



**The Revolutionary ERSA *i-CON* and *i-Tool*:
*i*ntelligent and Performing Power
For the Ultimate *i*nnovation in Hand Soldering**

ERSA GmbH

Soldering & Inspection Systems

ERSA *i*-Tool The World's Most intelligent Professional Soldering Iron!



Guaranteeing quality in a Lead Free environment will put the greatest demands on hand soldering applications. How well the iron recovers or puts back the heat lost at the tip and how long the tip remains on the joint, ultimately determines the actual joint temperature. Slow recovering irons will lead to inconsistent joint temperatures. Today, soldering iron manufacturers are developing better performing irons, but many are based on the tip being attached to the heating element cartridge which means the tip temperature can overshoot and the tip price is very high! Such irons force companies to throw away a perfectly good and expensive heating element only because the small copper tip is worn out!

To meet the Lead Free challenge, ERSA is introducing its newest technology (patent pending) for a state of the art solder station

– the ERSA *i*-CON and *i*-Tool! Today at ERSA, “i” stands for *intelligent, innovative, intuitive, ingenious, interactive, informative* – simply *ideal!*

As process windows become smaller, the soldering task becomes more difficult. True innovation demands more than just a nice slogan, a catchy word. Today's soldering stations must be *intelligent* themselves but *intuitive* for the user. The *interactivity* between operator and station must be greater, and the *interactivity* between stations themselves must be greater. Truly *ingenious* solutions are engineered to optimize process quality and productivity while at the same time reducing operating costs. These are the elements that make up today's *ideal* soldering station, and these are precisely the elements that make up the world's most intelligent soldering iron ever designed – the ERSA *i*-Tool!

Highlights: ERSA *i*-Tool and *i*-CON



Actual size

Optimal Ergonomics & Ease of Use:

- Ultra Short Tip-to-Grip: 45 mm, Ultra small: 155 mm, Ultra Light: 30 gr.
- Thinnest & Lightest Cable for Maximum Comfort
- Dual Material Grip with “Soft Pad” stays cool during use
- “One Touch” Easy to Use Operation with new *i*-Op Control
- Ultra Large, Multi-functional Display
- Small footprint
W: 150 mm x L: 175 mm x H: 100 mm
- Automatic Tool Detection of 6 Different Soldering & De-soldering Tools

Highest Power & Performance:

- 150 W Micro Heating Element (Patents Pending)
- Ultra Fast Heat up: from 30 °C to 350 °C in approx. 9 sec., Standby to 350 °C in approx. 3 sec.
- Ultra Fast Heat Recovery Time

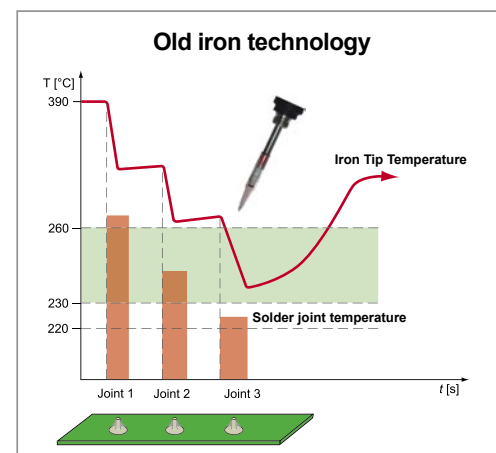
Ultimate Innovations:

- Process Window Alarm Function alerts operator if tip temp is out of window
- Three Power Levels settings to control overshoot
- *i*-Set Tool for quick & easy downloading of parameter settings to all stations
- ASM – Automatic Standby Motion Sensor
- Calibration of *i*-Tool itself, independent from station

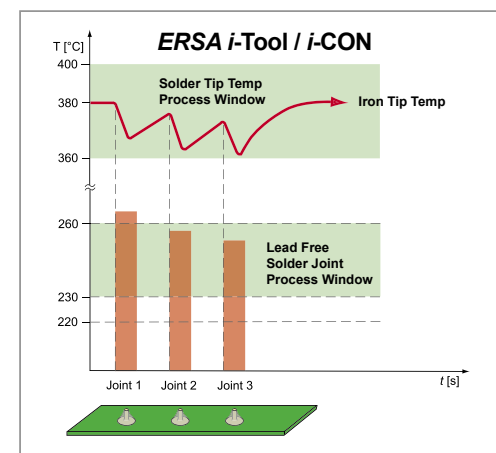
Lowest Running Costs:

- Low Cost, Long life, Quick Change *i*-Tips specially designed for lead free
- Lowest maintenance, station programming and calibration costs
- Highest productivity in hand soldering

The *i*-Tool has a highly advanced PCB integrated into the handle for a level of intelligence never before seen in a solder iron.



Standard soldering irons where the sensor is located far away from the tip will lead to inconsistent solder joint quality. The tip loses temperature into the joints but does not recover fast enough before the next joint is made.



The *i*-Tool recovers so fast that all solder joints can be made with nearly the same temperature. The sensor measures the actual tip temperature very close to the tip extremity. The Process Window Alarm assists the operators in guaranteeing repeatable quality.

Expensive heating cartridge tips



Micro power soldering irons offer performance and ergonomic advantages, but have the two major drawbacks of tip temperature overshoot and expensive heating cartridge tips.

ERSA i-CON: Solving the Industries Toughest Hand Soldering Problems!



innovative features of this technology

150 W micro heating element (patent pending): allows for standard, long life, low cost tips to be removed without replacing the expensive heating element each time the tip wears out.

Ultra fastest heat up and recovery of all soldering irons that have exchangeable, low cost tips: room temp to 350 °C in approx. 9 seconds; from standby to 350 °C in approx. 3 seconds.

“One Touch” Easy to Use operation: user friendly station software with large, multifunctional display has on-line Help Text and easy menu navigator with *i-Op* control.

Automatic Standby Motion Sensor: recognizes when the iron is being used and automatically goes into a standby temperature when the iron is put into its holder.

i-Set Tool: this optional item allows for automatic down-loading of station settings and lockout by acting as a type of USB stick. Simply upload the station settings from an *i-CON* into the *i-Set Tool*. The *i-Set Tool* is then plugged into any other *i-CON* station and all set parameters are automatically downloaded in less than 5 seconds and the station is locked out!

Process Window Alarm: informs operator with a visual and acoustic signal if the soldering iron tip gets too hot or too cold. QC can specify a Process Window in which the iron is allowed to work, and for the first time ever in the history of hand soldering, it is possible to guarantee that every solder joint is made with the proper temperature!

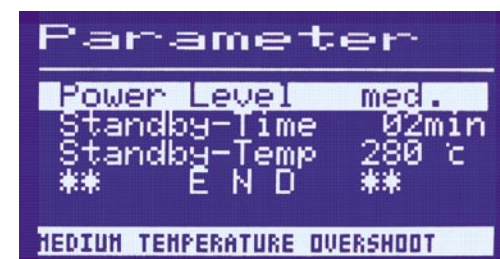
i-Tool Calibration: unlike other systems, the microprocessor which stores the temperature calibration of the iron is actually located in the PCB handle. This now allows for each individual *i-Tool* to be calibrated independent of the solder station meaning great time and cost savings. Only the irons need to be taken for calibration, which is much easier and faster!

Lead free *i-Tips:* The low cost *i-Tips* are specially plated with the new ERSADUR-LF galvanic process lasting 2 to 3 times longer than standard tips!

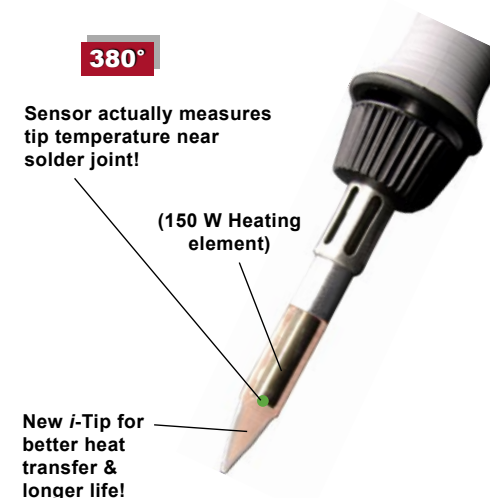
Power Level Settings: allows for the use of three different power settings which control the heating element overshoot depending on the heat required. Thus, the operator can choose the right setting for the right job – either more power or more control! Power Level Low guarantees NO OVERSHOOT for maximum component safety!



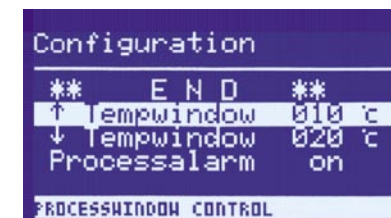
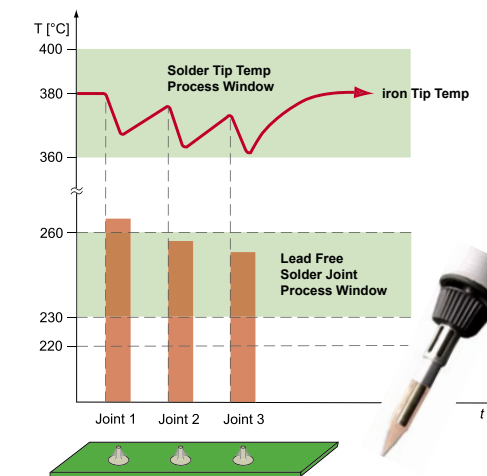
The fastest, safest programming and locking out of solder stations for maximum quality control and documentation!



Safe control is possible when temp sensitive components require NO OVERSHOOT! - Power Level Low!



The *i-Tool* recovers so fast that all solder joints can be made with nearly the same temperature. The sensor measures the actual tip temperature very close to the tip extremity. The Process Window Alarm assists the operators in guaranteeing repeatable quality.



Operator is visually and acoustically alarmed if the tip temperature goes outside of the specified process window

The Ultimate innovation in Hand Soldering Process Control

Highest Quality & Repeatability: this technology offers the world's first Process Window Alarm which notifies operator if they are working outside a specified process window. Each solder joint can be now made with the proper temperature. Overshoot is not possible, thereby reducing lifted pads and damaged components! All systems can be locked out, thereby guaranteeing repeatability. Individually calibrated *i-Tools* can follow an operator in order to deliver best results anywhere in the factory.

Highest Productivity: this technology offers ultra fast heat up and recovery. Additionally, QC managers can use the optional *i-Set Tool* for the fastest station setting and lockout available on the market – less than 5 seconds! Finally, individual *i-Tool* calibration will greatly increase calibration productivity.

Lowest Running costs: this technology offers long tip life with low tip prices compared to all high powered solder irons using expensive heating cartridge tips. Station setting, maintenance and calibration costs will be dramatically reduced.



1. Low cost *i-Tip*
(Consumable, long life)
2. *i-Tip* fastener
(Re-usable, long life)
3. Heating element
(Re-usable, long life)

i-Tool Solder iron: Ultra light (only 30 grams), ultra short (only 155 mm), and ultra short tip-to-grip (only 45 mm).

Multiple soldering and desoldering Tools for maximum flexibility

ERSA *i*-Tip series for the *i*-Tool with long-life ERSADUR plating



***i*-CON2 offers all the amazing features of the revolutionary *i*-CON in a double iron digital station with Chip tool for SMD removal**

Both the *i*-CON and the *i*-CON2 allow for the use of various soldering and desoldering tools to be used in addition to the *i*-Tool.

The Chip Tool offers a wide range of SMT desoldering tips for safe and fast removal of the smallest chips (0201, 0402, etc.) up to medium size PLCCs.

The X-Tool is a high powered desoldering iron designed for the toughest through hole desoldering applications which must be used in combination with the CU compressor unit. All tools are automatically detected when connected to either the *i*-CON or the *i*-CON2 station and can be individually programmed.



Tools are automatically detected when inserted into the station and a pre-determined program is started.



Special Chip Tool tips for 0201 rework.



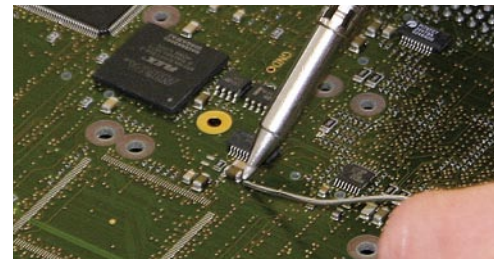
Chip tool
SMT desoldering tweezers



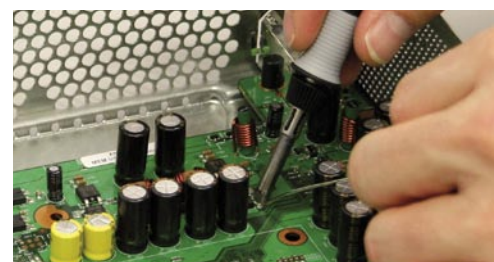
X-Tool
High power through hole desoldering



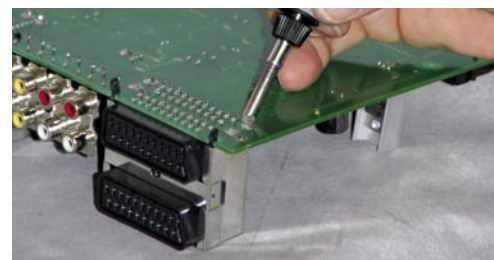
X-Tool with compressor unit and *i*-CON



Low temp., safe SMD soldering.



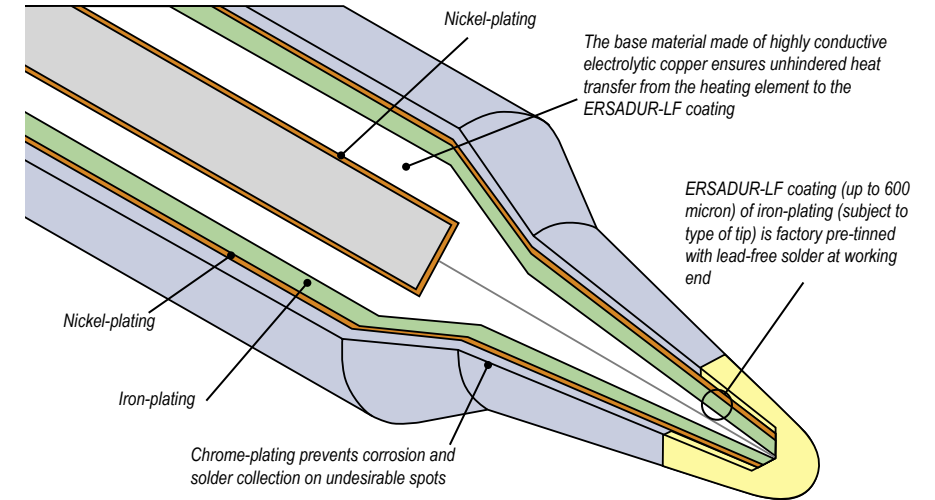
High mass SMD soldering in hard-to-reach areas.



High mass Through hole soldering.

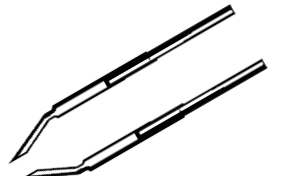
The *i*-Tips are available in 6 different shapes and in 17 dimensions - suiting them for most applications.

1. **Pencil point:**
ø: 0.2 mm, 0.4 mm, 0.7 mm, 1.0 mm
2. **Chisel-shaped:**
W: 1.2 mm, 1.6 mm, 2.0 mm, 2.4 mm, 3.2 mm, 5.0 mm
3. **Angled face:**
L: 2.0 mm, 4.0 mm
4. **Solder Well:**
L: 1.6 mm, 2.3 mm, 3.5 mm
5. **PLCC blade**
6. **Curved tip**

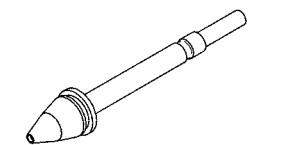


Cross-section of an ERSADUR soldering tip, non-scale representation

Lead free soldering will require higher working temperatures. In addition, the higher tin (Sn) content in the lead free solder will greatly increase the stress degradation to the solder tip, thereby decreasing the life of the tip considerably. In order to increase the tip life, soldering tip manufacturers must adjust the amount of iron (Fe) plating on the tips.



422 Series for Chip tool



722 Series for X-Tool

New galvanic plating process for the ERSADUR-LF long life soldering tips.

- Improved tip precision
- More iron plating
- Improved tip life*

*Expected tip life depends on factors such as tip temperature, flux, mechanical pressure etc.

The new ERSADUR-LF tips should last up to times longer than standard tips!



Features, technical description ERSA *i*-Tool and *i*-CON:



www.ersa.com



More than 70 ERSA representatives
in over 65 countries.

i-CON soldering station

Supply voltage; frequency:	220 – 240 VAC/50Hz; 110 – 120 VAC/60 Hz
Admissible ambient temperature:	0 °C – 40 °C / 0 - 104 °F
Secondary voltage:	24 V~
Continuous rating:	80 W (120 W with <i>i</i> -CON 2) protection class I (double insulation)
Weight:	2 kg / 4.4 lb
Control technology:	<i>i</i> -Tool: <i>i</i> -TRONIC control (patent pending) with digital PID algorithm and multiple sensors; X-Tool: SENSOTRONIC control system with digital PID algorithm; Chip tool: RESISTRONIC control system
Temperature range:	continuous 150 °C – 450 °C / 300 °F – 842 °F
Display:	blue LCD display
Operation:	one-touch operation by means of a rotary type push button
Cable:	2 m / 6.5 ft PVC with connector
Antistatic:	antistatic design suitable for operation in an ESD environment. MIL-SPEC/ESA standard
Non-operative temperature fluctuation:	less than +/-2 °C
Tip to ground resistance:	less than 2 ohms
Tip leakage:	less than 2 mVeff, VDE, EMV checked
Fuse rating:	800 mA, slow-blow
Connectable soldering and desoldering tools:	<i>i</i> -Tool, Chip tool, X-Tool

i-Tool soldering iron

Voltage:	24 V~
Rating:	150 W +/- 10 %
Heating time:	approx. 9 s to 350 °C / 662 °F
Weight (without cable):	approx. 30 g / 1 oz
Cable:	1.5 m / 5 ft highly flexible, heat resistant, antistatic
Model:	antistatic according to MIL-SPEC/ ESA standards with integrated ID and standby function

Total weight soldering station, tool holder, soldering iron incl. packaging: approx. 3.1 kg / 7 lb



Lead-free soldering,
inspection or rework: ERSA
solutions for a safe process.

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