Production Equipment & Services

for Manufacturing & Repair of Electronic Assemblies

Kurtz ELECTRONICS

ERSA® GLOBAL CONNECTIONS

Our Vision

Our competitive lead in technology optimizes quality, costs and delivery service in our customers‘ production process.

Our Mission

- We develop and produce high quality machines and systems for the production of electronics.
- We offer services and complete solutions designed to optimize our customers‘ production processes.
- We think globally and act locally.
- As a company with tradition, we strive for long-term relationships with our customers, partners and employees.
- Our core focus is to business areas where we can prove to be “Best in Class” as compared to third parties.
- We strive for above average economic success in order to guarantee the continuing development and innovative strength of our company.

FOCUS on...

- **Screen Printing**
- **Reflow Soldering**
- **Selective Soldering**
- **Wave Soldering**
- **Rework & Repair**
- **Hand Soldering Tools**
- **Optical Inspection**
- **Value Added Services**

Your SMT Process – Our Responsibility!

Now responsible for 100 % of the process related steps in the SMT line, as well as the majority of steps which follow the line, ERSA is re-defining the role of a strategic supplier.

The name ERSA has been synonymous with soldering for over 8 decades. We have maintained a strategic commitment to keeping all aspects of the electronic PCB manufacturing process at the forefront of our R&D.

A revolutionary print solution with integrated post print AOI; world class reflow, selective and wave soldering machines; handling & periphery systems; optical inspection; patented rework & repair systems including a completely new Hybrid heating technology and innovative soldering tools for touch up –

All from One Supplier!

VERSAPRINT

A Revolutionary Printer with Fully Integrated Post Print AOI

VERSAPRINT Print Head

Intelligent Stencil Cleaner via 100 % Inspection

VERSAPRINT P1

New Technology

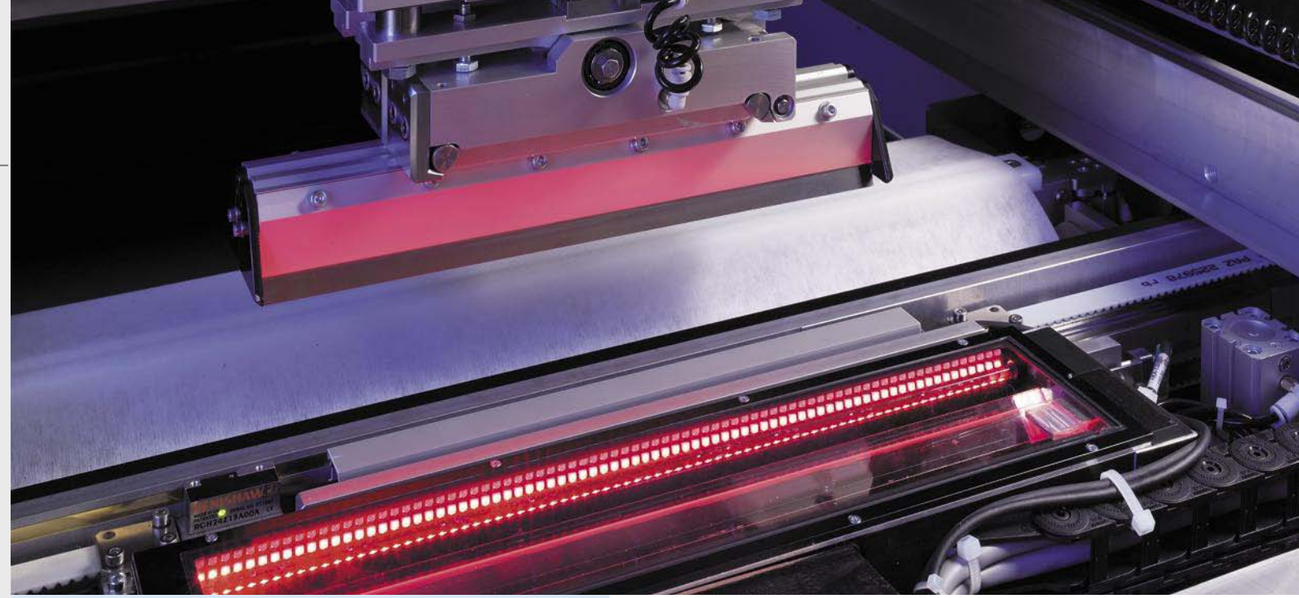
The launch of the new VERSAPRINT printing machines is a world premiere that will re-define SMT production. The revolutionary Line Scan Technology (LIST) camera (patent pending) and the TRT (Triple Rail Transport) represents the core competence of this new printer: true time savings via optimized parallel processing, 100 % post print AOI integrated into the machine, as well as the maximum in machine capability for the minimum floor space requirement.

LIST - Line Scan Technology

Today's printers use a standard camera and prisms for alignment and the same camera to rapidly shoot many small field-of-view pictures for inspection. ERSA revolutionizes these processes via the use of a line sensor based camera for both alignment and inspection. Similar to a standard scanner, the LIST camera (patent pending) has top and bottom contact image sensors (CIS) and an array of rod lenses specifically designed for this application.

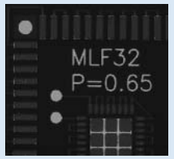
VERSAPRINT S1

Standard cameras take many pictures of a very small area, whereby the LIST camera scans the entire length of 260 mm at a speed of 35 mm per second! From an inspection speed standpoint, ERSA's Line Scan Technology will set the new standard. The fastest inspection speed in a printer today is 1,200 mm^2/s. The LIST camera in the VERSAPRINT achieves the world's fastest inspection speed of 9,100 mm^2/s! In addition to inspection speed, the scanning of the entire substrate offers many additional advantages.



Unique Technology Advantages:

- **True Parallel Processing for High Quality & High Speed Printing**
- **LIST Camera for 100 % Inspection at Line Speed**
- **Intelligent Stencil Cleaning via 100 % Inspection**
- **Least Floor Space Required & Lowest Invest**
- **Closed Loop Process Control for Print & Post Print Inspection**
- **Easy to Program & Easy to Use**
- **Only One Contact for Printer & Post Print Inspection**



Direct Lighting

Diffuse Lighting

Benefits for Post Print Inspection:

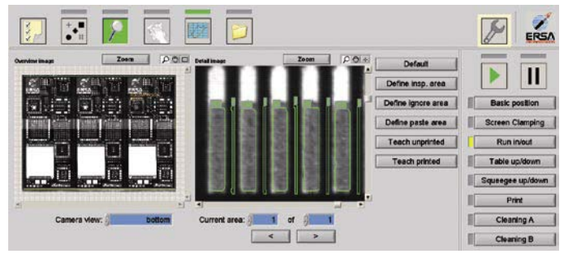
- **Scanning entire Substrate enables Operator to Setup & Teach Fiducial Marks Very Easy**
- **System Detects Position & Location of Fiducials & Aligns Unprinted Board Accordingly**
- **Reduction of Setup Time**
- **Minimising of Operator Errors**
- **High Resolution and Distortion Free Pictures**

Parallel Processing: TRT Triple Rail Transport

Optimizing production efficiency remains the foremost goal of SMT equipment manufacturers. In a paste printing machine, the major process steps and their relative cycle times are printing, transporting, cleaning and inspecting. The VERSAPRINT revolutionizes parallel processing based on a TRT Triple Rail Transport and the 100 % inspection capability offered by LIST. The two most time consuming processes of printing and inspection can run parallel in order to achieve a tremendous cycle time savings!

VERSAPRINT Inspection Capability

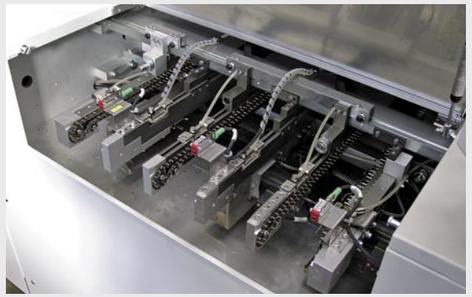
The LIST camera offers advanced inspection capabilities not often found in a printing machine. Detection of paste on pad, detection of print offset, detection of bridges, and finally detection of stencil smearing and blockage can be all managed at line speeds!



Integrated AOI Detects Paste on Pad & Bridges

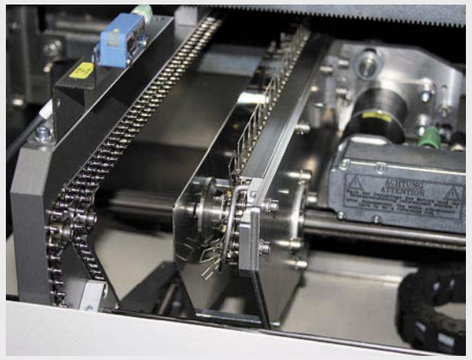
HOTFLOW

New Reflow Platform Designed for Maximum Throughput



Triple Track Transport

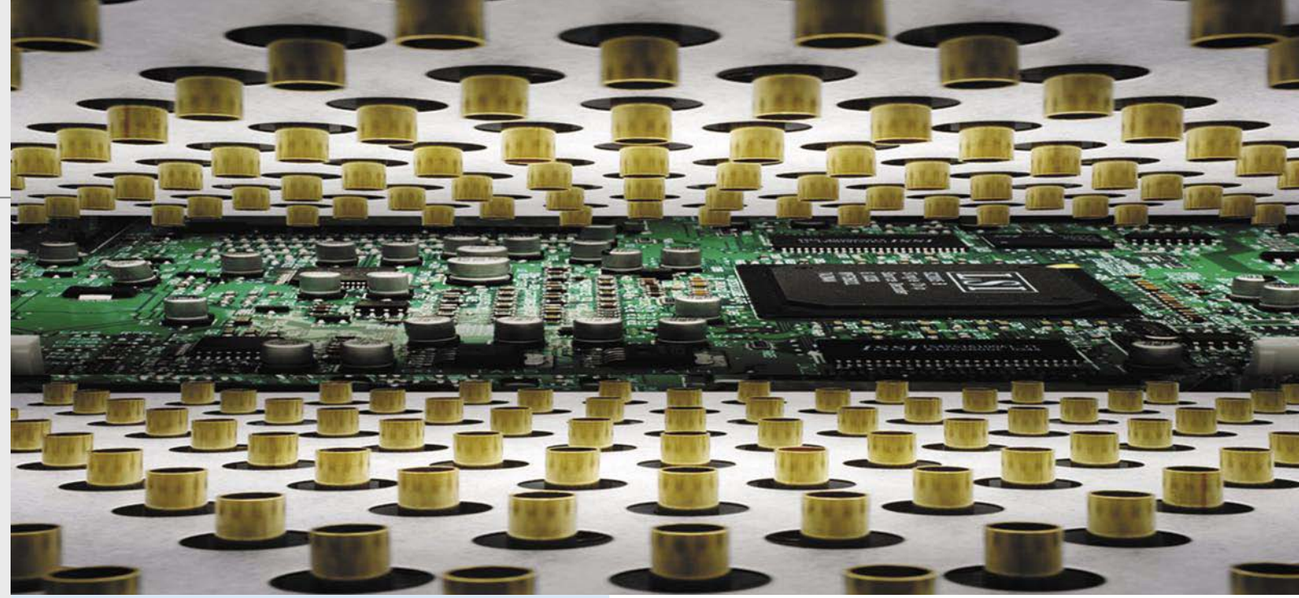
Since their introduction into the market nearly 30 years ago, ERSA reflow ovens have been setting the industry standard for high-end reflow machines.
The new HOTFLOW is the third generation machine based on the proven & proprietary Multijet ERSA heating technology. The R&D of this HOTFLOW series had its focus on improved heat transfer via a complete re-design of the process tunnel, reduced energy and N_2 consumption, improved cooling, as well as optimized process control.



Ultra Low Mass Center Support

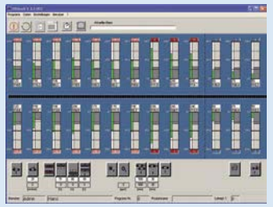
From a productivity versus floor space requirement standpoint, the HOTFLOW sets the industry standard. With both dual and now triple track options, it is possible to increase throughput by as much as 300 % without increasing floor space! Each track runs its own set speed and its own PCB width for maximum flexibility. It is now possible to run as many as three different products simultaneously. Only highest quality materials have been used in order to guarantee the highest machine availability. Finally, all major parts are exchangeable within only minutes in order to keep machine downtime to an absolute minimum.

HOTFLOW 3/20



Unique Technology Advantages:

- **Dual and Triple Track Transport Increases Throughput**
- **Optimized Heat Transfer, Zone Separation & minimized Delta T**
- **“On the Fly” Maintenance Reduces Downtime**
- **Switchable Internal / External Cooling Unit**
- **100 % Gas Sealed Process Tunnel with Lowest Energy & N_2 Consumption**
- **New Process Control Software**
- **Best Machine Uptime**
- **Retractable Heating Modules**
- **Ultra Low Mass Center Support**



Software Highlights:

- **New Process Control Software**
- **ERSAsoft – Process Data Recorder**
- **ERSAsoft – User Friendly Maschine Control**
- **Auto Profiler for Rapid Offline Profiling**

HOTFLOW Series

The HOTFLOW series machines remain to be a best seller from an investment payback standpoint. The line consists of various machine configurations, differing mainly by the total process length dimensioned individually subject to the customer‘s process specifications. Whatever your demands, high throughput, easy parameter settings, processing area cleanliness, conveyor system flexibility or easy maintenance - the HOTFLOW line has the perfect system to meet your demands!

HOTFLOW 2/12

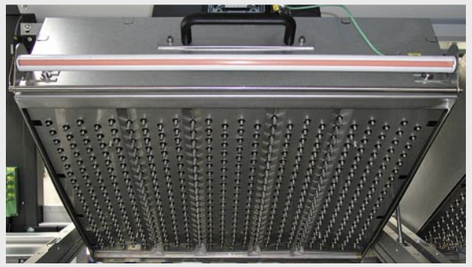
Serviceability

The design of the convection modules and of the entire system was based on a maximum machine avalibility. All main service group parts can be exchanged in less than 15 minutes!

VERSAFLOW

Modular Platform for Low to High Volume Selective Soldering

High Volume Soldering via Dual Track Transport



Fast & safe high mass soldering via top & bottom side convection heating modules

Excepted as the world leader in in-line selective soldering, ERSA is now proud to introduce the third generation of VERSAFLOW machines. Market research indicated that improved machine accuracy, modular design allowing for machine extensions, increased throughput and decreased floor space requirements are being demanded by our customers. Increasing production efficiency remained a primary goal which was achieved during R&D.

The new VERSAFLOW encompasses a modular platform which allows for adding or subtracting additional solder pots, fluxers and/or pre-heat modules when needed. A revolutionary dual track capability allows for the simultaneous processing of up to 14 PCBs! Finally, a new Hybrid heating technology extends the flexibility for the pre-heating of high mass assemblies. The VERSAFLOW offers the highest flexibility and the highest throughput at a minimum of required floor space.

VERSAFLOW 3/45

Unique Technology Advantages:

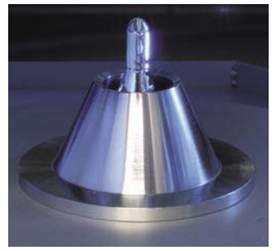
- **In-Line Floor Space Savings by Increased Throughput**
- **Up to 4 Individual Solder Pots & 8 Spray Heads Running Simultaneously**
- **New Dual Track Option for Simultaneous Processing of up to 14 PCBs**
- **New Modular Platform**
- **New Hybrid Heating Technology**
- **Improved Serviceability at Front Side of Machine**
- **Lowest Running Cost Compared to Wave Soldering**

Software Highlights:

- **New CAD Assistant - CAD Data or Picture Based Programming Interface**
- **Identification of incoming PCB via Barcode Scanner**
- **Automatic Activation of Solder Program**

The VERSAFLOW Product Range

The range of selective machines begins with the off-line ECOSELECT 350. The in-line capable machines are the VERSAFLOW 4050 and VERSAFLOW 5060 both using the VERSAFLOW wettable nozzle technology in a single or dual pot configuration. The Multiwave is a mass selective machine with a dip solder pot. The VERSAFLOW Highspeed combines both selective technologies of single pot and dip in one machine.



VERSAFLOW Wettable Nozzle

Multiwave Wettable Nozzle Plates

VERSAFLOW Highspeed

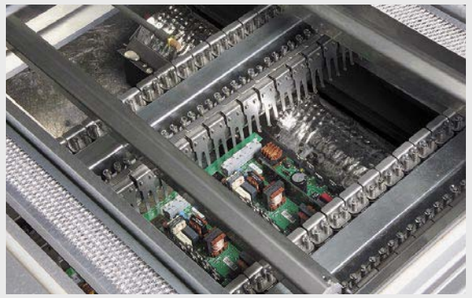
VERSAFLOW 4050

ECOSELECT 350

POWERFLOW

Advanced Wave Soldering with Air & N_2 Tunnel Machines

Top & Bottom Side Convection Heating Modules

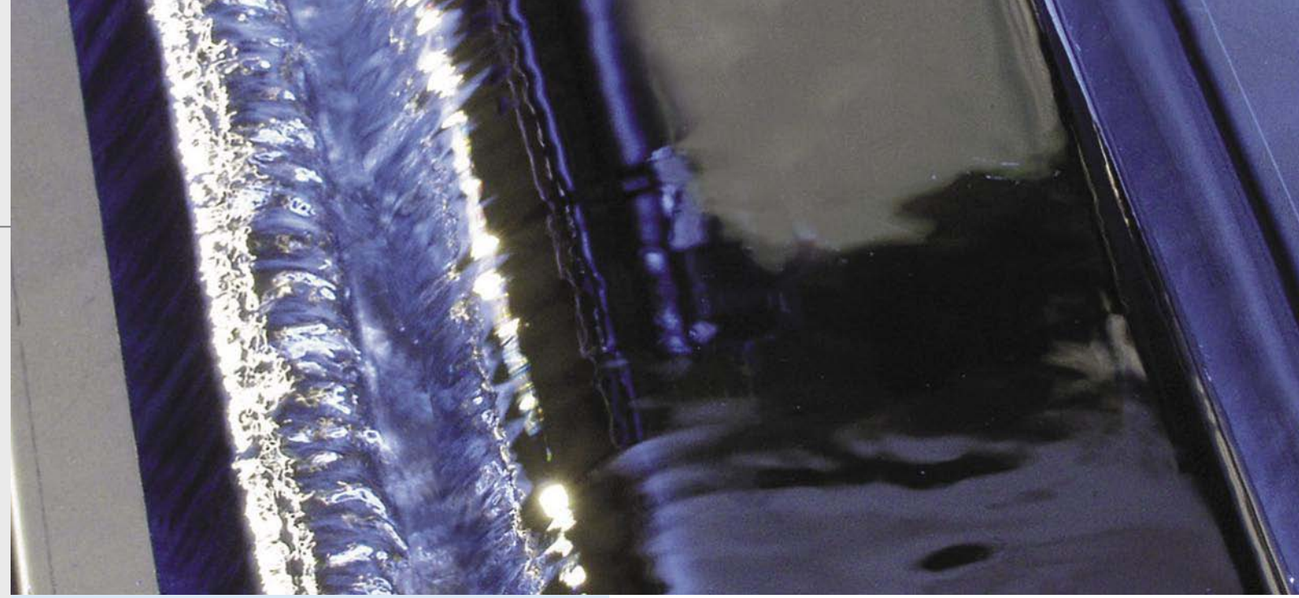


Finger Transport only over Wave Reduces Vibration

ERSA's new full N_2 tunnel wave solder machine, the POWERFLOW N_2 was specifically designed to meet the challenges of lead free! The machine highlights a 16" board width, plug and play preheat design (Medium IR, Convection, Short IR and now with new topside Convection) and 1.8 meters of preheat standard. Additional pre-heating of up to 2.4 meters can be added if needed. A new nozzle configuration brings the chip wave closer (40 mm) to the laminar wave for reduced solder defects. This machine has a pin & chain transport throughout the fluxer and pre-heater and feeds into a finger conveyor in the wave section of the machine.

A bar code scanner on the new fluxer allows to selectively flux and program in "keep out areas" for board cut outs, where the fluxer will not spray a specific are of the board. The POWERFLOW N_2 machine has a process gas cleaning system (similar to Reflow machines) which also regulates the Auto Tunnel Temperature Compensation. The machine has a low profile design of 1.57 m and is ideal for demanding customers who require a 16" tunnel wave.

POWERFLOW N_2



Unique Technology Advantages:

- **Over 90 % Cost Savings due to Low Dross**
- **"Clean" N_2 Tunnel with Auto Temperature Compensation**
- **Auto PCB Highly Flexible Fluxer**
- **Modular & Flexible Pre Heat Concept**
- **New LF Solder Nozzles & Pot Technology for Solder Defect Reduction**
- **Service Friendly Finger and Pallet Machines**
- **User Friendly Control & Software Concept**

Software Highlights:

- **Easy User Interface**
- **Touch Screen Operation**
- **Network Compatible**
- **Remote Maintenance**

POWERFLOW

Advantages of soldering in a N_2 atmosphere

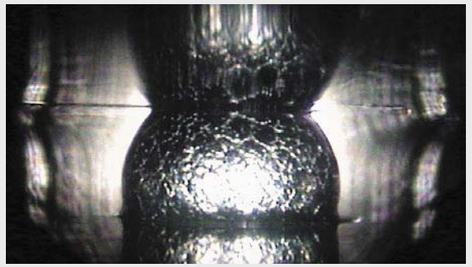
Larger process window due to reduced oxidation of components and PCB; advantages for AOI due to shiny solder joints; no discoloration of component leads due to oxidation; improved self-alignment effect of SMDs; multiple soldering processes by OSP and flashgold surfaces; use of flux with low solid content; reduced maintenance & reduced residues on PCB are some of the competitive advantages for CEMs when using a nitrogen tunnel.

ETS 250

ETS 330

ERSASCOPE

Optical BGA Inspection – Now for All Budgets!



High Resolution BGA Optical Inspection.

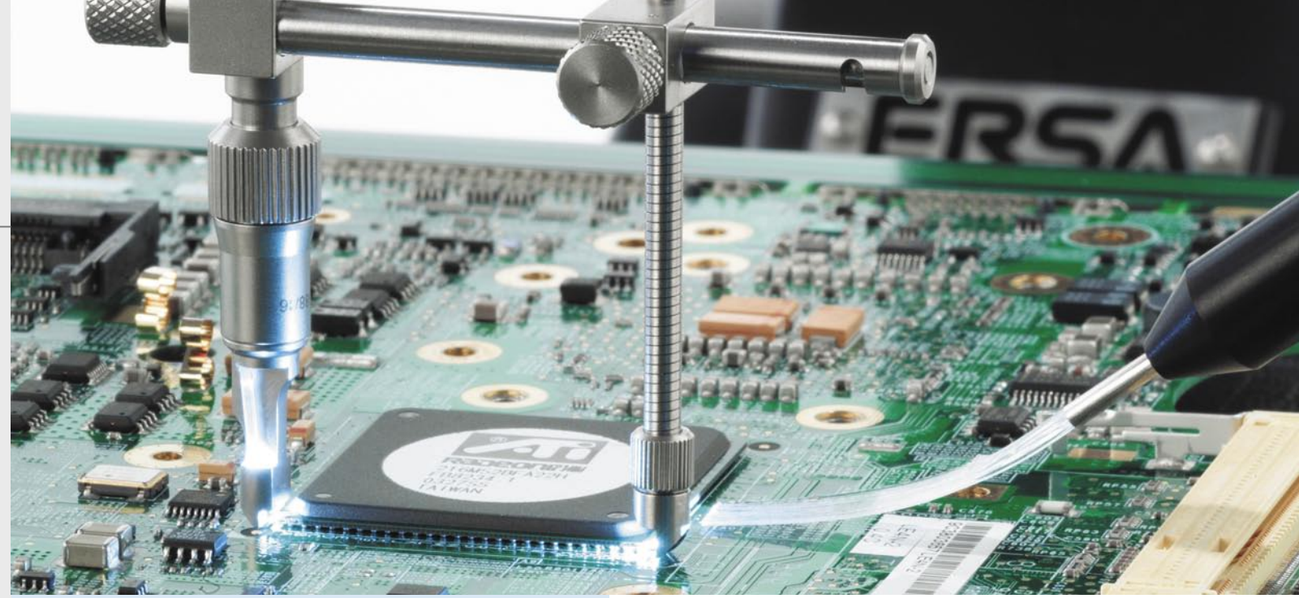
The ERSASCOPE 2 now uses megapixel, digital USB 2.0 camera technology offering up to 400 % more resolution! Enhanced images allow for increased clarity when zooming to high magnification especially when using the revolutionary Flip Chip Optical Head! Superior picture quality, increased light sensitivity and plug & play ease of use with USB 2.0 technology are the main user advantages. A new Metal Halide Light Source offers a brighter white light and a mechanical iris adapter for the additional gooseneck lighting with 2 standard fiber optic light brushes.

90° BGA Optic

90° Flip Chip Optic

0° Look Down Optic

ERSASCOPE 2



Unique Technology Advantages:

- **USB 2.0, Megapixel High Resolution Camera**
- **Flip-Chip Optical Head (≤ 50 µm)**
- **High Resolution BGA Optical Head (≤ 280 µm)**
- **Wide Angle 0°, "Look down" Optical Head**
- **Metal Halide Light Source; Long Life Bulb**
- **Superior Light Management: Fiber Optic Light Brush & Fan; Mechanical Iris Adapter**
- **Flexible & ESD Safe Stand and Table Allows for a Total of 7 Axes of Movement of Optics and PCB**

Software Highlights:

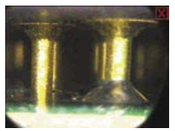
- **ImageDoc Software for Both Beginner & Advanced Operators**
- **Largest Database of Problems & Solutions**
- **Advanced Recording, Measurement & Reporting Functions**
- **"Plug & Play" Set Up**

The ERSASCOPE 1- The Original is a completely new unit designed to offer the award winning, original ERSASCOPE inspection capability at the lowest price possible.

ERSASCOPE 1

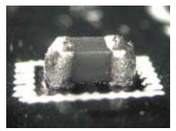
Advantages of ERSASCOPE Inspection Technology

For almost a decade, over 3,000 users worldwide are benefiting from the ability to inspect hidden 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!



Under PGA

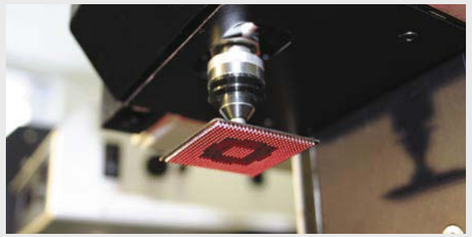
Under PLCC



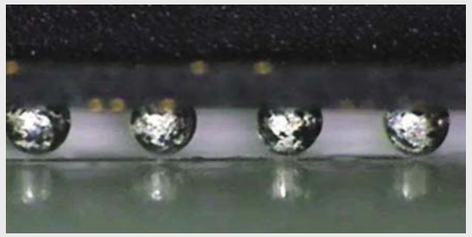
0201 High Mag.

IR Rework

IR/PL 650 & IR/PL 550: Handling the Toughest Rework Applications



Auto Pick & Place Function with the PL 650 A

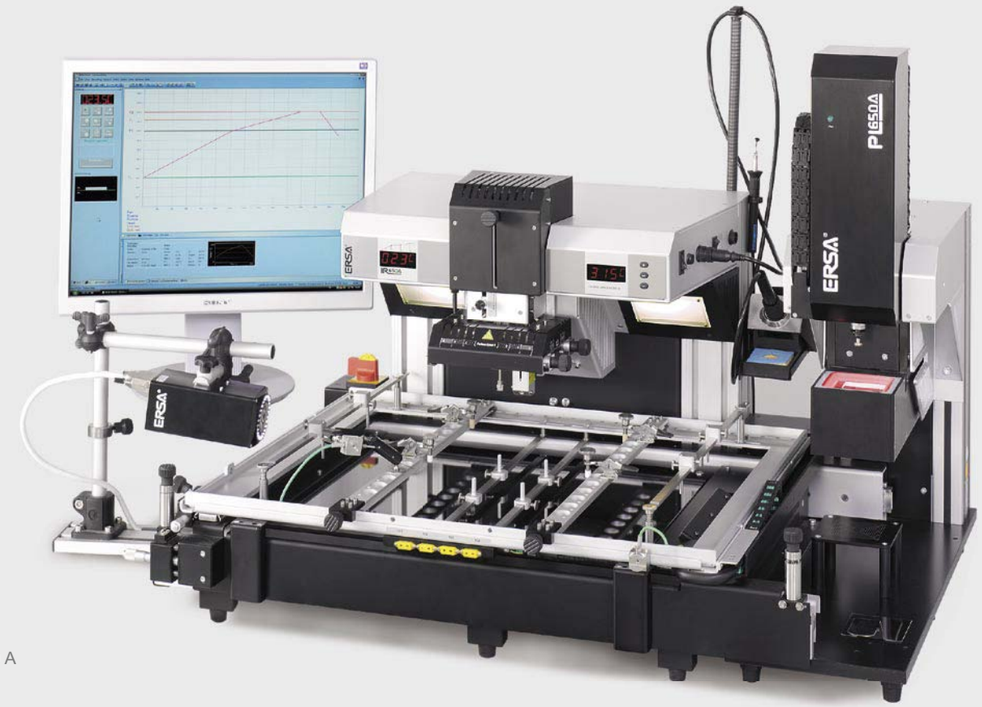


RPC Reflow Process Camera Shows Reflow

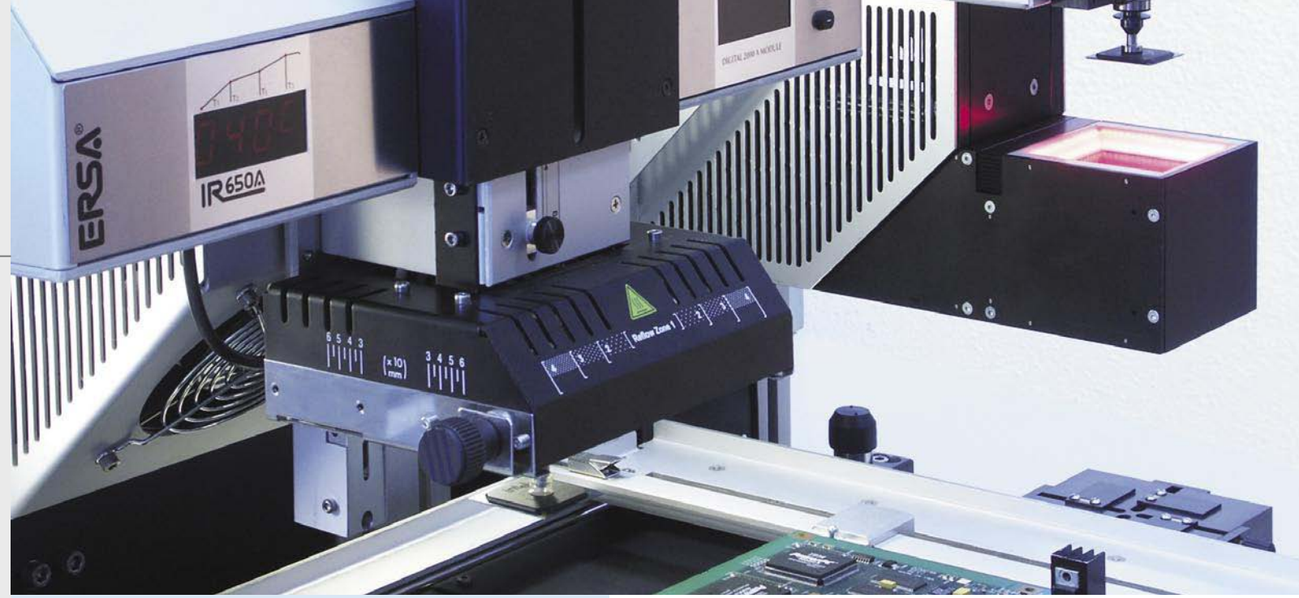
Now for almost a decade, over 5,000 operators worldwide continue to benefit from ERSA's patented Safe IR rework technology. In addition to an outstanding Cost/Price ratio, the ERSA IR/PL 550 and IR/PL 650 have established their position in the market as being able to handle the toughest rework applications where other rework machines often fail. Plastic or metal, SMD or PTH, small or large components – ERSA Safe IR handles it all!

IR/PL 650:
DynamicIR heating technology for large (18" x 20") PCBs; 4,600 W, 9 zone programmable top & bottom heating zones; precise, easy to use motorized Auto Pick & Place

IR/PL 550:
Top selling rework system based on cost/performance ratio; 1,600 W, ***DynamicIR*** heating technology; plastic, metal, high or low mass SMT or PTH – IR 550 does it all!

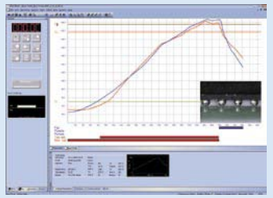


IR/PL 550 A



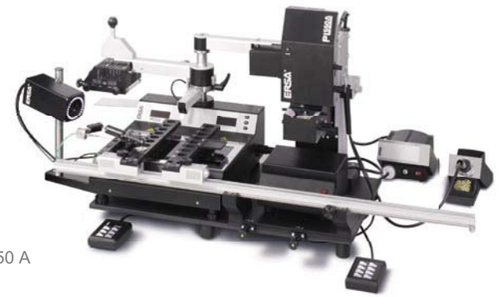
Unique Technology Advantages:

- **DynamicIR Heating Technology**
- **Mutiple True Closed Loop Control**
- **Intelligent IRS Non-Contact Measurement**
- **AccuTC Thermal Couples**
- **Auto Active Cooling**
- **Auto Pick & Place**
- **APR - Auto Process Repetition Program**
- **RPC - Reflow Process Camera**
- **9 Programmable Reflow Zones with 4,600 W**
- **No Rework Nozzles Required**



Software Highlights:

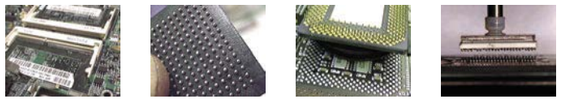
- **Software Platform for All ERSA Systems**
- **Visualization of All Rework Process Data; Up to 5 Channel Temp. Profiling**
- **Live Video for Process Camera & Placer**
- **User Admin. for Rework Library, Documentation & Analysis Functions**
- **Fast Communication via USB 2.0**



IR/PL 550 A

Advantages of using IR for rework applications

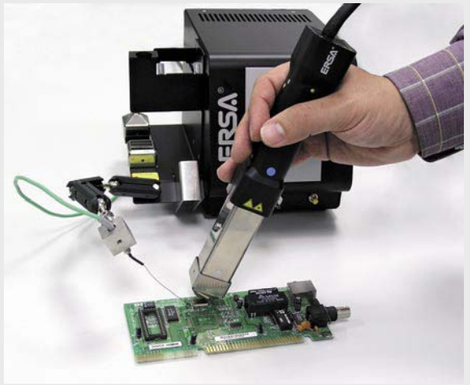
The Multiple True Closed Loop DynamicIR heating system guarantees uniform heating, minimal ΔT across the BGA, an optimal heating gradient, a low temperature LF peak, an optimal cooling gradient, and the fastest total rework cycle time!



Excellence of a rework system lies in its flexibility to handle truly difficult rework jobs. ERSA IR Rework users worldwide are benefitting from the extended rework capabilities such as:
BGA, CCGA, CSP, Flip Chip, QFN, MLF, PGA, PTH VGA card slots, re-workable epoxy, Flex circuit, BGA on flex circuit, plastic, metal components & shields, Processor sockets, SMD and PTH connectors, PQFPs, PLCCs SOICs, TSOPs as well as 0603s, 0402s and even 0201s.

Hybrid Rework

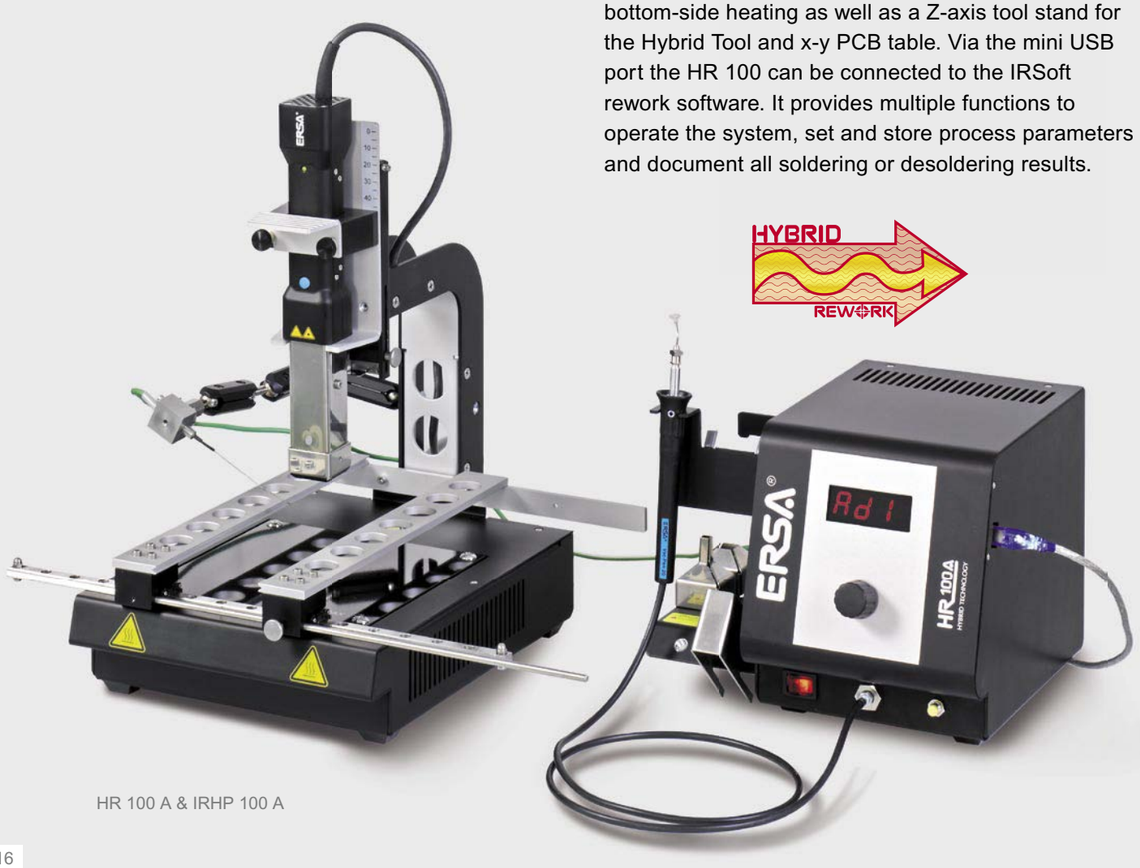
HR 100 A: Revolutionary Hand Held & Benchtop Rework System



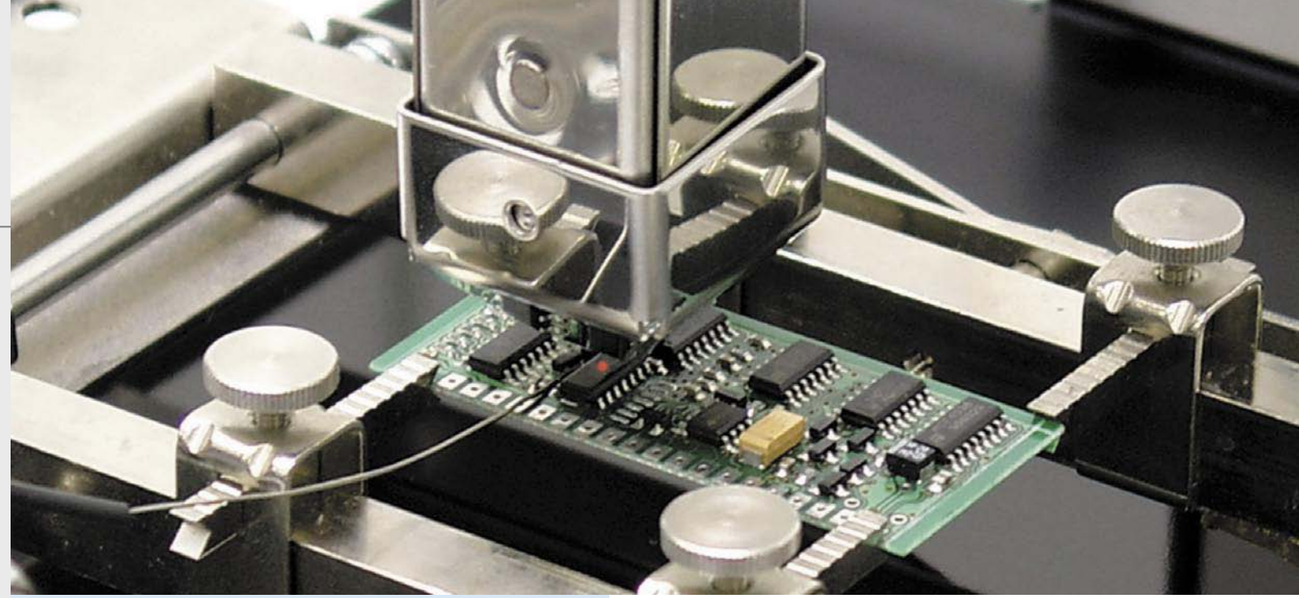
Rapid, Simple & Safe Hand Held Component Removal

Via in-depth understanding of convection reflow systems as well as infrared rework equipment, ERSA has now combined both heating technologies in one unique system. The patented HR 100 ERSA Hybrid Rework system combines infrared as well as convection heating in one hand tool for the soldering and desoldering of densely packed SMT components. By means of IR radiation augmented by a gental flow of hot air, the Hybrid Tool delivers homogenous heat to components sizing from 0201s to 20 x 20 mm SMDs. Exchangeable hybrid adaptors focus 200 W of hybrid heating power onto the component while protecting chips from blowing away.

Using the optional IRHP 100 heating plate (800 W), the benchtop set provides powerful and safe IR bottom-side heating as well as a Z-axis tool stand for the Hybrid Tool and x-y PCB table. Via the mini USB port the HR 100 can be connected to the IRSoft rework software. It provides multiple functions to operate the system, set and store process parameters and document all soldering or desoldering results.

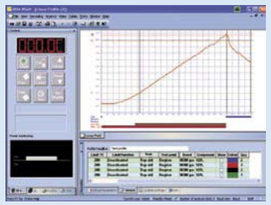


HR 100 A & IRHP 100 A



Unique Technology Advantages:

- **Low Cost, Compact & Easy to Use**
- **Hybrid Technology Combines Safe IR & Convection for Process Safety**
- **Uniform Heating with Minimal Air Movement & Turbulence**
- **No Chip Blowing; Low Noise Rework Blower (below 40db)**
- **Designed for Beginners & Advanced Operators**
- **Start Small & Upgrade to Full Process Controlled Rework System**
- **Powerful 800 W IR Pre-heating Plate**



Software Highlights:

- **Individual Parameter Settings**
- **Closed Loop Ramp Profiles**
- **Process Profile Recording & Documentation**
- **User Level Access**
- **2 Channel Temp. Recording Option: TC & IRS**

HR 100 A

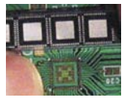
Advantages using HYBRID Technology

High temp. tweezers can shock the component, hot air blowers can blow adjacent components away, short wavelength IR tools can overheat the component and large rework machines do not provide flexible hand-held access. Hybrid technology is low cost, safe, easy to use & fits on any crowded workbench!

Dense PCB

0402 & 0201s

PTH Connector

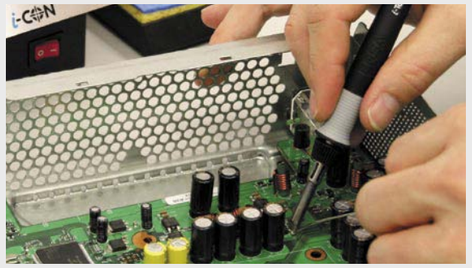


QFN & MLFs

Hybrid Hand Tool

Touch Up Soldering

The World's Most Intelligent Digital Soldering Station



150 W *i*-Tool Handles the Heaviest Applications.

The successful launch of the world's most advanced digital soldering station, the ERSA *i*-CON (patent pending), is now being augmented to include a complete line of stations. A dual tool station can either be used with two *i*-Tool soldering irons or with specialty tools for SMD or PTH removal, the ERSA Chip Tool or the ERSA X-Tool. Finally, a "communication" version can either be used with a robotic soldering machine or can automatically turn on/off an ERSA solder fume extraction system.

Chip Tool

X-Tool

i-Tool

i-CON 2 with *i*-Tool & Chip Tool

Unique Technology Advantages:

- **150 W Micro Heating Element Technology**
- **Low Cost & Long Life Replaceable *i*-Tips**
- **3 sec. Heat up & Fastest Recovery**
- **Three Power Level Settings**
- **Process Window Alarm Function**
- **Energy Saving Auto Shut Off**
- **Automatic Motion Sensor for Auto Standby & Clean Air Fume Extraction Control**
- **Multiple Tools for SMT & TH Rework**
- **Auto Tool Recognition**

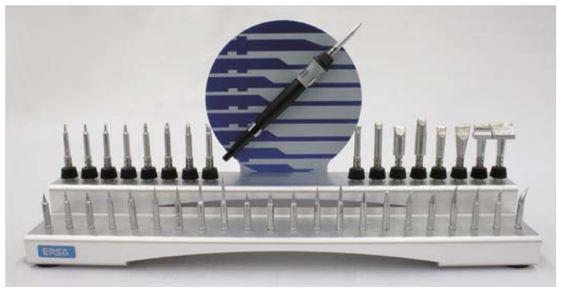
Station Menu Highlights:

- **Rapid Station Programming & Lockout**
- **Ultra Large Multifunction Display with *i*-Op Control**
- **Menu Available in 7 Languages**
- **On Line Help Text**

EASY Arm Fume Extraction with Auto Off function when used in combination with the *i*-CON C soldering stations.

Advantages of using *i*-CON Technology

Today's hand soldering applications require powerful tools in order to handle lead free applications. The higher temperatures put greater stress on the solder tips and can be dangerous for sensitive components. The 150 W *i*-Tool has low cost, exchangeable tips, a Process Window Alarm, three energy levels and Auto Shut Off. Safe, productive and low cost soldering is the value added by this innovative technology!



Low Cost, Replaceable *i*-Tips from 0.2 mm up to 20 mm

ERSA Value Services

Our Global Commitment to Your Success

As stated in our Mission statement, “We offer services and complete solutions designed to optimize our customers‘ production processes.”

At ERSA, we pride ourselves in offering comprehensive expert consulting covering not only process related issues but also the economical aspects of Total Cost of Ownership. Our fully equipped Application Centers located in Europe, North America and China, are a meeting point where customers can work together with our application specialists on their own assemblies in order to establish the optimal process. Assemblies can be sent for profiling and/or reworking. On-site process support from our expert team can also be arranged.

With over 5,000 satisfied attendees in the last 15 years, the ERSA Know-how seminar series continues to be a welcome venue for our German and international customers. Telephone trouble-shooting, remote maintenance and service consulting are an integral part of our total service commitment.

Finally, we offer customized Service Package Agreements as well as TCO (Total Cost of Ownership) Consulting. It goes without saying that our local ”around-the-world, around-the-clock“ spare-part stock & service is permanently at the disposal of our customers in the event of malfunctions.

Know-how Transfer

TCO Consulting

Remote Maintenance

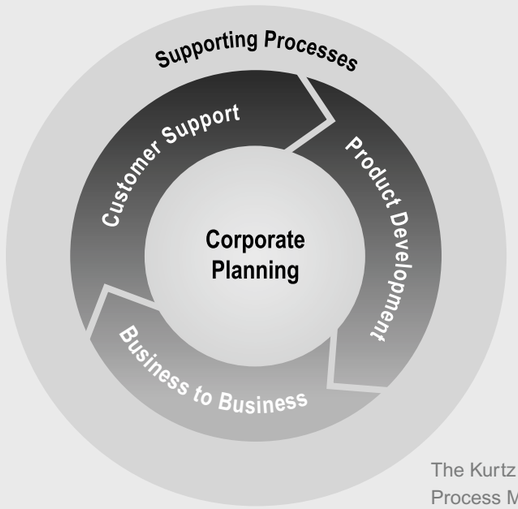
The Kurtz Group

Worldwide More Than 1,100 People

The Kurtz Group is comprised of several companies from different business sectors. The strategic management is positioned in Kurtz Holding GmbH & Co., while the operational responsibility lies with the individual segments.

Our integrated management system directs all the processes and assures that the demanding quality requirements of our customers are satisfied. We regard the protection and preservation of nature as a great responsibility. We continually investigate possibilities for making our own contribution to environmental protection.

A matrix organisation with the business segments Plastics, Metals, Electronics and Services ensures the greatest possible degree of flexibility and customer proximity.



The Kurtz Group
Process Model

Business Segments and Products

Kurtz, METALS	Kurtz, ELECTRONICS	Kurtz, PLASTICS	Kurtz, SERVICES
Foundry Products	Stencil Printers	Shape Moulding Machines	Know-how Transfer
Machining	Soldering Systems	Pre-Expanders	Used Machines and Assembly Service
Low-Pressure Casting Machines	Soldering Tools	Blockmoulds	Total Maintenance Quality Service
Sheet Metal Technology	Inspection Systems	Sheet Processing	Innovation Support
	Rework Systems		Engineering

1779 Foundation of the iron hammer works in Hasloch
1852 Foundation of the iron foundry in Hasloch
1860 First machine building activities
1921 Patent registration of the electrical soldering iron
1932 Engineering
1968 Production of soldering machines
1971 Production of particle foam machines
1982 Aluminium foundry
1983 Production of foundry machines
1984 Foundation of Kurtz North America
1988 Foundation of KURTZ Far East / Hongkong
1993 ERSA purchased by KURTZ
1996 Foundation of sheet metal plant
1998 Kurtz Corporate Headquaters
2003 Manufacturing plant in China
2006 Foundation of KURTZ Ost in Moscow
2007 Foundation Mechanical Prozessing Plant

Where it all began:
The historical iron hammer works in Hasloch, Spessart, remains in operation today as an industrial memorial.

Our control center:
The headquarters of the Kurtz Group are in Wiebelbach – not far from the iron hammer works in Hasloch.

Fine Traditions and a Bright Future

since 1779

Choose the Original
Choose Success!

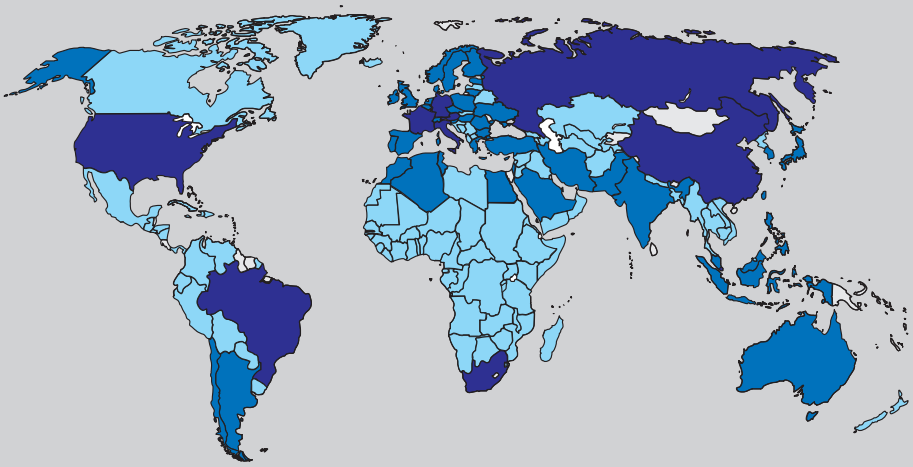
Founded as iron hammer works in 1779 in Hasloch in Spessart, the Kurtz Group has developed into an internationally operating conglomerate. Today, we are technological or world market leaders in many fields.

The corporate group is in the ownership of the sixth generation of the family.

The management can fall back on an advisory board consisting of excellent industry personalities.

TECHNOLOGIES & SERVICES FOR
METALS • ELECTRONICS • PLASTICS

Kurtz



The World is Kurtz
Present in 135 countries

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