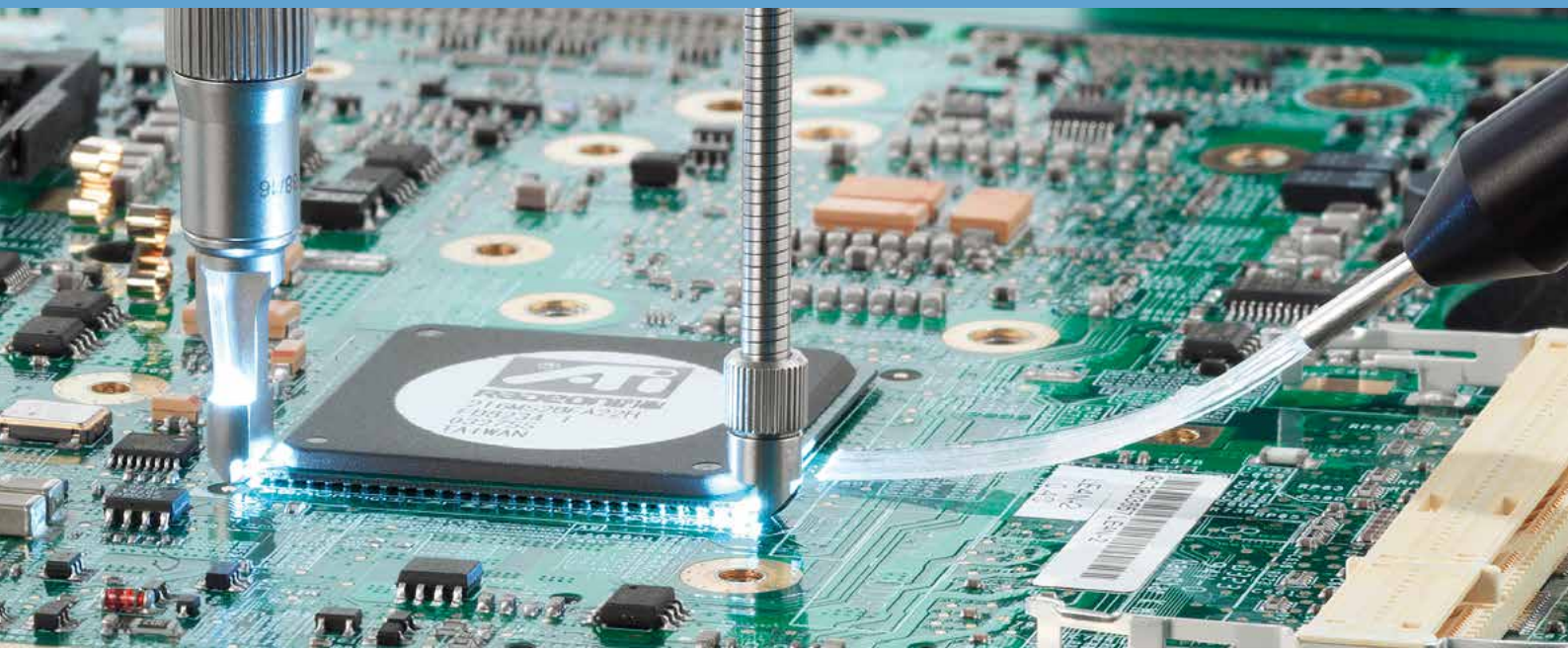
Ersa Rework & Inspection Systems

We take care of excellent worldwide joints



kurtz ersa

Content

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 are proud to boast one of the world's largest installed equipment bases of over 6,000 systems ranging from smaller bench top units to larger semi-automated machines.

Ersa rework systems have proven themselves to be the undisputed leaders in handling the largest variety of rework applications.

From the smallest 0201 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 safe IR 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 nearly twenty years now, 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 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.

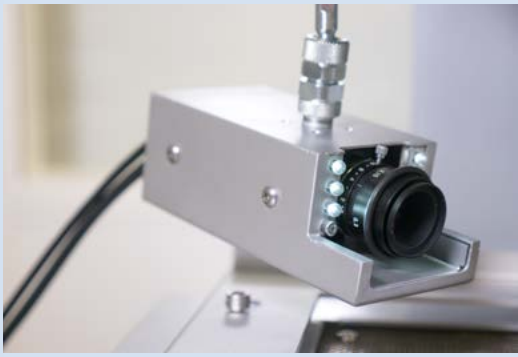
ERSASCOPE remains to be the undisputed industry standard for optically inspecting BGAs and other hidden solder joints!

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 Portfolio

- **Stencil printers**
- **Reflow systems**
- **Selective soldering systems**
- **Wave soldering systems**
- **Rework systems**
- **Inspection systems**
- **Soldering stations**
- **Solder fume extraction units**
- **Solders, fluxes and more**
- **Staff training and certification**

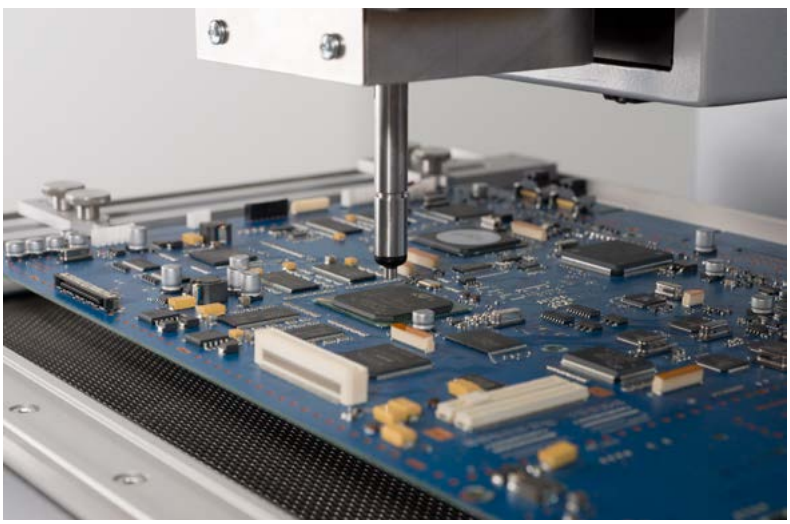
Ersa HR 550 Hybrid Rework System
Guided rework!



Reflow process camera on the HR 550

High-performance rework for professionals!

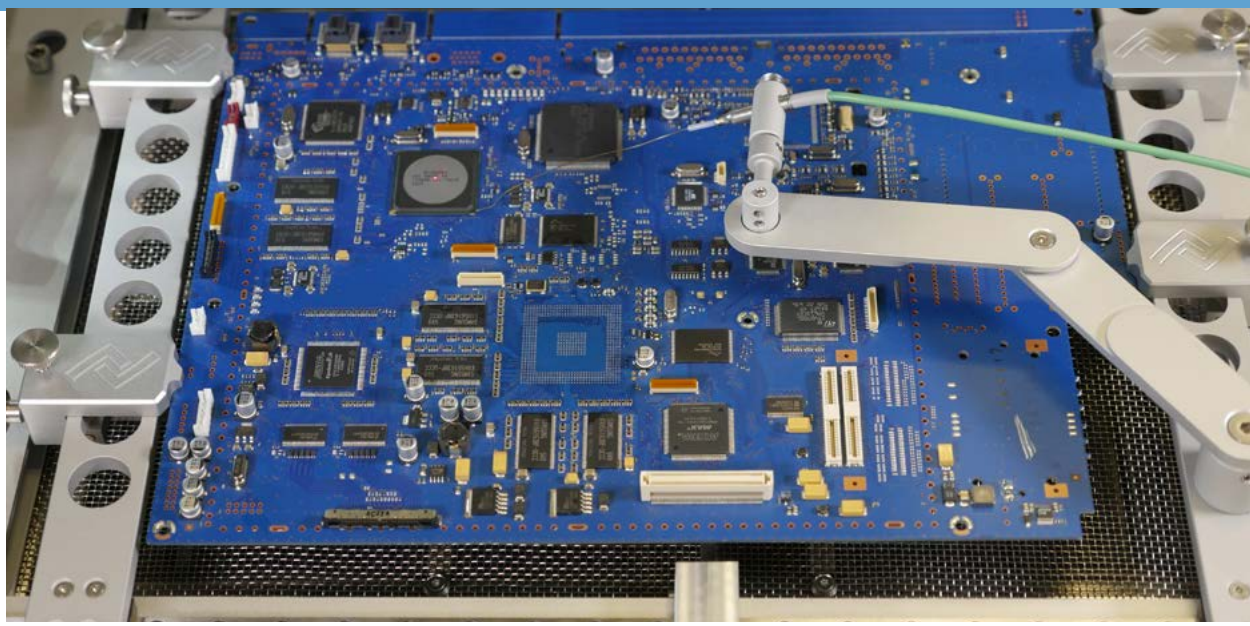
The Ersa HR 550 hybrid rework system addresses all users with highest requirements in terms of precision and process safety in electronic assembly rework applications.
The HR 550 features a 1,500 W high-performance hybrid heating element to desolder and solder SMT assemblies up to dimensions of 70 x 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 assemblies ensues 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 recognises

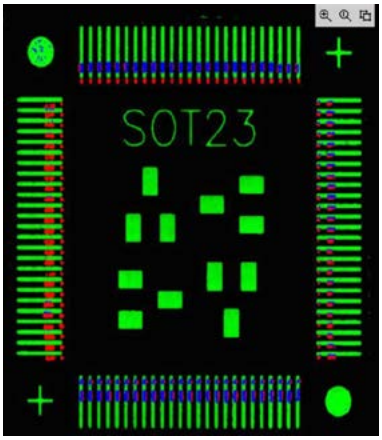


Ordering information:

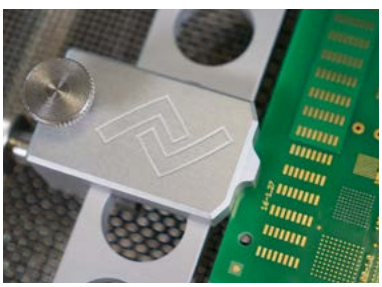
Order number	Description
0HR550	**Ersa HR 550** Hybrid Rework System
0HR510	**RPC camera HR 550**
0PR100	**Ersa Dip&Print Station,** complete

Ersa HR 550
Reworking at the highest level





Computer-supported alignment of a QFP



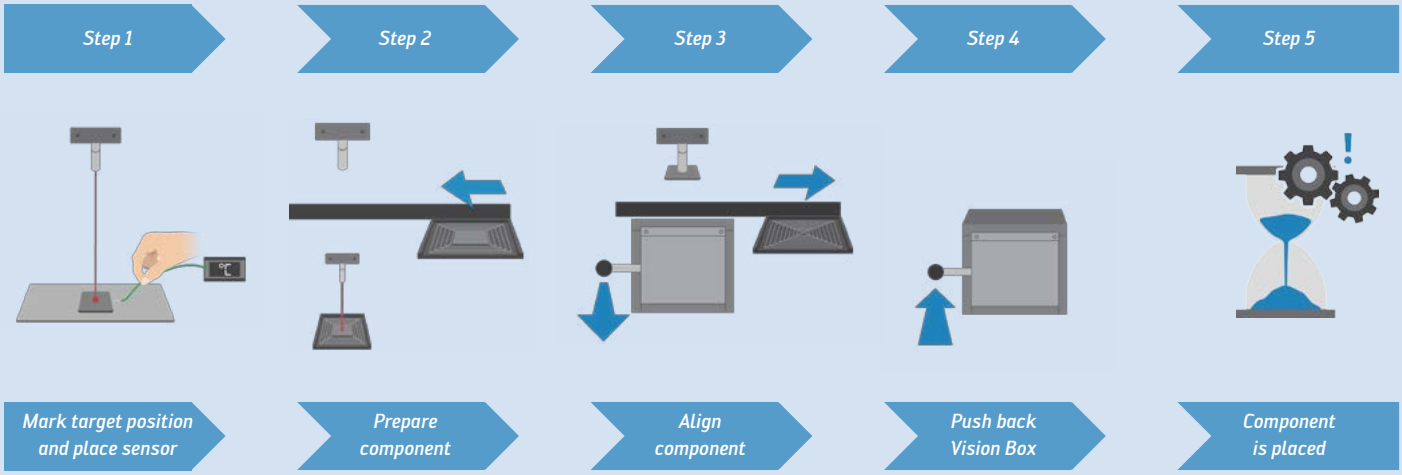
Flexible circuit board holder

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 ensues via the newly-developed operating software and ergonomically-arranged control elements on the equipment.

Features of the HR 550

- High-definition camera for placement and process tracking
- Computer-supported component alignment, digital split-optic
- 1,500 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
- Ergonomically optimized system operation
- PCB dimensions of up to 382 x 270 (+x) mm
- Component handling of sizes from 0.5 x 0.5 mm up to 70 x 70 mm
- Working depth of up to 349 mm
- Operating distance of between 30 and 60 mm from the top heater and 35 mm from the bottom heater
- Field of view placement camera with 70 x 70 mm (wide-angle) and 25 x 33 mm (telephoto)
- Operation via HRSoft 2
- Compact dimensions (B x T x H) – 573 x 765 x 545/747 mm (heating head below/above)

HRSoft 2
Transparent user guidance in rework



HRSoft 2 – User guidance via pictograms showing component placement as example

HRSoft 2 – Enhanced Visual Assistant

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

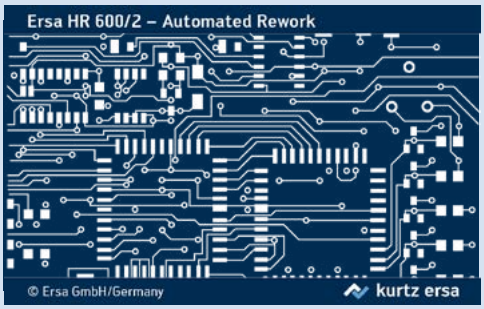
Even the novice user quickly becomes adept thanks to the well-structured and clearly laid out software. Predefined soldering and desoldering profiles are simple to select and the user is guided through all the rework process steps. Easy-to-understand pictograms and instruction texts provide direction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

In the computer-aided placement of components, HRSoft 2, the new Ersa rework software, 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.

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

Ersa HR 600/2 Hybrid Rework System
Flexible, efficient, automated, reliable!

IMAGESOFT Target



Ersa high-end rework

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

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

To preheat the complete board area of the assembly mounted in the PCB holder, the system utilizes highly dynamic IR heating elements in the bottom heater. 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.

Component placement is a largely automatic process; integrated image processing software assesses data supplied by the two installed cameras. The component position is calculated and placed using a vacuum pipette mounted on an axis system.

The system is prepared for the Ersa Dip&Print Frame. Paste printing takes place off-side on the Dip&Print Station; fluxing the component is equally a fully automated process.

Stainless steel adapters can be inserted in the hybrid heating head as an option, in order to further limit the area to be heated on the board. Available baffle dimensions are 40 x 40 mm, 30 x 30 mm, 20 x 20 mm.

In conjunction with the two separately controllable zones the operator obtains thus various options for a safe top-side heating of assemblies.

Ersa HR 600/2
Rework of board assemblies newly defined

Ersa HR 600/2 VOIDLESS

Features of the HR 600/2 and RPC

- High-performance hybrid heating head with 2 heating zones (800 W)
- Three programmable lower IR heating zones (2,400 W)
- Temperature acquisition by 3 channels – 1 IRS sensor, 2 AccuTC thermocouples (K-type)
- Board size up to 300 (+x) x 390 mm
- Board size up to 300 x 535 mm (option)
- Motorized heating head with vacuum pipette
- Interchangeable adapters
- Cooling with hybrid head and compressed air-knife from below
- Laser pointer for component ID and board location
- Precision axis system with stepper motors
- 2 high-quality USB 2.0 cameras and image processing
- Adaptive LED illumination
- Handling of component sizes from 1 x 1 mm up to 50 x 50 mm
- Positional accuracy up to +/- 0.025 mm
- PC interface via USB port
- Operation via HRSoft
- High-resolution USB 2.0 camera for process monitoring (option)
- Dimmable LED point light source for RPC
- Multiple adjustment of RPC holder

RPC Reflow Process Camera

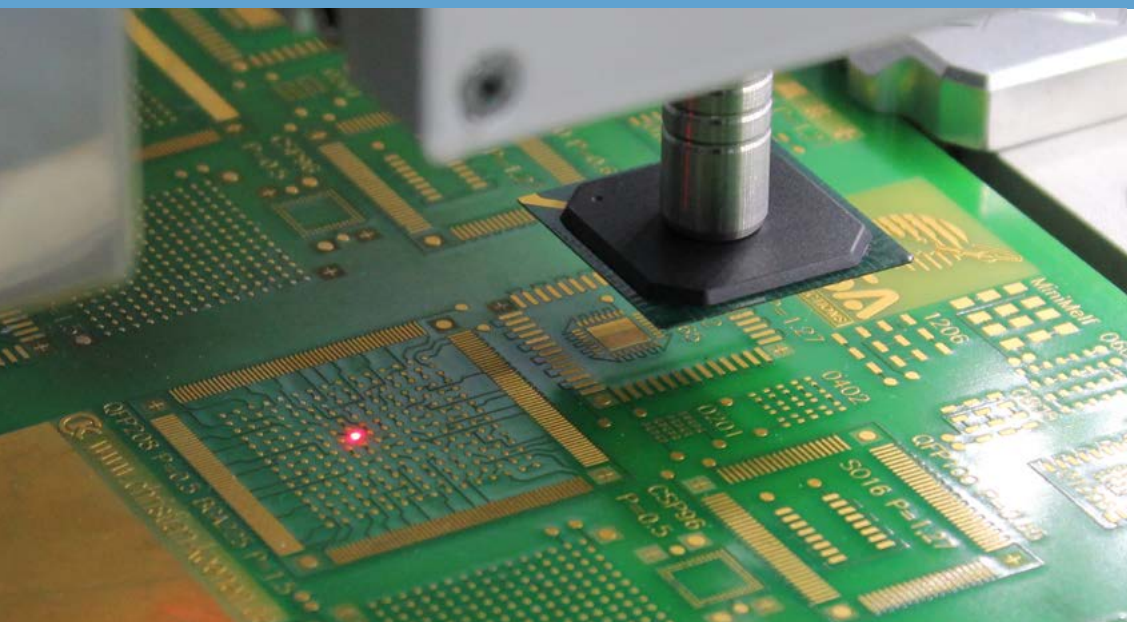
Hybrid heating head with interchangeable adapters

Ordering information:

Order number	Description
0HR600/2	**Ersa HR 600/2** hybrid rework system
0HR610	**Ersa Reflow Process Camera** for HR 600/2, complete
0PR100	**Ersa Dip&Print Station,** complete
0HR-VL1	**Ersa VOIDLESS module** for HR 600/2, complete

HRSoft

The combination of proven technology and innovative image processing sets new standards!



By continuing the development of the universal control software platform of IRSoft, a new control software has been created for the HR 600 called HRSoft. All of the process steps of the HR 600/2 are supported by this user-friendly software.

Through HRSoft, 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.

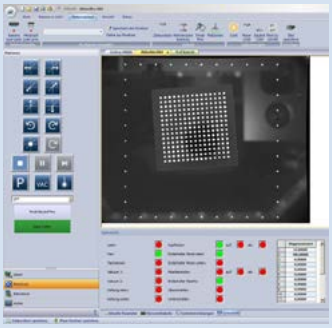
The library feature of HRSoft clearly displays the stored soldering and desoldering temperature profiles. A soldering or desoldering process can be started either manually or automatically, whereas the results are automatically recorded regardless of the starting method.

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 solder process in real time. In addition to the automated operation of the HR 600/2, HRSoft offers an archive in which all rework process records are administered and stored.

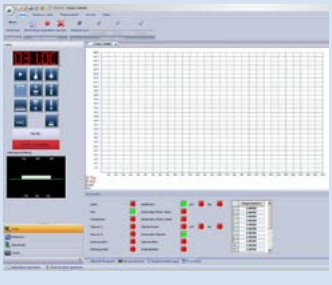
And finally, every HR 600/2 can be expanded to a rework system with the retrofitable VOIDLESS module, which minimizes the occurrence of voids (entrapped gas) in solder joints of critical applications!

Image of the target position



Determining the component connections

Superimposing of component and target position



HRSoft process recording

Dip&Print Station
for Ersa rework systems

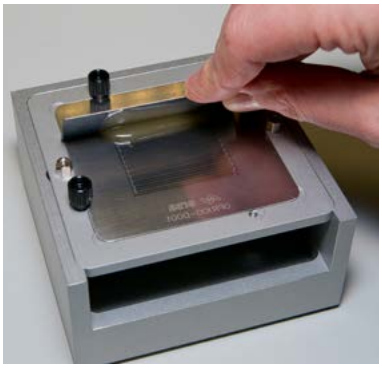
Removal of the component from the print stencil

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.



Flux deposition in the dip stencil

Ordering information:

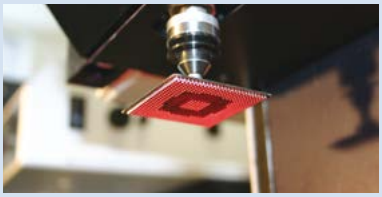
Order number	Description
0PR100	**DIP&PRINT STATION**
0PR100-PL550	**Rack fixation PL 550**
0PR100-PL650	**Rack fixation PL 650**
Customized stencils available on request	

Dip&Print Station with accessories

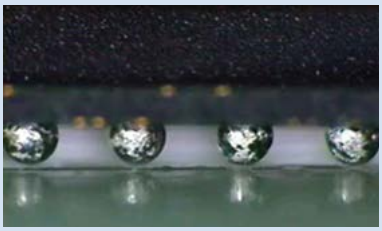
Features of the Dip&Print Station

- 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

Ersa IR/PL 650
The Ersa rework power-pack for demanding applications



"Auto Pick & Place" allows for rapid, precise and repeatable results!



Real-time rework process visualization of BGA during reflow

The IR/PL 650 provides a very high heating power (4,400 W) for large and complex PCBs. Offering a high degree of automation, the IR/PL 650 requires only little user intervention. This guarantees stable and repeatable rework processes for all applications.

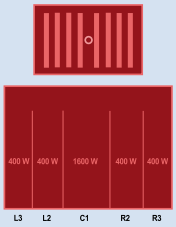
The IR rework system is made up of four distinct operational modules:

1. ***IR 650*** *selective reflow module*
2. ***RPC 650*** *camera module*
3. ***PL 650*** *placement module*
4. ***IRSoft*** *software module*

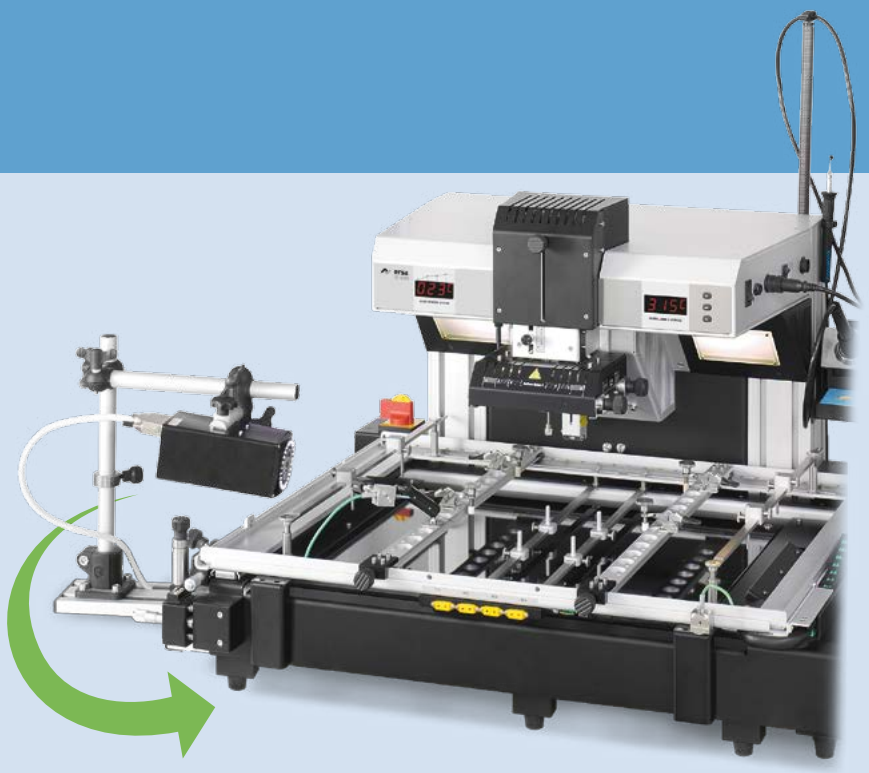
Recommended accessories:

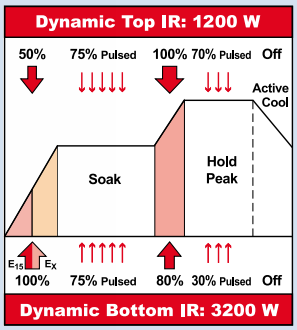
It is recommended to purchase: Split Optic Kit for placing large PQFPs, Component Centering Station for alignment of Fine-Pitch components and the Rework Starter Kit. Special desoldering tools, such as the CHIP TOOL to remove smallest SMDs and the X-TOOL for TH desoldering can be used with the soldering station integrated into this system. For ordering details, please refer to the Ersa tools catalog or visit www.ersa.com. A complete listing of all rework accessories is available on pages 26 to 30.

Ersa IR 650
Selective BGA/SMT reflow technology for rework



The 4,400 W DynamicIR system has 4 top and 5 bottom-side heating zones





The IR 650 selective reflow module uses DynamicIR heating technology for fully automatic dynamic control of the top (1,200 W / 60 mm x 120 mm) and bottom (3,200 W / 350 mm x 450 mm) IR heaters. The total available power (4,400 W) to the selective reflow system is spread across 4 separately controllable heating zones on the top and 5 zones on the bottom. Depending on board size, the thermal mass of the substrate and component size, the DynamicIR technology guarantees that the required heat energy is delivered at the precise time and location in order to ensure that the component and board exactly follow the prescribed temperature profile.

Now combined with the enhanced capability to run an extended or flat peak, this revolutionary technology affords the lowest temperature deltas across the component, the highest degree of process safety and greatly reduces PCB warpage.

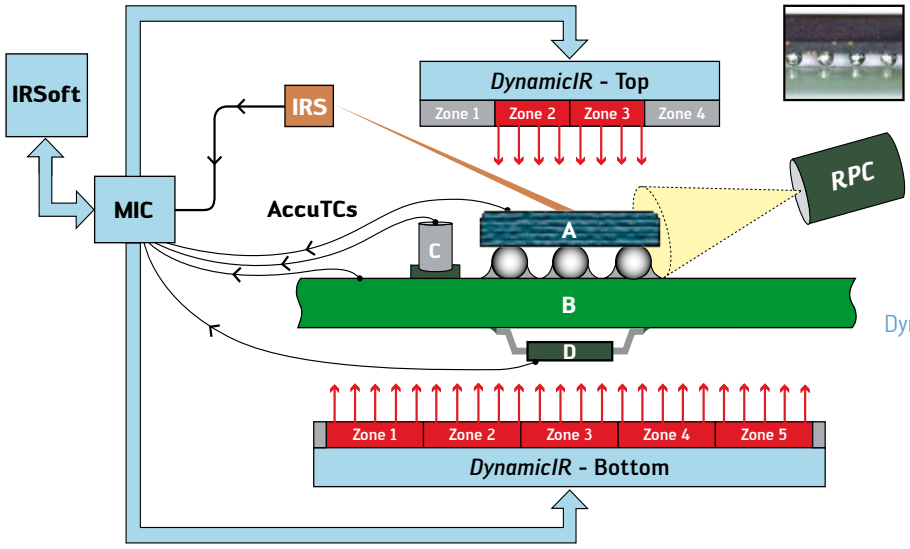
Ordering information:

Order number	Description
0IR650A	**IR 650 IR rework system with RPC 650 module** incl. IRSoft, 2 pcs. AccuTC, 1 pc. Flexpoint TC holder, integrated cooling fans and soldering station

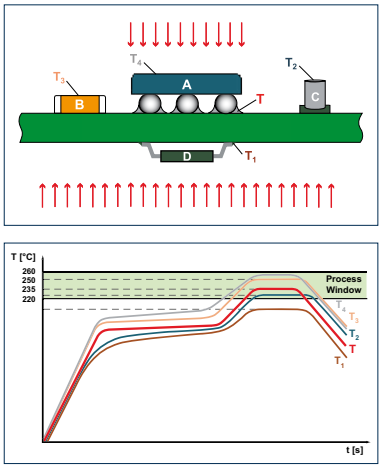
Features of the IR 650 module

- Four programmable heating zones, top (1.200 W)
- Five programmable heating zones, bottom (3.200 W)
- PCB size up to 460 x 560 mm
- 5-channel temperature recording: 1 IRS sensor, 4 AccuTC thermocouples (K-type)
- DynamicIR and Multi True Closed-Loop controlled heating technology with APR process repetition
- Laser pointer for component ID and PCB positioning
- Motorized reflow head with vacuum pipette
- Removable PCB fixing frame with top- and bottom-side center supports
- Integrated axial top cooling fans and laminar bottom cooling fans
- Vacuum pipette for component handling
- Integrated digital soldering station with soldering iron
- PC-ready via USB
- Operation via IRSoft

DynamicIR Heating Technology
Multiple True Closed-Loop



A:	Component for rework
B:	PCB
C:	Adjacent component (top side)
D:	Adjacent component (bottom side)
AccuTCs:	Thermocouples
IntelligentIRS:	Non-contact infrared sensor
DynamicIR Top:	Top IR radiator
DynamicIR Bottom:	Bottom IR radiator
RPC:	Reflow Process Camera
IRSoft:	Control and documentation software
Mic:	Microprocessor controls the DynamicIR heating system



MTCL control guarantees process safety!

Ersa's proven Multiple True Closed Loop Selective Rework Technology uses the actual temperature of the component and/or PCB to drive the DynamicIR heating system.

The non-contact IntelligentIRS infrared sensor offers a comfortable, in-process temperature measurement of the component to be heated and guarantees that it exactly follows the prescribed profile path.

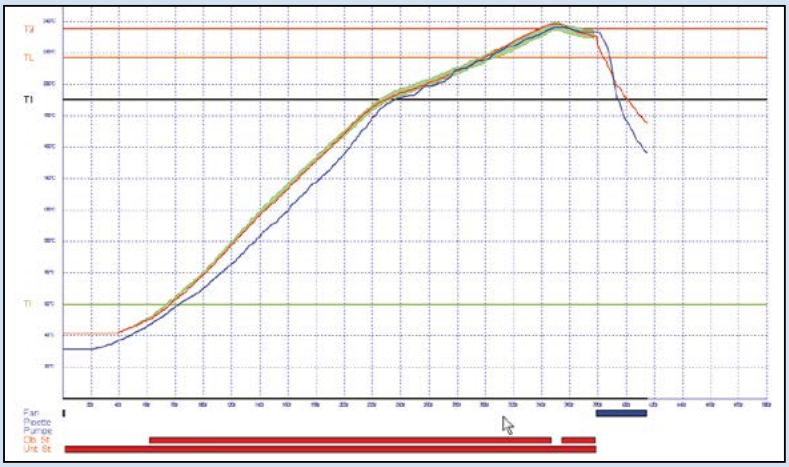
The power to the medium wavelength IR heaters is controlled based on the precise temperature gradient of the component required at each specific time point in the profile. Up to four additional AccuTC K-type thermocouples can monitor temperatures at four additional locations in order to prevent the system from undesired overheating of temperature sensitive components. The DynamicIR heating technology offers a multiple zone, optimized reflow process.

The RPC Reflow Process Camera offers enhanced safety by visualizing the rework process.

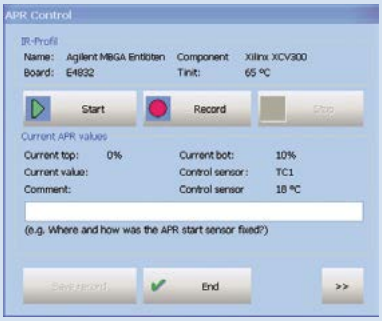
Finally, the new IRSoft control and documentation software provides a user-friendly command and control interface.

APR – Auto Process Repetition

Ultimate rework process stability through automatic process repetition function



All PCBs exactly follow the same temperature profile



User-friendly operating interface

Today's rework operators have many different challenges, sometimes high mix and other times high volumes. Quite often operators must perform completely different removals and replacements on a large mix of different boards.

For these applications, Ersa's Multiple True Closed-Loop Process offers the highest degree of safety available on the market. Other times, however, operators must perform exactly the same operation on hundreds or thousands (high volumes) of boards and must guarantee safety and repeatability. For these applications, Ersa has introduced the Ersa APR – Auto Process Repetition – for automated selective rework.

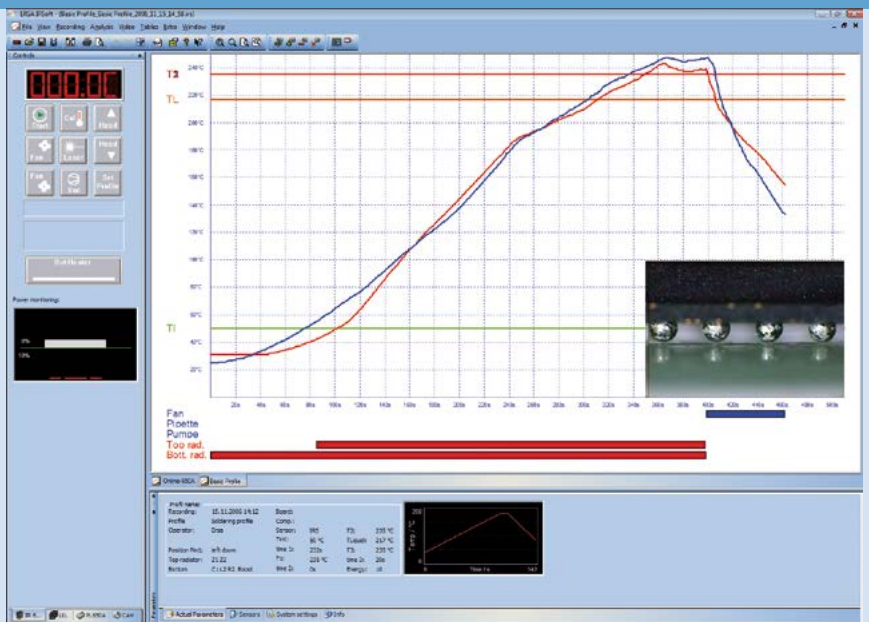
APR allows the operator to establish the perfect closed-loop profile using the multiple sensors provided. The system records the exact power control of the top and bottom heaters and their zones over the entire time cycle of the process.

After verifying the optimal profile, the boards for repeated high-volume rework can be placed into the system one-by-one and each and every PCB will be subjected to the exact same selective reflow process. Speed, safety and ultimate process repeatability are the added value benefits of this rework function.

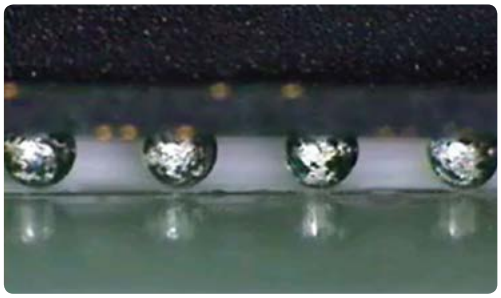
Features of APR

- High reproducibility due to stable rework processes
- Multiple sensor, closed-loop profiling
- Auto recording of all heating parameters
- Auto repetition of heating profile
- For use with the IR 650, IR/PL 650 XL and IR 550 systems
- APR control via IRSoft

Ersa RPC 650
Reflow Process Camera



Live video pop-up window during profile recording



Real-time rework process visualization of BGA during reflow

The RPC 650 module is attached to the IR 650 module and uses a high-power (up to 300x enlargement) motorzoom camera, a controllable LED ring lighting system, and a robust movable swivel arm in order to visualize the rework process in real time.

The reflow process can be watched from various angles and with high magnification on even the smallest of components.

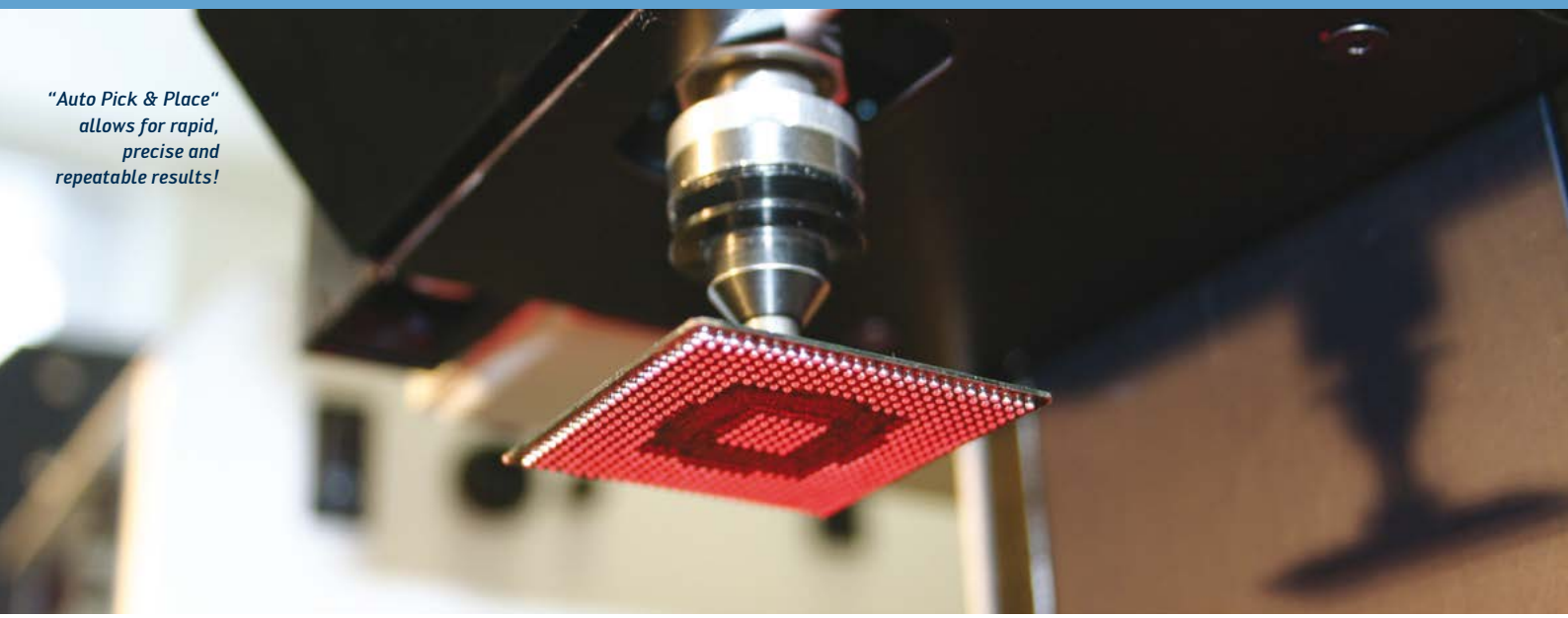
Through the real-time observation of the soldering and desoldering process, the user can capture the melting point of the solder and directly calibrate the unit. This feature substantially improves process reliability.

Features of the RPC 650 module

- CCD camera with 25x optical and 12x digital zoom
- Motorized zoom and focus
- LED ring light, one push auto focus and white balance
- Programmable camera presets
- Movable and fixable swivel camera arm
- Remote control via mouse or PC using IRSoft

RPC camera with LED ring light

Ersa PL 650
Precision component placement



"Auto Pick & Place" allows for rapid, precise and repeatable results!

Ordering information:

Order number	Description
0PL650A	**PL 650 motorized precision placement system** (PL 650 module attachable to IR 650 and controlled via IRSoft)

The PL 650 module is the second generation precision placement system designed for the largest range of components. It provides increased automation and excellent repeatability. A highly sophisticated and fully automated, pressure triggered component placement head drops off the component at the same contact pressure (1.5 N) as an in-line pick & place machine.

A high-resolution camera with motorized zoom permits highly precise alignment of component leads to lands with up to 300x enlargement. The excellent image quality is supported by a high-contrast, separately controlled two-color LED lighting system from four sides. The Auto Pick & Place mode guarantees repeatable and precise results.

Features of the PL 650 module

- CCD camera with 25x optical and 12x digital zoom
- Motorized placement head, camera zoom and focus
- Pressure triggered head with automatic drop-off
- "Auto Pick" & "Auto Place" with +/- 0.010 mm accuracy
- Component handling from 1 x 1 mm to 60 x 60 mm
- 60 x 60 mm split optic cassette for large QFPs and BGAs (option)
- Four-side red/white LED illumination
- One push auto focus and white balance
- Programmable camera presets
- Remote control via PC using IRSoft

Ersa IR/PL 650 XL

The flexible rework power-pack for the handling of extra large PCBs

1 5	2 5	3 5	4 5	5 5
6 2	7 2	8 1	9 3	10 3
11 2	12 2	13 1	14 3	15 3
16 4	17 4	18 4	19 4	20 4

1 - 20 = heating element number
1 - 5 = zones

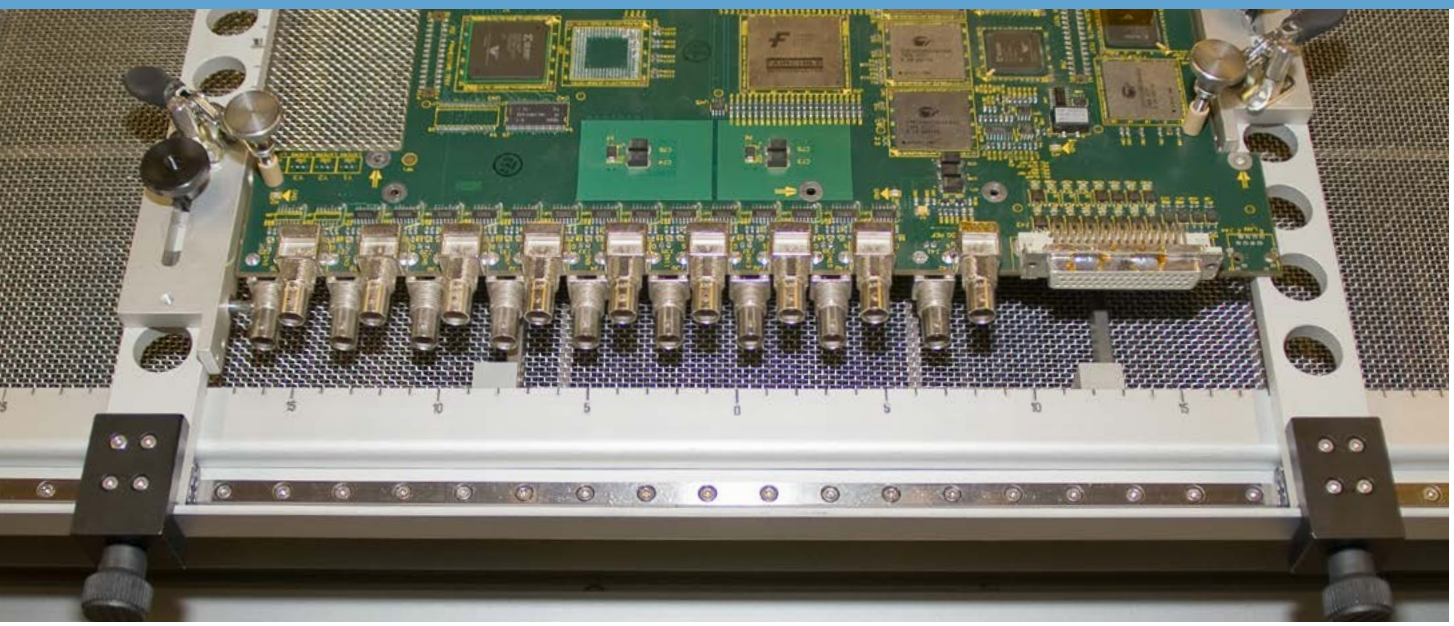
For today's rework operators working on large PCBs one truth remains constant – the rework difficulty increases with the size of the PCB. From a profitability standpoint, reworking large PCBs represents a tremendous risk, due to the very high PCB price. One failed rework procedure could destroy a PCB, thereby losing the high material costs and follow-on profits!

PCBs of up to 20" x 24" or 500 mm x 650 mm can now be safely and rapidly reworked using one of the industry's largest and most powerful bottom-side heaters – an 8,000 W medium wavelength IR heater measuring 500 mm x 625 mm. Total system power is 9,200 W.

These extra powerful bottom and top heaters are necessary for large boards, especially for those which are thicker than 3 mm. Unless the entire board area is efficiently preheated from the bottom, such boards show the tendency of bending and warping during the rework procedure. Divided into 5 separately controllable bottom-side heating zones and 4 top-side zones, the operator on the IR/PL 650 XL can individually set the heating power to each zone in order to find the optimal preheating conditions.

In addition to the total size and power of the bottom heater, an important factor is the position of the PCB over the bottom heater. The IR/PL 650 XL has a completely redesigned PCB holder table which exposes the entire PCB to the heater area. No matter where the component to be repaired is located on the board, the entire PCB is preheated. No cold spots means less warping.

Ersa IR/PL 650 XL



The large PCB table design guarantees that all shapes of boards are carried in an optimal manner. Top- and bottom-side support rails are easy to insert and adjustable to the actual rework task within minutes. The table includes a 45° butterfly mechanism to lift the entire PCB while it is inserted in the holder and thus provides easy access to the bottom side. The operator can easily attach thermo probes on the bottom side, position support pins or carry out other "down under" operations like shielding heat sensitive components.

Finally, the IR/PL 650 XL has taken a completely new approach to cooling, as large PCBs require a higher cooling volume. Similar to Ersa's wave soldering machines, this rework system has a new and highly efficient compressed air cooling system.

Using an air tube which extends the entire length of the bottom-side heater, laminar flow cooling takes place via very fine air outlets. The air flow rate can be adjusted for a faster or slower cooling gradient.

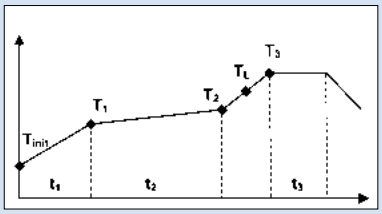
Features of the IR/PL 650 XL

- Four programmable IR heating zones, top (1,200 W, 120 x 60 mm)
- Five programmable IR heating zones, bottom (8,000 W, 500 x 625 mm)
- PCB size up to 500 x 650 mm
- 5-channel temperature recording: 1 IRS sensor, 4 AccuTC thermocouples (K-type)
- DynamicIR and Multi True Closed-Loop controlled selective reflow process with APR
- Laser pointer for component ID and PCB positioning
- Motorized reflow head with vacuum pipette
- Tiltable PCB fixing frame with top- and bottom-side center supports
- Integrated axial top- and laminar bottom cooling fans
- Vacuum pipette for component handling
- PC ready via USB
- Operation via IRSoft

Ordering information:

Order number	Description
0IRPL650A-XL	**IR/PL 650 XL semiautomatic IR rework system incl. RPC camera**

Ersa IR 550
Unbeatable in price and performance!



The IR 550 provides high profile flexibility with a flat peak

Features of the IR 550

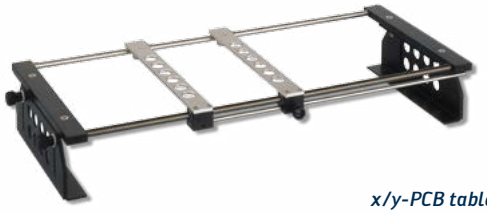
- High-performance IR heater, top (800 W)
- One programmable IR heating zone, bottom (800 W)
- 2-channel temperature recording: 1 IRS sensor, 1 AccuTC thermocouple (K-type)
- PCB size up to 250 x 320 mm
- DynamicIR and closed-loop selective reflow process
- Laser pointer for component ID and PCB positioning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

The IR 550 is the best seller 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 revolutionary technology affords the lowest temperature deltas across the component, and greatly reduces PCB warpage.

SMT Vision Award: Best New Rework Product



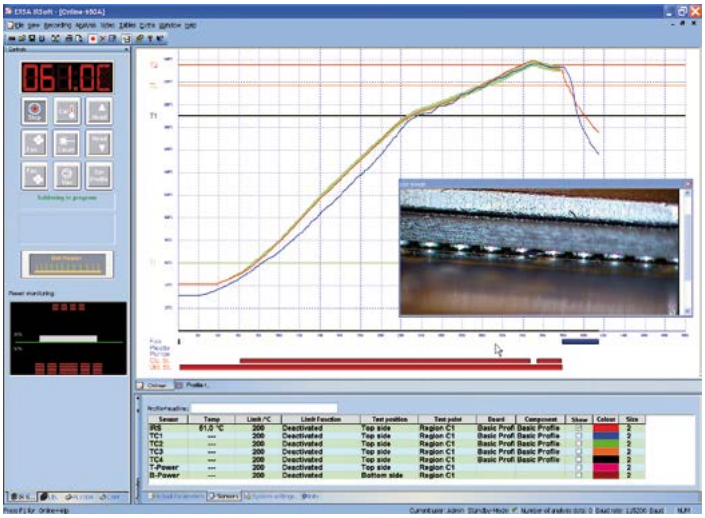
x/y-PCB table for IR 550

Ordering information:

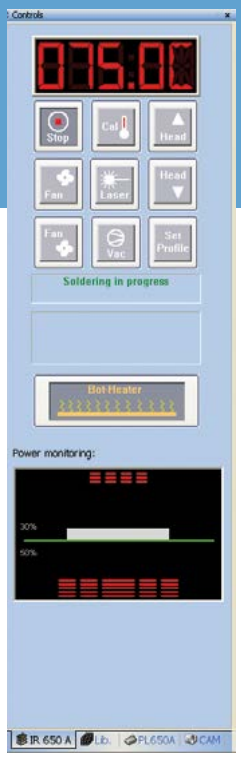
Order number	Description
0IR550A	**IR 550 rework system** (w/o x/y-PCB table) incl. IRSoft, 1 x AccuTC and soldering station
0IR5500-01	**x/y-PCB table** (not required with PL 550)

Ersa IRSoft

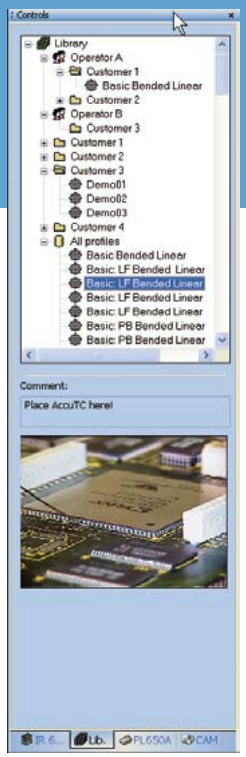
User-friendly system control and process documentation for Ersa rework systems



Live temperature recording with real-time video process window



IR 650, IR/PL 650 XL



Customized library

Ersa has rounded off its rework product platform from the handheld HR 100 all the way up to the IR/PL 650. IRSoft is a universal system control, process documentation and process visualization software platform designed for use with all Ersa rework systems, from the smallest to the largest. In this manner, Ersa ensures operators an easy move between systems with hardly any learning curve required.

Today, with 20 years of rework experience and over 6,000 systems installed, we have continually added features and functions which were demanded by the market and have provided free updates to the existing user base.

This universal software concept ensures that operators can easily operate the different Ersa systems without additional training requirements.

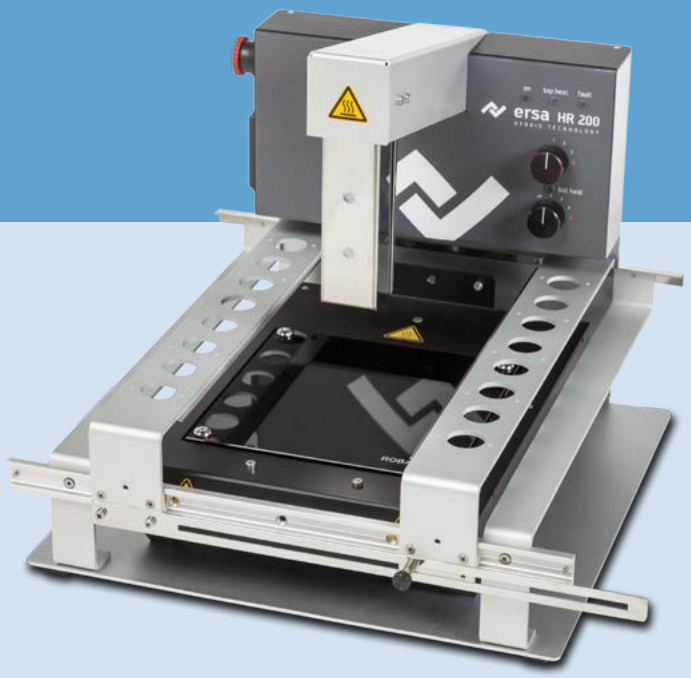
Features of the Ersa IRSoft

- Control software for IR/PL 650 & XL, IR/PL 550 and HR 100 (with IRHP 100)
- User-friendly interface with online help
- Visualization of all rework process data with up to 5-channel temperature recording
- Live process video window for RPC 650, RPC 550 and 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 fast USB 2.0 port

Rework process visualization with live image window

Ersa HR 200 Hybrid Rework System

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



Easy parameter setup

Bottom Heat	Top Heat: smooth			intensive	Parameters
	time*	180 s	180-120 s	120-90 s	90-60 s
	power level	1	2	3	4
smooth 1	ultra light weight	sensitive bottom side		intensive top	
2	sensitive top side	typical SMT application			
intensive 3					
4	intensive bottom			heavy duty caution	

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

Useful hybrid adapter set

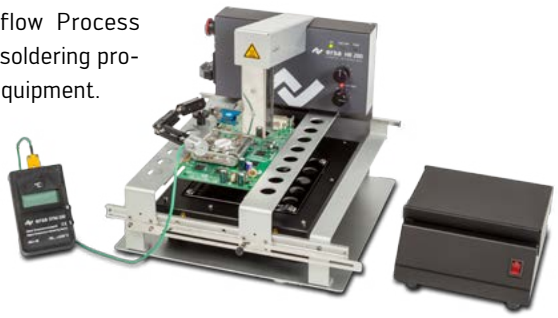
Unpack, setup, solder! It's simple as that to rework a PCB nowadays. The Ersa HR 200 hybrid rework system contains a 400 W high-power hybrid heating element to desolder and solder SMT components of up to 30 x 30 mm. In addition, the system can operate a powerful 800 W infrared heating plate. This bottom 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 working 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 rounds off the equipment.

Technical highlights:

- 400 W Hybrid high-power 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)



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

Order information:

Order No.	Description
0HR200	**Ersa HR 200** Hybrid Rework System
0HR200-HP	**Ersa HR 200** Hybrid Rework System with heating plate
0HR200-16	Hybrid adapter set **Ersa HR 200**

Ersa HR 100 and IRHP 100
Combined handheld and benchtop rework system

Features of the HR 100 and IRHP 100

- 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
- 2-channel temperature recording: 1 AccuTC thermocouple (K-type), 1 IRS sensor
- PC-ready via USB
- 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 IRSoft

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 homogeneous heat to components sizing from 0201s to 20 x 20 mm SMDs and even larger.

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

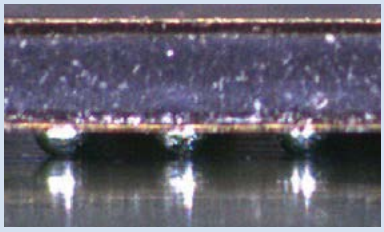
The handle of Ersa's ergonomically designed HYBRID TOOL contains a positioning laser which helps the operator to focus the heat precisely throughout the entire process. Via the USB 2.0 port, the HR 100 can be connected to Ersa's top of the line and well-established IRSoft rework software.

Ordering information:

Order number	Description
0IRHR100A	**HR 100 hybrid rework system** with 200 W HYBRID TOOL, 3 hybrid adapters, adapters changer, VAC-PEN and HYBRID TOOL holder
0IRHR100A-HP	**HR 100 and IRHP 100 hybrid rework system** complete with heating plate incl. stand with HYBRID TOOL holder

Ersa RPC 500
Unbeatable in price and performance!

RPC 500



High magnification of Tessera CSP

RPC 500 with IRHR 100 A-HP

RPC 500 with IR 550

Ordering information:

Order number	Description
0VSRPC500A-LE	**Reflow Process Camera,** complete

The RPC 500 unit offers rework process observation at the lowest cost possible. The 70 x optical magnification MACROZOOM 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.

The camera is connected over a USB cable to the PC and the live image is visualized through IRSoft.

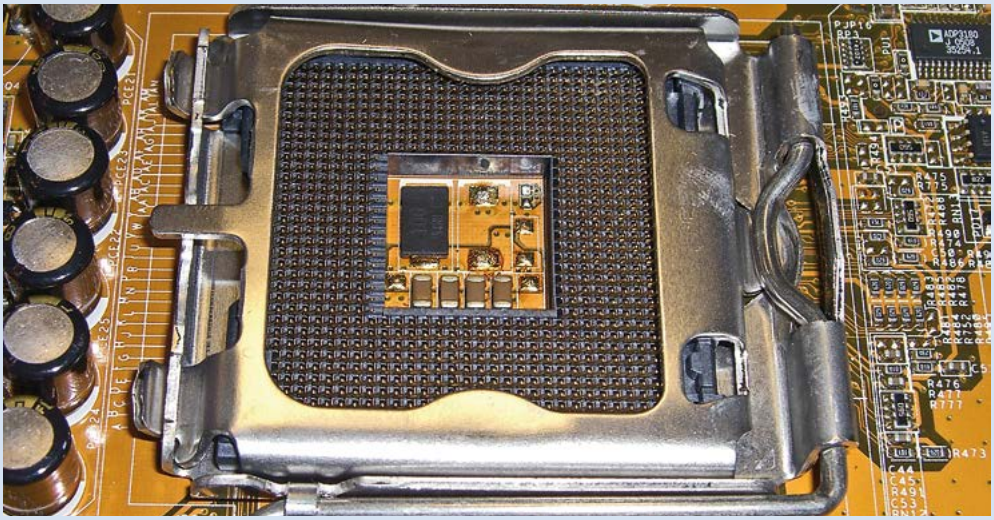
Features of the RPC 500

- High-quality CMOS USB 2.0 camera
- 70x optical MACROZOOM 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

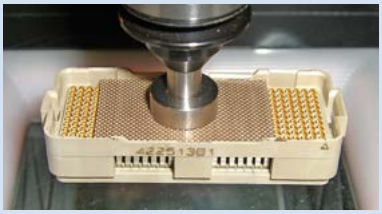
Ersa MACROZOOM

Difficult Applications – No Problem!

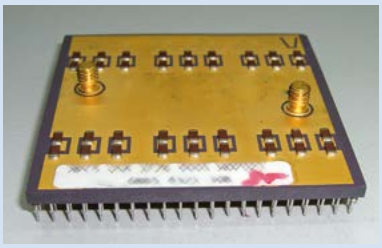
Ersa rework systems handle the most complex rework applications



LGA 775 Processor Socket



BGA plastic socket



Ultra heavy-mass PGA

IPC

5.7.3

BGA Reballing Procedure

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

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.

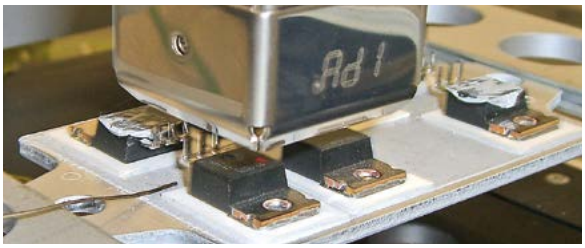
Finally, do not hesitate to contact Ersa directly for special rework applications assistance and training material.

Ersa Rework
Takes care of all jobs!

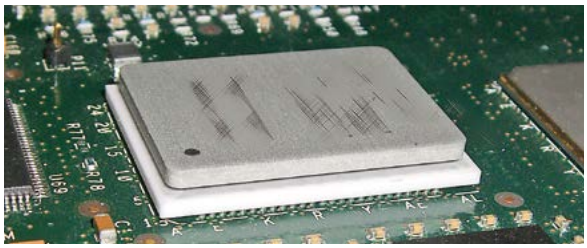
CSP, micro BGA 0201s, 0402s

FCBGA

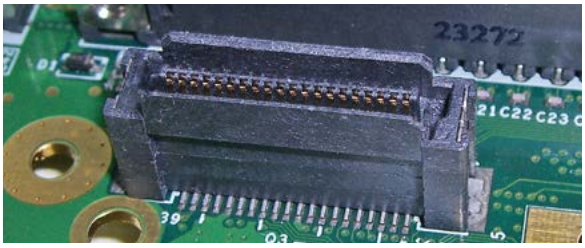
PBGA on aluminium carrier



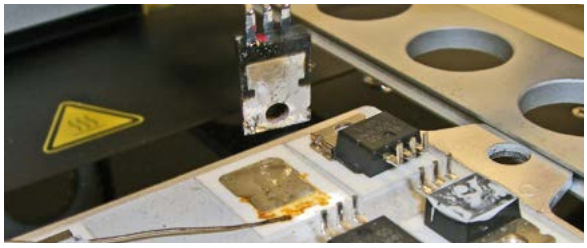
TO220 on aluminium carrier with hybrid rework system



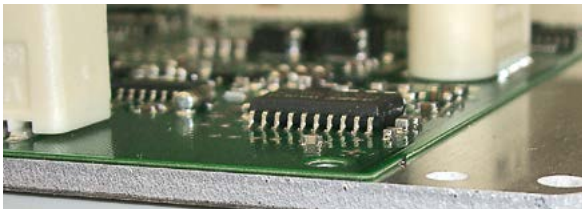
CGA with heat sink



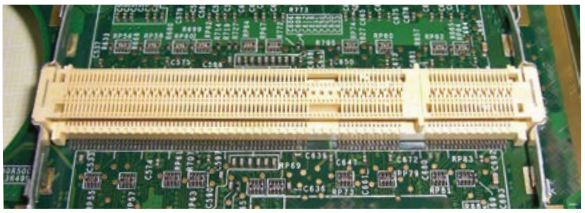
Plastic SMD connector



TO220 on aluminium carrier with hybrid rework system

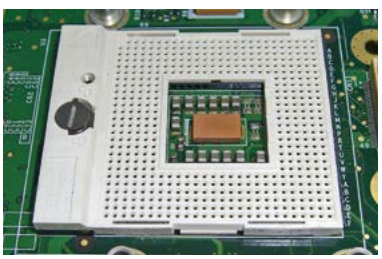


SOIC and plastic SMT on aluminium carrier



Large plastic SMD connector

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



BGA processor socket

BGA GPU

Accessories

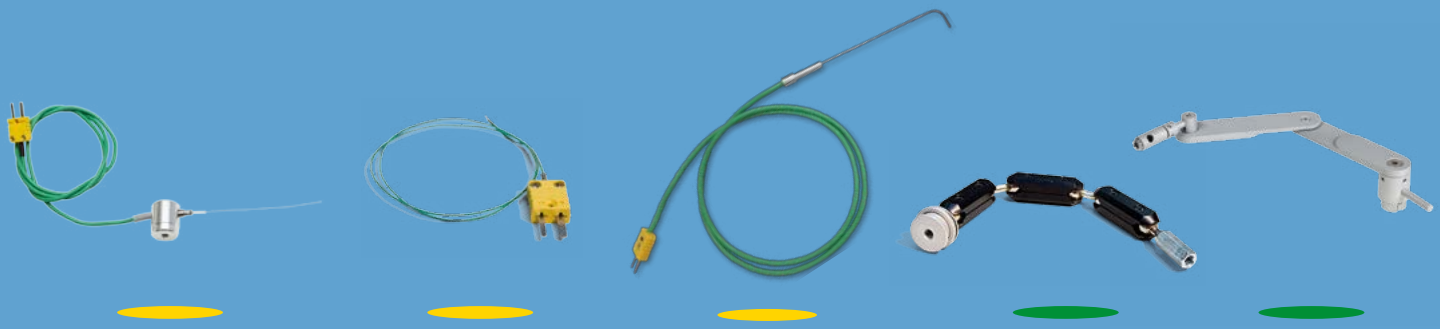
Based on our many years of rework experience with many thousands of satisfied customers, we have compiled the most sought-after and useful accessories. Every accessory table features a "Starter Kit" column, showing the recommended rework starter kit. You will find additional accessories in our soldering tools catalogue.

For inquiries regarding specific soldering tips and special accessories, please contact Ersa directly or take a look at: **www.ersa.com**

Nozzles and suction cups

	Order number	Name	Description	Technical data	HR 100	HR 200	IR/PL 550	IR 650	PL 650	HR 550	HR 600/2	Starter kit
●	**3HR600-06-023**	Placement nozzle, 1 mm	Pick & place of smallest components	outer ø 1.0 mm							X	
●	**3HR600-06-025**	Placement nozzle, 2 mm	Pick & place of small components	outer ø 2.0 mm							X	
●	**3HR600-06-022**	Placement nozzle, 4 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	
●	**0HR5520-05010**	Placement nozzle, 1 mm	Pick & place of smallest components	outer ø 1.0 mm						X		
●	**0HR5520-10020**	Placement nozzle, 2 mm	Pick & place of small components	outer ø 2.0 mm						X		
●	**0HR5520-26036**	Placement nozzle, 3 mm	Pick & place of medium-sized components	outer ø 3.6 mm, inner ø 2.6 mm						X		
●	**0HR5520-35050**	Placement nozzle, 5 mm	Pick & place of medium-sized components	outer ø 5.0 mm, inner ø 3.5 mm						X		
●	**0HR5520-80100**	Placement nozzle, 10 mm	Pick & place of large components	outer ø 10 mm, inner ø 8.0 mm						X		
●	**0PL6500-13**	Nozzle, 0.8 mm	Pick & place of smallest components	outer ø 0.8 mm					X			
●	**0PL6500-14**	Nozzle, 1.2 mm	Pick & place of very small components	outer ø 1.2 mm					X			
●	**0PL6500-15**	Nozzle, 3 mm	Pick & place of small components	outer ø 3.0 mm					X			
●	**0PL6500-16**	Nozzle, 4 mm	Pick & place of medium-sized components	outer ø 4.0 mm					X			
●	**0PL6500-17**	Nozzle, 10 mm	Pick & place of large components	outer ø 10 mm					X			
●	**0PL6500-18**	Nozzle, 10 mm, rubber lined	Pick & place of heavy/smooth components	outer ø 10 mm, rubber lined					X			
●	**0PL500A-S00.8**	Nozzle, 0.8 mm ø	Pick & place of smallest components	outer ø 0.8 mm			X					
●	**0PL500A-S01.2**	Nozzle, 1.2 mm ø	Pick & place of very small components	outer ø 1.2 mm			X					
●	**0PL500A-S003**	Nozzle, 3 mm ø	Pick & place of small components	outer ø 3.0 mm			X					
●	**0PL500A-S004**	Nozzle, 4 mm ø	Pick & place of medium-sized components	outer ø 4.0 mm			X					
●	**0PL500A-S010**	Nozzle, 10 mm ø	Pick & place of large components	outer ø 10 mm			X					
●	**0PL500A-S010-G**	Nozzle 10 mm ø, rubber lined	Pick & place of heavy/smooth components	outer ø 10 mm, rubber lined			X					
●	**0IR5500-40**	MicroPickup, type 0510	Lifting of smallest components, rigid	outer ø 1 mm, inner ø 0.5 mm, brass			X	X			X	
●	**0IR5500-41**	MicroPickup, type 1020	Lifting of very small components, rigid	outer ø 2 mm, inner ø 1 mm, brass			X	X			X	
●	**0IR5500-44**	Suction adapter small	Adapter for small suction cups	for cups of 2 mm and 3.5 mm			X	X			X	
●	**0IR5500-45**	Suction adapter large	Adapter for large suction cups	for cups of 5 mm and 8 mm			X	X			X	
●	**0IR4520-01**	Silicone suction cup, OD 8 mm	Lifting of large components, flexible	outer ø 8 mm, silicone			X	X		X	X	3
●	**0IR4520-02**	Silicone suction cup, OD 5 mm	Lifting of medium-sized components, flexible	outer ø 5 mm, silicone			X	X			X	3
●	**0IR4520-03**	Silicone suction cup, OD 2 mm	Lifting of very small components, flexible	outer ø 2 mm, silicone			X	X			X	
●	**0IR4520-07**	Silicone suction cup, OD	Lifting of very small components, flexible	outer ø 1 mm, silicone, for 0IR0500-40			X	X			X	
●	**0IR4520-04**	Viton® suction cup, OD 8 mm	Lifting of large components, flexible	outer ø 8 mm, Viton®, long-life			X	X		X	X	
●	**0IR4520-05**	Viton® suction cup, OD 5 mm	Lifting of medium-sized components, flexible	outer ø 5 mm, Viton®, long-life			X	X			X	
●	**0IR4520-06**	Viton® suction cup, OD 3.5 mm	Lifting of small components, flexible	outer ø 3.5 mm, Viton®, long-life			X	X		X	X	
	319833	Suction cup, 2.6 mm	Lifting of small components, for 0HR5520-26036	outer ø 2.6 mm, silicone						X		
	0SVP07S	Suction cup	for VAC-PEN 0VP020	outer ø 7 mm, silicone	X		X	X				
	0SVP13A	Kit of suction cups	for VAC-PEN 0VP020	outer ø 4, 6, 9 mm, NBR	X			X				

Viton® is a registered trademark of Dupont Dow Elastomes



Temperature sensors

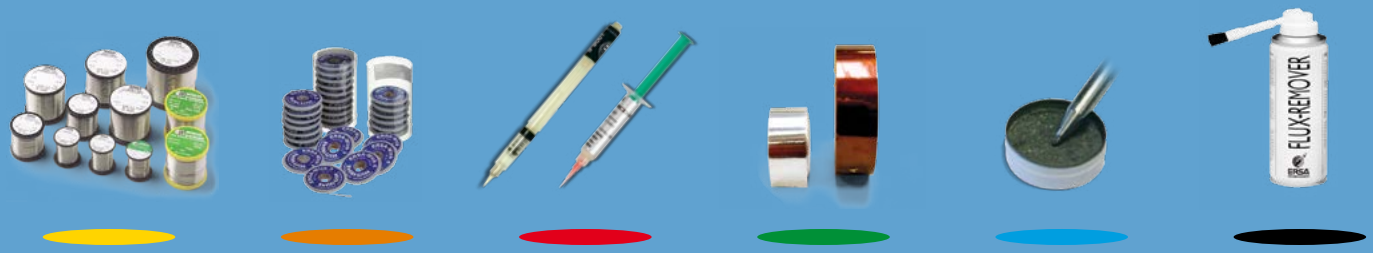
	Order number	Name	Description	Technical data	HR 100	HR 200*	IR/PL 550	IR 650	PL 650	HR 550	HR 600/2	Starter kit
●	**0IR6500-01**	AccuTC thermocouple	Temperature measurement at component	Sheathed thermocouple, K-type, ø 0.5 mm	X	X	X	X		X	X	
	0IR6500-37	AccuTC sensor without fixture	Spare element without fixture	Sheathed thermocouple, K-type, ø 0.5 mm	X	X	X	X		X	X	
●	**0HR645**	AccuTC2.0 thermocouple	Temperature measurement at component	Sheathed thermocouple, K-type, ø 1.5 mm	X	X	X	X		X	X	
●	**0IR4510-02**	Thermocouple wire	Temperature measurement	Ni-Cr-Ni wire, thermo-plug	X	X	X	X		X	X	
●	**0IR5500-35**	Flexpoint TC holder	Adjustable holder for AccuTC	Length 210 mm	X	X	X	X		X	X	
	0IR5500-36	Flexpoint extension	Extension	Length 210 mm	X		X	X		X	X	
●	**0HR640**	TC holder for HR 600	Adjustable holder for AccuTC	Length approx. 170 mm, height approx. 48 mm	X		X	X		X	X	

* in combination with **0DTM103**

Additional equipment

	Order number	Name	Description	Technical data	HR 100	HR 200	IR/PL 550	IR 650	PL 650	HR 550	HR 600/2	Starter kit
●	**0IR5500-13**	Cooling fan	PBC cooling	Air volume: 160 m³/h	X	X	X					
	0IR5500-43	Deflector hood	Deflection of the airflow	Aluminium	X	X	X					
●	**0PL500A-SPC**	Split optic cassette for PL 550	Magnified view of component corners	For components with diagonal of 21 - 50 mm			X					
●	**0PL6500-11**	Split optic cassette for PL 650	Magnified view of component corners	For components with diagonal of 15 - 55 mm					X			
●	**0DTM103**	Temperature measuring device	Digital temperature measurement	For K-type thermocouples, battery driven	X	X	X	X		X	X	
●	**0IR5500-33**	ROBAX® glass plate for IR 550	Glass plate cover for heating elements	ROBAX® glass plate			X					

Accessories

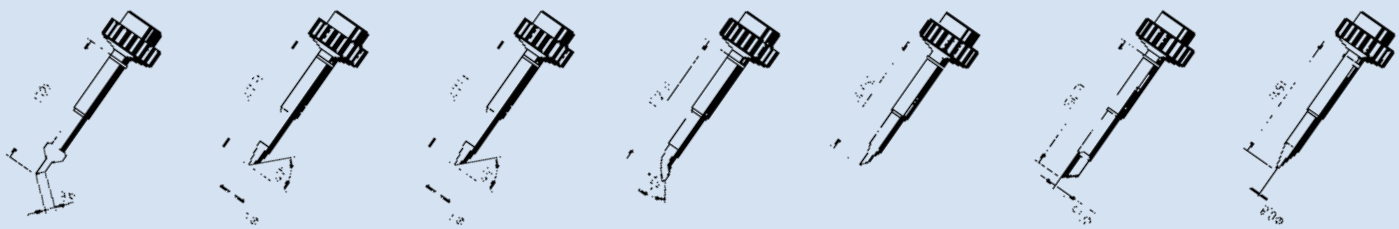


Consumable items

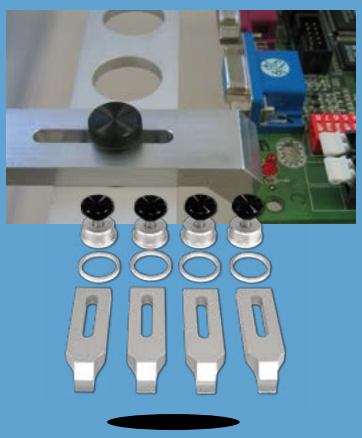
	Order number	Name	Description	Technical data	HR 100	HR 200	IR/PL 550	IR 650	PL 650	HR 550	HR 600/2	Starter kit
●	**010MM0250LF02**	Solder wire	Solder wire; Sn96.5Ag3.0Cu0.5	1 mm diameter, 250 grams			X	X				1
●	**0WICKNC2.2**	No-Clean desoldering wick	Removal of solder	Width 2.2 mm, length 1.5 m			X	X				
●	**0WICKNC2.7**	No-Clean desoldering wick	Removal of solder	Width 2.7 mm, length 1.5 m			X	X				1
●	**4FMJF8001-PEN**	FLUX-PEN, Interflux IF8001	Application of flux	With fiberglass brush, refillable, 7 ml	X		X	X				
●	**4FMJF6000-PEN**	FLUX-PEN, Interflux IF6000	Application of flux, for lead-free applications	With fiberglass brush, refillable, 7 ml	X		X	X				1
●	**4FMJF8300-005**	Flux gel	Flux for e.g. SolderWell process	Dispensing cartridge & needle, 5 ml	X	X	X	X		X	X	1
●	**4FMJF8300-030**	Flux gel	Flux for dip processes	Dispensing cartridge & needle, 30 ml	X	X	X		X	X	X	
●	**0IR4500-40**	Heat shielding tape	Heat protection of adjacent components	Width 25 mm, length 1 m, aluminium	X	X	X	X		X	X	1
●	**0IR4500-07**	Capton tape	Heat-resistant tape	Width 25 mm, length 10 m	X	X	X	X		X	X	1
	0IR6500-46	PTFE glass cloth tape	Heat-resistant tape to improve IRS reading on reflective surfaces	Width 40 mm, length 5 m	X	X	X	X	X	X	X	
●	**0TR01/SB**	TIP-REACTIVATOR	Reactivation of passive soldering tips	Lead-free, 15 g can			X	X				1
●	**0TR02/SB**	TIP-REACTIVATOR	Reactivation of passive soldering tips (new: without abrasives)	Lead-free, 30 g can			X	X				
●	**0FR400**	FLUX-REMOVER	Removal of flux and cleaning of PCBs	Spray can with brush, 400 ml	X	X	X	X		X	X	1

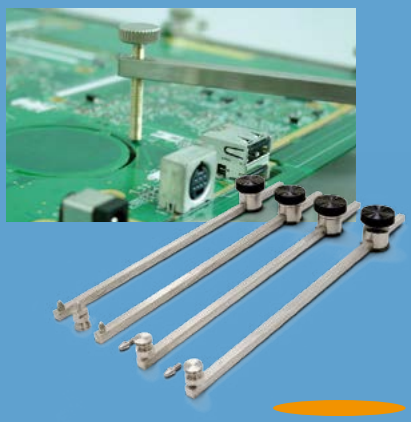
A complete list of solders and desoldering wicks is available in the Ersa tools catalog or online at www.ersa.com

Soldering tips



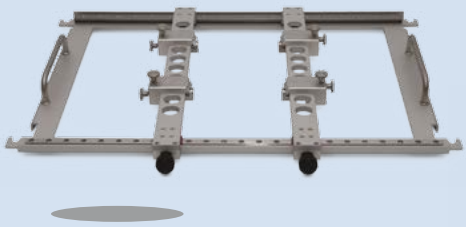
Soldering tips for rework applications are available in our Ersa soldering tools catalog or on our website at: tips.ersa.de

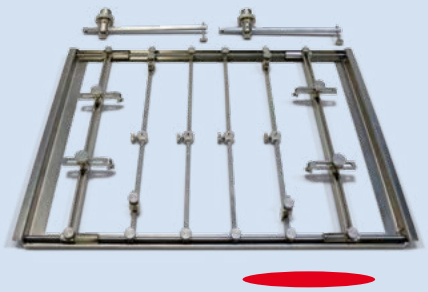


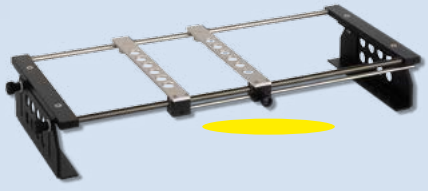


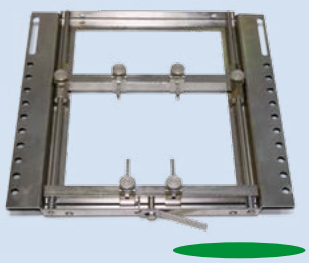
PCB holders and more

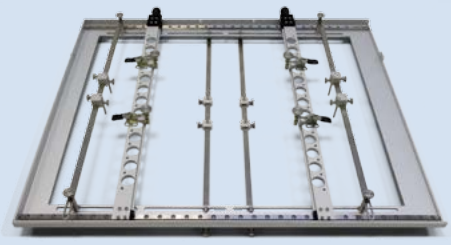
	Order number	Name	Description	Technical data	HR 100	HR 200	IR 650	PL 650	HR 550	HR 600/2	Starter kit
●	**0IR5500-01**	x/y PCB table	Fixture for PCBs or PCB holders	Recommended PCB size up to 280 x 390 mm	X		X				
●	**0PL500A-LP01**	Support for PCB holder	Support & fixture to prevent PCB warpage	4 pcs., length 250 mm each, stainless steel	X						
●	**0PH360**	PCB holder	Fixture and support of medium-size PCBs	Recommended PCB size up to 270 x 365 mm			X	X			
●	**0PH100**	PCB holder	Fixture of small PCBs	Recommended PCB size up to 170 x 170 mm	X	X	X	X			
●	**0IR6500-16**	PCB holder	Fixture and support of large PCBs	Recommended PCB size up to 460 x 560 mm			X	X			
●	**0IR6500-17**	PCB holder set	Fixture of odd shaped PCBs	4 pcs, 30 mm adjustable length per clamp	X		X	X			
●	**0HR625**	PCB holder for HR 600/2	Support and fixture of PCBs	Recommended PCB size up to 300 x 390 mm						X	
	0HR635	XL PCB holder for HR 600/2	Support and fixture of PCBs	Recommended PCB size up to 300 x 535 mm						X	
●	**0HR655**	Additional PCB clamp	Support and fixture of odd shaped PCBs	40 mm range per clamp, 1 piece	X	X	X		X	X	
●	**0HR554**	PCB holder HR 550	Fixture and support of PCBs	Recommended PCB size up to 382 x 300 mm					X		
●	**0HR554-01**	Support bar with pin	Support of PCBs	Lenght 274 mm					X		



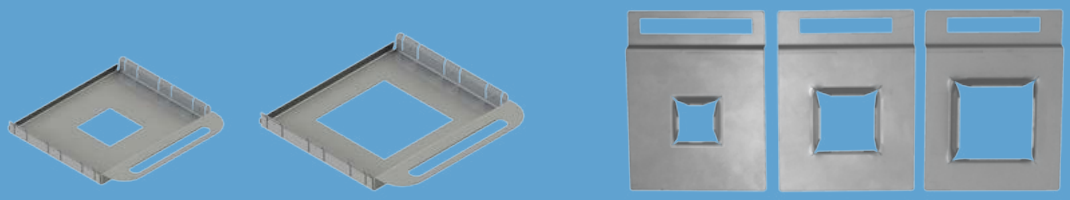








Accessories

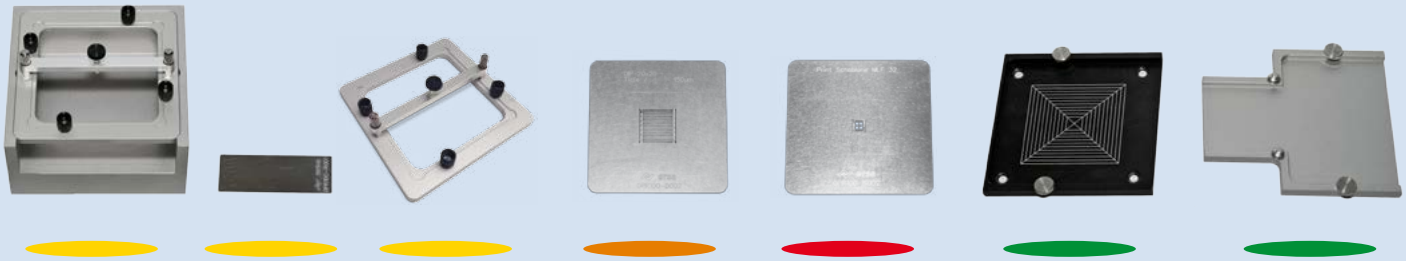


Baffles for HR 550

Order Number	Name
0HR5530-001	Baffle, 30 x 30 mm
0HR5530-002	Baffle, 45 x 45 mm

Baffles for HR 600/2

Order Number	Name
0HR620-001	Baffle, 40 x 40 mm
0HR620-002	Baffle, 30 x 30 mm
0HR620-003	Baffle, 20 x 20 mm



Dip&Print Station

	Order Number	Name
●	**0PR100**	Dip&Print Station incl. stencil frame and squeegee
●	**0PR100-20**	Stencil frame for Dip&Print Station
●	**0PR100-R001**	Squeegee, 70 x 25 mm, 0.3 mm thick
●	**0PR100-PL550**	Frame fixation for PL 550
●	**0PR100-PL650**	Frame fixation for PL 650
●	**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-S001**	Print stencil, type 1, BGA 225
●	**0PR100-S002**	Print stencil, type 2, MLF 32
	Customer-specific stencils on request	

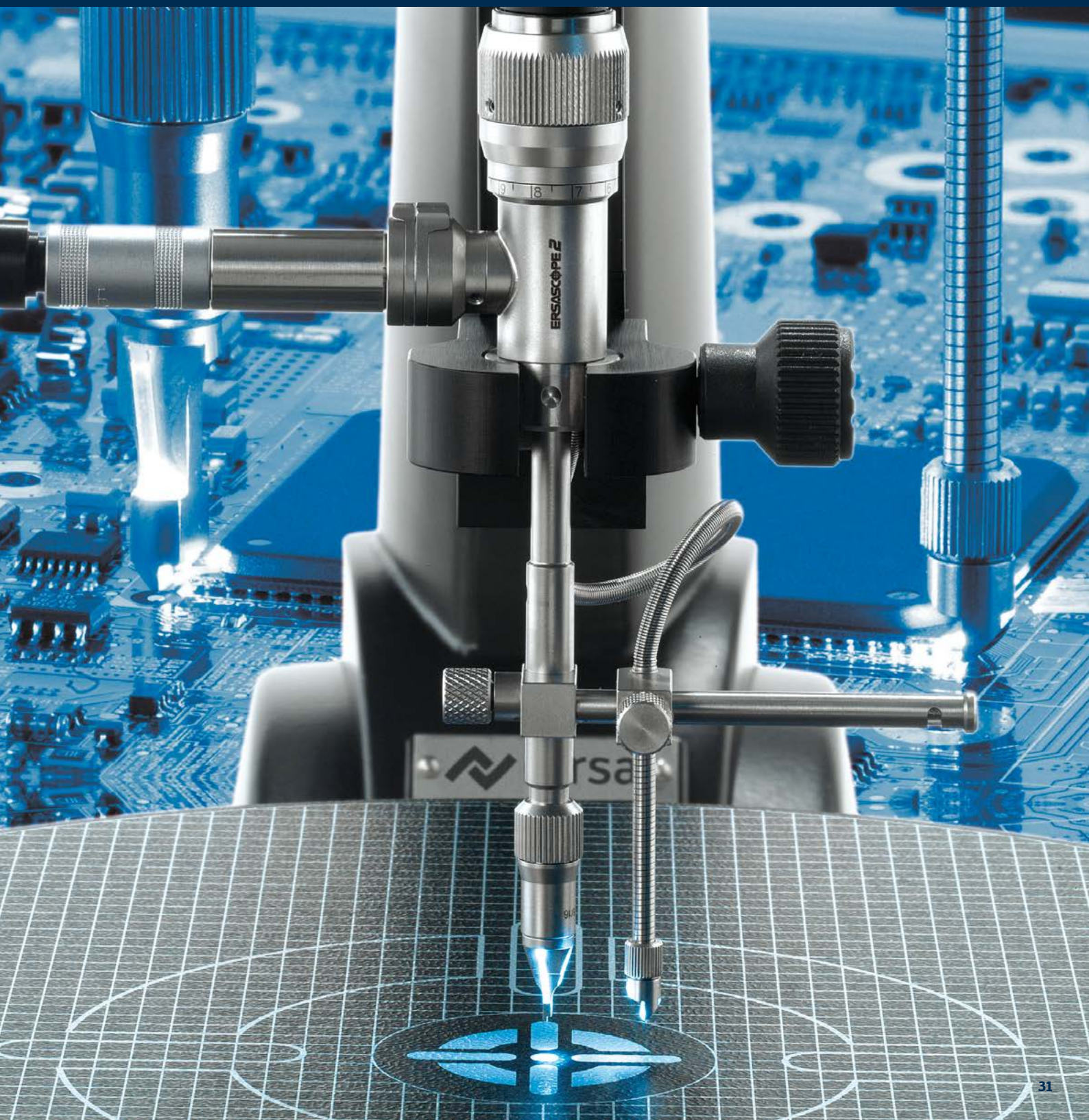
Information on Dip&Print Stations is available on our website under:
dip-print.ersa.com

NOTE:

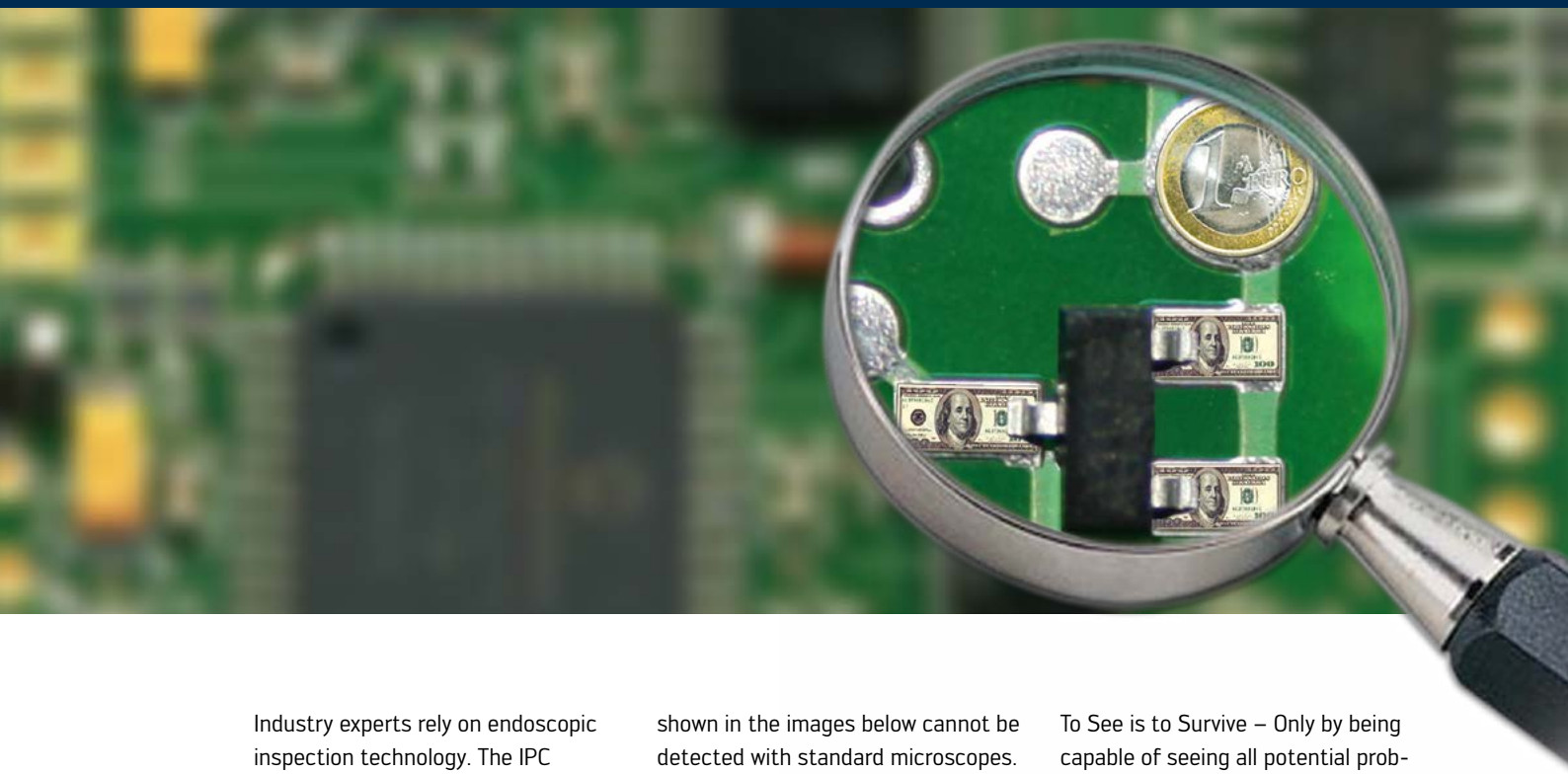
Ersa's customer service department assists its customers in selecting suitable fluxes and solders pastes for the dip-in and the printing process. For example, Interflux, a manufacturer of fluxes and solder pastes, recommends its product "µ-dlFe7" as dip-in solder paste, and flux gel "IF 8300" for this 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 suitable proposal.

Inspection



Proper Inspection Can Save Money!
Industry standards like IPC & experts alike promote hidden solder joint inspection

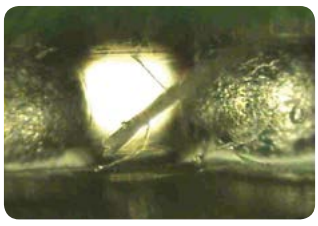


Industry experts rely on endoscopic inspection technology. The IPC standard IPC-7095B (March 2008) recommends the use of endoscopes for BGA inspection.

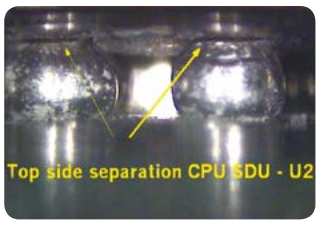
The introduction of the lead-free processes lead to new problems and required an improved inspection process, as it is offered by the ERSASCOPE technology. The defects shown in the images below cannot be detected with standard microscopes. If undetected, such problems will result in the improper qualification of the lead-free process.

The award-winning ERSASCOPE is a patented, endoscope-based system specifically designed for hidden solder joint inspection under components like BGAs, CSPs and Flip-Chips.

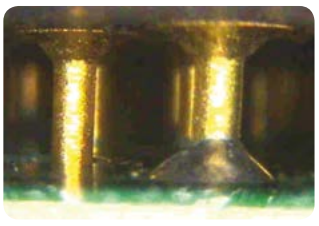
To See is to Survive – Only by being capable of seeing all potential problems in your process will you be able to react, in order to correct those problems, to assure quality and TO SAVE MONEY!



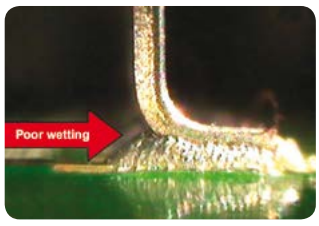
Flux residue under BGA



Top-side delamination of BGA



PGA: insufficient hole fill



PQFP: missing interior heel fillet

ERSASCOPE
Best in class inspection technology

US patent no. US 6,580501
EU patent no. EP 11 23 525

1999 Dr. Rudolf-Eberle,
Innovation Prize, Germany

1999 Most Innovative Product,
ELENEX Australia

2000 Best Product in Show,
Component & Electronic, Sweden

2000 EP&P Excellence Award,
Nepcon, USA

2000 EP&P Grand Award,
Nepcon, USA

2000 SMT Vision Award,
Best New Product, Inspection, Apex, USA

ERSASCOPE 1 vs. ERSASCOPE 2
Which system is best for which inspection application?

Best in class optical inspection technology for inspecting underneath components

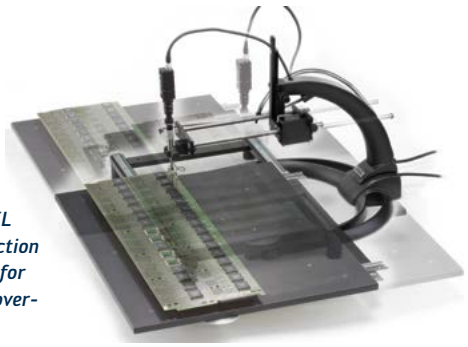
The award winning and patented original ERSASCOPE technology has been further developed in order to meet today's lead-free and low component profile challenges.

The ERSASCOPE 1 offers a cost-effective optical inspection solution in accordance with the new IPC Inspection Standards (see IPC -7095B) for not only BGA, but also for the hidden, interior joints on SMD and TH components.

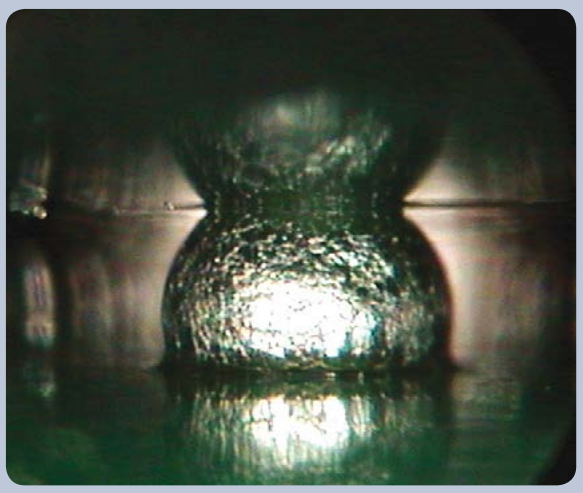
The ERSASCOPE 2 is currently the ONLY inspection system in the world offering exchangeable optical heads for Flip-Chip, CSP, BGA and 0201 optical inspection.

ERSASCOPE 1: fixed optics for BGAs

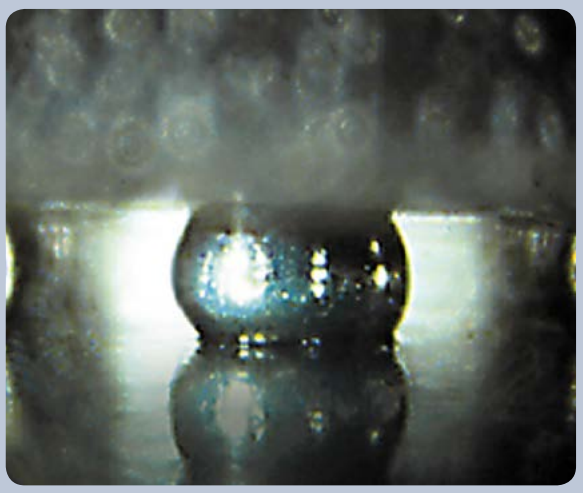
ERSASCOPE 2: exchangeable optics for CSPs



The ERSASCOPE XL system with retraction unit and XL-table for the inspection of oversized assemblies.



ERSASCOPE 1 image of BGA (gap ~ 300 µm)



ERSASCOPE 2 image of Flip-Chip (gap ~ 30 µm)

Whereby both ERSASCOPE systems are fundamentally similar in their capabilities, they differ technically in the following functional areas listed in the technical comparison table below.

When considering inspection applications, the two ERSASCOPE systems differ with respect to the standoff height of the component to be inspected and the density of the PCB. The 90° lens of the ERSASCOPE 1, for example, has a footprint of 1.5 x 4.5 mm, a magnification of up to 400x* and a typical inspection gap of ~ 300 µm. The Flip-Chip optical lens of the ERSASCOPE 2, on the other hand, has a footprint of only 0.6 x 4.0 mm, a magnification of up to 700x* and a typical inspection gap of ~ 30 µm.

Low standoff components such as CSPs and Flip-Chips are thus better inspected with the ERSASCOPE 2 system.

*20" monitor, 1600 x 1200 pixel resolution, no digital zoom

Technical comparison:

Part	ERSASCOPE 1	ERSASCOPE 2
Optical head	Endoscope with fixed integrated lens	Endoscope with exchangeable lenses
Camera	Digital USB camera	High-resolution CCD, 1.3 megapixel
Light source	Halogen	Metal halide
Table	x/y	x/y rotation
Software	ImageDoc	ImageDoc

ERSASCOPE 2

The world's only optical inspection system for Flip-Chips and CSPs

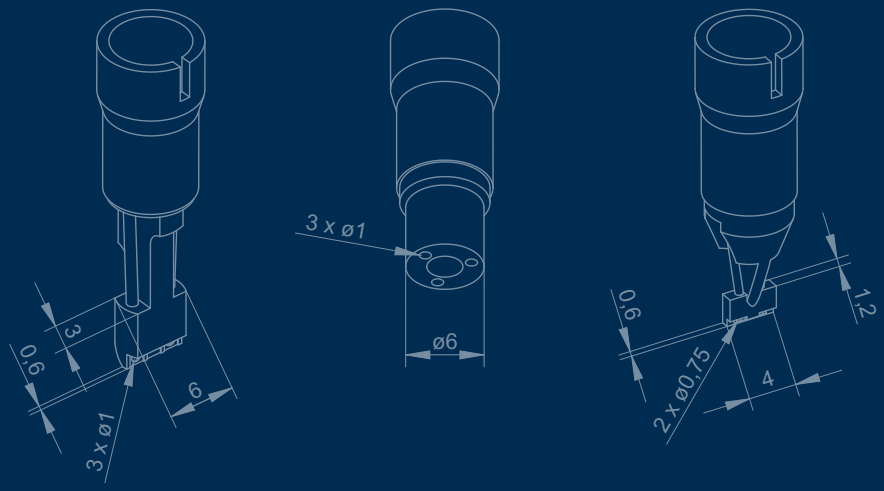
Easy to change and robust optical heads offer the greatest inspection flexibility

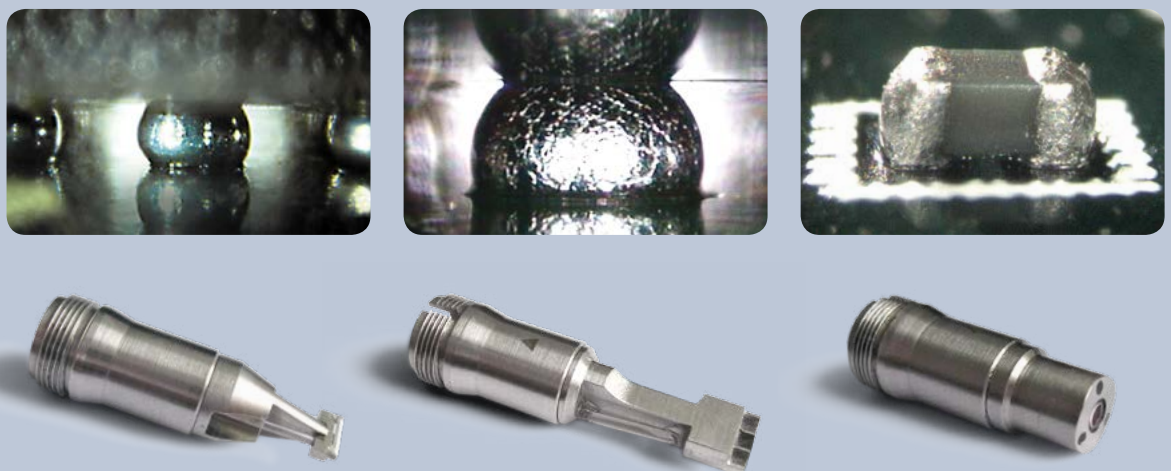
The ERSASCOPE 2 comes standard with an LED light source. The LED light offers a much cleaner and brighter white light compared to other systems. The light quantity is regulated electronically without changing temperature or color of the light during dimming. Two mechanical irises on the optic carrier allow for an individual and separate continuously variable dimming (0 to 100 %) of the front- and backlights. Also standard is a newly designed fiber optic light brush made up of individual fibers (0.050 mm diameter) which can be inserted under most area array packages for optimal illumination during inspection.

Optical carrier

The ERSASCOPE 2 optical carrier is a highly advanced, endoscope-based system offering a rapid exchange of the 3 robust optical heads (lenses) as well as precise image focussing and superior light management. Value added features include:

- Fiber optic front and backlights with mechanical iris, adjustable from 0 to 100 %
- Swing-out and fixture mechanism of backlight arm
- Connection and fastening of the 3 optical heads
- Focus ring with measurement scale
- "One Click" interface for fiber optic light cable





90° Flip-Chip head | *90° SMD & BGA head* | *0° microscope head*

Flip-Chip 90° optical head

The revolutionary Flip-Chip optical head has the smallest footprint in the industry (0.6 x 4.0 mm) and has been specifically designed for use on densely packed PCBs. The ERSASCOPE 2 Flip-Chip head's aperture height is so low that it is now possible with a magnification of up to 700x to inspect even a typical gap of ~ 30 µm. The critical top-side Flip-Chip joint, never before seen by any BGA optical inspection equipment on the market, is now visible!

BGA 90° optical head

The ERSASCOPE 2 BGA optical head provides a high-resolution, 90° viewing angle under the component. This light sensitive optical lens offers a 425x magnification in a typical inspection gap of ~ 300 µm and a footprint of 3 x 6 mm. The digital zoom makes it possible to inspect the interior joints underneath the BGA component!

"Look down", 0° optical head

The wide angle, 0° optical head offers viewing similar to a microscope. The integrated fiber optic lighting perfectly illuminates and magnifies up to 250x for high-contrast surface and via hole inspection.

Features of the ERSASCOPE 2

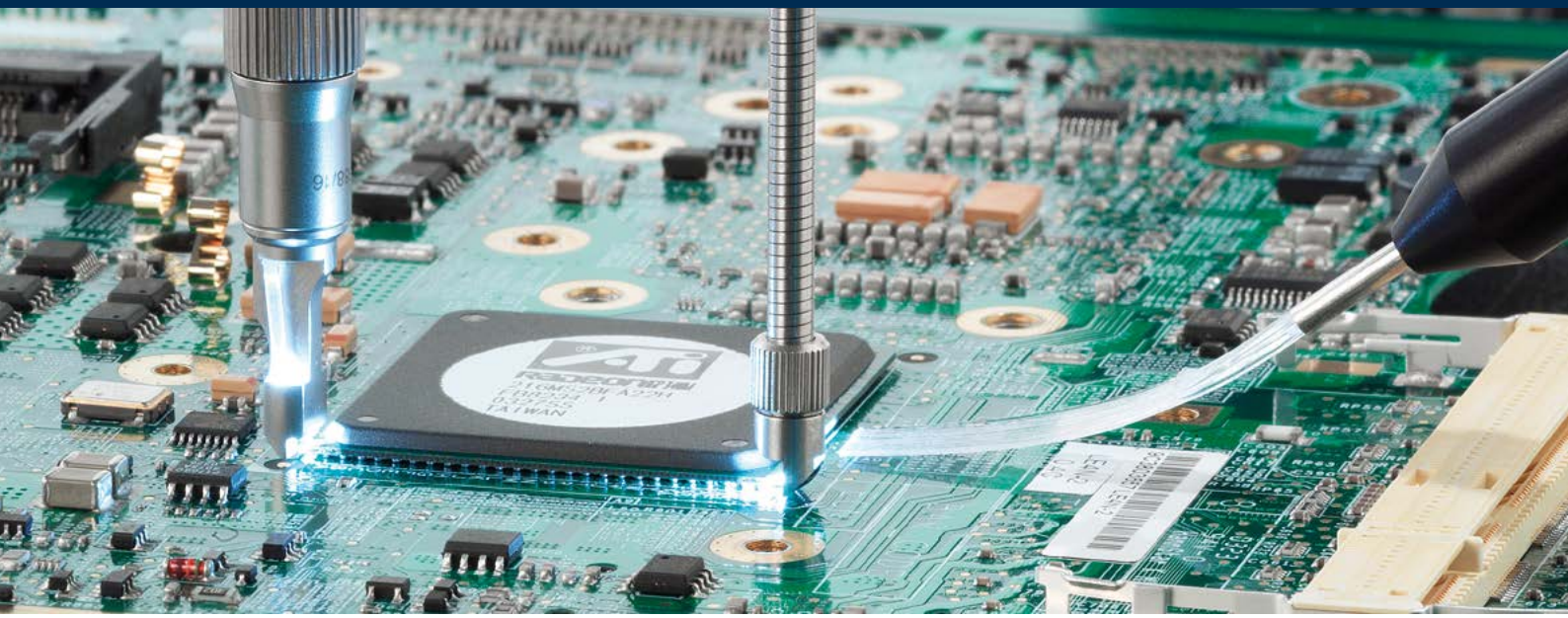
- High-resolution USB 2.0-CCD camera
- Flip-Chip optical head (700x magnification, gap ~ 30 µm)
- BGA optical head (425x magnification, gap ~ 300 µm)
- Wide angle 0° "look down" optical head (250x)
- Optional high-quality MACROZOOM head (70x) with fiber ring light
- Long-life LED light source
- Light management: fiber optic front and backlights with mechanical iris, fiber optic light brush and -flat light brush, gooseneck
- Stand and table with a total of 7 axes of movement for the optical heads and the board
- ImageDoc Basic or ImageDoc EXP software for both beginners and advanced operators
- Large problem/solution database
- Advanced recording, measurement and reporting functions
- "Plug & Play" setup

Ordering information:

Order number	Description
0VSSC600	**ERSASCOPE 2 inspection system,** complete
0VSSE200-90K	**90° optical head**
0VSSE200-FCK	**Flip-Chip optical head**
0VSSE200-0K	**0° optical head**

Light, Camera and Action!

Best in class inspection productivity with highest quality images



Optimal component illumination is essential for a quality inspection process

Superior light management

The LED light source of the ER-SASCOPE 2 inspection system offers clean and bright white light.

The light quantity is regulated electronically without changing temperature or color of the light during dimming.

Furthermore, all fiber optic light cables have a mechanical iris. Two mechanical irises on the optic carrier allow for an individual and separate continuously variable dimming adjustment from 0 % to 100 % of the front and backlights.

Also standard is a newly designed fiber optic light brush. This new light brush is made up of individual fibers (0.050 mm diameter) which can be inserted under most area array packages and mechanically dimmed for optimal lighting during inspection.

Mechanical irises control both the front & backlights for perfect lighting

7 axes of movement of the ERSASCOPE optic positioning guarantees maximum flexibility and productivity

High-resolution, light sensitive USB 2.0 camera

In addition to optimal light management, image quality depends not only on precision optics, but also on high-quality camera technology. The high-resolution and highly light sensitive Ersa USB 2.0 camera has 1.3 megapixels and delivers images of highest detail and perfect contrast. Even the smallest object details can be captured, digitally enhanced and used for quality assurance and documentation purposes.

ERSASCOPE inspection stand and table

The ERSASCOPE stand and inspection table offer the most accurate BGA inspection in the fastest cycle time when compared to all competitive systems on the market. The greatest flexibility with a total of 7 axes of movement of the ERSASCOPE optic positioning is guaranteed: optics pan positions every 90°, unlimited table rotation, unlimited camera rotation, free tilting of optics between +/- 90° with zero degree lock position, x/y/z adjustment in micrometer range.

Removable fibre optic light brush incl. mechanical iris

ERSASCOPE 1
The award-winning and patented original

Optics

The patented ERSASCOPE is the world's first optical inspection system which allows for non-destructive manual inspection of BGAs.

Today over 3,000 users worldwide are benefiting from finding defects that otherwise would have gone undetected by other inspection methods.

The ERSASCOPE 1 optics is a specially designed endoscope with an integrated fiber optic system, focus ring and adjustable backlight; a footprint of 1.5 x 4.5 mm; a magnification of up to 400x and a typical inspection gap of ~ 300 µm.

Camera

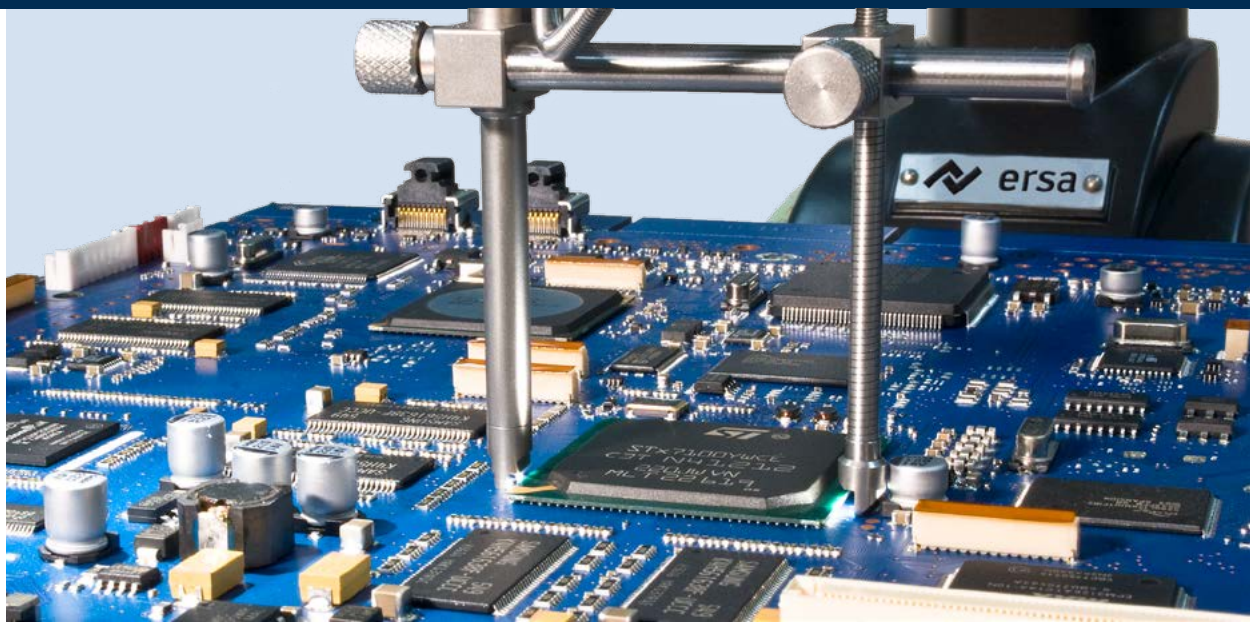
The digital camera with USB 2.0 interface uses CMOS technology offering optimal light sensitivity and resolution. The halogen light source supplies optimal light to both the ERSASCOPE 1 optics as well as the flexible gooseneck which is included in the delivery.

Light management

Two light outlets at the optical carrier system and a flexible gooseneck ensure superb light distribution both on the PCB surface and beneath the component.

Via mechanical coupling of the backlight with the inspection head, the illumination remains uniform during movement along the component thus

High magnification and viewing angles from 0 to 90° offer maximum inspection flexibility



Integrated front and back lighting allows for optimal illumination of the hidden joints underneath the component

allowing for the fastest BGA inspection of any system on the market.

The Ersa halogen, "cold" light source was specifically designed for ERSASCOPE industrial endoscopy and image processing. Continuous dimming from 0 to 100 % ensures an optimal light control in areas where an exact lighting adjustment is required such as by hidden joint inspection underneath BGAs.

Table and stands

The multifunctional ERSASCOPE inspection stand includes a z-axis course and fine adjustment of the optics and offers a total of 6 axes of movement for the optics. It is thus possible to view an object at almost any angle! The x/y PCB table has two control wheels for quick and fine positioning of the PCB during inspection.

Software

Image processing and documentation software goes hand in hand with today's inspection requirements. The ERSASCOPE 1 comes standard with ImageDoc Basic inspection software.

Features of the ERSASCOPE 1

- High-resolution USB 2.0 CMOS camera
- High-quality BGA optical head (400x magnification, gap ~ 300 µm)
- High-quality MACROZOOM head (70x) with fiber optic ring light (option)
- Long-life halogen light source
- Light management with gooseneck and optional fiber optic light brush or flat light brush
- Stand and table with a total of 6 axes of movement for the optical heads and PCB
- ImageDoc Basic or ImageDocEXP software for both beginners and advanced operators
- Large problem/solution database
- Recording, measurement and reporting functions
- "Plug & Play" setup

Ordering information

Order number	Description
0VSSC070	**ERSASCOPE 1 inspection system,** complete

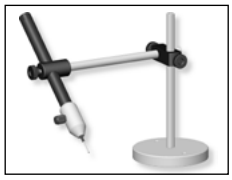
Ersa MOBILE SCOPE

Mobile optical inspection system for electronics production

X-Y table

Foot switch for image capture

Stand unit 0VSST060



Stand unit for LED light brush

Desktop holder for Ersa MOBILE SCOPE

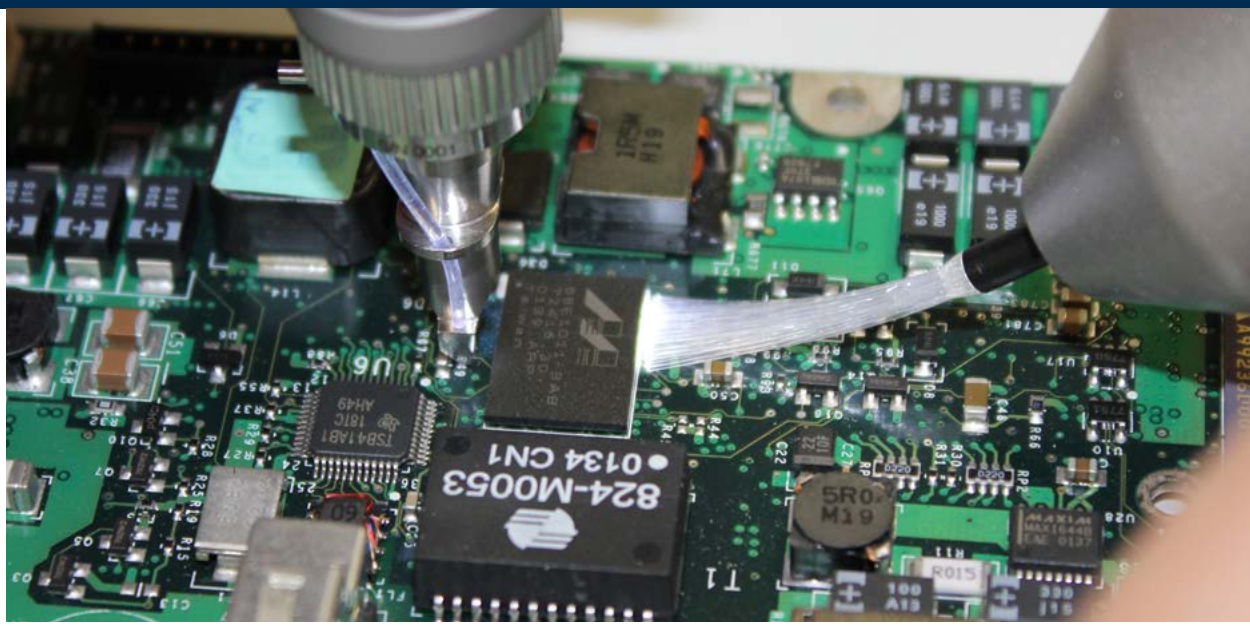
Stand unit 0VSST065 with Ersa MOBILE SCOPE

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.



Inspection of a CSP

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.

Features of the Ersa MOBILE SCOPE

- 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

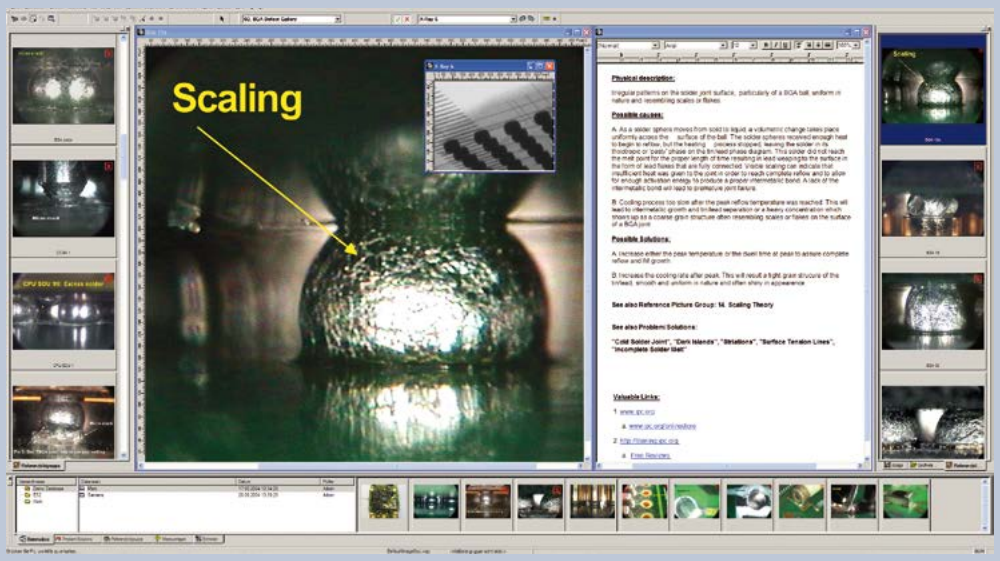
Ordering information:

Order number	Description
0VSCA060	**Basic camera unit**
0VSSC060VK1	**Sales kit 1,** for details see page 50
0VSSC060VK2	**Sales kit 2,** for details see page 50
0VSSC060VK3	**Sales kit 3,** for details see page 50

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

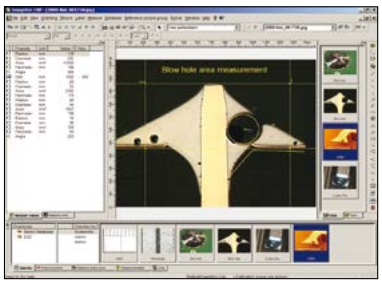
Ersa ImageDoc Software

Designed for the inspection personnel containing expert documentation!



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

Database & reporting modules to store process & FA info



Extensive measurement control 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.

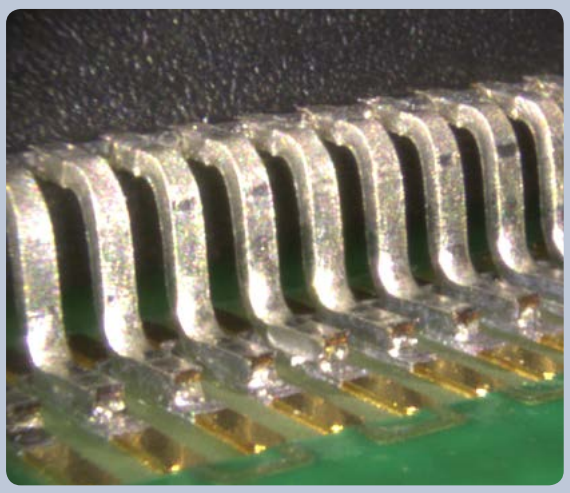
The Ersa ImageDoc software guides the operator through the critical and time consuming process of determining whether a defect exists, and then directs the operator where to look in the process in order to correct the problem. Inspection subjectivity is reduced, problems are solved more quickly and valuable 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.

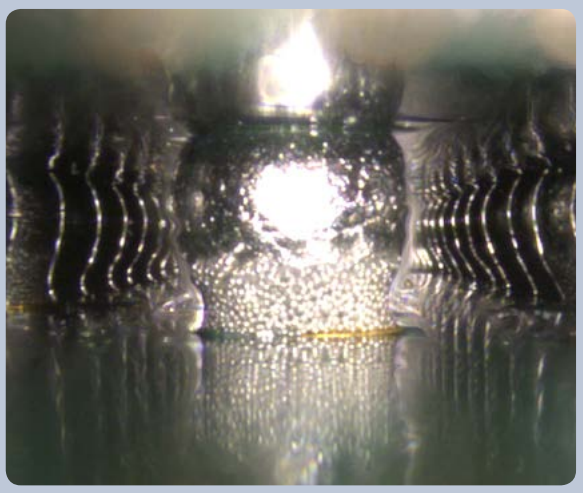
Features of ImageDoc Basic

- 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 & Play" setup

Still sharper views at even more depth
ImageDoc EXP with new image processing functions

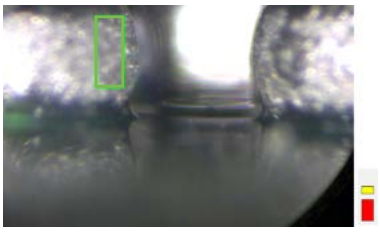


"Focus Fusion" – view of QFP solder joints

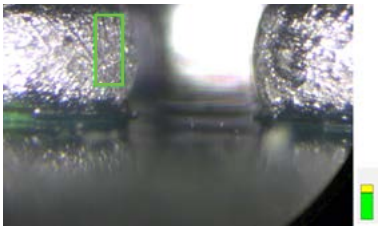


"Focus Fusion" – view of a BGA printed with solder after it has been placed

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.



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

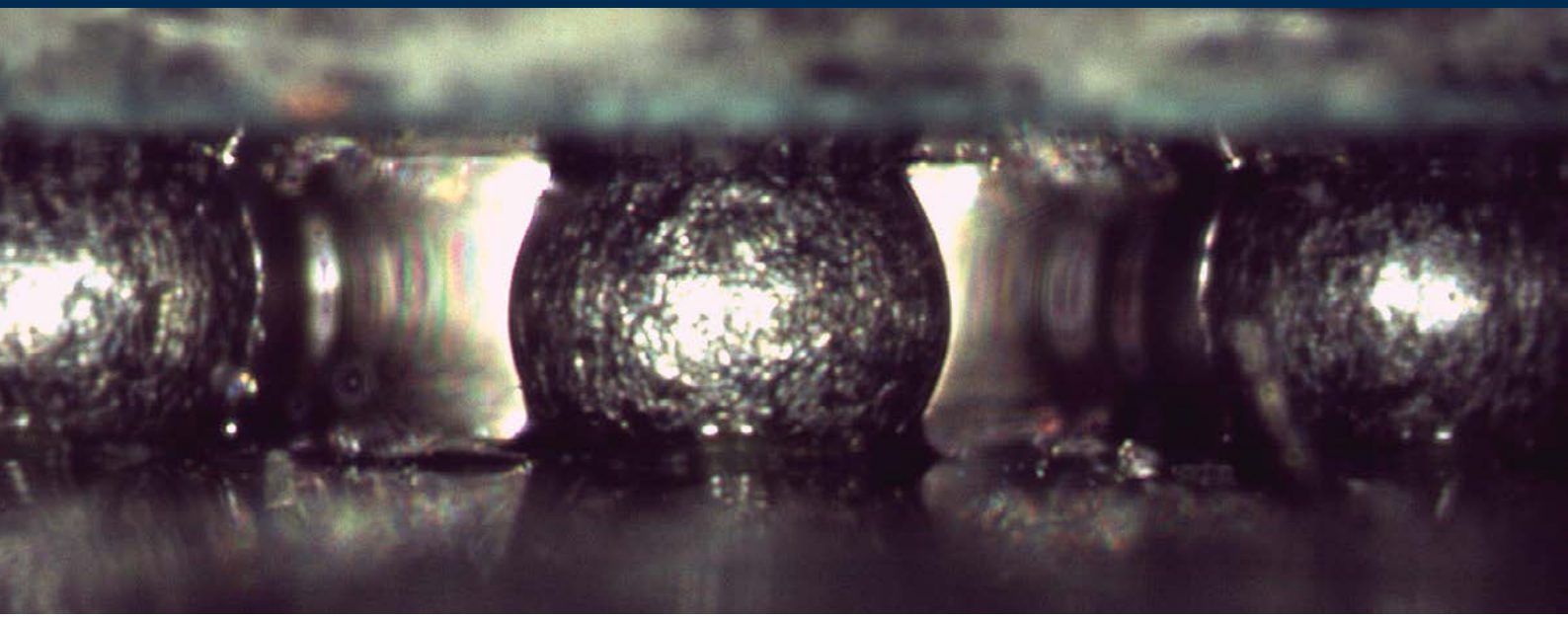
The second function serves to improve the presentation and documentation of the inspection results. With "Focus Fusion", the software calculates a composite image with excellent depth of sharpness from a number of previously recorded images. Balls of a BGA, aligned in one row, can thus be viewed with 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.

Features of ImageDoc EXP

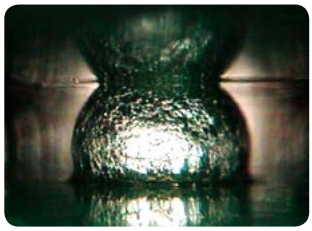
- Live and still picture, AVI recording, sequence module, presentation mode
- „Best Focus" and „Focus Fusion"
- Guided failure analysis, spported by an extensive expert database (over 450 MB)
- Reference pictures
- Large problem/solution database, set up by Ersa, Fraunhofer and the industry
- Measurements, 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
- On-line updates and user forum

Inspection applications
Hidden solder joints and further applications

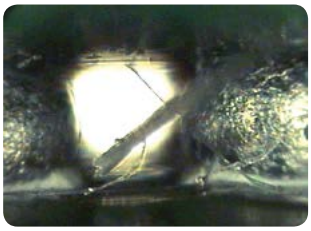


Hidden solder joint inspection is one of the most important areas in a quality assurance program. The images shown on these pages underscore the flexibility of the ERSASCOPE inspection systems.

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.

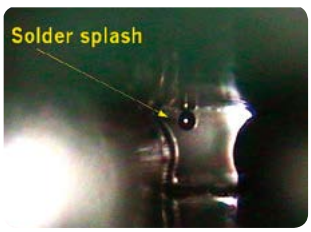


PBGA – scaling: insufficient heat

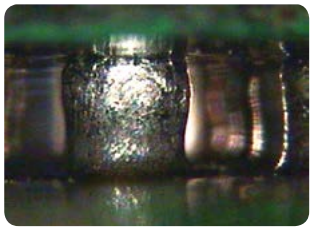


BGA: contamination (fibre)

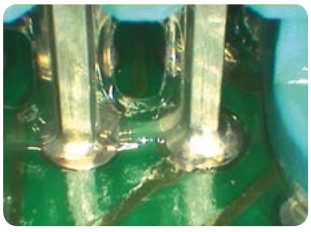
BGA – "dark islands": overheat



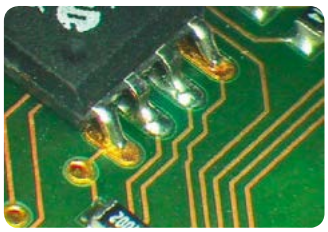
BGA: via hole solder splash



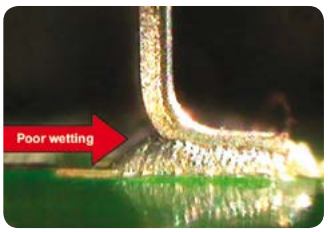
CBGA: good wetting angle



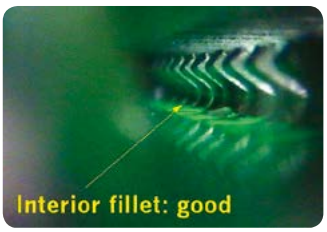
Conformal coating inspection



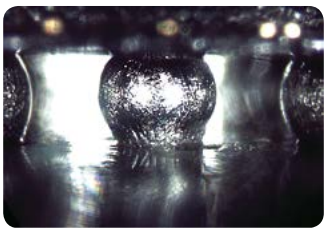
Lead-free assembly: non-wetting



PQFP – interior fillet: poor wetting



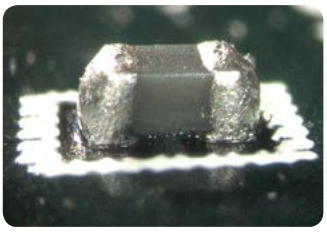
PLCC – interior fillet inspection



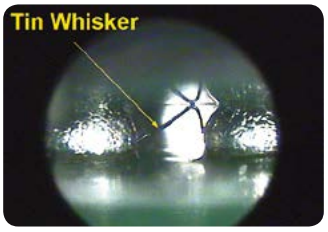
PBGA – cold joint: insufficient heat

CCGA: insufficient solder

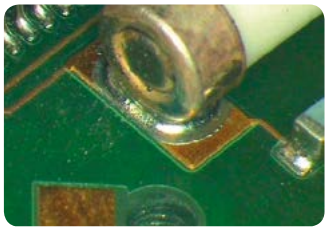
BGA – piggy back: bad alignment



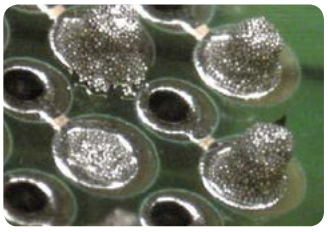
0402: bulbous solder joint



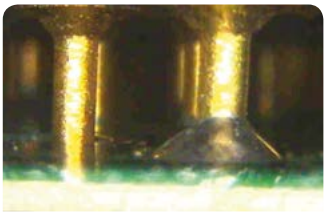
PBGA: tin whisker



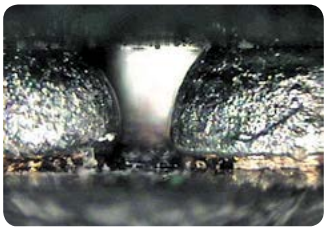
Lead-free assembly: non-wetting



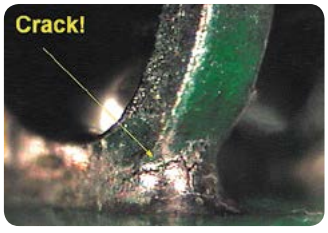
BGA – paste print: insufficient solder



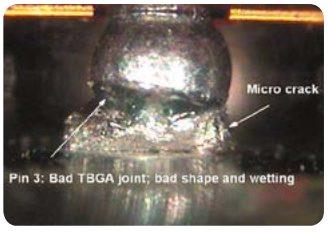
PGA – no flow thru: insufficient heat



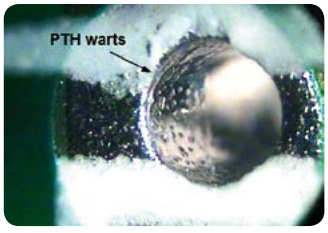
PBGA – scaling: insufficient heat



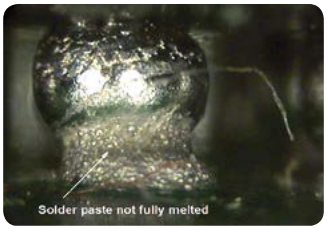
Lead-free PLCC: micro crack



TBGA: disrupted joint & micro crack

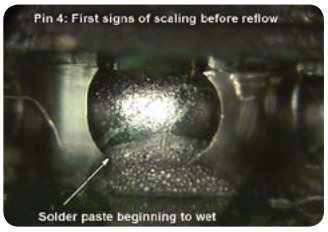


Plated thru-hole: disrupted wall

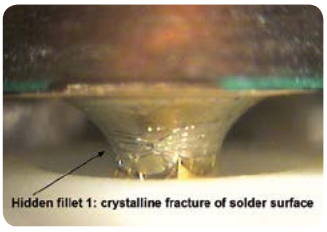


PBGA – scaling: insufficient heat

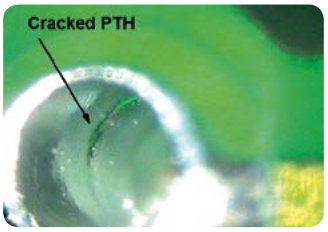
SMD LED inspection



PBGA – scaling: insufficient heat



THT joint: crystalline fracture



Plated thru-hole: cracked wall

ERSASCOPE 2
System configurations and options

Order number	Description	Technical data	Part
0VSSC600	**ERSASCOPE 2 inspection system,** consisting of:		
0VSSE200-T	**Optical carrier** endoscope with integrated lens and fiber optic system	calibration scale, focus ring and two mechanical irises for front and backlight each	
0VSSE200-90K	**90° optical head** with integrated lens and fiber optic cable	footprint 3 x 6 mm magnification up to 425x* typical inspection gap ~ 300 µm	
0VSSE200-FCK	**Flip-Chip optical head** with integrated lens and fiber optic cable	footprint 1.5 x 4.5 mm (0.6 x 4.0 mm) magnification up to 700x* typical inspection gap ~ 30 µm	
0VSSE200-0K	**0° optical head** for surface inspection	footprint ø 6 mm; magnification up to 250x*	
0VSCA2240	**High-resolution CCD camera** color inspection camera	SXGA, digital (USB 2.0) manual or auto white balance 1.3 million pixels; 1/3" CCD chip	
0VSTV200	**TV adapter** connects optical carrier to CCD camera	60 mm focal length C-type mount	
0VSLS400	**LED light source** with electronic light quantity regulation and brightness presets	(W x H x D): approx. 170 x 196 x 98 mm 12 VDC, 5,420 mA, max. 65 W weight approx. 2.1 kg	
0VSLR200 ●	**Light regulator for gooseneck**	mechanical iris adjusts from 0 to 100 %	
0VSLLVL200 ●	**Fiber optic light guide extension**	length 200 mm	
0VSLF200 ●	**Light brush**	length 35 mm, width 5 mm	
0VSLF300 ●	**Flat light brush**	length 80 mm, width approx. 10 to 35 mm	
0VSRM100 ●	**Glass calibration scale**	10 µm lines at 100 µm pitch	
0VSLC100 ●	**Lens cleaning kit**	cleaning cloth, papers and liquid	
3VP00640 ●	**Storage case**	(W x H x D): ~ 325 x 230 x 110 mm aluminium with padded insert	
0VSST210	**ERSASCOPE stand** with z-axis micrometer adjustment; integrated fiber optic cables and camera cables	(W x H x D): ~ 500 x 400 x 520 mm total weight ~ 5 kg surface: antistatic includes 1,000 mm coated fiber optic cable with gooseneck	
0VSXY100	**ERSASCOPE 2 table** with 4 PCB supports	X-Y-θ movement with fine adjustment and antistatic mat with grid 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	

● **= option for ERSASCOPE 1** ● **= option for ERSASCOPE 2** *20" monitor, resolution 1,600 x 1,200 pixels, no digital zoom

ERSASCOPE 1
System configurations and options

Order number	Description	Technical data	Part
0VSSC070	**ERSASCOPE 1 inspection system,** consisting of:		
0VSSE100	**ERSASCOPE 1** endoscope with integrated lens and fiber optic cable	focus ring and adjustable backlight footprint 1.5 x 4.5 mm magnification up to 400x* typical inspection gap ~ 300 µm	
0VSCA1225	**Digital color camera with USB port**	digital (USB 2.0) manual or auto white balance 1/3" CMOS chip	
0VSTV036	**TV adapter** connects optical carrier to CCD camera	60 mm focal length C-type mount	
0VSLS070	**Halogen light source** adjustable	(W x H x D): 130 x 55 x 235 mm 220 V - 240 V~, 50 Hz, 45 W or 115 V - 127 V~, 60 Hz, 45 W weight: ~ 1.8 kg	
0VSST210	**ERSASCOPE stand** with z-axis micrometer adjustment; integrated fiber optic cables and camera cables	(W x H x D): ~ 500 x 400 x 520 mm total weight ~ 5 kg surface: antistatic includes 1,000 mm coated fiber optic cable with gooseneck	
0VSXY090	**ERSASCOPE 1 table** with 4 PCB supports	x/y movement with fine adjusment; antistatic mat with grid dimensions: ø 320 mm; weight: ~ 3 kg	
0VSID135	**ImageDoc Basic**	general inspection software	

Order number	Description	Technical data	Part
0VSUP6XL ● ●	**XL Upgrade Kit** upgrades the ERSASCOPE stand and table for inspection of very large PCBs	antistatic XL table (600 x 700 mm), telescopic arm, optical carrier system and fiber optic light guide extension	
0VSMS100 ●	**MAGNISCOPE head** 0° static endoscope with integrated lens and fiber optic cable	focus ring, magnification up to 400x*	
0VSMZ100 ● ●	**MACROZOOM head** for high-magnification top-view surface inspection	70x zoom lens aperture adjustment: F 5.6 – 32 C focal length: 180 – 450 mm	
0VSFR100 ● ●	**MACROZOOM ring light**	fiber optic ring light	
0VSMZ300H ● **0VSMZ200H** ●	**MACROZOOM holder**	connects optical head to the stand	
0VSSC600VK ●	**ERSASCOPE 2 Upgrade Kit** upgrade to ERSASCOPE 2	for complete ordering information, please contact your Ersa representative directly	

● **= option for ERSASCOPE 1** ● **= option for ERSASCOPE 2**

*20" monitor, resolution 1,600 x 1,200 pixels, no digital zoom

Ersa MOBILE SCOPE
System configurations and options

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	**0VSSE060-MZ80**
Dimensions	43 (L) x 19 (ø) mm (max. 85 x 35 mm)	

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 (max. 40 x 250 mm)	**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

Ersa MOBILE SCOPE accessories

Product name	Order number
Stand unit, height adjustable, with fine adjustment	**0VSST060**
Stand unit, height adjustable	**0VSST065**
x/y table	**0VSXY060**
Stand for LED light brush	**0VSLS030H**
Foot switch for image capture, with USB port	**0VSCA060FS**
Ersa lens cleaning kit	**0VSLC100**
Aluminium case for Ersa MOBILE SCOPE	**3VP00703**

Ersa – We Can Help You Even More!

Benefit also from our soldering irons, soldering systems, stencil printers and training offers

Innovative and efficient tools and machines to raise the productivity of your electronics production

Ersa, Europe's largest manufacturer of soldering systems, has the largest product range for the joining technology as applied in electronics production.

Hand- and rework soldering tools
An example from the Ersa hand soldering tools product range is the i-CON VARIO multi-channel soldering- and desoldering station, which satisfies the highest demands on soldering and desoldering. This flagship of the i-CON family allows the user to plug in and operate up to 4 different tools at the same time. Connectable tools are, for example: the ergonomic i-TOOL AIR S hot-air iron for flexible soldering and desoldering with non-contact energy transfer; the i-TOOL for efficient soldering; the i-TOOL HP for demanding high-mass applications; the CHIP TOOL VARIO for precise desoldering of most delicate SMDs and the well-proven X-TOOL or X-TOOL VARIO for desoldering through-hole components.

More information about these as well as other members of the comprehensive line of Ersa soldering tools is available in the Ersa tools catalog and online at www.ersa.com.

Printers and soldering systems
In the field of soldering systems we manufacture stencil printers, reflow ovens as well as wave- and selective soldering systems. Due to our longstanding cooperation with many manufacturers of electronic products all over the world, our knowledge of what is required by the industry has always kept pace with new developments and new processes. Reliability, low defect rates, continuous productivity improvements while keeping the consumption of resources at a very low level as well as low maintenance costs are challenges, which are faced and mastered by Ersa on a daily basis. Learn more from our product catalogs and on our website.

Extremely handy, precise and powerful – the CHIP TOOL VARIO desoldering tweezers

Ersa selective soldering technology is globally leading

Employee training and services
Ersa offers a comprehensive service program on all levels. While employee qualification takes on more and more importance. Benefit from qualified staff and take advantage of Ersa's training and continuous education programs. You will find more information and current dates in our program flyers or on our website.

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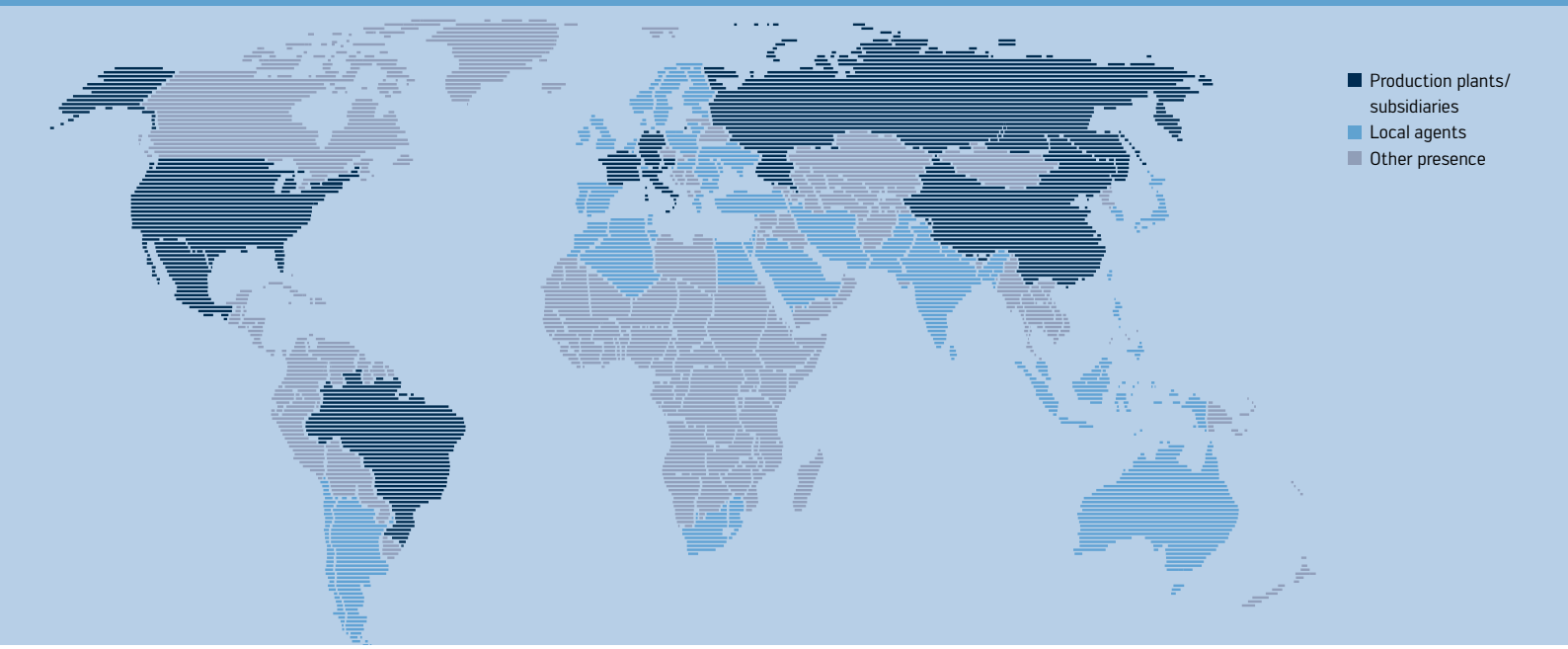
Present in 135 countries



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