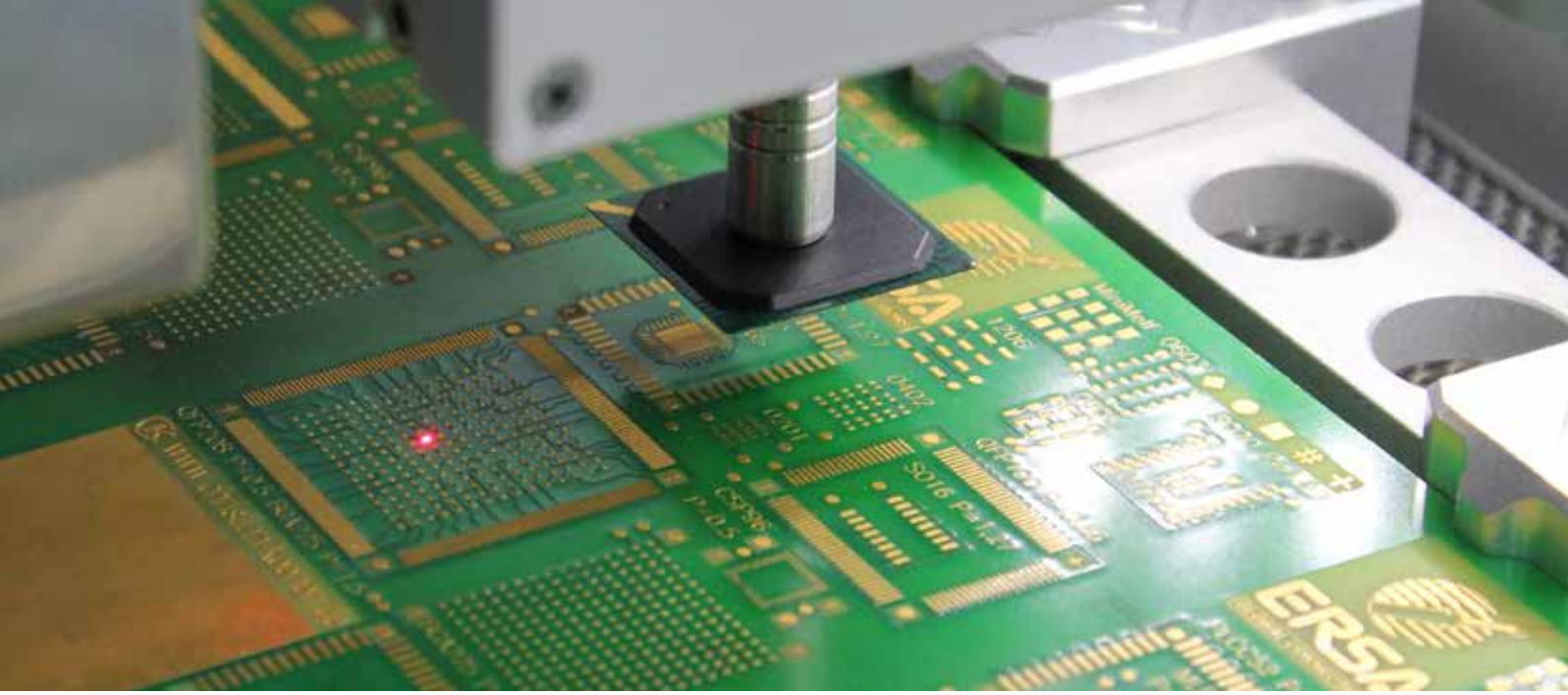
| ERSA HYBRID REWORK | | | |
|---|---|---|---|
| **Stations** | **Systems (with component placement)** | | |
| **S** | **M** | **L** | **XL** |
| HR 100 | HR 500 NEW | HR 550 | HR 550 XL NEW |
| HR 200 | | HR 600/2 | HR 600 XL |
| IR 550 (infrared radiation only) | | HR 600/3P NEW | |

| PROCESSES ERSA HYBRID REWORK SYSTEMS | |
|---|---|
| **Semi-automatic** | **Automatic** |
| HR 500 NEW | HR 600/2 |
| HR 550 | HR 600/3P NEW |
| HR 550 XL NEW | HR 600 XL |

kurtz ersa

# HR SOFT.

GLOBAL. AHEAD. SUSTAINABLE.



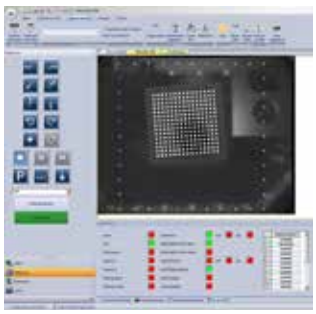
# ERSA HR SOFT

## Automated rework with proven technology and innovative image processing

By continuing the development of the universal control software platform of IR Soft, a new control software has been created for the HR 600 called HR Soft. All of the process steps of the HR 600/2 are supported by this user-friendly software.
Through HR Soft, the user can manually control all functions of the system with a simple mouse click. During a rework process the user can select to operate the HR 600/2 in either a step-by-step or an automatic mode.
The library feature of HR Soft clearly displays the stored soldering and desoldering temperature profiles. A soldering or desoldering process can be started either manually or automatically, whereas the results are automatically recorded regardless of the starting method. Heating head, vacuum pipette and compressed air cooling can be activated by a click of the mouse anytime.
For placing the new component, the step-by-step mode or the automatic process mode are again available. At all times the individual functions of the system, axes and cameras can be manually controlled.
The integration of an optional USB Reflow Process Camera (RPC) for the HR 600/2 is also provided for. This camera with a wide-aperture lens and a LED point light source visualizes the soldering process in real time. In addition to the automated operation of the HR 600/2, HR Soft offers an archive in which all rework process records are administered and stored.

**Compatible with HR 600/2**

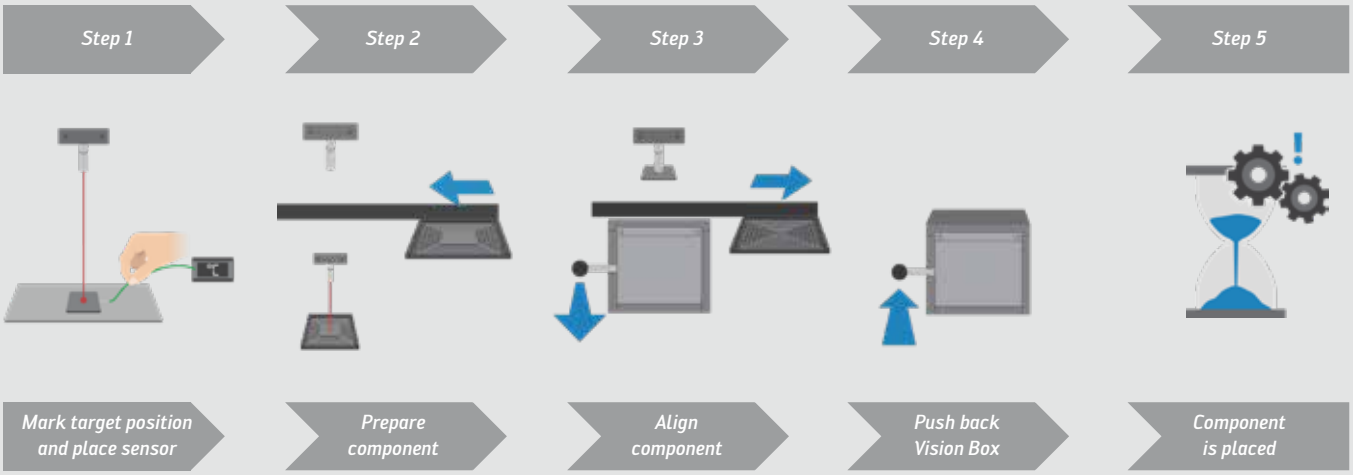
*Image of the target position*



*Determining the component connections*

*Superimposing of component and target position*

*HR Soft process recording*




**HR Soft 2 – User guidance via pictograms showing component placement as example**

# ERSA HR SOFT 2

## Transparent user guidance in rework

Under the motto Enhanced Visual Assistant (EVA), the HR Soft 2 user surface offers every assistance for completing rework tasks quickly and reliably.

Even the novice user quickly becomes adept thanks to the well-structured andaw clearly laid out software. Predefined soldering and desoldering profiles are simple to select and the user is guided through all the rework process steps. Easy-to-understand pictograms and instruction texts provide direction for the user.

In the computer-aided placement of components, the new Ersa rework software HR Soft 2 provides the user with brilliant, high-definition images of circuit boards and component leads. In this way, all SMD models can be aligned very quickly and with minimum fatigue for the user.

**Compatible with all rework systems, except HR 600/2**

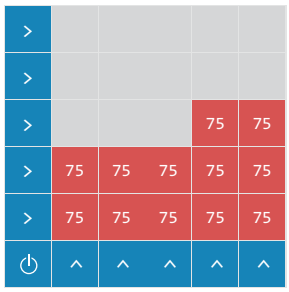
Together with a database-supported archive and further useful functions, special aids such as a digital split optics for aligning large QFPs round off the features of HR Soft 2.

HR Soft 2 is compatible with all Ersa rework systems except the HR 600/2.

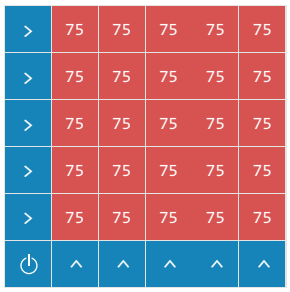
*HR Soft 2 – Enhanced Visual Assistant*

# The modern operating platform for Ersa rework systems

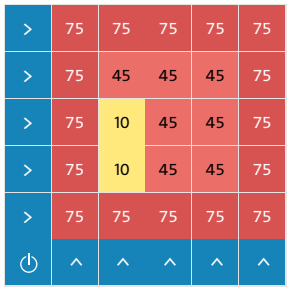
The user interface of HR Soft 2
sets new standards in rework, both technologically and optically. Being a clearly structured software platform for current and future systems, it offers the user all functions of the respective system and guides him through the single steps of the rework process.
Innovative image processing and powerful database management for profile and process parameters as well as the modern handling are just some of the features of this software package.
The use of different Ersa rework systems is also simplified by the fact that the same functions are represented in the same way. There is no need for a time-consuming adaptation.
Currently, the HR 500, HR 550, HR 550 XL, HR 600/3P and HR 600 XL are operated by HR Soft 2. It is also the communication interface for connections to Manufacturing Execution Systems (MES).



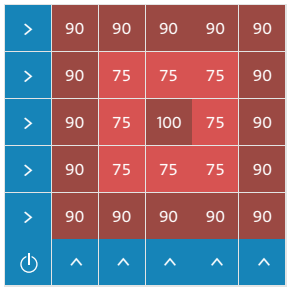

*Segmented heating with homogenous power in all zones.*




*Full-size heating with homogenous power in all zones.*




*Full-size heating with edge enhancement and "cold spot".*




*Full-size heating with edge enhancement and "hot spot".*


*Profile setup with HRSoft 2 – Full-size heating with enhanced edge heating.*

kurtz ersa

# REWORK-SYSTEMS.

GLOBAL. AHEAD. SUSTAINABLE.

# ERSA HR 500

## Rework of standard electronic assemblies

### Technical highlights:

- 900 W high-performance hybrid heating element
- Full-area 1,600 W IR bottom heater
- High-resolution cameras for placement and process monitoring
- Ergonomically optimal system operation
- Modern, user-friendly operating software


The Ersa HR 500 hybrid rework system is the first choice for all common rework tasks on medium-sized SMD assemblies. The system is suitable for desoldering, placing and soldering PLCC, QFP and BGA components as well as MLF components or bipolar elements up to an edge length of 1 x 1 mm.
Like all Ersa hybrid rework systems, the HR 500 is equipped with a powerful hybrid top heater and highly dynamic infrared heating elements in the bottom emitter; whereas the bottom emitter offers two switchable zones.
Component alignment is carried out by means of fine drives and high-resolution camera images of the Vision Box. The component is set down almost power-lessly with the aid of a stepper motor with fine switch-off. All in all the HR 500 convinces by its intuitive operation and by the flexibility during its application.
The HR 500 is prepared to accept an Ersa Dip&Print frame, the component printing with solder paste is done externally on the Ersa Dip&Print Station. The dip-in of a component into a flux depot is motor-driven. For process observation and documentation, the device can optionally be equipped with a high-performance Reflow Process Camera with LED illumination.
The HRSoft 2 operating software (for Windows™) supports the user in all work processes and documents them. It is also the communication interface for connections to Manufacturing Execution Systems (MES).

### Ordering information:

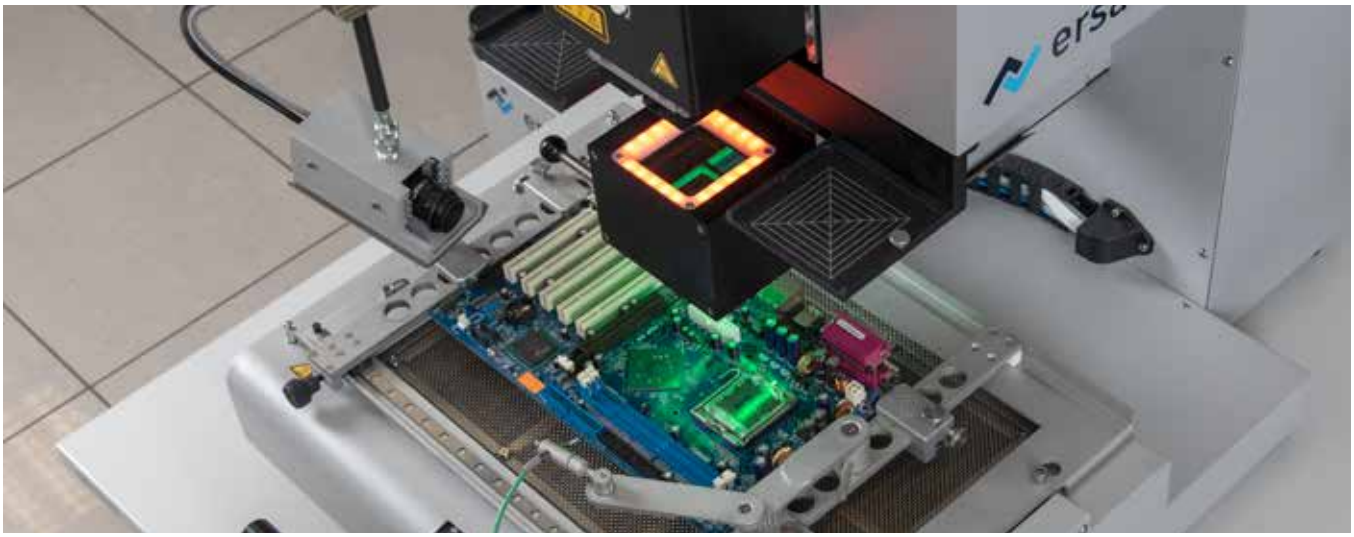
| Order no. | Description |
|---|---|
| 0HR500 | **Ersa HR 500** hybrid rework system |
| 0HR510 | **RPC (Reflow Process Camera)** for HR 500, HR 550 and HR 550 XL |
| 0PR100 | **Dip&Print Station,** complete |

# ERSA HR 550

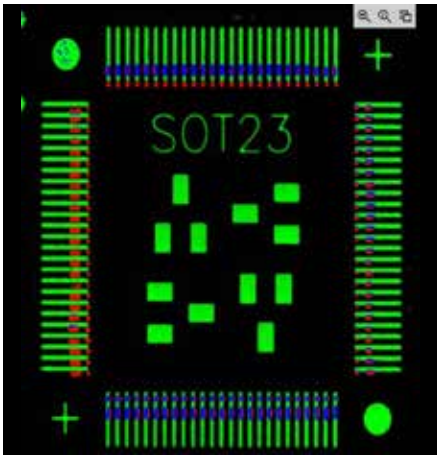
## Guided rework & touch-up at the highest level

### Technical highlights:

- High-resolution camera for placement and process monitoring
- Computer-supported component alignment, digital split optics
- 1,800 W high-performance hybrid heating with medium wave infrared heater and additional convection heating with top heater
- Full-surface 2,400 W medium wave infrared bottom heating
- Motorized heating head with vacuum pipette
- PCB dimensions of up to 400 x 300 (+x) mm, optional 520 x 360 (+x) mm
- Handling of components sizing from 01005 up to 70 x 70 mm
- Field of view placement camera with 70 x 70 mm (wide-angle) & 25 x 33 mm (telephoto)
- Operation via HR Soft 2



*Processing an assembly in the HR 550*




*Computer-supported alignment of a QFP*

*Reflow Process Camera (RPC) on the HR 550*

*Flexible circuit board holder*

The Ersa HR 550 hybrid rework system addresses all users with highest requirements in terms of precision and process safety in electronic assembly rework applications. The HR 550 features a 1,800 W high-performance hybrid heating element to desolder and solder SMT assemblies up to dimensions of 70 x 70 mm. The 2,400 W infrared bottom heater with three zones guarantees homogenous heating of the complete assembly.
Contact-free and direct-contact temperature sensing directly at the component and optimized process control guarantee ideal soldering and desoldering. The removal and placement of the components is executed by means of a high-precision vacuum pipette which is integrated into the heating head. Both the exchangeable heating head and the vacuum pipette are each activated by stepper motors. An integrated force sensor recognizes contact between component and printed circuit board.
A particularly beneficial feature for the user is the practical arrangement of the control elements and the computer-controlled alignment of components based on brilliant, high-definition camera images. The HR 550 is fitted for use with the Ersa Dip&Print Station.
The operation of the system is carried out via the HR Soft 2 software platform and ergonomically arranged control elements on the equipment.

**Ordering information:**

| Order no. | Description |
|---|---|
| 0HR550 | **Ersa HR 550** hybrid rework system |
| 0HR550L | **Ersa HR 550** with PCB holder 520 x 360 (+x) mm |
| 0HR510 | **RPC (Reflow Process Camera)** for HR 500, HR 550 and HR 550 XL |
| OPR100 | **Dip&Print Station,** complete |

# ERSA HR 550 XL

## Safe processing of large assemblies

### Technical highlights:

- 1,800 W high-performance hybrid heating element
- Full area 6,400 W IR bottom heater
- High-resolution cameras for placement and process monitoring
- Computer-supported component alignment, digital split optics
- Ergonomically optimal system operation
- Modern, user-friendly operating software
- Motorized component rotation and x/y-adjustment
- Tip operation with resolution < 20 µm


The HR 550 XL hybrid rework system is for all users who place the highest demands on precision and safety when reworking large assemblies.
The HR 550 XL features a 1,800 W high-performance hybrid heating element that can be used to desolder and solder SMT components up to the size of 70 x 70 mm. The 6,400 W infrared bottom heater with eight zones ensures homogenous heating of the entire assembly.
Non-contact and contacting temperature measurement on the component as well as optimized process control guarantee perfect soldering and desoldering processes. Component removal and component placement are carried out via a vacuum pipette that is integrated in the heating head.
The exchangeable heating head and the vacuum pipette are controlled by a stepper motor. An integrated force sensor detects the contact to the component and circuit board.
The motor-adjustable printed circuit board table is particularly useful for the large dimensions of the heating cassette. The component is also turned into the correct position by a motor. HR 550 XL is prepared to accept the Ersa Dip&Print Station.
It is operated via the HRSoft 2 software and ergonomically arranged operating elements on the device. The connection to the customers' MES systems is prepared.

### Ordering information:

| Order no. | Description |
|---|---|
| 0HR550XL | **Ersa HR 550 XL** hybrid rework system |
| 0HR510 | **RPC (Reflow Process Camera) for HR 500, HR 550 and HR 550 XL** |
| OPR100 | **Dip&Print Station,** complete |

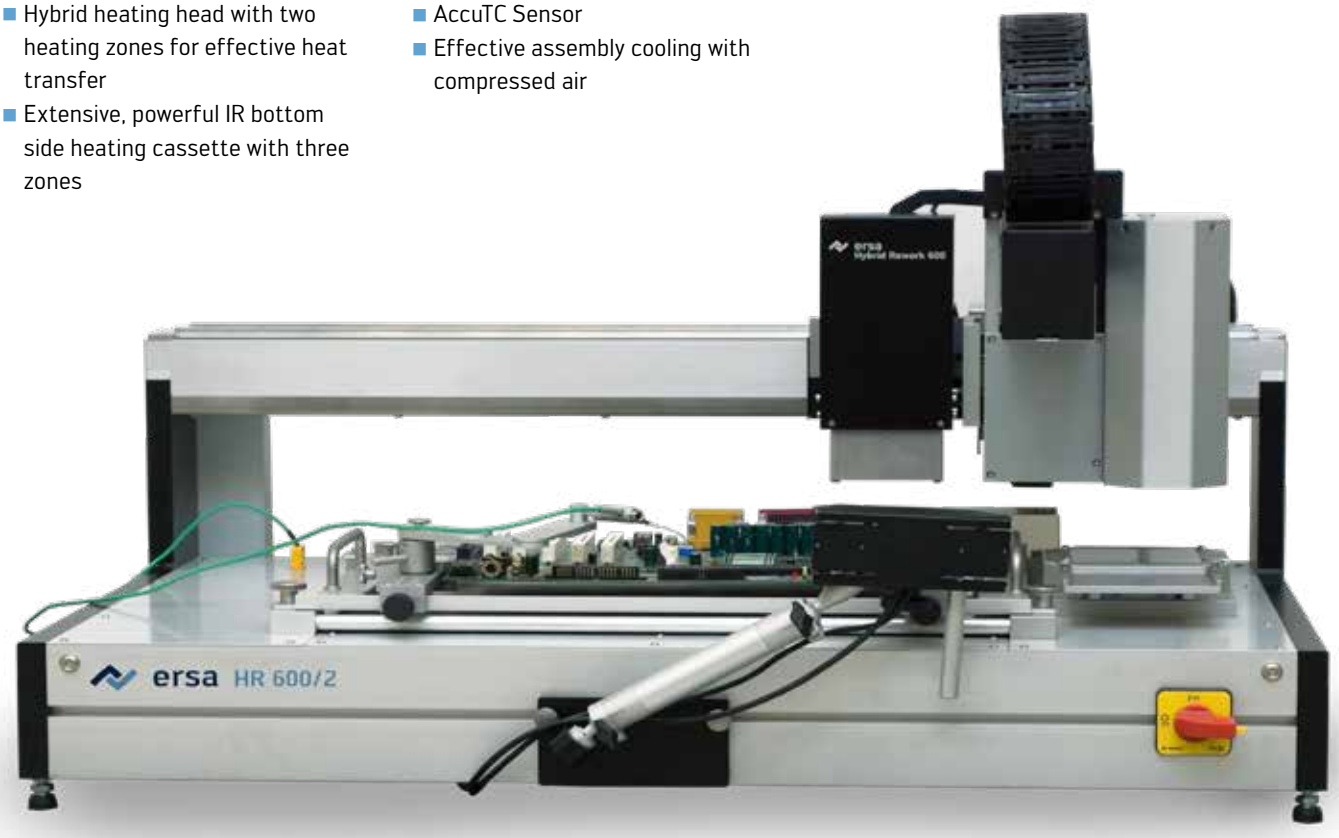
# ERSA HR 600/2

## Flexible, efficient, automated, reliable!

**Software HR Soft, see page 5**

### Technical highlights:

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




With the HR 600/2 hybrid rework 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 and automatically 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.
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.
For component placement, image processing software is used to automatically calculate the required component position and the component is placed user-independently using a vacuum gripper and axis system.
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 results are being achieved.
An optional Reflow Process Camera (RPC) with LED illumination is available for process monitoring and documentation.
The system is prepared for the use of the Ersa Dip&Print Station

### Ordering information:

| Order no. | Description |
|---|---|
| 0HR600/2 | **Ersa HR 600/2** hybrid rework system |
| 0HR600/2BHL | **Ersa HR 600/2** with lowered bottom heater |
| 0HR600/2L | **Ersa HR 600/2** with PCB holder 300 x 535 mm |
| 0HR600/2LBHL | **Ersa HR 600/2** with PCB holder 535 x 300 mm (+x) and lowered bottom heater |
| 0HR610 | **RPC (Reflow Process Camera)** for HR 600/2 |
| 0PR100 | **Dip&Print Station,** complete |

# ERSA HR 600/3 P

## High-precision automatic rework of delicate fine-pitch components and smallest chips

### Technical highlights:

- High-precision axis system (x, y, z) and high-resolution cameras
- Automated component placement as well as soldering and desoldering processes
- Hybrid heating head with two heating zones
- Large, powerful IR bottom heater in three zones
- Non-contact temperature measurement with digital sensor
- Three K-type thermocouple elements for AccuTC Sensor
- Effective component cooling with compressed air


*Automatically determined overlay of a 01005 chip*

The Ersa HR 600/3 P hybrid rework system performs automated assembly repair with the highest accuracy. With this system, all component shapes on modern assemblies can be repaired reliably. HR 600/3 P is particularly suitable for very fine components (pitch 0.3 mm and finer) as well as chip components of the designs 0402, 0201 and 01005.

As with the HR 600/2, all process steps are automated. The accuracy of the axis system and of the component nozzles has been further increased, and the 5 megapixel camera systems also provide the necessary resolution. The exact component position is calculated automatically and the component is placed using a vacuum gripper and axis system. HR 600/3 P works with highly dynamic infrared heating elements in the bottom radiator for homogeneous heating of the assembly. The hybrid heating head combines infrared radiation and convection heating for targeted and efficient component heating.

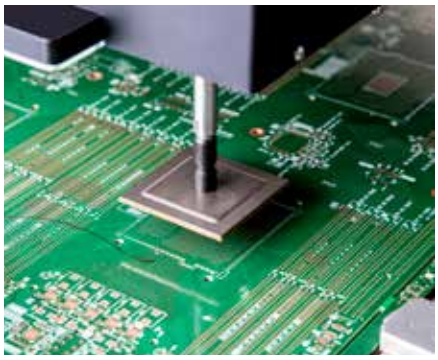
Component printing with solder paste is carried out externally at the Ersa Dip&Print Station. The dip-in of a component into a flux depot is carried out fully automatically. A powerful Reflow Process Camera with LED illumination is optionally available for process monitoring and documentation. The HR Soft 2 operating


*Automatic pick-up of a 01005 chip*

*01005 chip placement*

*Provision of 01005 components with a tape feeder*

*Metallic BGA above the light dome for detection of component connections*



*Handling of a metallic BGA*

software (for Windows™) accompanies the user through all work processes and documents them. HR Soft 2 is prepared for connection to customer MES systems.

The HR 600/3 P is available in different versions and can be optimally adapted to the customers' working priorities:

In the version with the XL board holder, significantly larger assemblies can be processed. The HR 600/3 P with lowered heating cassette provides additional free space on the underside of the assembly (for high components or elements). Both versions can be combined.

For chip components of the sizes 0201 and 01005 special nozzles are available to desolder and place the components. Furthermore it is possible to connect different tape feeders in order to feed these types of components into the rework system.

*Pin transfer of solder paste for 01005 components*

**Ordering information:**

| Order no. | Description |
|---|---|
| 0HR600/3P | **Ersa HR 600/3 P** hybrid rework system |
| 0HR610/3P | **RPC (Reflow Process Camera)** for HR 600/3 P |
| 0PR100 | **Dip&Print Station,** complete |
| 0HR600/3PL | **Ersa HR 600/3 P** with XL board holder 535 x 300 mm (+x) |
| 0HR600/3PBHL | **Ersa HR 600/3 P** with lowered heating cassette (65 mm) |
| 0HR600/3PLBHL | **Ersa HR 600/3 P** with XL board holder and lowered heating cassette (65 mm) |

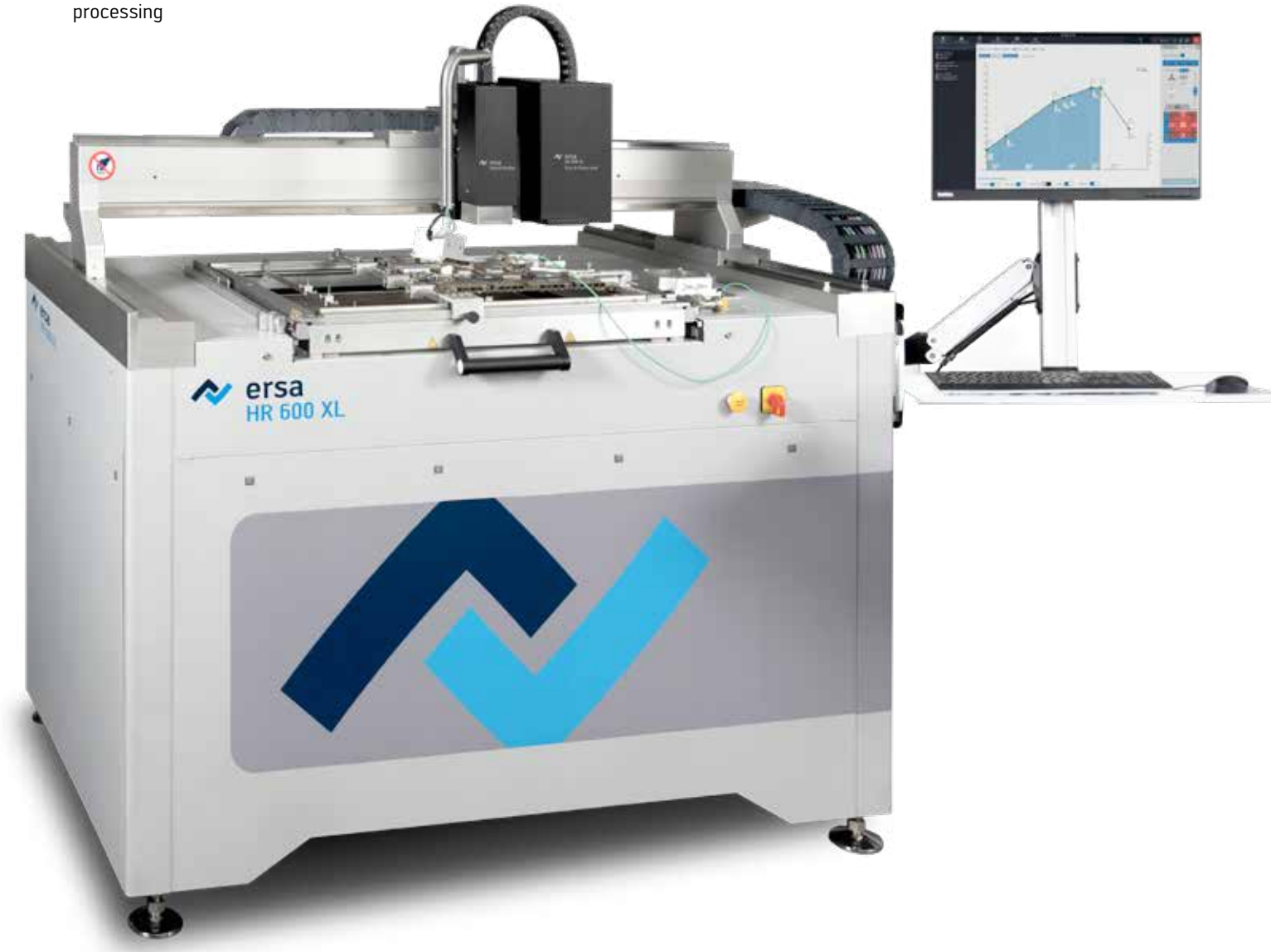
**Tape feeder for chip components on request**

# HR 600 XL

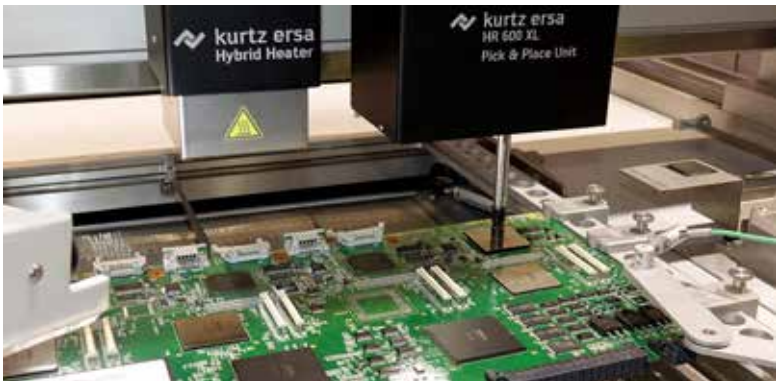
## Professional repair of big boards!

### Technical highlights:

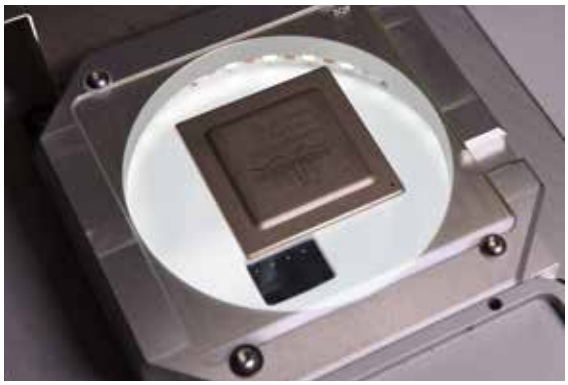
- Highly efficient 800 W hybrid heating head
- Large-area bottom-side IR Matrix Heater™ with 25 single heating elements
- Process monitoring with up to 8 thermocouples
- Automatic and precise component alignment with the help of image processing
- Highly accurate, motor-driven axis system for component placement (±0.025 mm)
- User independent, reproducible repair results guaranteed
- Process control and documentation via the operator software HR Soft 2
- Fully automatic or semiautomatic operation
- Suitable for the use of the Dip&Print Station




The Ersa HR 600 XL was designed for the professional repair of BTC (bottom-terminated components) on big boards. With an active heating area of 625 x 625 mm (24 x 24 in) and its capability to process PCBs with a thickness of up to 10 mm, the system opens up rework applications in telecommunications, network technology and IT-infrastructure. The bottom-side IR Matrix Heater™ with 15 kW power consists of 25 individually controllable heating elements. In this way, the ideal heat distribution can be set for each application. The highly efficient 800 W hybrid heating head executes the desoldering or installation of components such as BGAs of up to

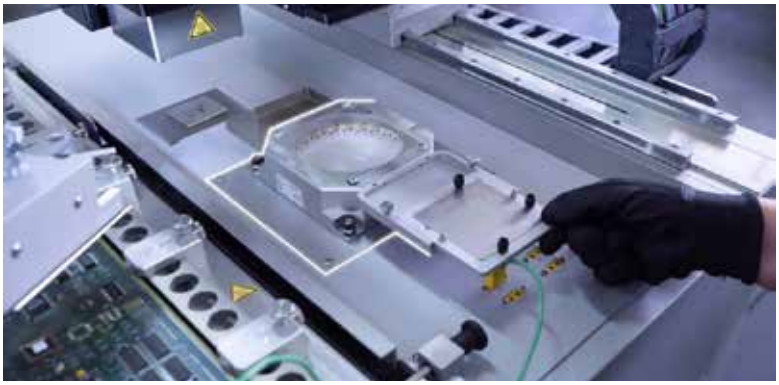



*Automatic processing of large assemblies*

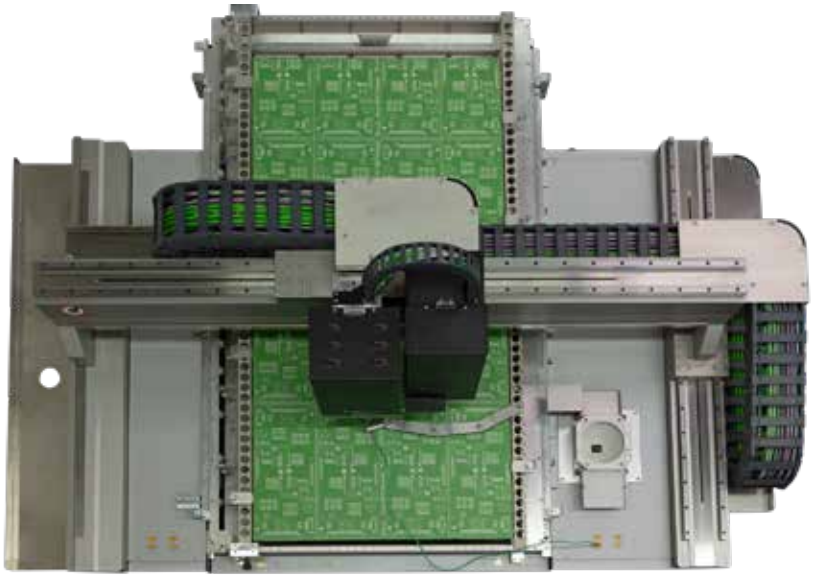


*Metallic BGA on the light dome*


*The XL heating head of the Ersa HR 600 XL is suitable for components with an edge length of up to 150 x 120 mm*



*Dip&Print Station of the HR 600 XL - for a defined flux deposition on BGAs*



*The top view clearly shows that printed circuit boards with enormous dimensions can be processed with the HR 600 XL.*

60 x 60 mm (2.36 x 2.36 in) to chip components with the usual high Ersa quality.
By means of image processing, the system performs a precise automatic component alignment and places components with an accuracy of up to ±0.025 mm thanks to its precision axis system. The HR 600 XL can be operated in fully automatic or semi-automatic mode and thus provides highest flexibility for the users.
Furthermore, the HR 600 XL is ready for use with the Ersa Dip&Print Station, to prepare components with defined amounts of flux and solder paste.
For visual process control, an optional high-resolution Reflow Process Camera is available. Process control and documentation is realized with the HR Soft 2 software package.

*Live process monitoring on the HR 600 XL*

**Ordering information:**

| Order no. | Description |
|---|---|
| 0HR600XL | **Ersa HR 600 XL** hybrid rework system |
| 0HR610XL | **RPC (Reflow Process Camera)** for HR 600 XL |
| 0PR100 | **Dip&Print Station,** complete |

**Further configurations available on request.**

# ERSA IR 550

## Unbeatable in price and performance!

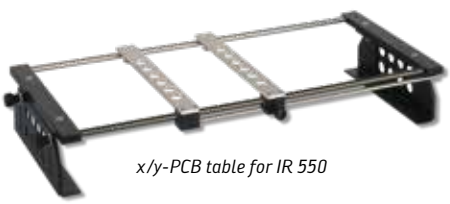
### Technical highlights:

- One programmable IR heating zone, bottom (800 W)
- 2-channel temperature recording:
  - 1 IRS-Sensor
  - 1 AccuTC Thermocouple (K-type)
- High-performance IR heater,top (800 W)
- PCB size up to 250 x 320 mm
- Laser pointer for component ID and PCB positioning
- Reflow head with vacuum pipette
- Integrated axial top cooling fan
- Integrated digital soldering station with soldering iron
- PC interface via USB port
- Remote control via keypad or IR Soft

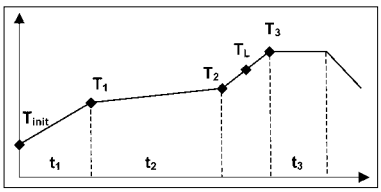
The IR 550 is the bestseller in the Ersa rework line with thousands of systems sold. This module uses the DynamicIR heating technology for fully automatic dynamic control of the top (800 W / 60 mm x 60 mm) and bottom (800 W / 135 mm x 260 mm) IR heaters.

Depending on board size, thermal mass of the substrate, and component size, the DynamicIR heaters (total of 1,600 W) guarantee that the required heat energy is delivered at the precise time and location in order to ensure that the component exactly follows the prescribed temperature profile.

Combined with the enhanced capability to run a flat peak, this technology realizes the lowest temperature deltas across the component, and greatly reduces PCB warpage.



*x/y-PCB table for IR 550*




*The IR 550 provides high profile flexibility with variable temperature curves*

### Ordering information:

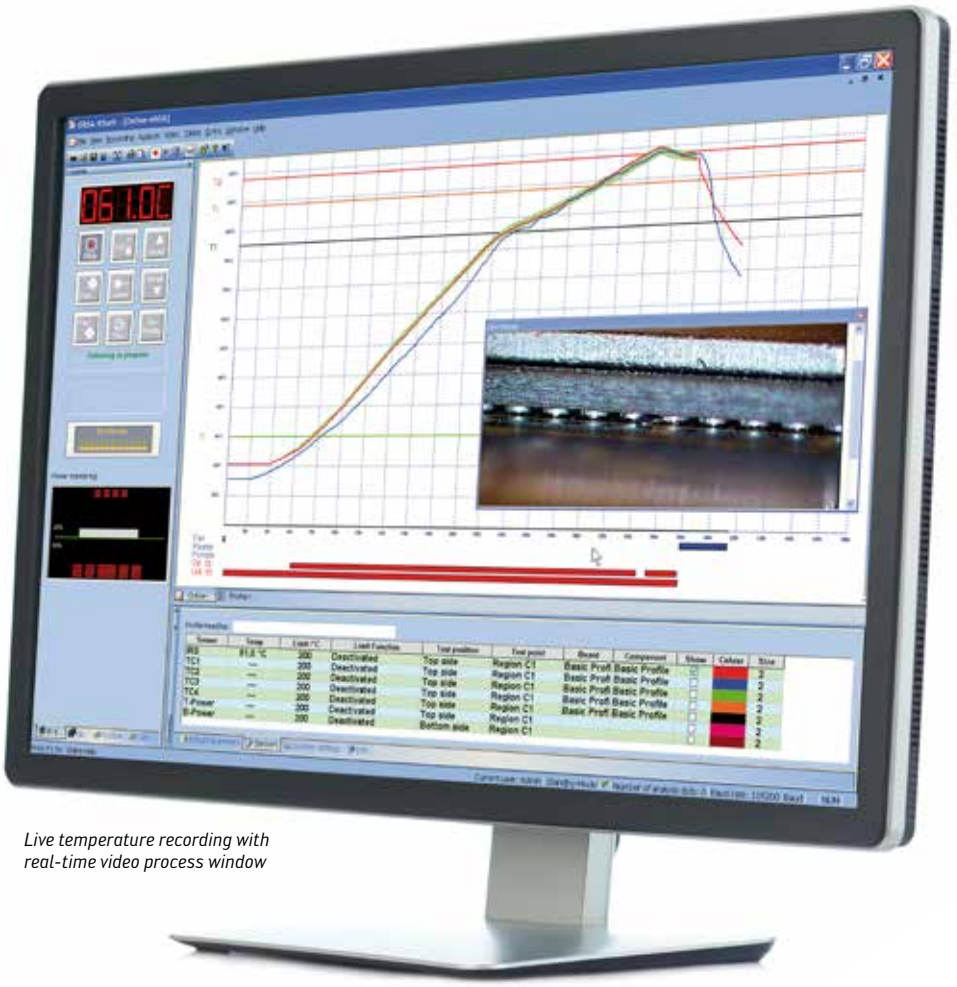
| Order no. | Description |
|---|---|
| 0IR550A | **IR 550 rework system** (incl. IR Soft , 1 x AccuTC and soldering station, without x/y-PCB table) |
| 0IR5500-01 | **x/y-PCB table** |

# ERSA IR SOFT

## User-friendly system control and process documentation for Ersa rework systems

### Technical highlights:

- Control software: IR 550 and HR 100 (with IRHP 100)
- User-friendly interface
- Visualization of all rework process data with temperature recording
- Live process video window for RPC 500
- Customized user admin rights and library for soldering and desoldering profiles
- Complete process documentation and analysis
- Operating systems – Windows 7, 8 and 10
- All systems communicate over a USB 2.0 port



*Live temperature recording with real-time video process window*

With IR Soft Ersa provides a universal software platform for its HR 100 rework system and the IR rework system IR 550, which has proven itself a thousand times over. System control, process documentation and process visualization become easy to operate.
Temperature profiles can be set very easily and and then be used for the desoldering or soldering process. Temperature curves are recorded and automatically stored so that they can be analyzed afterwards in IR Soft. The export of process data for further processing is also possible. IR Soft is known to a broad, worldwide customer base and runs on current Windows™ PCs.

With over 20 years of experience and more than 6,000 installed IR rework systems, Ersa has always integrated functions for direct customer benefit. Existing users are provided with free software updates.

*Customized library*

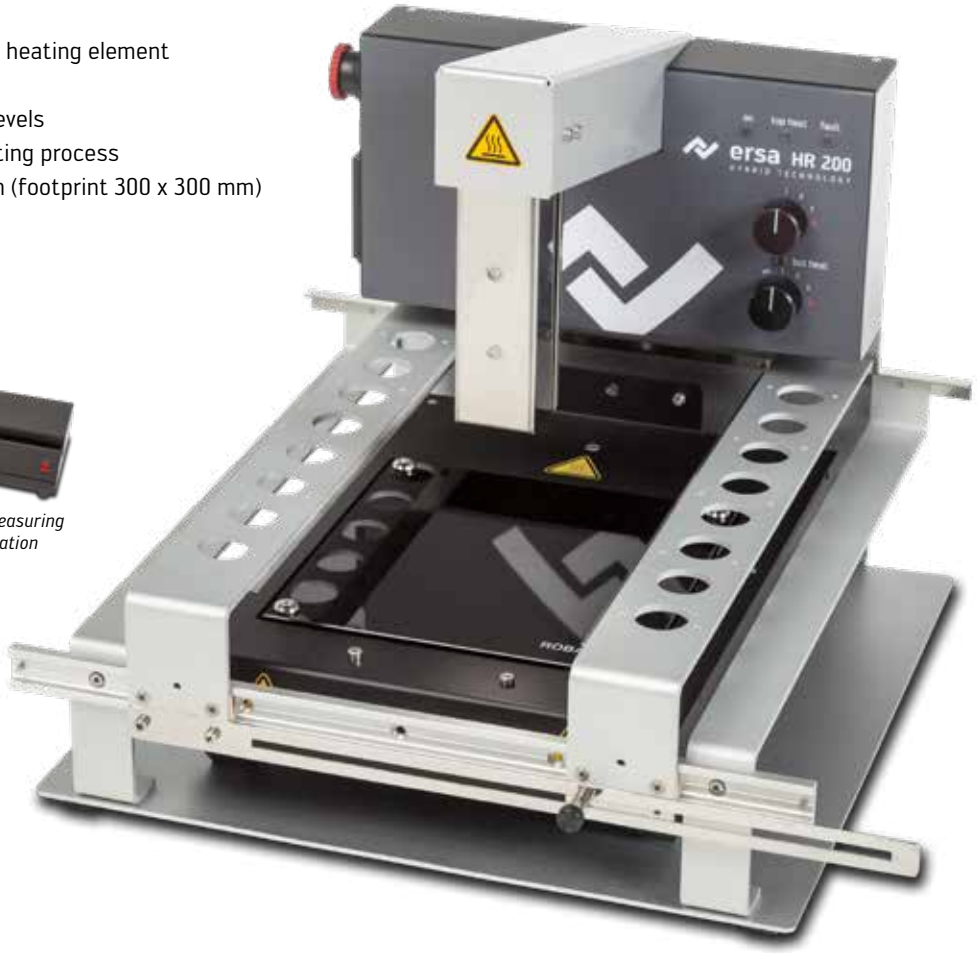
# ERSA HYBRID REWORK STATION HR 200

## Rework out of the box! As easy as one, two, three.

### Technical highlights:

- 400 W high-performance hybrid heating element
- Optional 800 W IR heating plate
- Simple power selection in four levels
- Foot switch to activate the heating process
- Very compact and handy system (footprint 300 x 300 mm)
- Runs without software

*HR 200 with cooling fan and temperature measuring device - the right power level for each application*




*Useful hybrid adapter set*

Unpack, setup, solder! It´s simple as that to rework a PCB nowadays. The Ersa HR 200 hybrid rework system contains a 400 W high-power hybrid heating element to desolder and solder SMT components of up to 30 x 30 mm.

In addition, the system can operate a powerful 800 W infrared heating plate. This bottom heater guarantees ideal preheating of the assembly to rework. The operator selects the required power for top and bottom heating with a control knob, each with four levels. A foot switch activates the heating process. The operator's hands are free to remove the desoldered component with appropriate tools.

Depending on the assembly and the preselected power a typical soldering time for components can range from 60 to 180 s (1 -3 min). During breaks, the bottom heater switches back to standby level. The integrated PCB holder locates the assembly in optimum working distance to top and bottom heater.

Ersa recommends an optional cooling fan, a thermocouple and a temperature measuring instrument to complete the workplace. Additional accessories including a Reflow Process Camera to observe the soldering processes round off the equipment.

### Easy parameter setup

| | | Top Heater | | | |
|---|---|---|---|---|---|
| | | smooth | | intensive | |
| | time* | >180 s | 180-120 s | 120-90 s | 90-60 s |
| | power level | 1 | 2 | 3 | 4 |
| Bottom Heater smooth | 1 | ultra light | sensitive bottom side | | intensiv oben |
| Bottom Heater smooth | 2 | sensitive top side | typical SMT application | | |
| Bottom Heater intensive | 3 | | | | |
| Bottom Heater intensive | 4 | intensive bottom | | | heavy duty caution |

Parameters

* Expectable soldering time, depending on application an preheating with bottom heater.

### Ordering information:

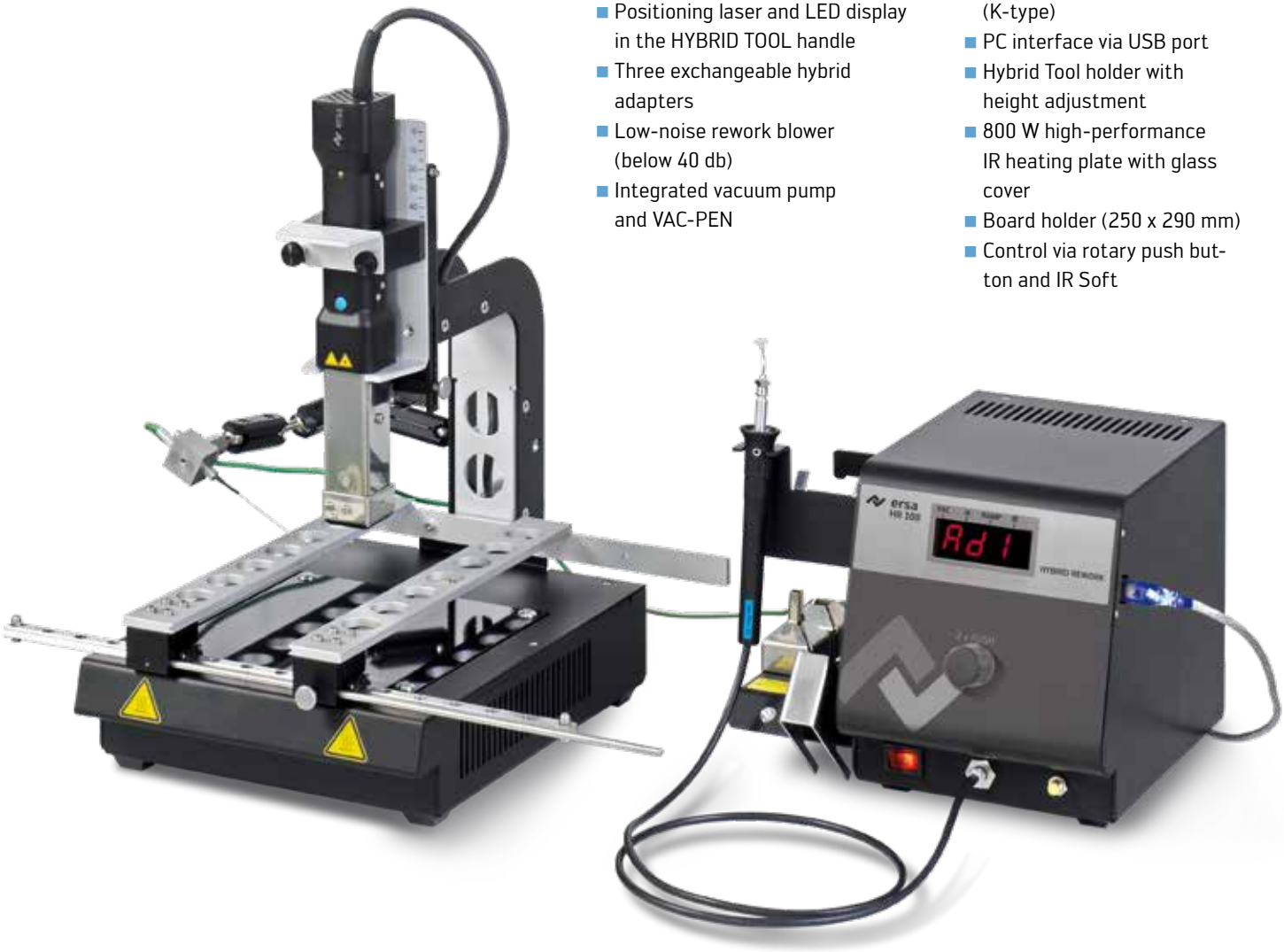
| Order no. | Description |
|---|---|
| 0HR200 | **Ersa HR 200** hybrid rework station |
| 0HR200-HP | **Ersa HR 200** hybrid rework station with heating plate |
| 0HR200-16 | Hybrid adapter set **Ersa HR 200** |

# ERSA HR 100 & IRHP 100

## Combined handheld and benchtop rework system

### Technical highlights:

- HYBRID TOOL with 200 W heating element
- Positioning laser and LED display in the HYBRID TOOL handle
- Three exchangeable hybrid adapters
- Low-noise rework blower (below 40 db)
- Integrated vacuum pump and VAC-PEN
- Temperature recording via AccuTC Thermocouple (K-type)
- PC interface via USB port
- Hybrid Tool holder with height adjustment
- 800 W high-performance IR heating plate with glass cover
- Board holder (250 x 290 mm)
- Control via rotary push button and IR Soft




The HR 100 uses Ersa's revolutionary and patented hybrid rework technology for safe removal and replacement of small SMDs. Safe, medium wave IR radiation combined with a gentle hot-air stream guarantees optimal energy transfer to the component.

The HYBRID TOOL delivers smooth and homogenous heat to components. Interchangeable hybrid adapters direct up to 200 W of targeted hybrid heat to the component - and adjacent areas are protected.

The user-friendly operation allows for even non-experienced operators to handle the HR 100 safely and quickly.

The handle of Ersa's ergonomically designed HYBRID TOOL contains a positioning laser which helps the operator to focus the heat precisely throughout the entire process. Via the USB 2.0 port, the HR 100 can be connected to Ersa's top-of-the-line and well-established IR Soft rework software.

### Ordering information:

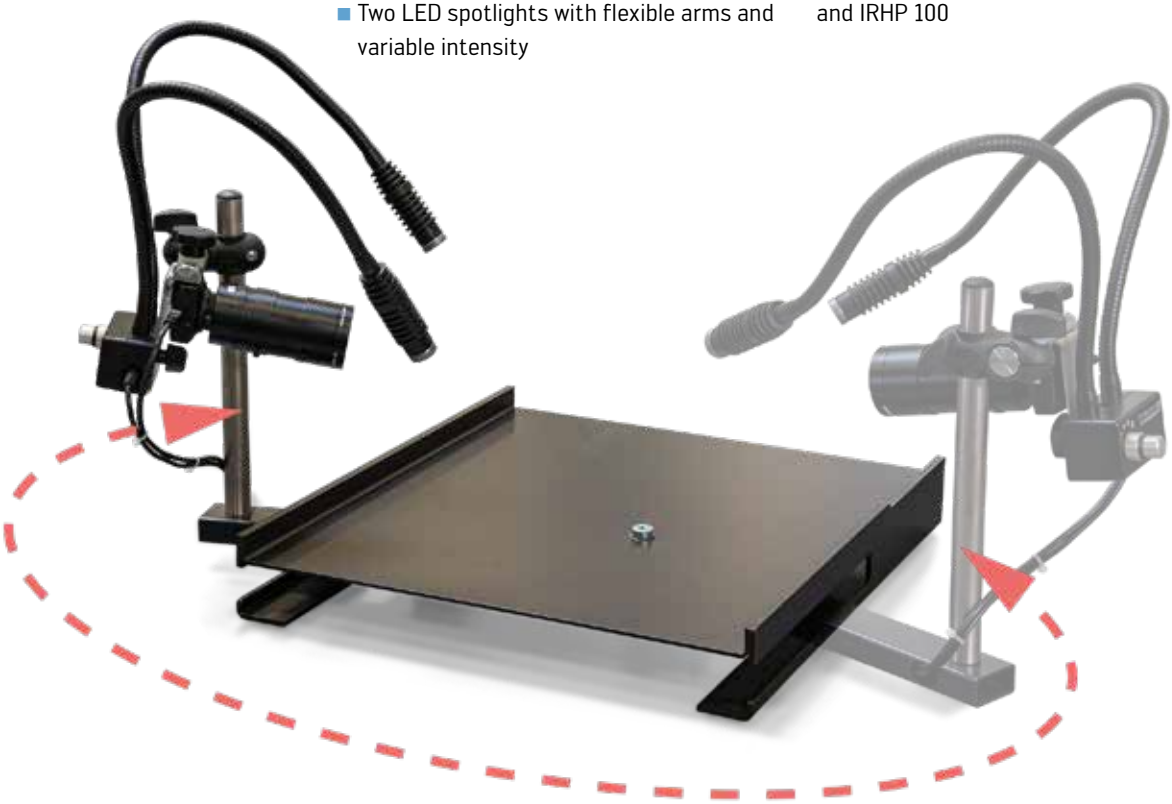
| Order no. | Description |
|---|---|
| 0IRHR100A | **HR 100** hybrid rework station with 200 W HYBRID TOOL, 3 hybrid adapters, adapters changer, VAC-PEN and HYBRID TOOL holder |
| 0IRHR100A-HP | **HR 100 & IRHP 100** hybrid rework station, complete with heating plate incl. stand with HYBRID TOOL holder |

# ERSA RPC 500

## Stand-alone Reflow Process Camera

### Technical highlights:

- High-quality CMOS USB 2.0 camera
- 70x optical MAKROZOOM lens
- Two LED spotlights with flexible arms and variable intensity
- Free swivel arm (180°), stable stand
- Fits for IR 550, HR 200, HR 100 and IRHP 100

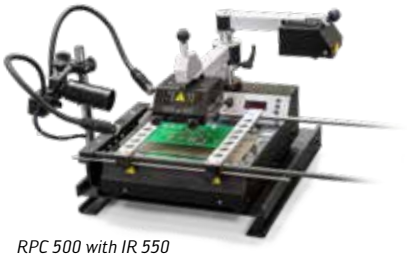


*High magnification of Tessera CSP*

*Ersa MACROZOOM*

The RPC 500 unit offers rework process observation at the lowest cost possible. The 70x optical magnification MACRO-ZOOM lens delivers highest quality and high magnification images of the finest applications.
Two LED spotlights fixed on top of flexible arms provide for an optimal illumination of the “rework scene”.
Mounted on its bottom side, the 180° swivel arm carries the camera and offers maximum flexibility of process viewing angles.
This unit can be used in combination with the IR 550, HR 200, HR 100, IRHP 100 and any other hand tools.
Via USB cable the camera is connected with the PC and the live image is visualized through IR Soft.

*RPC 500 with IRHR 100 A-HP*



*RPC 500 with IR 550*

### Ordering information:

| Order no. | Description |
|---|---|
| 0VSRPC500A-LE | **RPC (Reflow Process Camera),** complete |


*Removal of the component from the print stencil*

# DIP&PRINT STATION

## for Ersa rework systems

### Technical highlights:

- Easy solder paste printing
- Component dip-in for flux and solder paste deposition
- Fits to all Ersa rework systems
- Easy to change stencils
- Easy to clean system components

*Flux deposition in the dip stencil*

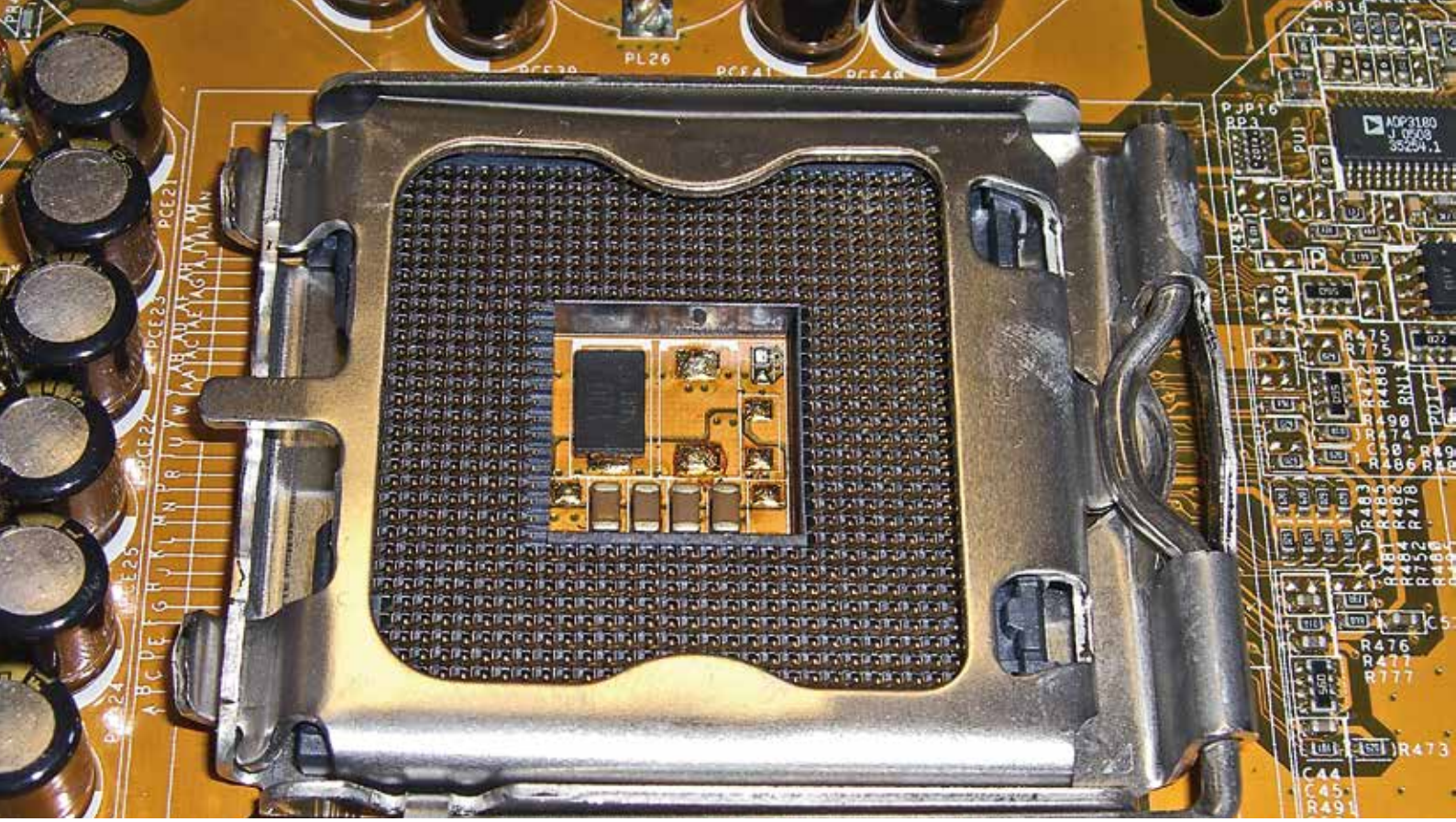
The Ersa Dip&Print Station enables the user of an Ersa rework system to easily, reliably and reproducibly perform the preparatory work on the component (application of solder paste or flux).
Optional dip stencils permit – using defined parameters – to immerse the components into flux and in solder paste, building up a defined depot on the contacts to be soldered. This method is suitable for BGAs and for most Fine-Pitch components. For example, using a component-specific stencil, solder paste depots on QFN/MLF connections and those of other SMD components can be added easily and precisely.
To apply solder paste, the component is fixed in the print stencil at first. Then the solder paste is printed from below to the component. Subsequently, the placement unit lifts the component out of the stencil and places it on the target position.
A suitable rack fixation is available for each Ersa rework system to mount the stencil frame of the Dip&Print Station on the placment system.

*Dip&Print Station with accessories*

### Ordering information:

| Order no. | Description |
|---|---|
| 0PR100 | Dip&Print Station |
| 0PR100-PL550 | Rack fixation PL 550 |
| 0PR100-PL650 | Rack fixation PL 650 |

Customized stencils available on request



*LGA 775 processor socket*

# ERSA REWORK

## Up to all requirements!

The purchasing decision for today's rework equipment goes to the company that can GET THE JOB DONE!

Rework applications specialists at Ersa have proven the flexibility of our systems by handling applications where other units failed.

Some of the most difficult of these applications include: stacked BGA packages (RAM, DIMM module), top- and bottom-side shadowed BGAs, mobile phone shield and BGA rework, rework on aluminium composite boards, BGA desoldering with heat sink glued on component, LGA775 THT socket exchange, BGA on flex circuit, reworkable epoxies, and large plastic BGA processor sockets, just to name a few. Please look closely at the application picture gallery on these two pages to fully understand the true versatility of the Ersa rework systems. Finally, do not hesitate to contact Ersa directly for special rework applications assistance and training material.

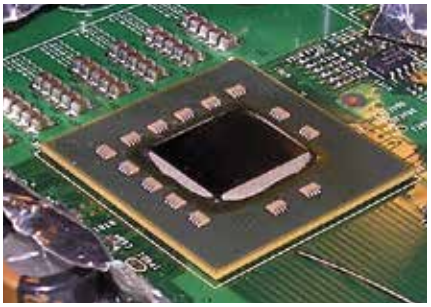

IPC

5.7.3

BGA Reballing Procedure

*The Ersa IR 550 is IPC's recommended BGA reballing system (source IPC 7711)*

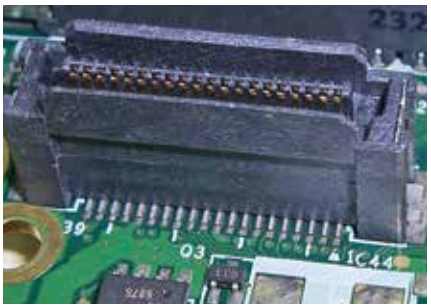
*CSP, Micro-BGA 01005, 0201, 0402 chips*



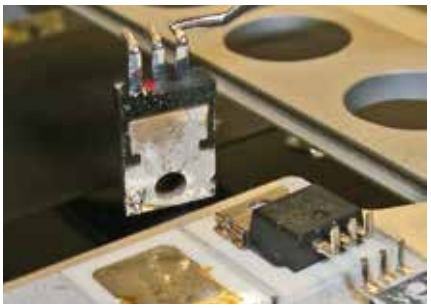
*FCBGA*

*PBGA on aluminium carrier*

*CGA with heat sink*



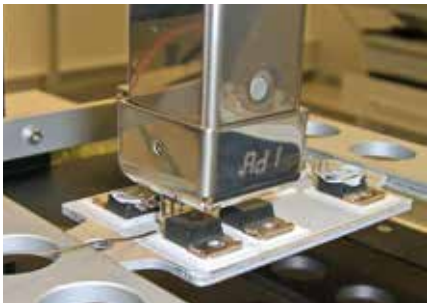
*Plastic SMD connector*



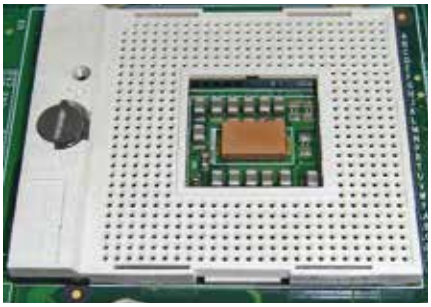
*TO220 on aluminium carrier with hybrid rework system*

*Plastic SMT aluminium carrier*

*Large plastic SMD connector*



*TO220 on aluminium carrier with hybrid rework system*

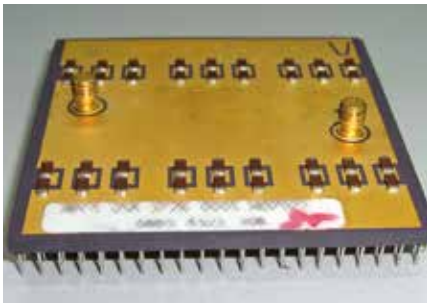


*BGA processor socket*


*BGA GPU*

Heavy-mass aluminium carriers, metal plates and shields, ceramic substrates and even plastic components can be safely reworked with the Ersa Rework Heating Technology!

*BGA plastic socket*



*High-mass ceramic Pin Grid Array*

kurtz ersa

# ACCESSORIES.

GLOBAL. AHEAD. SUSTAINABLE.

# NOZZLES & SUCTION CUPS

| | Order no. | Description | | HR 100 | HR 200 | IR 550 | HR 500 | HR 550 | HR 550 XL | HR 600/2 | HR 600/3 P | HR 600 XL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **0HR5520-025035B** | Placement nozzle, 0.35 mm, black | Aufnehmen und Platzieren von Miniaturbauteilen, outer ø 0,35mm , inner ø 0,25 mm | | | | | | | | X | X |
| | **0HR5520-02003** | Desoldering nozzle 0.3 mm, metallic | Desoldering of smallest components, outer ø 0,3 mm, inner ø 0,2 mm | | | | | X | X | | X | X |
| | **0HR5520-05006** | Desolering nozzle 0.6 mm, metallic | Desoldering of smallest components, outer ø 0,6 mm, inner ø 0,5 mm | | | | | X | X | | X | X |
| | **0HR5520-06007** | Desoldering nozzle 0.7 mm, metallic | Desoldering of smallest components, outer ø 0.7 mm, inner ø 0.6 mm | | | | | X | X | | X | X |
| | **0HR5521/10** | Component filter | Component filter for all nozzles | | | | | X | X | | X | X |
|  | **0HR5520-05010** | Placement nozzle, 1.0 mm | Pick & place of smallest components, outer ø 1.0 mm | | | | X | X | X | * | X | X |
| | **0HR5520-10020** | Placement nozzle, 2.0 mm | Pick & place of small components, outer ø 2.0 mm | | | | X | X | X | * | X | X |
| | **0HR5520-20033** | Placement nozzle, 3.3 mm | Pick & place of medium-sized components, outer ø 3.3 mm, inner ø 2.0 mm | | | | X | X | X | * | X | X |
| | **0HR5520-35050** | Placement nozzle, 5.0 mm | Pick & place of medium-sized components, outer ø 5.0 mm, inner ø 3.5 mm | | | | X | X | X | * | X | X |
| | **0HR5520-80100** | Placement nozzle, 10 mm | Pick & place of large components, outer ø 10 mm, inner ø 8.0 mm | | | | X | X | X | * | X | X |
| | **0HR5520-20** | Suction cup, AD 2 mm | Pick & place of medium-sized components, outer ø 2 mm, silicone, for 0HR5520-20033 | | | | X | X | X | * | X | X |
| | **0HR5520-35** | Suction cup, AD 3.5 mm | Pick & place of medium-sized components, outer ø 3,5 mm, silicone, for 0HR5520-35050 | | | | X | X | X | * | X | X |
| | **0HR5520-80** | Suction cup, AD 8 mm | Pick & place of large components, outer ø 8 mm, silicone, for 0HR5520-08100 | | | | X | X | X | * | X | X |
|  | **3HR600-06-023** | Placement nozzle, 1.0 mm | Pick & place of smallest components, outer ø 1.0 mm | | | | | | | X | | |
| | **3HR600-06-025** | Placement nozzle, 2.0 mm | Pick & place of small components, outer ø 2.0 mm | | | | | | | X | | |
| | **3HR600-06-022** | Placement nozzle, 4.0 mm | Pick & place of medium-sized components, outer ø 4.0 mm | | | | | | | X | | |
| | **3HR600-06-021** | Placement nozzle, 10 mm | Pick & place of large components, outer ø 10 mm | | | | | | | X | | |
| | **3HR600-06-033** | Nozzle adapter | Adapter for nozzle series 0HR5520..., length approx. 50 mm | | | | | | | X | | |
|  | **0IR5500-40** | MicroPickup, type 0510 | Lifting of smallest components, rigid, outer ø 1 mm, inner ø 0.5 mm, brass | | | X | | | | X | | |
| | **0IR5500-41** | MicroPickup,type 1020 | Lifting of smallest components, rigid, outer ø 2 mm, inner ø 1 mm, brass | | | X | | | | X | | |
|  | **0IR5500-44** | Suction adapter, small | Adapter for vacuum suction cups, for cups of 2 mm und 3.5 mm | | | X | | | | X | | |
| | **0IR5500-45** | Suction adapter | Adapter for vacuum suction cups, for cups of 5 mm and 8 mm | | | X | | | | X | | |
|  | **0IR4520-01** | Suction cup, AD 8 mm | Lifting of large components, flexible, outer ø 8 mm, silicone | | | X | | | | X | | X |
| | **0IR4520-02** | Suction cup, AD 5 mm | Lifting of medium-sized components, flexible, outer ø 5 mm, silicone | | | X | | | | X | | |
| | **0IR4520-03** | Suction cup, AD 2 mm | Lifting of smallest components, flexible, outer ø 2 mm, silicone | | | X | | | | X | | |
| | **0IR4520-07** | Suction cup, AD 1 mm | Lifting of smallest components, flexible, outer ø 1 mm, silicone, for 0IR05500-40 | | | X | | | | X | | |
|  | **0IR4520-04** | Suction cup, AD 8 mm | Lifting of large components, flexible, outer ø 8 mm, Viton®, long-life | | | X | | | | X | | X |
| | **0IR4520-05** | Suction cup, AD 5 mm | Lifting of medium-sized componetns, flexible, outer ø 5 mm, Viton®, long-life | | | X | | | | X | | |
| | **0IR4520-06** | Suction cup, AD 3.5 mm | Lifting of small components, flexible, outer ø 3.5 mm, Viton®, long-life | | | X | | | | X | | X |
| | **0SVP07S** | Suction cup | for VAC-PEN 0VP020, outer ø 7 mm, silicone | X | | X | | | | | | |
| | **0SVP13A** | Suction cup set | for VAC-PEN 0VP020, outer ø 4, 6, 9 mm, NBR | X | | | | | | | | |

Viton® is a registered trademark of Dupont Dow Elastomers. *With adapter 3HR600-06-033.

Further nozzles on request

# TEMPERATURE SENSORS

| | Order no. | Description | | HR 100 | HR 200 * | IR 550 | HR 500 | HR 550 | HR 500 XL | HR 600/2 | HR 600/3 P | HR 600 XL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | **0IR6500-01** | AccuTC Thermocouple | Temperature measurement at the component, sheathed thermocouple, K-type, ø 0.5 mm | X | X | X | X | X | X | X | X | X |
| | **0IR6500-37** | AccuTC Sensor without fixture | Spare element without fixture, sheathed thermocouple, K-type, ø 0.5 mm | X | X | X | X | X | X | X | X | X |
| | **0HR645** | AccuTC2.0 thermocouple | Temperature measurement at component, sheathed thermocouple, K-type, ø 1.5 mm | X | X | X | X | X | X | X | X | X |
| | **0IR4510-02** | Thermocouple wire | Temperature measurement, Ni-Cr-Ni wire, thermo-plug | X | X | X | X | X | X | X | X | X |
|  | **0HR641** | TC holder | Adjustable holder for AccuTC, length approx. 170 mm, height appx. 48 mm | X | | X | | X | | X | | X |
| | **0HR640XL** | TC holder | Long version, Length approx. 370 mm, height appx. 48 mm | | | | | | X | | | X |
| | **0IR5500-35** | Flexpoint TC holder | Adjustable holder for AccuTC, length 210 mm | | | X | | | | | | |

*together with **0DTM103.**


*DTM 100 (0DTM103)*

## DTM 100 TEMPERATURE MEASURING DEVICE

In certified companies and from a quality point of view, the recording and monitoring of the process temperature is obligatory.
When repairing assemblies, the DTM 100 is used to record the soldering temperature in addition to the measuring channels of the Ersa rework systems.
With all K-type thermocouples, the temperature can be measured on sensitive components or on the underside of the assembly.

The DTM 100 is also suitable for controlling the temperature of soldering tips.
For more information, please refer to our Ersa soldering tools catalog or our homepage at:

**www.ersashop.com**

# CONSUMABLES

| | Order no. | Description | |
|---|---|---|---|
|  | **010MM0250LF02** | Solder wire | Solder wire, Sn96.5Ag3.0Cu0.5, diameter 1 mm, 250 g |
|  | **0WICKNC2.2** | No-Clean desoldering wick | Removal of solder, width 2.2 mm, length 1.5 m |
| | **0WICKNC2.7** | No-Clean desoldering wick | Removal of solder, width 2.7 mm, length 1.5 m |
|  | **4FMJF8001-PEN** | FLUX-PEN Interflux IF8001 | Application of flux, with fibreglass brush, refillable, 7 ml |
| | **4FMJF6000-PEN** | FLUX-PEN Interflux IF6000 | Application of flux, for lead-free applications, with fibreglass brush, refillable, 7 ml |
| | **4FMJF8300-005** | Flux gel | Application of flux, e.g. for SolderWell processes, dispensing cartridge and needle, 5 ml |
| | **4FMJF8300-030** | Flux gel | Auftragen von Flussmittel, für Dip-Prozess, dosing syringe, 30 ml |
|  | **0IR6500-47** | Thermal pad | Heat shield to protect temperature sensitive areas, 305 x 305 x 3 mm |
|  | **0IR4500-40** | Heat shielding tape | Heat protection of adjacent components, width 25 mm, length 1 m, aluminium |
| | **0IR4500-07** | Capton tape | Heat-resistant tape, width 25 mm, length 10 m |
|  | **0IR6500-46** | PTFE glass cloth tape | Heat-resistant tape to improve IRS reading on reflective surfaces, width 40 mm, length 5 m, also suitable to lift components |
|  | **0TR01/SB** | TIP-REACTIVATOR | Reactivation of passive soldering tips, lead-free, 15 g can |
| | **0TR02/SB** | TIP-REACTIVATOR | Reactivation of passive soldering tips (new: without abrasives), lead-free, 30 g can |
|  | **0FR400** | Flux remover | Removal of flux and cleaning of PCBs, spray can with brush, 400 ml |

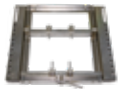

*i-CON NANO*

## SOLDERING STATIONS AND TIPS

A complete list of solders and desolderig wicks as well as further soldering stations and soldering tips for rework applications can be found in our Ersa soldering tools catalogue or on our homepage at **www.ersashop.com**

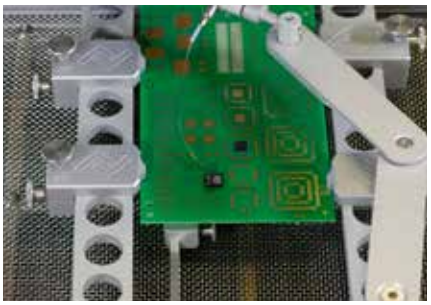
*i-CON VARIO 2*

# PCB HOLDERS AND MORE

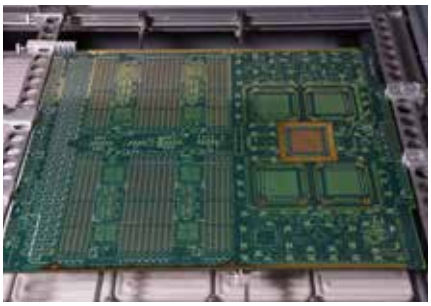
| | Order no. | Description | HR 100 | HR 200 | IR 550 | HR 500 | HR 550 | HR 550 XL | HR 600/2 | HR 600/3 P | HR 600 XL |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | **0PH100** | PCB holder, fixture of small PCBs, recommended PCB size up to 170 x 170 mm | X | X | | X | X | X | X | X | X |
|  | **0HR655** | Additional PCB holder for odd shape PCBs (1 pcs) | X | X | | | X | X | X | X | X |
| | **0HR635** | PCB holder frame XL (535 x 300 mm (+x)) for HR 600 | | | | | | | X | X | X |
|  | **0HR626XL** | Support rail for HR 600 XL with 3 pins | | | | | | | | | X |
|  | **0HR625** | PCB holder, exchange frame for HR 600 (390 x 300 mm (+x)) | | | | | | | X | X | |
|  | **238568E** | Support rail for HR 600/2 with 2 pins | | | | | | | X | X | |
|  | **0HR554** | PCB holder, exchange frame for HR 550 | | | | | X | X | | | |
| | **0HR554L** | PCB holder, exchange frame L (520 x 360 mm) for HR 550 retrofit | | | | | X | X | | | |
|  | **0HR554-01** | Support rail for HR 550 with 1 pin | | | | | X | X | | | |
|  | **0HR554-02** | Pin for support rail of HR 550 | | | | | X | X | | | |
| | **0HR505** | PCB fixture for HR 500 | | | | X | | | | | |
|  | **0IR5500-01** | x/y-PCB table, fixture for PCBs or PCB holders, recommended PCB size up to 280 x 390 mm | X | X | X | | | | | | |
| | **0HR504-01** | Support rail for HR 500 with 1 pin | | | | X | | | | | |
| | **0HR504-02** | Pin for support rail of HR 500 | | | | X | | | | | |

Further equipment on request

*Flexible board holders adapt to size and structure of an assembly.*



*Support rails with pins prevent PCB warpage...*



*...so that even XL PCB formats can be safely fixed in the rework systems .*

# DIP&PRINT STATION

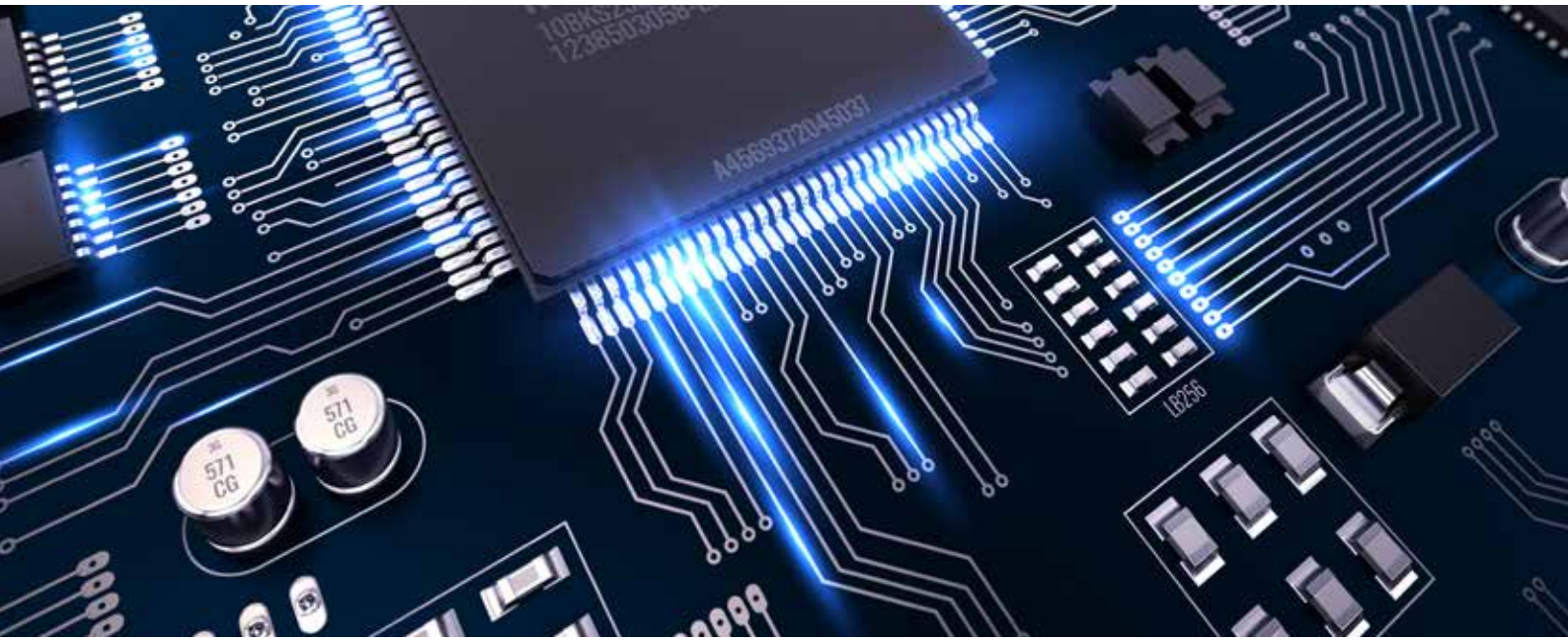
| | Bestell-Nr. | Bezeichnung |
|---|---|---|
|  | **0PR100** | Dip&Print Station incl. stencil frame and squeegee |
|  | **0PR100-D001** | Dip stencil, 40 x 40 mm / 300 µm |
| | **0PR100-D002** | Dip stencil, 20 x 20 mm / 150 µm |
| | **0PR100-D003** | Dip stencil, 20 x 20 mm / 100 µm |
| | **0PR100-D004** | Dip stencil, 40 x 40 mm / 100 µm |
| | **0PR100-D015** | Dip stencil, 55 x 55 mm / 100 µm |
| | **0PR100-D016** | Dip stencil, 55 x 55 mm / 150 µm |
| | **0PR100-D017** | Dip stencil, 55 x 55 mm / 200 µm |
| | **0PR100-D018** | Dip stencil, 55 x 55 mm / 250 µm |
|  | **0PR100-S001** | Print stencil, type 1, BGA 225 |
| | **0PR100-S002** | Print stencil, type 2, MLF 32 |

Customer-specific stencils on request

PLEASE NOTE:
Ersa's customer service department assists its customers in selecting suitable fluxes and solders pastes for the dip-in and the printing process. For example, Interflux, a manufacturer of fluxes and solder pastes, recommends its product "µ-dlFe7" as dip-in solder paste, and flux gel "IF 8300" for this process.
In order to fabricate a print stencil for a certain product, we would require a datasheet showing the exact dimensions of the body as well as the position of the pins. Depending on the complexity of the stencil, Ersa will issue a proposal.

For further information on the **Dip&Print Station** please refer to our website at:
**dip-print.ersa.com**

kurtz ersa | AVLE



# QUALIFICATION & TRAINING

## AVLE Training Association – High-quality courses from practical experience for practical use - e.g. Rework of Complex Components


**Top soldering equipment delivers top performance** if the user as well has the latest technical knowledge: Ersa offers a wide range of training courses covering manual or machine soldering or paste printing, from professional soldering courses to company-specific trainings or technology days.

For example, Ersa is a founding member of the German AVLE training association. Within this framework, we have been successfully offering certified courses for soldering technology specialists for 10 years. These courses have a modular structure with its Module 4 covering rework.

**AVLE Modul 4: Rework of complex SMT components**

The fourth module of the training course „Soldering Specialist" provides specific knowledge on the rework of complex SMT components on electronic assemblies using rework systems. Participants will learn the targeted desoldering of defective components and the subsequent re-soldering of a new component in the same spot on the circuit board. The focus in these processes is on the temperature profile of the component to be replaced during desoldering and re-soldering and the temperature stress of components in directly adjacent areas.

*Further information and registration*

### Content:

- Machine processing of components that can no longer be adequately soldered by hand
- Rework basics, process management with professional rework systems
- Temperature profiles in the rework process, differences to the reflow machine process
- Typical preparations and problems in the rework process
- Temperature measurement during rework, process evaluation
- Moisture sensitivity of assemblies and components
- Printed circuit board properties, expansion and warpage, printed circuit board support
- Overview SMT rework systems, technologies, placement systems
- Basic function of rework and placement systems
- Use of flux for rework, application possibilities, removal
- Use of solder pastes for rework, application possibilities

kurtz ersa

# INSPECTION SYSTEMS.

GLOBAL. AHEAD. SUSTAINABLE.

# ERSASCOPE M & ERSASCOPE M PLUS

## Optical inspection systems for hidden solder joints

### Technical highlights:

- High-resolution 5 MP USB camera
- Interchangeable high-quality lenses
- Multifunctional tripod and x/y-table with rotation for difficult inspections
- Completely ESD safe
- Including ImageDoc Basic software

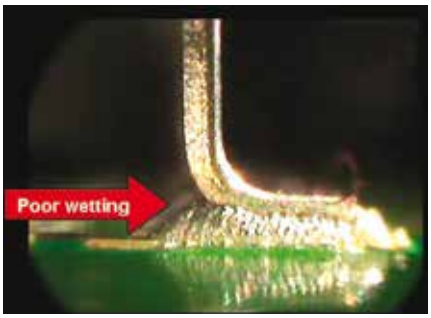
*ERSASCOPE M*

The ERSASCOPE M and M plus are multi-purpose inspection video microscopes to analyze hidden solder joints in electronic production environments.

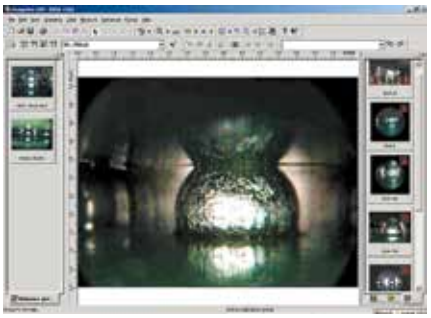
Both units have been designed for optical inspection and digital image recording including measurements of solder joints on Ball Grid Array (BGA) and many other SMT packages. Their application field covers the visual inspection of components on printed circuit boards in Surface Mount Technology (SMT) or Through-Hole Technology (THT) in general, but also the visual inspection of PCB lands or solder paste prints. The devices can be used in quality assurance, production, laboratories or R&D departments.

The compact ERSASCOPE M units connect with a PC or any portable computer via a USB interface, and within minutes they are ready for operation. Thanks to the high-quality BGA optical head, the inspection of components with hidden solder joints is easy. A MACROZOOM lens allows top-view surface inspection in various magnifications. Both optical heads are plugged onto the high-resolution digital color camera hand piece with a “Quick Snap” connection.

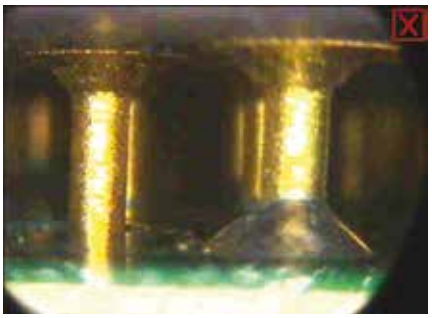
Changing the optical heads in accordance to the inspection task is a matter of seconds. Long-life and very bright controllable LED lights are integrated in both optical heads and provide optimal illumination of the solder joints.



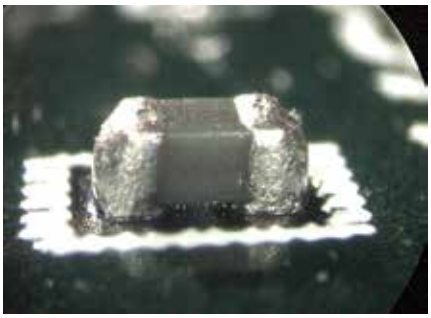

*PQFP interior heel fillet inspection: non-wetting with lead-free paste*



*BGA inspection with reference pictures*

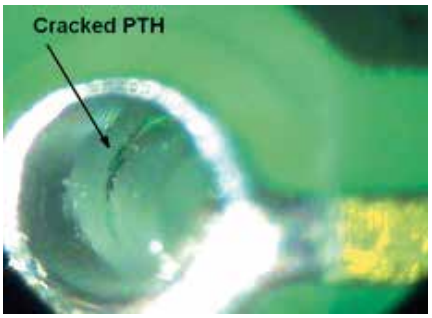


*THT inspection under PGA*



*High magnification inspection of 0201s*

*ImageDoc Basic inspection software*

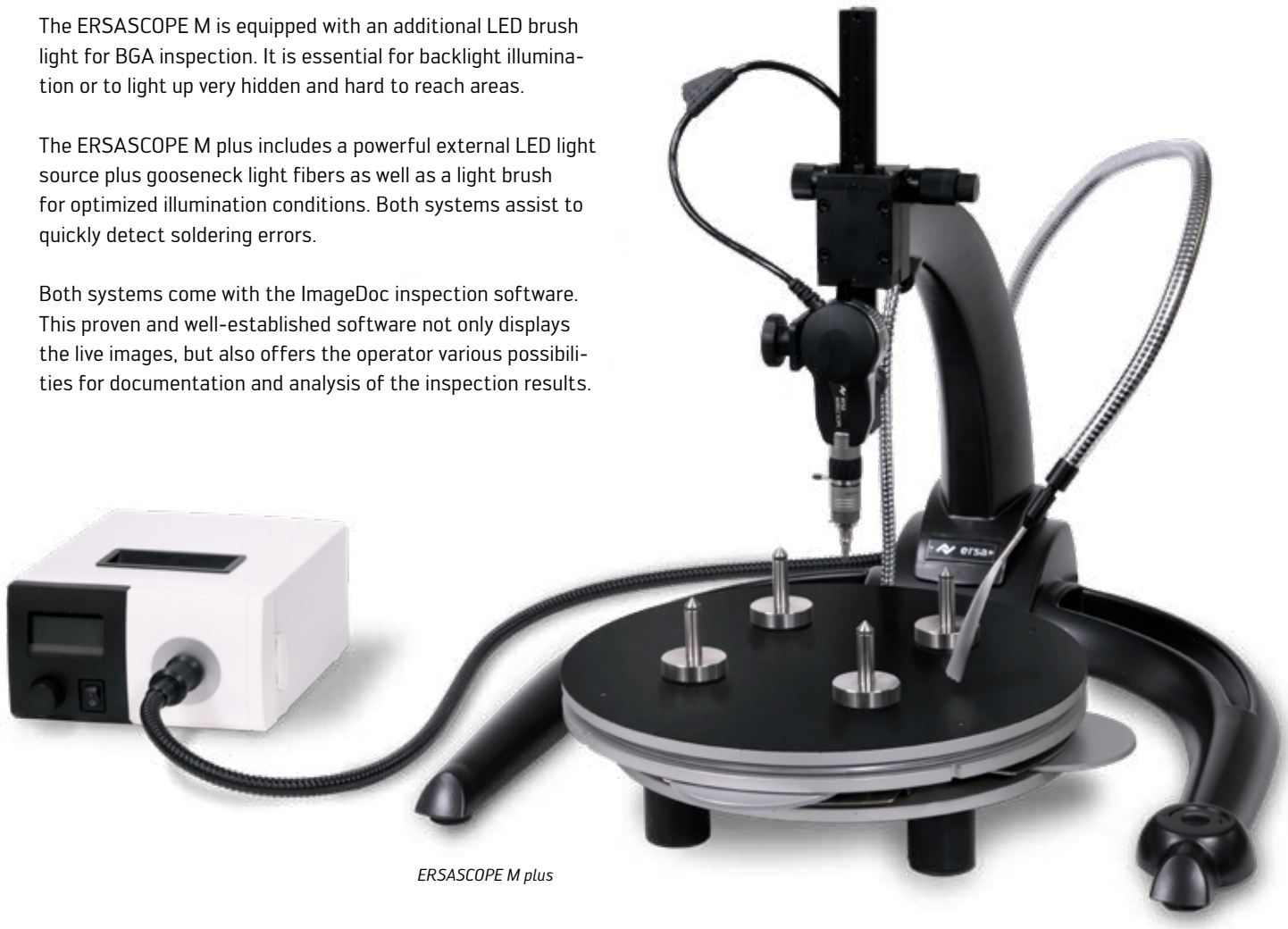



*PCB inspection inside via hole*

The ERSASCOPE M is equipped with an additional LED brush light for BGA inspection. It is essential for backlight illumination or to light up very hidden and hard to reach areas.

The ERSASCOPE M plus includes a powerful external LED light source plus gooseneck light fibers as well as a light brush for optimized illumination conditions. Both systems assist to quickly detect soldering errors.

Both systems come with the ImageDoc inspection software. This proven and well-established software not only displays the live images, but also offers the operator various possibilities for documentation and analysis of the inspection results.



*ERSASCOPE M plus*

# ERSA MOBILE SCOPE

## Mobile optical inspection system for electronics production

### Technical highlights:

- High-resolution USB camera
- High-quality BGA optical head (180x)
- Optional 0° optical head (80x)
- Integrated, adjustable LED lighting
- Optional LED fiber optic lighting
- Stand units and further accessories
- ImageDoc Basic or ImageDoc EXP software for both beginners and advanced operators
- Recording, measurement and reporting functions
- Mobile application


# Mobile quality assurance in no time at all

The Ersa mobile scope is a compact and handy, portable video microscope to inspect solder joints in electronic production environments. It has been designed for optical inspection and digital image recording including measurements of solder joints on Ball Grid Array (BGA), µBGA, CSP and Flip-Chip packages.

Furthermore, the Ersa MOBILE SCOPE can also be used to visually inspect lands, solder paste prints or, in general, to visually inspect components in Surface Mount Technology (SMT) or in Trough-Hole Technology (THT) on the board. The device can be used in quality control, production, laboratories or R&D departments.

The compact Ersa mobile scope connects with a PC or any portable computer via a USB interface and is ready for operation within minutes in any location.

By means of the high-quality BGA optical head, components with hidden solder joints can easily be inspected, a MACROZOOM lens allows top-view surface inspection in various magnifications. Both optical heads are plugged onto the high-resolution digital color camera hand piece with a “Quick Snap” connection. Changing the optical heads in accordance to the inspection task is a matter of seconds.

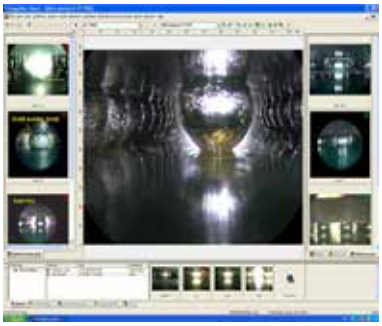
Long-life and very bright, controllable LED lights are integrated in both optical heads and provide optimal illumination of the solder joints. In BGA inspection an additional LED light brush is essential for backlight illumination or to light up very hidden and hard-to-reach areas. Thus soldering errors can be detected quickly and easily with the Ersa MOBILE SCOPE.

The Ersa MOBILE SCOPE is supplied together with the well-established ImageDoc Basic inspection software. This software not only displays the live images but also provides various possibilities to document and analyze inspection results.

Extensive accessories allow the operator to compose his individual Ersa MOBILE SCOPE inspection system according to his needs.

A practical aluminium case offers safe storage of the inspection equipment and facilitates the transportation of the system to any location wherever it is needed.

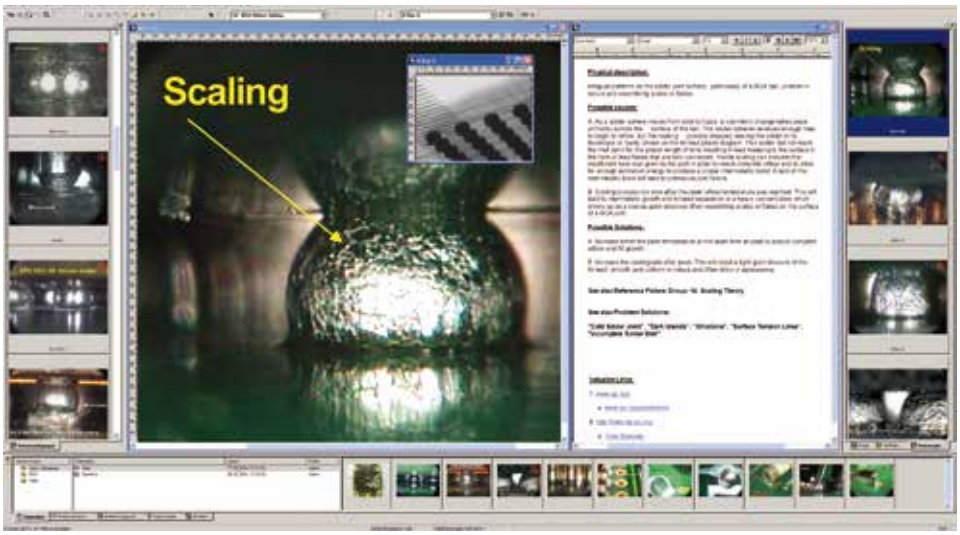
*QFP solder joints – taken with the Ersa MOBILE SCOPE MACROZOOM optical head*



*ImageDoc inspection software*

**Ordering information:**

| Order no. | Description |
|---|---|
| 0VSCA060 | Basic camera unit |
| 0VSSC060VK1 | Sales kit 1, for details see page 42 |
| 0VSSC060VK2 | Sales kit 2, for details see page 42 |
| 0VSSC060VK3 | Sales kit 3, for details see page 42 |




*Reference picture databank, live image with "good/bad" reference images*

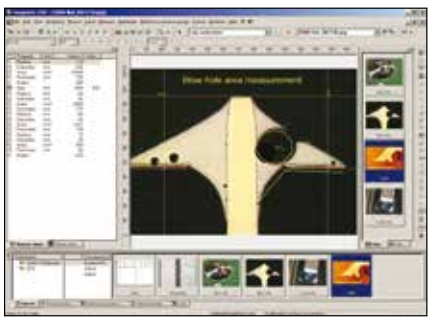
# ERSA IMAGEDOC

## Inspektions-Software für das Prüfpersonal mit Dokumentationen von Experten!

### Technical highlights:

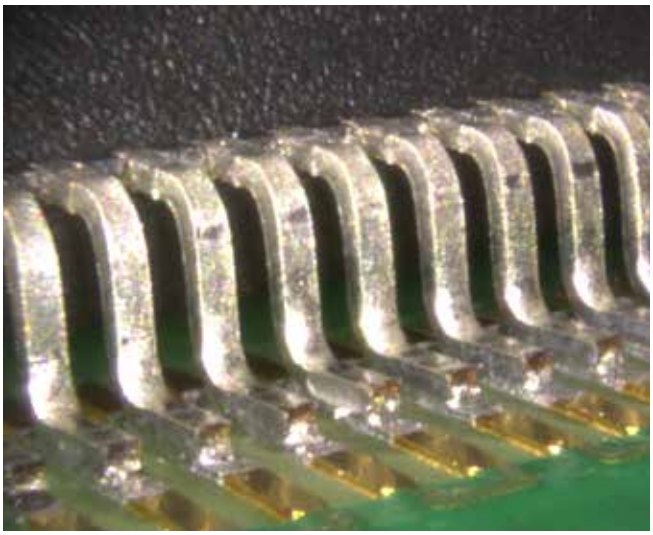
- Live and still picture window for documentation and control
- Image database with examples of good and bad solder joints for evaluation purposes
- Reference pictures
- Basic problem/solution database, set up by Ersa, Fraunhofer and the industry
- Measurements and automatic measure control function/calibration
- Image processing and labelling
- Basic reporting/e-mail out of application
- Plug-and-Play setup

*Database & reporting modules to store process information and failure analyses*

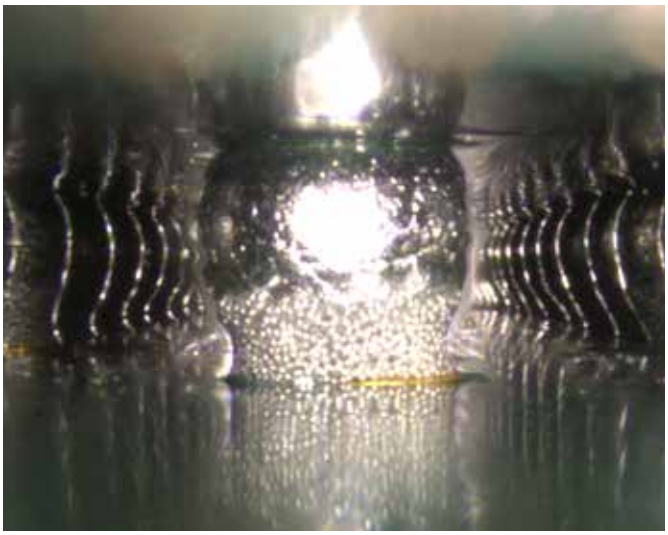


*Extensive measurement and labelling functions*

Based on the four fundamental principles of "Inspect, Classify, Analyse and Document", the ImageDoc software platform was designed especially for the inspection personnel. Lead-free implementation required a complete re-training of how operators classify solder joint quality. The days of "If the solder joint looks good, it most likely is good!" are over! By means of software-guided inspection processes the personnel can be properly trained for lead-free.
The Ersa ImageDoc software guides the operator through the critical and time consuming process of determining whether a defect exists, and then directs the operator where to look in the process in order to correct the problem. Inspection subjectivity is reduced, problems are solved more quickly and valuable process information is documented for future use. The included database can be modified and extended by the user at any time. The user can add own reference pictures (with good/bad marking) and problem/solution references.



*"Focus Fusion" – view of QFP solder joints*



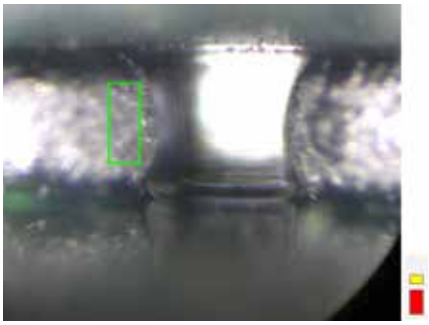
*"Focus Fusion" – view of a BGA printed with solder after it has been placed*

# ERSA IMAGEDOC EXP

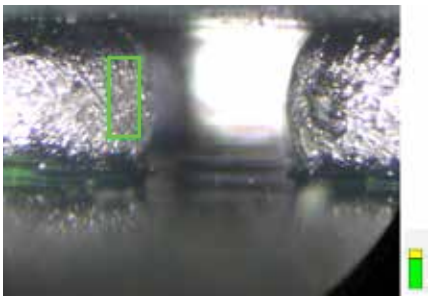
## Additional functions for sharper views at even more depth

### Technical highlights:

- Live and still picture, AVI recording, sequence module, presentation mode
- "Best Focus" and "Focus Fusion"
- Guided failure analysis, supported by an extensive expert database
- Reference pictures
- Large problem/solution database, set up by Ersa, Fraunhofer and the industry
- Measurements, automatic measure control function/calibration
- Image processing/labelling, filters and macros
- Network operability, multi-user licensing
- User administration
- Report generation in *.doc and statistics in *.xls/database, import/export, e-mail
- Online updates and user forum



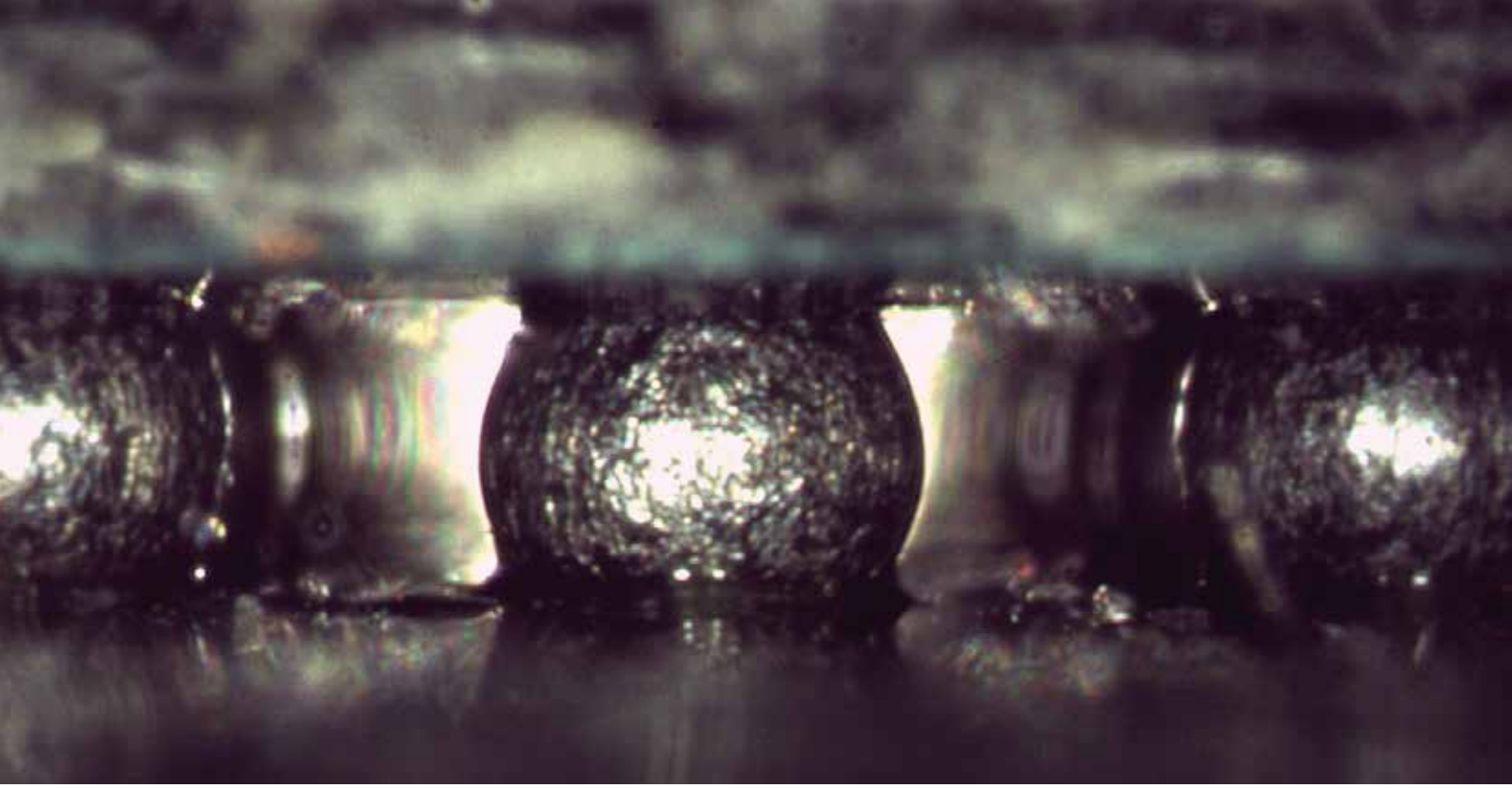
*Best Focus – blurred picture in the green framed section (Area of Interest) – red bar graph*



*Best Focus – focused picture in the green framed section (Area of Interest) – green bar graph*

The image process function "Best Focus" enables the ERSASCOPE user to easily find the objectively best sharpness setting for any freely determined portion of the image. This is an especially useful feature when measurements are to be taken within the image.
The second function serves to improve the presentation and documentation of the inspection results. With "Focus Fusion", the software calculates a composite image with excellent depth of sharpness from a number of previously recorded images. Balls of a BGA, aligned in one row, can thus be viewed with a high clarity and sharpness, for example. Solder defects or irregular solder joints can be inspected far more easily. The inspection result of a component with high pin-out is documented in only one image.

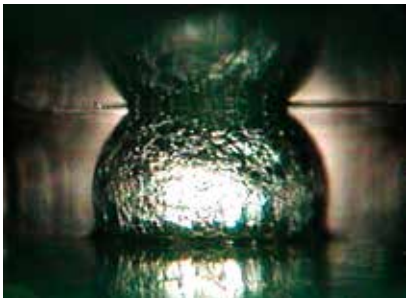
Both functions are available starting with version 3.0 of the well-proven ImageDoc EXP inspection software. An update is available for existing ERSASCOPE customers.



# APPLICATIONS

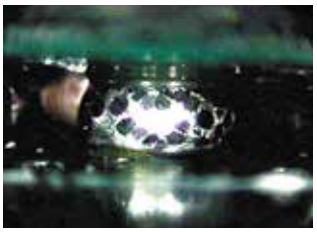
## Hidden solder joints and further applications

The inspection of hidden solder joints is one of the most important areas in a quality assurance program. The images shown on these pages underscore the flexibility of the ERSASCOPE inspection systems.
Whether SMDs or THTs, BGAs or Flip Chips: the ERSASCOPE offers the perfect complement to existing microscopes and X-ray systems for a total quality assurance program.



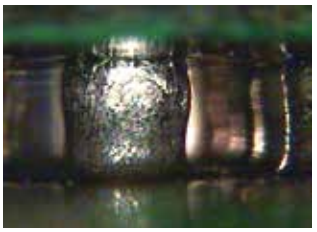
*PBGA – scaling: insufficient heat*

*BGA: contamination (fibre)*

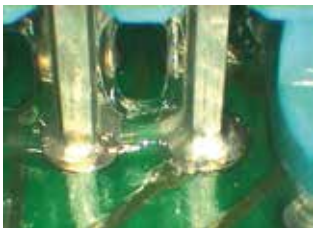


*BGA – "dark islands": overheat*


*BGA: via hole solder splash*

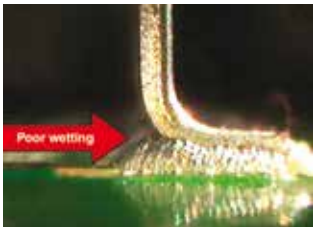


*CBGA: good wetting angle*



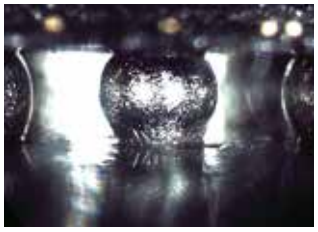
*Conformal coating inspection*

*Lead-free assembly: non-wetting*




*PQFP – interior fillet: poor wetting*

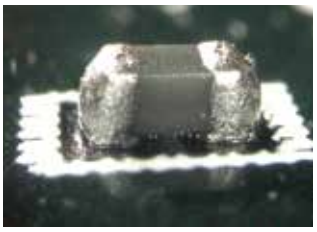

*PLCC – interior fillet inspection*



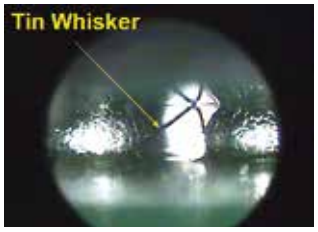
*PBGA – cold joint: insufficient heat*

*CCGA: insufficient solder*

*BGA – piggy back: bad alignment*



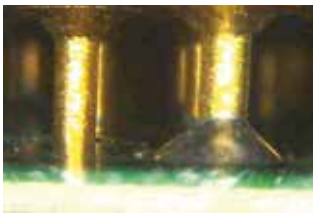
*0402: bulbous solder joint*




*PBGA: tin whisker*

*Lead-free assembly: non-wetting*

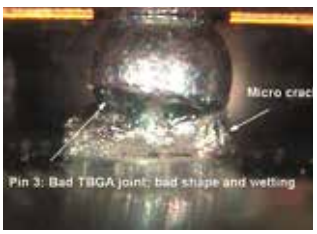
*BGA – paste print: insufficient solder*



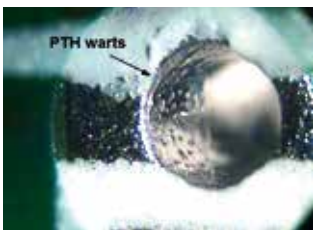
*PGA – no flow thru: insufficient heat*

*PBGA – scaling: insufficient heat*


*Lead-free PLCC: micro crack*




*TBGA: disrupted joint & micro crack*

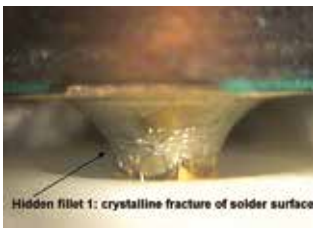



*Plated thru-hole: disrupted wall*

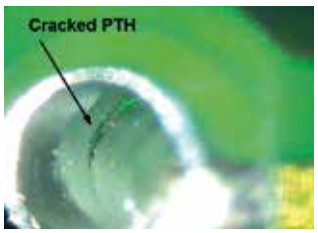

*PBGA – scaling: insufficient heat*

*SMD LED inspection*


*PBGA – scaling: insufficient heat*




*THT joint: crystalline fracture*




*Plated thru-hole: cracked wall*

# SYSTEM COMPONENTS

## for Ersa MOBILE SCOPE, ERSASCOPE M and M plus

| Order no. | Descritpion | Technical data | Part |
|---|---|---|---|
| **0VSLS400** | **LED light source**<br>with electronic light quantity regulation and brightness presets | (W x H x D): approx. 170 x 196 x 98 mm<br>12 VDC, 5,420 mA, max. 65 W<br>weight approx. 2.1 kg |  |
| **0VSLF200** | **Light brush** | length 35 mm, width 5 mm |  |
| **0VSRM100** | **Glass calibration scale** | 10 µm lines at 100 µm pitch | |
| **0VSLC100** | **Lens cleaning kit** | cleaning cloth, papers and liquid | |
| **0VSXY100** | **x/y-table with fine adjustment**<br>and 4 PCB supports | X-Y-θ-movement with fine adjustment and antistatic mat with grid<br>dimensions: ø 320 mm; weight: ~ 5 kg |  |
| **0VSID300L** | **ImageDoc EXP 3.x** | upgrade licence for ImageDoc EXP professional inspection software | |
| **0VSID135** | **ImageDoc Basic** | general inspection software | |

| Basic camera unit | Description |
|---|---|
| Image sensor | 1/3" N-MOS solid state color image sensor |
| Number of effective pixels | 1,600 (H) x 1,200 (V) pixels (UXGA / 2.0 MP) |
| Interface | USB 2.0 serial bus |
| Dimensions | 114 (L) x 36 (W) x 51 (H) mm, without cable |

**0VSCA060**

| BGA 90° optical head | Description |
|---|---|
| On-screen magnification | ~ 180x – 15x on 14" monitor |
| Working distance range | ~ 0.5 – 30 mm (focusing range) |
| Field of view | ~ 2.0 – 24 mm |
| Illumination | integrated long-life cool white LED illumination |

**0VSSE060-90K**

| MACROZOOM head 80x with LED light | Description |
|---|---|
| On-screen magnification | ~ 80x – 8x on 14" monitor |
| Working distance range | ~ 5 – 200 mm |
| Field of view | ~ 5 – 45 mm |
| Illumination | integrated long-life cool white LED illumination |
| Dimensions | 43 (L) x 19 (Ø) mm (85 x 35 mm max.) |

**0VSSE060-MZ80**

| LED light brush | Description |
|---|---|
| Illumination | Cool white LED illumination |
| Illumination level | 64 x 0.250 mm (ø) plastic optical fibers |
| Power source | 3 x AA (LR06) batteries (alcaline cells recommended) |
| Dimensions | ø 26 x 250 mm (40 x 250 mm max.) |

**0VSLS030**

## Ersa MOBILE SCOPE sales kits

| Order number | 0VSSC060VK1 | 0VSSC060VK2 | 0VSSC060VK3 |
|---|---|---|---|
| Basic camera unit, digital | 1x | 1x | 1x |
| BGA lens, 90° optical head | 1x | -- | 1x |
| MACROZOOM lens 80x with LED light | -- | 1x | 1x |
| LED light brush with dimmer | 1x | -- | 1x |
| Desktop holder for camera unit | 1x | -- | 1x |
| Operating manual | 1x | 1x | 1x |
| ImageDoc Basic (inspection software) | 1x | 1x | 1x |
| Aluminium case for Ersa MOBILE SCOPE | -- | -- | 1x |

# PRODUCT PORTFOLIO
## by Ersa

### Stencil printers
With its fully-integrated, full-area post-print at the speed of the line, VERSAPRINT 2 stencil printers offer unique technological and cost advantages. The new 3D camera features inspection functions which are one of a kind: soldering paste volumes, print offsets, bridging and smeared or blocked stencils are all recognised at the speed of the production line.

### Reflow soldering
Ersa reflow machines have been convincing users for many years with their outstanding thermic performance, highest machine availability and lowest operating costs. With the Ersa HOTFLOW 4 series, it has been possible to reduce the $N_2$ and energy consumption even further – with comparable performance.

### Selective soldering
As market leader, Ersa presents perfect solutions for all selective soldering tasks: From start-up and/or high-end, inline, and/or cellular manufacturing, single and/or multiwave, flexible and/or throughput, the range of VERSAFLOW, ECOSELECT, ECOCELL and SMARTFLOW models is ideally tailored to user requirements.

### Wave soldering
Wave soldering still offers optimum value for money. However, user requirements are highly varied. This is why Ersa offers a comprehensive POWERFLOW range, from entry-level to high-end models, each of which can be individually configured.

### SMT/BGA rework
In over two decades, far more than 6,000 users worldwide have already benefitted from the patented Ersa IR rework technology. In addition to their outstanding value for money, the Ersa systems have attained their leading market position by delivering the best results, even in demanding rework applications.

### Handling systems
Ersa handling systems can be tailored exactly to specific process requirements. A variety of modules are available such as lifting and lowering stations, height difference modules, turning stations and workstations which can be joined by conveyor belts to offer ideal PCB handling.

### SMT/BGA inspection
Whether for inspecting the BGAs just replaced in the rework system, or finding the right parameters in the line - ERSASCOPE inspection systems for non-destructive inspection of concealed solder joints have established themselves as standard and are indispensible in electronics manufacturing today.

### Hand soldering and desoldering
Ersa soldering and desoldering stations impress with compact dimensions, high performance, energy efficiency and low operating costs as inexpensive replacement tips are used. The i-CON VARIO 4 is the current flagship, meeting the highest professional requirements with the possibility of using four tools at the same time.

### Solder, solder wire & fluxes
Everything to do with soldering – all from a single source: In addition to special implements, tools and temperature measurement equipment, Ersa also offers auxiliary and expendable materials for the production and repair of high-end circuit boards. Ersa solder wire consists exclusively of high-quality raw materials. Due to production on the most modern of machinery, they meet all quality requirements.

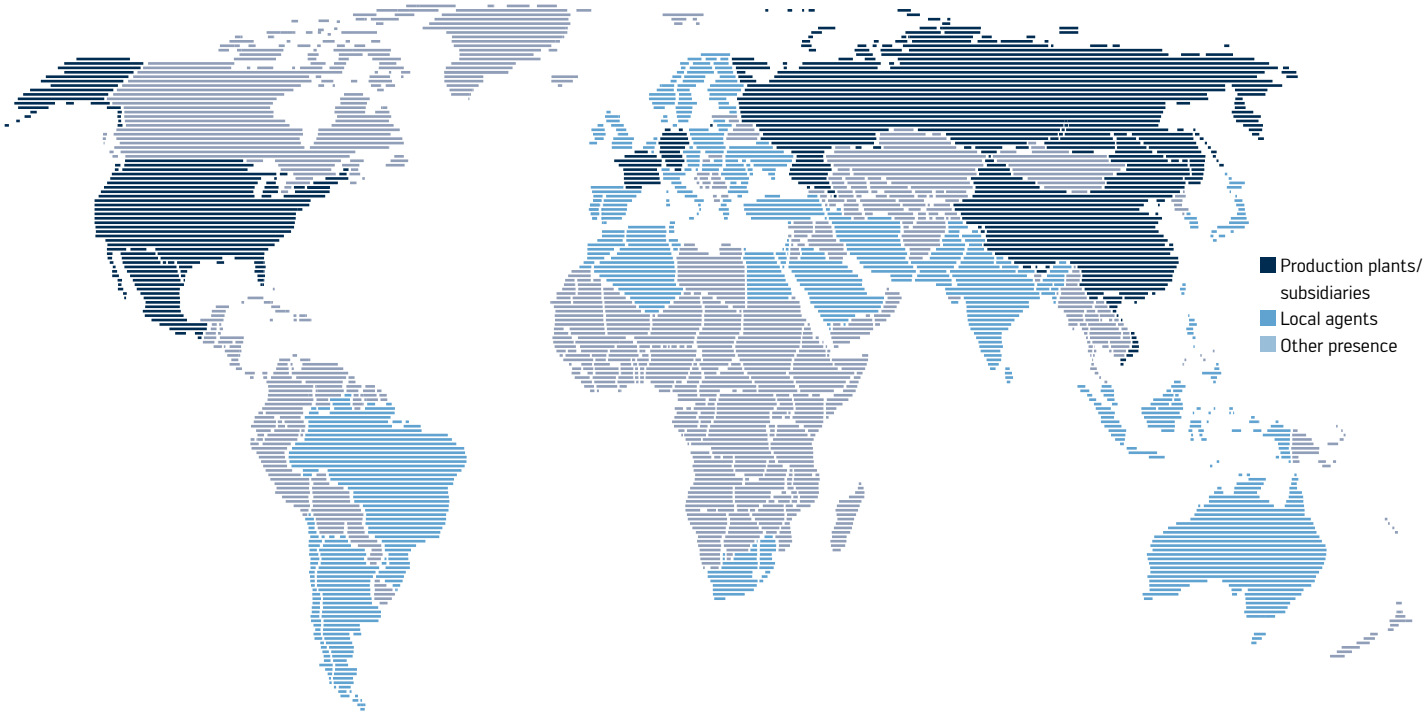
### Solder fume extraction
Ersa solder fume extraction units efficiently and economically ensure clean PCBs and healthy breathable air when hand soldering. They extract the fumes in the entire work area via large nozzles, available in a variety of versions, and effectively filter them.


### Ersa SERVICES
In addition to a wide range of products, Ersa offers comprehensive system consulting for every aspect of soldering with services such as machine and process audits, maintenance contracts, ramp-up support, machine capability studies or online spare parts catalogs. The global Ersa service network with application centers, subsidiaries and representatives is unique.

### Ersa training
Whether seminars on know-how, process technology or individual technology days - Ersa offers perfectly tailored knowledge transfer in line with current practices. As an accredited training institution, Ersa, a founding member of the Training Association for Soldering Technology Electronics (AVLE), trains your employees as "specialist in soldering technology" according to uniform standards.

# ELECTRONICS PRODUCTION EQUIPMENT

## Worldwide presence




**America**
Kurtz Ersa, Inc.
1779 Pilgrim Road
Plymouth, WI 53073
USA
Tel. +1 920 893 3772
aus den US: 1 800 363 3772
usa@kurtzersa.com
www.ersa.com

**Mexico**
Kurtz Ersa, S.A. de C.V.
Av. Lopez Mateos Sur Núm. 1450 Int. 7
Col. Las Villas (Plaza las Villas)
Tlajomulco de Zúñiga, Jalisco
C.P. 45643
México
Tel. +52 33 15 93 18 63
info-kmx@kurtzersa.com
www.ersa.com

**Asia**
Kurtz Ersa Asia Ltd.
Unit 03-05, 8th Floor
One Island South
No. 2 Heung Yip Road
Wong Chuk Hang
Hongkong
China
Tel. +852 2331 2232
asia@kurtzersa.com
www.ersa.com

**China**
Ersa Shanghai
Room 720, Tian Xiang Building
No. 1068 Mao Tai Rd.,
Shanghai 200336
China
Tel. +86 213126 0818
info-esh@kurtzersa.com
www.ersa.com

**Vietnam**
Kurtz Ersa Vietnam Company Limited
B916 Road 3, Kizuna 2 Factory Area, Lot B4-3-7-8,
Tan Kim IP, Can Giuoc Dist. Long An Province,
Vietnam
Tel. +84 2723 733 682
info-kev@kurtzersa.com
www.ersa.com

**France**
Kurtz Ersa FRANCE
2, Avenue de Wissembourg
67500 Haguenau
France
Tel.: +33 6 07 78 01 87
kefrance@kurtzersa.com
www.ersa.com

Ersa GmbH
Leonhard-Karl-Str. 24
97877 Wertheim/Deutschland

Tel. +49 9342 800-0
Fax +49 9342 800-127
info@ersa.de
www.ersa.de

kurtz ersa