Ersa i-CON 1V & i-CON 2V MK2

Soldering station

Operating Instructions

kurtz ersa

1.   Table of Contents

1. Concerning your safety

Ersa products are developed, manufactured and tested in compliance with general requirements concerning health and safety.

However, residual risk does remain!

You should therefore read this instruction manual before you start to operate the device for the first time. It will help you to learn the functions of the device and to use it in the most optimal way. Keep this instruction manual in a place that can be accessed by all users at any time!

The safety instructions to be observed also include the enclosed information leaflet "Safety Instructions". National and international safety, health and occupational safety regulations must be observed.

1.1 Safety instructions

WARNING! Malfunctions of the device possible!
Check all components before each use. Have damaged parts only repaired by a specialist or the manufacturer. If repairs are carried out inappropriately, the operator may become victim of accidents. Always use original Ersa spare parts for possible repairs.

ATTENTION Risk of burning!
Thermal tools get very hot. Before heating up the device check whether the tool insert (e.g. soldering tip, modeling insert, etc.) is correctly connected with the thermal tool. The hot tool insert should never come in contact with skin, hair or any heat-sensitive and combustible materials. Make sure you use a sufficiently heat proof work base.

ATTENTION Risk of injury!
Keep unauthorized persons at a safe distance. Make sure that unauthorized persons, especially children, have no access to the thermal tools.

ATTENTION! Fire hazard!
Before heating up the thermal tool remove any combustible objects, fluids and gases from the working range of the thermal tool. If work is interrupted, always store the thermal tool in the workstand provided for this purpose. Disconnect the thermal tool from the mains supply after use.

ATTENTION! Fire hazard!

Do not leave your hot thermal tool unattended. Remember that it will take quite some time for the tool insert to cool down to a harmless temperature, after the device has been switched off.

ATTENTION Risk of injury!

Keep your working area clean and tidy. A messy working area increases the risk of accidents.

ATTENTION Eating and drinking prohibited!

Solders and solder auxiliaries are toxic. If they enter into the organism it will have a toxic effect. Eating, drinking and smoking is strictly prohibited. Always wash your hands thoroughly after having worked with solder and solder auxiliaries.

CAUTION! Danger of poisoning by inhalation!

Harmful fumes are produced during soldering. Ensure sufficient ventilation or extraction. Follow the relevant safety data sheets of the used solder paste and flux.

CAUTION! Dangerous electrical voltage!

Protect the supply cables. Do not use the connecting cable to pull out the mains plug or carry the device. Keep connecting cables clear of heat, oil or sharp edges. Damaged connecting cables may cause fires, short circuits or electric shocks and must therefore be immediately replaced.

ATTENTION! Fire hazard and dangerous electrical voltage!

Consider environmental influences. Protect your device against any type of fluid and moisture. Otherwise there is a danger of fire or electric shock.

CAUTION! Risk of injury!

Take care of your thermal tool. Always keep your Ersa product in a safe and dry place, out of the reach of children. Follow the maintenance instructions. Check your device in regular intervals. Use only original accessories and spare parts from Ersa.

ATTENTION Risk of injury!
Physically and/or mentally disabled persons must only use the soldering station under the supervision of trained specialists! Children are not allowed to play with the soldering devices.

CAUTION! Wear protective clothing!
Wear suitable protective clothing during all operations with the soldering station (protective glasses and gloves, etc.)!

CAUTION! Safe disposal of solder waste!
Solder waste is hazardous waste and must not be disposed with the normal household waste. Provide safe and environmentally friendly disposal of operating materials, auxiliaries and replacement parts. Observe the municipal waste disposal regulations.

Note ESD sensitive components!
Electronic components can be damaged by electrostatic discharge. Note the warnings on the packing or ask the manufacturer or supplier. To protect these components use an ESD-save workplace (ESD = electrostatic discharge).

1.2 Intended use

Thermal tools from Ersa must only be used for the processing of soft solder. However, if explicitly described in the operating instructions of the respective thermal tool, some thermal tools may, in exceptional cases, be used for the processing of plastic materials. In case of unintended use and tampering with the device, any warranty and liability claims of the buyer against the manufacturer will become null and void. Intended use also includes observing the operating instructions including the safety instructions.

1.3 National and international regulations

National and international health and safety regulations as well as occupational health and accident prevention regulations must be complied with.

2. Technical data

Soldering station	i-CON 1V	i-CON 2V
Designation	**Value**	**Value**
Dimensions, mm	150 x 175 x 105	
Weight, kg	3.0	3.7
Mains voltage, VAC	220-240	
Mains frequency	50-60	
Fuse (slow blowing), A	0.8	
Operating voltage, VAC	110-120	
Mains frequency, Hz	50-60	
Fuse (slow blowing), A	1,6	
Secondary voltage, VAC	24	
Maximum short-term heating output, W	150	
Mean heating output	80	120
Class of protection	I	
Permissible ambient temperature, °C	0-40	
Temperature range (stepless), °C, °F	50-450, 122-842	
Control oscillations in idle state, °C	< ± 2	
Ohmic resistance between soldering tip and ground, Ohm	< 2	
Soldering tip to ground rebound voltage, mV eff	< 2	
Equipotential bonding socket, mm	4	
Two tools operable at the same time	-	Yes
Miscellaneous		
Control technology	SENSOTRONIC (PID-characteristic), RESISTRONIC	
Function display	LC-Display, blue	
Conformity	CE	
Supply cable 2 m, PVC, with appliance socket		
Single-button operation via incremental encoder (i-OP)		
Anti-static surface, especially suitable for use in ESD areas.		
Acc. to MIL-SPEC/ESA-standard		
VDE, EMC-tested		
Connectable soldering and desoldering devices (depending on model): i-TOOL, CHIP TOOL, CHIP TOOL VARIO, X-TOOL, X-TOOL VARIO, TECH TOOL, MICRO TOOL, POWER TOOL, i-SET TOOL		
Optionally available: Serial interface for actuating the Easy Arm 1 and Easy Arm 2 soldering fume extraction systems or the 0IRHP100A heating plate		

i-TOOL soldering iron	
Designation	**Value**
Operating voltage, VAC	24
Maximum heating output, W	150
Mean heating output	80
Heat-up time to 350 °C / 662 °F,	Approx. 10 s
Temperature range, °C	150 – 450 °C
Temperature fluctuations in idle state, °C	Less than ± 2
Weight (without supply cable),	Approx. 30 g
Miscellaneous	
Supply cable 1.2 m, highly flexible, heat resistant, antistatic	
Antistatic design acc. to MIL-SPEC/ESA-standard	
Identification and standby function integrated in the handle	

Desoldering CHIP TOOL VARIO	
Designation	**Value**
Operating voltage, VAC	24
Maximum heating output, W	80
Temperature range, °C	150 – 450
Temperature sensor	K-type thermocouple in each tip
Weight (without supply cable),	Approx. 30
Dimensions (without supply cable), mm	Approx. 145 x 45 x 25
Supply cable, m	Approx. 1,2
Design	Antistatic

3. Transport, storage, waste disposal

The soldering station is delivered in a sturdy cardboard box. Please use only the original packaging for transportation and intermediate storage. Strictly avoid jerkily moving, impacting or dropping the soldering station. The soldering station must be protected from weather influences such as rain, fog or sea air, etc. During extended storage in high humidity areas, the soldering station must be hermetically packed and provided with a dehumidifying agent. Damage caused by unprofessional transport or storage are not covered under warranty.

Disposal instructions according to Directive 2012/19/EC of the European Parliament and of the Council of 4/7/2012 on waste electrical and electronic equipment:

Products marked with a crossed out waste bin must not be disposed of together with unsorted domestic waste. Municipalities have special collection points for this type of waste. Please consult your council and ask for available possibilities for the separated collection of old appliances. You thereby contribute to the reuse or other forms of use of old appliances, with the aim of protecting the environment and human health.

4. Commissioning

4.1 Before start-up

Please check the contents in the package for completeness. With regard to this, please read the [Spare parts, accessories] chapter! Should any of the listed components be damaged or incomplete, you should immediately consult your supplier.

i-CON 1V Contents		Order no.		
		0IC1105A	0IC1105V0C	0IC1135A0C
i-CON 1V	0IC1135A	1 x	1 x	1 x
i-TOOL	0105CDJ	1 x	1 x	
CHIP TOOL VARIO	0460MDJ			
X-TOOL VARIO	0740EDJ			
Interface			1 x	1 x
All soldering irons come with a matching workstand.				

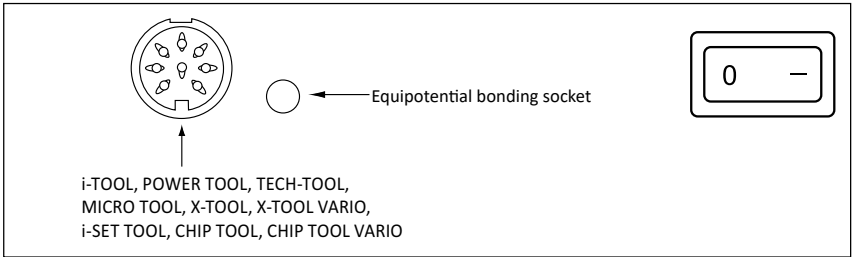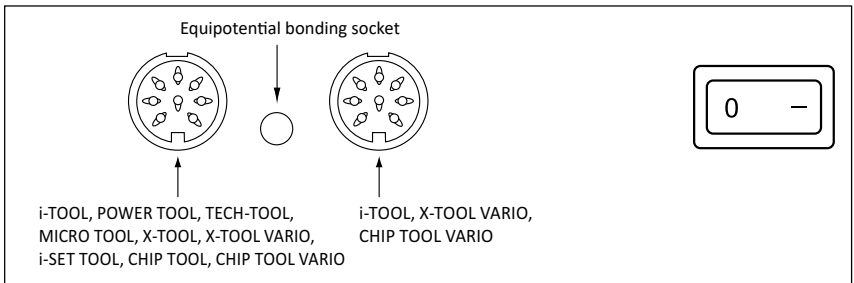| i-CON 2V Contents		Order no.				
		0IC2205V	0IC2205VC	0IC2205VIT	0IC2205V0C	0IC2235V0C
i-CON 2V	0IC2235V	1 x	1 x	1 x	1 x	1x
i-TOOL	0105CDJ	1 x	1 x	2 x	1 x	
CHIP TOOL VARIO	0460MDJ		1 x			
X-TOOL VARIO	0740EDJ					
Interface					1 x	1x
All soldering irons come with a matching workstand.						

4.2 Switching on the first time
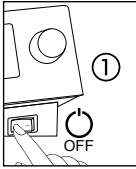
- ■ Place the soldering station in a dry place on a level surface and the workstand next to the soldering station.
- ■ Before switching on, make sure that the mains voltage complies with the value specified on the type plate.
- ■ Switch off the soldering station via the mains switch ①.

One or two soldering tools can be connected to the soldering station. With regard to this, please observe the following figure:

i-CON 1V:

Equipotential bonding socket

i-TOOL, POWER TOOL, TECH-TOOL,
MICRO TOOL, X-TOOL, X-TOOL VARIO,
i-SET TOOL, CHIP TOOL, CHIP TOOL VARIO

i-CON 2V:

Equipotential bonding socket

i-TOOL, POWER TOOL, TECH-TOOL,
MICRO TOOL, X-TOOL, X-TOOL VARIO,
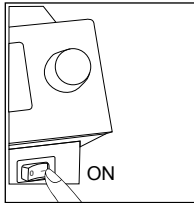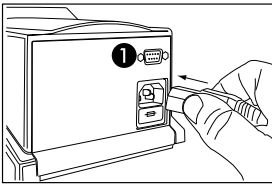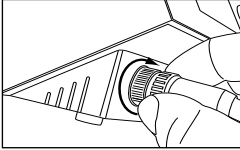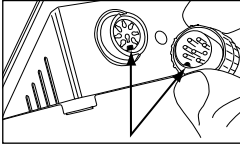i-SET TOOL, CHIP TOOL, CHIP TOOL VARIO

i-TOOL, X-TOOL VARIO,
CHIP TOOL VARIO

The following combinations are not possible:
left CHIP TOOL VARIO and right POWER TOOL as well as left CHIP TOOL VARIO and right CHIP TOOL VARIO.

- Check the correct fit of the soldering tip.

- Ensure the correct fit of the plug in the connection socket. The pin in the plug must match the groove in the connection socket.

- Connect the soldering tool with the station. To do so, insert the plug into the socket and lock it. Store the soldering tool in the workstand.

- Connect the mains supply cable with the soldering station via the mains socket
  ❶ Interface (C models)

- Switch on the soldering station.

ON

CAUTION! Risk of burning!
The connected soldering tools are immediately heated after they are switched on!

4.2.1 microSD card

The use of a microSD card allows you to make firmware updates. The latest firmware can be found on the web pages of "www.kurtzersa.com". Log in to the free Members Area and open section "6.1.4 i-CON family".

4.2.1.1   Inserting a microSD card

The station is provided with a port for a microSD card.
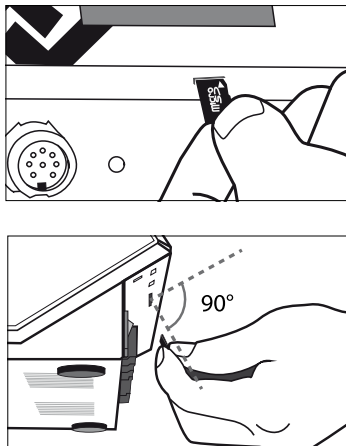
- Insert the microSD card into the port as shown.
- You should recognize a slight resistance after inserting half the card. This is a sign that the card is inserted correctly.
- If there is no tangible resistance take the card out completely and try again.
- A firmware update is started automatically as soon as the card is inserted correctly. For carrying out any other application follow the menu navigation.
- The firmware and the update instructions can be found at www.kurtzersa.com, in section i-CON 1V oder i-CON 2V under "Downloads".

5. Functional description

5.1 Operation

The soldering station is switched on/off via switch ① at the front side. If the soldering station is switched on, the switch will light up red.

The soldering station is controlled via a rotary encoder ② to be pressed as a push-button. It is called i-OP. The i-OP allows selecting desired functions or changing values.

A clockwise rotation will result in higher values and a counterclockwise rotation in lower ones. Slow turning will result in increments of one. Quick turning will change the selected values in increments of 10/50/100 (depending on the corresponding parameter).

By pressing this push-button, the selected parameters and values are confirmed and become effective for the station. In addition, this push-button function enables you to select the connected tools alternately. All setting steps and measured values are displayed in plain text in a clearly structured display window.

5.2 The working mode

After the station has been switched on, the startup screen will be displayed for approx. 2 seconds. It displays the name of the station ① and the software version ② of the soldering station. After this, the station will automatically switch to working mode:

- ■ Actual value ③.
- ■ Target value and, where appropriate, standby status ④.
- ■ Connected soldering tool (in our example i-Tool) ⑤.
- ■ Password protection is active (KEY symbol) ⑥.

In working mode the soldering tip temperature can be directly changed by turning the i-OP. This is confirmed by pressing i-OP. .

ⓘ   With active password protection, the target value can only be changed via the parameter mode. A password is needed to do so.

5.2.1 Software version

These operating instructions refer to the 3.1x software version. The software version number may be useful for service purposes. You should therefore make a note of it and keep it ready as our Service Department may ask you for it. The software version is displayed for approx. 2 sec. after switching on the station. Other firmware versions can be queried in the [Contrast] menu. With regard to this, please read chapter 5.5 [Contrast].

5.2.2 Activating tools

If two soldering tools are connected to the station (only i-CON 2V), you can activate them alternately by pressing the i-OP. A connected i-Tool, CHIP TOOL VARIO or X-TOOL VARIO is always automatically activated as soon as it is removed from the workstand.
In working mode, the soldering tip temperature of the active soldering tool can be changed by directly turning i-OP. This is confirmed by pressing i-OP.

> (i) With active password protection, the target value can only be changed via the parameter mode. A password is needed to do so.

> (i) For all soldering tools not specifically mentioned in these instructions, please refer to the operating instructions for the corresponding tool.

5.2.3 Setting the heating level of the heating plate

This function is only guaranteed if the soldering station is provided with a PC serial interface (optional). You can then use the soldering station to control the infrared heating plate of the 0IRHR100A rework system. With regard to this, also read the [Configuration mode] section.

- In the working mode, click on i-OP three times in a row. The opposite display appears.
- Set the desired heating stage between [0] and [6] by turning the i-OP.

> (i) The heating plate can be operated with 6 heating levels. Stage [0]: The heating plate is switched off; level [1]: Lowest heating output; level [6] maximum heating output. The factory setting is [0].

- When the desired heating level appears, press i-OP to select the heating level.

5.2.4   Working with the heating plate

The heating plate is switched on as follows:

- With the [Heating plate] function activated, you can switch on the heating plate in the working mode by double-clicking on i-OP.
- The ① window will appear for 2 seconds. The ② symbol indicates that the heating plate is working. The ③ display shows the set heating level.

The heating plate is switched off as follows:

- Double-click on i-OP to switch off the active heating plate.

In working mode the heating range is changed as follows:

- Double-click on i-OP to switch on the heating plate.
- The ① window will appear.
- Press i-OP again. Select the desired heating level by turning the i-OP. Press i-OP again to accept the set value.
- The heating plate now operates with the set heating range.

Once the soldering station changes to idle state, the heating plate is also switched off. The fact of the soldering station being taken out of the idle state does not automatically switch on the heating plate. You have to manually switch it on by double-clicking on i-OP. With regard to this, also read the [Adjustable shutdown function] section.

5.2.4.1   Heating plate power values

The maximum temperature has been limited to 300 °C (Heating level 6) to prevent over-heating of the heating plate.
The following characteristic shows the end temperatures of the heating plate at the various heating ranges.

- Horizontal (x): set heating level
- Vertical (T): Temperature after 10 minutes heating time
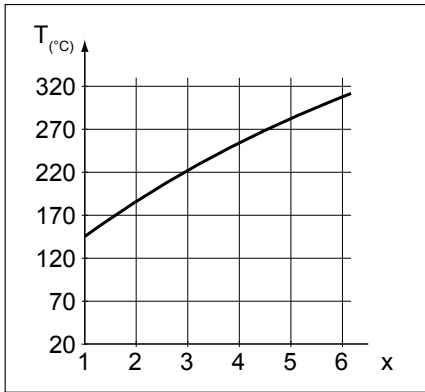
5.3 Parameter mode

The following settings can be made in parameter mode:

- [Target temperature 1] (50 - 450 °C / 122 - 842 °F)
- [Calibration temperature] (–70...+50 °C / –126...+90 °F)
- [Tip offset] (Function reserved)
- [Energy] (3 levels)
- [Standby time] (0 – 60 min)
- [Standby temperature] (150 - 300 °C).

To activate parameter mode, proceed as follows:

- Press and hold i-OP for approx. 2 seconds.

Parameter mode has now been enabled. The desired parameter will be selected by turning i-OP.
The last line shows a legend ② for the selected parameter ① which contains additional explanations or numerical ranges.

Proceed as follows to change a parameter value:

- To open parameter mode, press and hold i-OP for approx. 2 seconds.
- Select the desired parameter by turning i-OP.
- Press i-OP to activate the cursor; pressing i-OP again deactivates the cursor.

With the cursor activated, turn i-OP to change the parameter value accordingly.

5.3.1 i-SET TOOL

The i-SET TOOL (optional) enables you to save the station settings (including password) and write them back into the station. This way you can quickly transfer the basic settings to several stations. For more details, please refer to the i-SET TOOL operating instructions. This is how you can use the i-SET TOOL:

- Separate the soldering tool from the soldering station and connect the i-SET TOOL.
- Turn i-OP and select the following: Upload: The station data is written into the i-SET TOOL. Download: The i-SET TOOL is written into the station. Then press i-OP.

A safety dialog appears:
- Select [Cancel] to quit the process or [>>>] to continue.

- Press i-OP; the settings will be saved. Wait until the text [Parameter saved] appears in the display. Then remove the i-SET TOOL.

(i) Display contrast, calibration and offset are not transferred. When transferring data to the soldering station, the parameters for all soldering tools will be overwritten. Please remember this when operating different tools on your soldering station.

Even if the soldering station is equipped with a PC serial interface (optional), the device number is not transmitted to the station. With regard to this, please read the [Device number] section!

5.3.2   Target temperature

The target temperature is the soldering tip temperature intended for work.

(i) In working mode, the soldering tip temperature of the enabled soldering tool can be directly changed by turning i-OP. This is confirmed by pressing i-OP.

5.3.3 Min. temp. / Max. temp.

The Min. temp. and Max. temp. parameters determine the temperature range in which the tool's temperature can be adjusted.

The tool's temperature can be changed directly in operating mode by turning i OP. This temperature can be reduced by adjusting the Min. temp. / Max. temp. parameters.

5.3.4 Calibration temperature

This function serves the purpose of calibrating the soldering tip temperature. It enables to balance the displayed value and actual tip temperature. The adjustable calibration range is –70 - +50 °C / –126 - +90 °F.
The exact calibration procedure is described in chapter 5.3.6 [Calibration].

If you do not have an appropriate measuring instrument for this measurement, please enter [0] into this parameter field.

5.3.5 Tip offset

Due to the different masses and geometric shapes of the soldering tips, their thermal characteristics are quite different. The tip offset serves the purpose of adapting the temperature measurement to the corresponding soldering tip used. The setting for the soldering tip used is made by entering a number.

Since the station automatically recognizes the connected soldering tool, the station is aware of the complete combination of tool and tip after selecting this number. This way temperature detection and control can work optimally. The tip offset can be adjusted from 1 up to the maximum possible limiting value (see table on next page) of the connected soldering tool.

Tip offset				
CHIP TOOL		**CHIP TOOL VARIO**	**POWER TOOL**	**X-TOOL VARIO**
422ED	422RD 3	462CD010	01*	01
422FD 1	422SD	462CD018	02	02
422FD 2	452ED060"	462MD007*	03	03
422FD 3	452FD040	462MD015	04	04*
422FD 4"	452FD075	462PD005		05
422FD 5	452FD100	462SD002		06
422FD 6	452FD125			07
422FD 7"	452FD150			
422FD 8"	452FD175			
422FD 9	452FD200			
422MD	452FD250			
422QD 1"	452FD275			
422QD 2	452FD400			
422QD 3	452MD020*			
422QD 4	452QD100			
422QD 5"	452QD125			
422QD 6	452QD150			
422QD 7	452QD175"			
422QD 8	452QD200			
422QD 9"	452QD250			
422QD10	452RD150			
422RD 1	452RD225			
422RD 2				
* Default				

With CHIP TOOL connected, the entry [Tip type] will be displayed instead of [Tip offset]. In this case you can select the tip type directly.

5.3.6   Calibration

By using the calibration temperature, the actual tip temperature is precisely matched to the temperature displayed. With regard to this, also read the [Calibration temperature] section. The following procedure must be strictly followed when calibrating:

■ Input of the desired target temperature - see chapter 5.3.2 [Target temperature].

■ Adjust the calibration temperature - see chapter 5.3.7 [Determining the calibration temperature].

5.3.7   Determining the calibration temperature

■ Determine the temperature of the soldering tip by using a calibrated measuring instrument (e.g. Ersa DTM 100).

■ Compare the displayed values of the soldering station with those of the measuring instrument.

■ Calculate the temperature difference:

$\Delta T = T_{\text{i-CON}} - T_{\text{Measuring instrument}}$

■ Set the calculated temperature difference ΔT (with an operational sign by turning the i-OP) in the [Calibr. temp] menu option.

Ensure calm air conditions to avoid measuring faults.

5.3.8   Energy

This function enables the user to influence the regulating behavior of the station, thus adapting the heat-up and post heating performance of the station to the relevant application. With i-TOOL, X-TOOL VARIO, CHIP TOOL VARIO and TECH TOOL, three settings are possible: [high], [med.] and [low]. All other tools operate according to the control characteristics with constant control parameters.
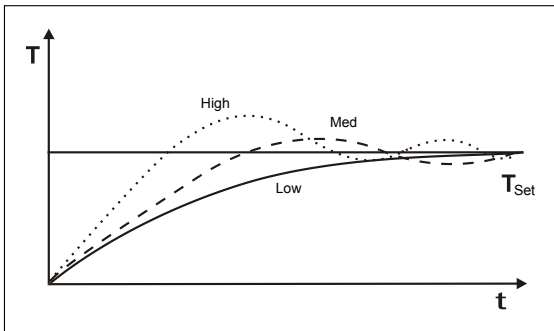
- [Low]: Minimum post heating performance. For soldering work with low heat requirements
- [Med.]: Higher post heating performance. For soldering work requiring higher temperatures.
- [High]: Maximum post heating performance. For soldering work requiring very high temperatures.

5.3.9 Standby period

The standby period is the time from the last operation carried out with the soldering tool to the time at which the standby temperature is activated. The adjustment range is 20 seconds to 60 minutes. Entering [0] deactivates the Standby function.

With small solder joints or soldering work performed very smoothly, the standby time should not be chosen too short to make sure that the standby function will not lower the temperature during the soldering process! As a measure to save energy and to extend the soldering tip and heating element service lives, you can automatically trigger an idle state for the soldering tool. With regard to this, please read section 5.3.17 [Adjustable shutdown function (idle state)].

5.3.10 Standby temperature

This is the soldering tip temperature during work breaks. It is automatically activated after the [Standby time] has lapsed. Lowering the temperature saves energy and extends the tip and heating element service lives.

The i-TOOL and CHIP TOOL VARIO can be reheated from standby temperature by movement; the Tech-Tool and X-TOOL by briefly wiping with a moist sponge; with all other tools by pressing or turning i-OP.

5.3.11 Configuration mode

To enter the configuration mode, press and hold i-OP for two seconds when switching on the soldering station.
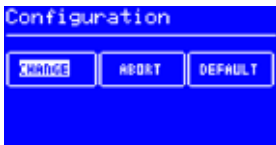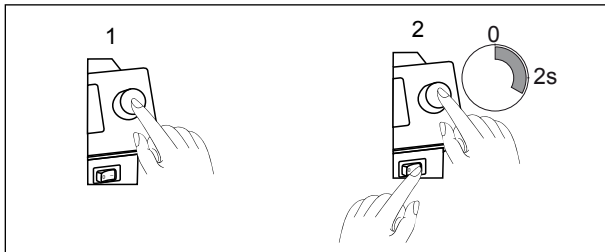
■ Turn i-OP to select a menu item, then press:
- [CHANGE] opens the [Configuration] menu
- [ABORT] stops the operation
- [DEFAULT] restores the factory settings.

In the configuration mode the following settings are possible:

- Temperature window (monitoring)
- Device number
- Process alarm (audible temp. control)
- Idle state
- Password
- Temperature unit

- Activating the heating plate
- Language selection for the station

ⓘ With active password protection you cannot reset the soldering station to the "as delivered" state (default) without entering your password.
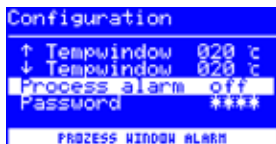
5.3.12 Temperature window
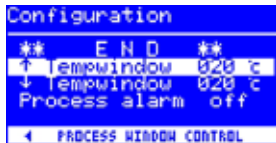
For the connected soldering tool, a temperature window with an upper and lower range can be defined. If the current tool temperature is within this window, "OK" will appear in the working mode.

Factory setting: ↑ 20 °C (68 °F)
                   ↓ 20 °C (68 °F)

5.3.13 Process alarm

When the current tool temperature disappears from the temperature window, a single audible signal will sound. When the current tool temperature is displayed again in the temperature window, a double audible signal will sound. Factory setting: [off].

5.3.14 Password protection

The data of the station can be protected by a 4-digit (0001-9999) password. This ensures that no settings/changes are made. No password protection is enabled at the factory. This is indicated with [0000] in the password input window.

The ①key symbol signals that the station is protected. Factory setting: [0000] = no protection.

You should always remember the password you have chosen, or keep it in a safe place. A forgotten password can only be deactivated by Ersa. If you have an i-SET TOOL with saved factory settings, you can also unlock the station yourself.
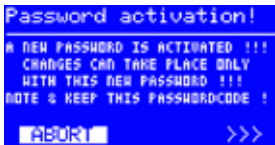
5.3.14.1 Setting the password

Please proceed as follows to activate the function [Password]:

- Open the configuration mode and choose the option [Edit].
- Enable the [Password] function by turning i-OP.
- Press i-OP to activate the cursor; pressing i-OP again deactivates the cursor.

With the cursor activated, the parameter value can be changed accordingly by turning the i-OP.

- To enter the desired password (numerical value between [0001] and [9999]) by turning the i-OP: Turn clockwise to increase, turn counter-clockwise to reduce.
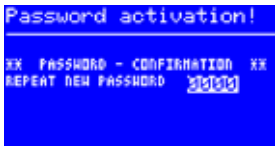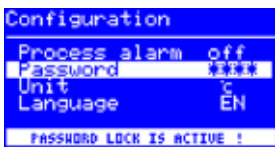
- Confirm the password by pressing i-OP. The first display [Password activation] will appear:

To cancel the process, you can either
- choose [ABORT] and confirm (In this case there is no password protection).

or
- write down the set password, select [>>>] (Continue) and press i-OP to confirm.

The second display [Password activation] appears:

■ Enter the password once again and press i-OP to confirm your entry.

The [Configuration] display will appear with the message [PASSWORD PROTECTION: ACTIVE]. The station is now protected.

5.3.14.2 Changing the password

The password is set in configuration mode. If a password has already been set, the code will appear "hidden".
If the user would like to change a password, the active password protection must first be revoked by entering the current password.
After a correct input, the new password can be set. If the numerical input is completed via the PUSH function, a note will appear to inform you that password protection has been activated. This note should once again inform the operator about the severity of this function. If the function is interrupted, the previous status will be maintained.
If the operator continues the dialog [>>>], the password needs to be repeated for activation.

If the password is repeated correctly, the station will be protected by the code. If the code is entered incorrectly, you will receive a message stating that the previous condition will be maintained.
The ① key symbol signals that the station is protected.

5.3.14.3 Input without disabling the password

If values are to be changed, e.g. a target value, without disabling your password, you will be required to enter your password before making any change. If the correct password is entered, the user has approx. 30 s time to make its changes.
If entries are made during this period of time, the length of time is extended by another 30 s so that further entries can be made. If no other entries are made during a 30 s time span, password protection is activated again.

5.3.14.4 Forgotten password

If you have forgotten your password, this can only be reactivated by Ersa Service due to safety reasons. In this case please consult Ersa by stating your address, name, invoice number and serial number of the soldering station (see type plate). Password protection can also be revoked via the i-SET TOOL. For this purpose, follow the corresponding note in section 5.3.14 [Password protection]!

5.3.15 Temperature unit

Here you can choose the desired temperature units Degree Celsius (°C) or Fahrenheit (°F). Factory setting: "°C"

5.3.16 Language selection

Here you can choose the desired language for the soldering station menu prompts. Factory setting: "English"

5.3.17 Adjustable shutdown function (idle state)

The adjustable shutdown function (Idle state) serves the purpose of energy saving and extending the soldering tip and heating element service lives. In idle state, the tools cool down to room temperature. The bottom line in the display then shows the text [Idle state]. You can end idle state at any time by actuating i-OP.
Please proceed as follows to activate the function [Idle state]:

- Open the configuration mode and choose the option [Idle state].
- Activate the menu [Idle state] by turning i-OP.

- Press i-OP to activate the cursor, pressing i-OP again deactivates the cursor.
- Enter the desired time from [010] to [240] minutes by turning i-OP accordingly. By entering [000] the [idle state] function is disabled.

ⓘ With the cursor activated, the parameter value can be changed accordingly by turning the i-OP. The set time starts to run only after the tool is in [Standby]. If the tool is not used during this time, idle state is activated after this time has lapsed.

Idle state is automatically exited as soon as the soldering tool is removed from the workstand or i-OP.

A controlled heating plate is not automatically activated! With regard to this, please read section 5.2 [The working mode].

5.3.18 Heating plate

This function is only guaranteed if the soldering station is provided with a PC serial interface (optional). With the soldering station you can control the 0IRHP100A infrared heating plate.

The following accessories are needed:

- Control cable from the soldering station to the 0IRHP100A
- Y control cable if the soldering fume extraction system and the 0IRHP100A infrared heating plate are to be controlled together.

5.3.18.1 Connecting heating plate to soldering station

- Connect the control cable of the 0IRHP100A heating plate with the control cable of the soldering station.
- Switch on the heating plate.

5.3.18.2 Activating the heating plate

- In configuration mode select the [Heating plate] menu by turning i-OP.
- Activate the cursor by pressing i-OP.

- Activate the function by turning i-OP. The opposite display appears.
- Quit the configuration menu.

ⓘ Information about working with the heating plate can be found in section 5.2 [The working mode].

5.3.19 Activating the soldering fume extraction

You can connect a soldering fume extraction system to the station.

- Connect the soldering fume extraction system to an interface connection on the rear side of the soldering station via a control cable.

ⓘ A connected soldering fume extraction is activated automatically as soon as a tool is taken out of the holder or is switched on.

5.4   Factory settings ("Default")

The following list shows the settings with which the station has been programmed in the factory. These settings can be restored via the "Default function" in configuration mode. The only exception is the password setting which is not deleted via the default function.

Configuration mode	
Parameter	**Setting**
↑ Temperature window, °C (0 °C to 150 °C)	20
↓ Temperature window, °C (0 °C to 150 °C)	20
Idle state	000
Heating plate	0
Process alarm	Off
Password	0000 (not deleted via the default function!)
Unit	°C
Language	EN

Parameter mode							
Parameter	**i-TOOL**	**TECH TOOL (X-TOOL)°**	**CHIP TOOL**	**CHIP TOOL VARIO**	**MICRO TOOL**	**X-TOOL VARIO**	**POWER TOOL**
Target temp. °C	360	360	385	360	285	360	360
Calibr. temp. °C	0	0	0	0/0	0	0	0
Tip offset/type	–	1 (2)°	422 MD	462MD007	1	04	1
Energy	Medium	Medium (High)°	-	Medium	-	Medium	Medium
Standby time (min)	5	10	10	5	10	5	10
Standby temp. (°C)	210	230	280	50	280	50	230

5.5   Contrast

Please proceed as follows to adapt the display contrast to your working environment:

■ Switch on the station and rotate i-OP immediately. This activates the contrast mode:
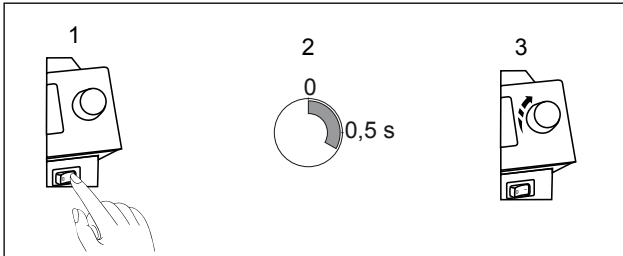
■ Set the desired contrast by turning i-OP.
■ Confirm your input by pressing i-OP.
Also the connected tool will appear in the display.

The contrast menu also displays the software version and date as well as the hardware version of the Control board (CB). Activate contrast mode as described above, then click and hold i-OP. Clicking and holding i-OP for a second time closes the display.

5.6　　　Changing soldering tips

Soldering tips must be changed when:

- The size of the soldering tip does not match the solder joint (current tip too big / too small).
- The soldering tip is worn or damaged (pitting corrosion; tip can no longer be wetted; mechanical damage).

Before replacing the soldering tip:

- Switch off the station. Allow the unit to cool to a safe temperature.
- Keep the tool ready for tip changing (if necessary).

CAUTION! Risk of burning!
Only use appropriate tools to change soldering tips and hot air nozzles. Changing still hot soldering tips takes place at your own risk! If necessary allow the soldering tip to cool down completely before changing it.

CAUTION! Material damage is possible!
Do not operate the soldering tool without soldering tip, otherwise the heating element could be damaged!

Once the soldering tip has cooled down, proceed as follows:

5.6.1　　　Changing the i-TOOL soldering tip

Attention! Burn hazard!
After switching off, the soldering tip remains hot for a long time! Always touch only the knurled plastic part.

When the tip has cooled off, proceed as follows:
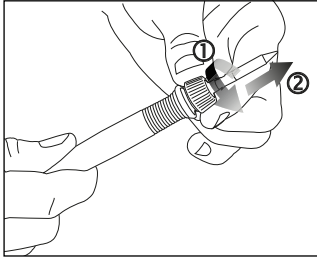
■ Unlock ① and pull off ② the soldering tip.
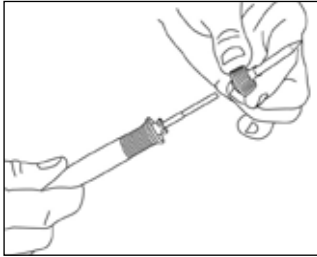
■ Remove the soldering tip.
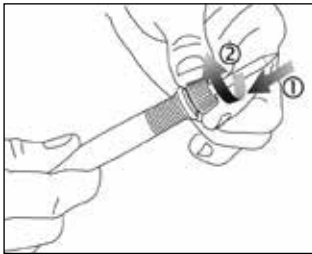
■ Fit the soldering tip ①, overcome the spring force and lock the bayonet mount ②.
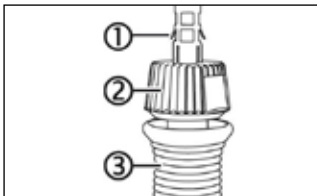
■ To check the soldering tip for tight seating:
■ Keep a correct distance between the knurled sleeve ② and the soldering iron ③, as shown in figure on the left.
■ The bayonet mount of the knurled sleeve is completely locked.
■ The display panels ① do not touch the knurled sleeve ②.

5.6.2 **Changing the X-TOOL desoldering tip**

The desoldering tip can be changed using the tip holder on the workstand.
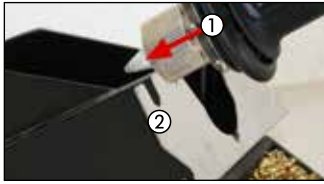
- Position the desoldering tip with radially extending groove ① in one of the recesses of the tip holder ②.
- Use one hand to hold the tip holder in place and pull the desoldering iron off the tip with the other.
- Now insert the required desoldering tip into the heat accumulator of the desoldering iron by following the above procedure in reverse order.

5.6.3 **Changing the X-TOOL VARIO desoldering tip**

A desoldering tip can be changed using the tip holder on the workstand, the accompanying tip changing tool (no. 3N597), or the VARIO TOOL (no. E074600).

CAUTION! Material damage is possible!
Do not twist the tip during extraction, otherwise the temperature sensor could be damaged!

Tip change using a tip holder

To remove a tip:

- Place the desoldering tip with the radially extending groove in one of the lateral seats of the tip holder.
- Use one hand to secure the workstand and the other to pull the desoldering iron off the tip.
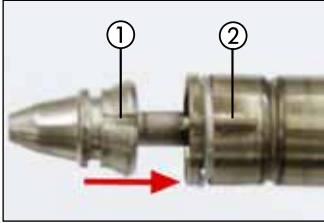
To put a tip in place:

- ■ Insert the radially running groove of the new tip into one of the seats of the tip holder.
- ■ Then push the desoldering iron on the tip until it stops. In doing so, the groove in the ① tip must slide into the indentation of the ② tip holder.
- ■ The tip must engage audibly in the heating element.

**To change a tip using a tip changing tool:**

- ■ Using the tip changing tool, grab the tip at the groove and pull it out of the heat element.
- ■ To insert a tip, grab it with a service tool at the groove and introduce it into the heating element. In doing so, the groove in the ① tip must slide into the indentation of the ② tip holder.
- ■ The tip must engage audibly in the heating element.

5.6.4 Changing the CHIP TOOL VARIO soldering tip

Please see section 5.7.4 [Changing the CHIP TOOL VARIO heating element].

kurtz ersa

5.7 Changing a heating element

Before changing a heating element:
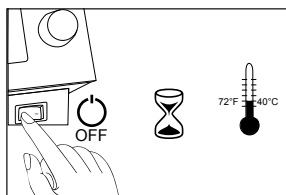
- Switch off the station and allow the soldering tip to cool down. Then remove the soldering tip as described above.
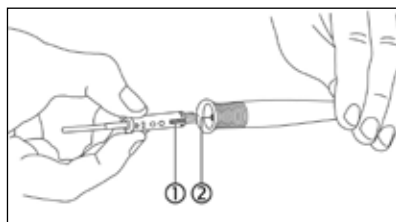
CAUTION! Risk of burning!
Allow the unit to cool to a safe temperature!

5.7.1 Changing the i-TOOL heating element

Attention! Burn hazard!
Only change the heating element when both the soldering tip and the heating element are cold! Before changing the heating element, switch off the soldering station and allow the soldering tip and the heating element to cool down!

- Remove the soldering tip.
- Pull the heating element out by hand.

Slide in the spare heating element.

- Align the groove of the heating element ① with the marking in the soldering iron ②.
- Align the heating element exactly parallel to the soldering iron.
- Gently push the heating element in carefully and slowly until it stops. If the heating element cannot slide in easily, do not press with greater force, but reposition it!
- Re-install the soldering tip.

5.7.2 Changing the CHIP TOOL heating element

■ To change the heating element please proceed as described in the operating instructions of "Ersa CHIP TOOL" (3BA00128-00).

5.7.3 Changing the X-TOOL heating element

■ Please return the tool to Ersa Service to have the heating element replaced.

5.7.4 Changing the CHIP TOOL VARIO heating element

On the CHIP TOOL VARIO a desoldering tip always consists of a heating element and a soldering tip. A pair of desoldering tips should never be separated during use.

ⓘ When aligning the tips with each other, the anti-turn locking device must be always disengaged.

■ Disengage the ① anti-turn locking device with an Allen key no. 1.5.

ⓘ Overtightening the retaining screws may damage the heating element or the clamping screws.

■ Pull the desoldering inserts carefully out of the holders of the CHIP TOOL VARIO ②.
■ Carefully push a new pair of desoldering inserts up to the mark into the holders.

■ In doing so, the mark on the ③ desoldering insert must be completely pushed into the holder.

### 5.7.5   Changing the X-TOOL VARIO heating head
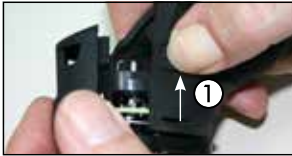
- Disconnect the tool from the soldering station and let it cool to room temperature. Remove the tip and the residual solder pot.
- Press the two ① latching lugs on both sides of the heating head cover and pull them off.
- Carefully pull out the heating head with the silicone holder.
- Remove the silicone holder.
- Place the silicone holder on the new heating head.
- Install the new heating head and close the heating head cover again.
- Re-insert the tip and the residual solder pot.
- Re-connect the tool to the soldering station.

5.8   Sensitive components

Some components may suffer damage when being exposed to electrostatic discharge (please follow the warnings on the packages or ask the manufacturer or supplier). To protect these components use an ESD-save workplace (ESD = electrostatic discharge). The soldering station can be easily integrated into such an environment. The soldering tip can be highly resistively (220 kΩ) connected with the conductive work base via the equipotential bonding socket (1).

The soldering station is fully antistatically equipped and thus meets the requirements of the American Military Standard.

Upon delivery the soldering tips are directly connected with the protective network conductor.
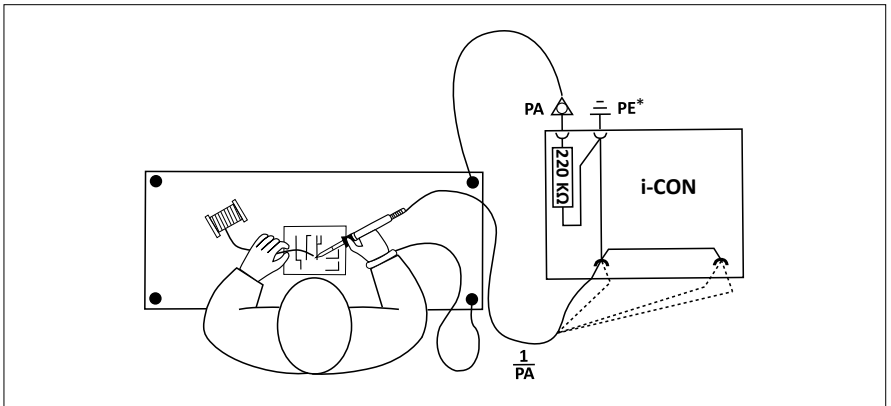
* "Hard" earth according to military and ESA standards

6. Error diagnosis and remedy

6.1 General errors

If the soldering station does not operate as expected, check the following items:

- Is the mains voltage present? Correctly connect the mains lead to the device and socket.
- Is the fuse defect? The fuse can be found at the rear side of the device in the mains connecting socket.
- Note that a defective fuse may also indicate a deeper cause of error. Simply changing the fuse therefore generally does not suffice.
- Is the soldering tool correctly connected to the supply unit?

6.2 Other faults

Other errors indicating possible defects of the soldering tool can occur. These are:

- The station permanently shows only the room temperature. In this case, the heating element or the supply line is defective.

The station is in idle state; the room temperature will also appear after a few minutes.

- The display is switched off and shows nothing (i-CON 2V mains switch is however still lit). In this case there is an overload of the soldering station. Once the soldering station has cooled down to a sufficient level (after approx. 30 minutes), work can be continued.
- Under favorable EMC conditions, minor temperature fluctuations can be displayed, which, however, has no effect on the tip temperature.

6.3   Parameter changes not possible

If the station is password protected, the parameters can only be changed after entering the correct password. (see chapter [Password protection]).

6.4 Error messages

The soldering station carries out automatic error diagnosis. The result of a diagnosis is displayed as an error code: In this case, the ① triangular pictogram will appear in the display of the soldering station. The error code ② is displayed as a number between 2 and 99.

The bottom line shows an additional legend ❸ . Error codes can be taken from the following table. Error messages must be acknowledged via i-OP. The connected soldering tool will be heated again only after the fault has been rectified and acknowledged.

Code	Text in display	Cause	Remedy
1	[MICRO SD CARD]	microSD card error. microSD card connector dirty	Remove and put in card again. Contact area must be on the backside. Format card with FAT32 and reload file. Use a different microSD card.
2	[FAULTY CALIBRATION]	Station no longer calibrated	Have factory calibration performed
4	[RT-COMPENSATION]	KTY measured value not OK	Have soldering tool and soldering station inspected
6	[UNDEF. TOOL!]	The soldering station is unable to identify the connected tool. Undefined new tool. Defective tool.	Remove tool. Update firmware. Replace tool.
62	[FAULTY CALIBRATION]	Tool no longer calibrated	Have factory calibration performed
7	[HEATING ELEMENT PLUGGED IN? THERMOCOUPLE?]	Heating element not correctly installed. Temperature sensor error.	Properly installing a heating element Having soldering tool checked
7	[THERMOCOUPLE?]	Fault in thermocouple	Have soldering tool and station inspected
71	[iTOOL AND HEATING ELEMENT DEFECTIVE/ REPLACE]	The i-TOOL electronic system and heating element are defective.	Replacing the i-TOOL
8	[HEATING ELEMENT?]	Heating element defective. X-TOOL: If the X-TOOL heating element is defective, the station will recognize the X-TOOL as TECH TOOL. CHIP TOOL VARIO: Heating element inserted?	Check the heating element. Checking the station
9	[LOSS OF DATA!]	Parameter/configuration data destroyed	Reset the soldering station to factory settings in configuration mode
97	[ERROR IN DATA TRANSMISSION]	Data transmission error between i-SET TOOL and soldering station	-
98	[MAINS FREQUENCY?]	Mains frequency outside the frequency range (± 10 %)	-
99	[i-CON OVERLOAD PROTECTION]	Soldering station overloaded	Allow the soldering station to cool down

7. Maintenance and cleaning

7.1 Important care work

The following points must be complied with to achieve a long lifetime of the station.

- Always make sure that the soldering and desoldering tips are tin coated. A continuously cleaned soldering tip will become passive after a short while. If you always leave a small amount of solder on the soldering tip after soldering, you will extend service life many times over.
- If necessary wipe the soldering and desoldering tip against a moist sponge or pierce it into the dry cleaner before the soldering or desoldering process, in order to remove old solder and flux material residues.
- If necessary, give the soldering tip a wipe just before soldering.
- To achieve good electric and heat conductivity, the tip should be occasionally removed and the heating element cleaned with a brass brush.
- Take care that the ventilation openings on the station will not lose their effect because of dust deposits.

Always use original ERSA consumables and spare parts to obtain safe operation and keep the warranty valid!
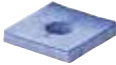
CAUTION! Danger of electric shock!
Do not open the device! There are no serviceable parts inside the device.

7.2 Cleaning

Occasionally clean the device with a damp, soft cloth. Steam or high pressure cleaners, scrubbing sponges, abrasive cleaners, solvents like alcohol or gasoline must not be used!

8. Spare parts, accessories

	Designation	Order-No.
	Soldering iron i-TOOL, 24 V, 150 W, antistatic with tip 0142CDLF16	0105CDJ
	i-TOOL workstand	0A59
	Heating element for i-TOOL	016100J
	Heating element and tip change tweezers for i-TOOL and i-TIPS	3N544
	i-SET TOOL	0103IST
	Viscose sponge for workstand	0003B
	Cleaning brush with brass bristles	3TZ00051
	Dry sponge with receptacle for 0A39 – 0A48	0A08MSET
	Dry sponge	0008M15B
	Prefilter with Luer adapter	3YE1057-02
	Front sealing plug	3T7260-02
	Back sealing plug	3T7260-03

	Designation	Order-No.
	Particle filter, 10 pcs	072605/10
	Solder collection filter, 10 pcs	072604/10
	Residual solder container, complete	72600
	CHIP TOOL VARIO	0460MDJ
	CHIP TOOL VARIO workstand	0A54
	MICRO TOOL	0270BDJ
	Control line to the heating plate	0IRHP100A-14
	Y-control cable for simultaneous connection of heating plate and soldering fume extractor	0IRHP100A-15
	For CHIP TOOL spare parts, please refer to "Ersa CHIP TOOL" operating instructions (3BA00128-00).	
	For X-TOOL spare parts, please refer to "Ersa X-TOOL" operating instructions (3BA00023-01)	
	For X-TOOL VARIO spare parts, please refer to "Ersa X-TOOL VARIO" operating instructions (3BA00215)	

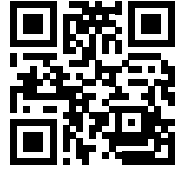Other spare parts can be found in Ersa web shop.

8.1 QR code links and web addresses for tool tips in ERSA web shop

Soldering tips series 142 (i-TIPS)
for i-TOOL

142.ersa.com

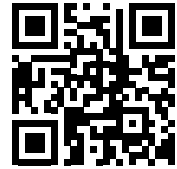Soldering tips series 212
for MICRO TOOL

212.ersa.com

Soldering tips series 612
for TECH TOOL

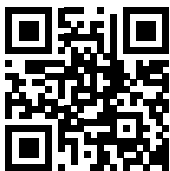612.ersa.com
Soldering tips series 842

Soldering tips series 832
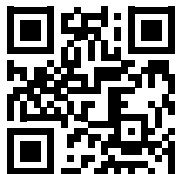for POWER TOOL

832.ersa.com
Soldering tips series 852

for POWER TOOL

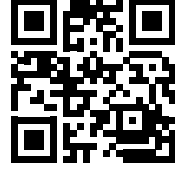842.ersa.com

for POWER TOOL

852.ersa.com

Soldering tips series 422
for CHIP TOOL

422.ersa.com

Soldering tips series 452
for CHIP TOOL

452.ersa.com

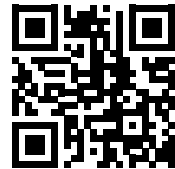Soldering tips series 462
for CHIP TOOL VARIO

462.ersa.com

Soldering tips series 742
for X-TOOL VARIO

742.ersa.com

Soldering tips series 722
for X-TOOL

722.ersa.com

9. Warranty

Heating elements and soldering or desoldering tips are considered wearing parts and are therefore excluded from warranty. Any return of goods must be accompanied by a written description of the material or construction fault that has occurred as well as a confirmed purchase invoice.

Ersa created these operating instructions with greatest care and attention to detail. However, no warranty can be granted with respect to contents, completeness and quality of data in this manual. The contents is continuously updated and adapted to prevailing conditions.

All the data published in this manual, including specifications concerning products and procedures, were determined by us to the best of our knowledge using cutting edge technical aids. These specifications are non-binding and for information only; they do not relieve the user from his responsibility of carrying out his own check before operating the device. We do not assume liability for violations of patent rights of third parties for applications and procedures without previous express and written confirmation. We reserve the right for technical modifications with the intention of improving the product. Within the scope of legal possibilities, all liability for immediate damage, including direct and indirect damage, which results from the acquisition of this product, is ruled out.

All rights are reserved. This manual, or any parts thereof, may not be reproduced, changed, transferred or translated into another languages without the written consent of Ersa GmbH.

Electronics Production Equipment

■ Production plants/
   subsidiaries
■ Local agents
■ Other presence
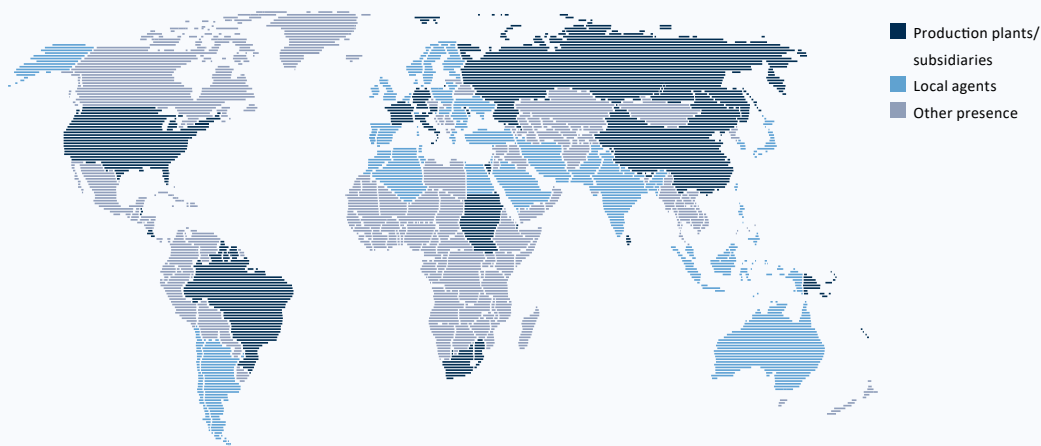
America
Ersa North America
Pilgrim Road Plymouth,
WI 53073 USA
Tel. 800-363-3772
Fax +1 920-893-3322
info-ena@kurtzersa.com
www.ersa.com

Asia
Ersa Asia Pacific
Flat A, 12/F
Max Share Centre,
373 King's Road
North Point, Hong Kong China
Tel. +852 2331 2232
Fax +852 2758 7749
kurtz@kfe.com.hk
www.ersa.com

China
Ersa Shanghai
Room 720,
Tian Xiang Building.
No. 1068 Mao Tai Rd.
Shanghai 200336 China
Tel. +86 213126 0818
Fax +86 215239 2001
ersa@kurtz.com.cn
www.ersa.com

Ersa France
Division de
Kurtz France S.A.R.L.
8, rue des Moulissards
F-21240 Talant, France
Tel. +33 3 80 56 66 10
Fax +33 3 80 56 66 16
info@ersa-electronics.fr
www.ersa-electronics.fr

Ersa GmbH
Leonhard-Karl-Str. 24
97877 Wertheim/Germany
Tel. +49 9342/800-0
Fax +49 9342 800-1 27
info@kurtzersa.de
www.ersa.com

kurtz ersa