Ersa SC 550 SCAVENGER

Residual Solder Sucker for HR 550 and HR 550 XL Rework Systems

Operating instructions

Ersa GmbH
Leonhard-Karl-Str. 24
D-97877 Wertheim/Germany
www.ersa.com
Rev. 3

Phone: +49 9342/800-0
Fax +49 9342/800-127
service.tools@kurtzersa.de

kurtz ersa

Table of Contents

1. Introduction

Thank you for purchasing the SC 550 Scavenger residual solder sucker. With SC 550 Scavenger, Ersa provides you with a residual solder sucker for the HR 550 and HR 550XL rework systems. With SC 550 Scavenger, residual solder can be removed from PCB soldered components without contact. All settings and positionings are done manually.
To operate the residual solder sucker, you will also need to read the Rework system instruction manual.

1.1 Intended use

The Ersa SC 550 Scavenger residual solder sucker is only approved for contactless removal of residual solder on Ersa Rework systems.
Ersa heating tools may only be used to process soft solders. Improperly using the appliance and conducting unauthorized work on it will invalidate any warranty and liability claims from the purchaser against the manufacturer. Proper use also includes compliance with the instruction manual including the safety provisions.

1.2 National and international regulations

National and international safety, health and occupational safety regulations must be adhered to.

1.3 Copyright, liability

Ersa drew up this instruction manual with utter care. However, no guarantee can be granted for its contents, completeness and the quality of the information provided therein. The contents have been carefully updated and adapted to current conditions.
All data as well as any product and process information published in these instruction manual was ascertained by us to the best of our knowledge, using the most cutting-edge technical tools. This information is non-binding and does not relieve the user of the responsibility to check themselves the appliance before using it.
We shall not be held liable for any infringement of third-party property rights due to applications and procedures without prior express written confirmation. We reserve the right to make technical changes as part of product improvements.
As far as legally possible, liability shall be precluded in cases of any direct, consequential or third-party damage resulting from the purchase of this product.

1.4 Warranty

The suction nozzles are wearing parts that are not covered by the warranty. Material- or production-related defects must be reported through notification by submitting the purchase receipt before the return of the goods, which must be acknowledged; the purchase receipt is then to be enclosed with the return of the goods. The heating element is a wearing part and is not covered by the warranty.
The warranty period shall comply with the contractual provisions set forth in the currently valid general sales, delivery and payment terms of Ersa GmbH. Ersa GmbH can only provide warranty if the appliance is returned in its original packaging.
Improperly using the appliance and conducting unauthorized work on it will invalidate any warranty and liability claims from the buyer against the manufacturer.

2. Technical data

Description	Value
Supply unit dimensions (W x D x H), mm	300 x 210 x 420
Footprint (W x D), mm	600 x 500
Rated voltage, VAC	240, 50-60 Hz, 2.5 A
Power consumption(max.), W	400
Secondary voltage, VDC	30
Fuse, A-T	2.5
Soldering system hot-gas head, regulated, W	400
Required nitrogen or air connection (quick coupling), inches	¼
Nitrogen/pneumatic system inlet pressure, oil-free (min./max.), bar	5 / 6
Required nitrogen/air quantity, oil-free, l/min	approx. 60
Quick coupling for the customer's nitrogen/pneumatic system connection, outer diameter, mm/inches	10, 3/8
Temperature range (constant), °C	18-26
Air humidity (non-condensing), %	40 - 60
Emission sound pressure level, dB(A)	< 70
Cleaning capacity, mm/s	approx. 1-3
Component size	all common SMD pad formats
Weight, kg	18.5
Antistatic design	Yes

2.1 Default settings

Description	Value
Standby temperature, °C / °F)	100 / 212
Warm-up temperature, C / °F	200 / 392
Heating temperature, °C / °F	320 / 608
Energy	med.
Shutdown	5 min.

3. For your safety

Ersa products are developed, manufactured and tested in accordance with essential safety requirements. **Nevertheless, there are residual risks!**
You should therefore read this instruction manual before operating the appliance for the first time. It will help you familiarize with the functions of the appliance and use them effectively. Keep this instruction manual in a place that can be accessed by all users at any time!

3.1 Explanations of pictograms and symbols

Pictograms are used as danger warnings in this instruction manual.

DANGER! Denotes an imminent, threatening danger.
If it is not avoided, death, severe injuries or material damage will result.

WARNING! Denotes a possibly threatening danger.
If it is not avoided, death, severe injuries or material damage may result.

CAUTION! Denotes a possibly threatening danger.
If it is not avoided, slight or minor injuries, or material damage may result.

This symbol is used to highlight text passages that contain explanations, note or tips.

- This symbol mark highlights

  - Activities to be carried out, or
  - Instructions that must be followed at all times.

Note! Use a solder fume extractor!
Solder fumes are dangerous to health. That is why you should always use a solder fume extractor. We recommend the Ersa “Easy Arm” solder fume extractor with pre-filter, HEPA particle filter and activated carbon filter. A suitable connection for the solder fume extractor is available on the appliance. The solder fume extractor also prevents the appliance from quickly getting dirty.

3.2 Safety instructions

DANGER! The appliance may malfunction!
Check all components before each use. Have damaged parts repaired only by a professional or the manufacturer. If repairs are improperly made, accidents may occur to the operator. Always use original Ersa spare parts for any repairs.

CAUTION! Burn danger!
Heating tools get hot. The hot tool insert must not come into contact with skin, hair or with heat-sensitive or flammable materials.

CAUTION! Injury danger!
To prevent accidents and burns, keep unauthorized persons away. Make sure that no unauthorized persons, and especially children, may have access to the heating tools.

WARNING! Fire danger!
Before heating up a heating tool, remove any flammable objects, liquids and gases from its work area.

WARNING! Fire danger!
Never leave your hot heating tool unattended. Please note that the tool insert needs some time to cool down to a safe temperature even after the appliance has been switched off.

CAUTION! Injury danger!
Keep your work area tidy. Untidiness in the work area increases the risk of accidents.

CAUTION! Eating and drinking are not allowed!
Solders and soldering materials are poisonous. If they get into the body, they have a toxic effect. Eating, drinking and smoking are strictly not allowed. Always wash your hands after working with solder and soldering materials.

CAUTION! Risk of poisoning through inhalation!
During soldering, harmful emissions occur. Ensure adequate ventilation or suction. Adhere to the safety data sheets for the solder pastes and flux materials used.

WARNING! Dangerous electrical voltage!
Protect the connecting cables. Make sure that connecting cables do not come into contact with heat, oil or sharp edges. Damaged connecting cables can cause fires, short circuits and electric shocks, and must therefore be replaced immediately.

WARNING! Fire danger and hazardous electrical voltage!
Take environmental influences into account. Protect your appliance from all liquids and moisture. Otherwise, there is a risk of fire or electric shock.

CAUTION! Injury danger!
Keep your residual solder sucker with due care. Always keep it safe, out of the reach of children and in a dry place. Adhere to the maintenance provisions. Check and service your appliance at regular intervals. Use original Ersa accessories and spare parts only.

CAUTION! Wear protective clothing!
Wear suitable protective clothing (protective gloves, safety goggles, etc.) when working!

CAUTION! Eye injury danger!
Danger due to hose lines whipping and parts being hurled away! When working on the nitrogen/pneumatic system and on pressurized machine components, wear suitable safety goggles! Beware of stored energy!

CAUTION! Injury danger!
Physically and/or mentally disabled people are allowed to use the soldering station only under the supervision of trained, skilled personnel. This appliance can be used by children aged 8 and over, as well as by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruct-

ed about how to safely use the appliance, and are aware of the associated dangers. Children are not allowed to play with these appliances. Cleaning and user maintenance should not be performed by unsupervised children.

CAUTION! Dealing with the nitrogen system/pneumatic equipment
Machine parts under high pressure!
Risk of personal injury or material damage due to machine parts under pressure or unexpected movement of mechanisms!
Work on the nitrogen system/ pneumatic equipment of the machine may be carried out only by a qualified technician with the appropriate knowledge.
a) Pneumatic connections according to the specifications in chapter “4.3.3 Installing and connecting the supply unit“ on page 16.
b) Depressurize the system sections and pressure lines to be opened before starting any repair or maintenance work!
Oxygen can be displaced by nitrogen accumulation in the air you breathe, so ventilate regularly or ensure air exchange.
Oxygen can be displaced by nitrogen accumulation in the air breathed, so ventilate regularly or ensure air exchange. Nitrogen cannot be perceived.
Note: Provided that the applicable workplace regulations regarding air exchange are complied with, and due to the design and the small quantities of nitrogen used, there is no danger from nitrogen.

CAUTION! Dispose of old materials safely!
Solder waste is hazardous and must not be disposed of with household waste. Make sure any operating and auxiliary materials as well as replacement parts are disposed of in a safe and environmentally friendly manner. Adhere to municipal waste disposal regulations.

Note! ESD hazardous components!
Electronic components can be damaged by electrostatic discharge. Abide by the warnings on the packaging, or contact the manufacturer or supplier. To protect these components, an ESD-safe workplace will be suitable.

4. Handling, assembly, storage, disposal

The residual solder sucker can be operated with both nitrogen and compressed air. Ersa recommends the use of nitrogen. When it is operated with nitrogen, there is less oxidation at the suction point.

The residual solder sucker is delivered in a stable covering box. To handle and temporarily store the systems, use only their original packaging. Absolutely avoid any jerky movements, bumps or lowering of the residual solder sucker, especially the suction pipe. The residual solder sucker must be protected from the effects of weather such as rain, fog or sea air, etc. For longer storage in areas with high humidity, the residual solder sucker must be packed airtight and provided with a dehumidifying agent. Damage due to improper handling or storage is not covered by the warranty!

4.1 Unpacking

- Carry the package with the residual solder sucker in its covering box to the installation site where the Rework system is located. The residual solder sucker must be placed onto the table on the right of the Rework system. See also the photo on the cover of this instruction manual.
  Please also read chapter “2. Technical data“ on page 6 about the necessary supplies.
- Check the contents of the packaging for completeness.
  If the components listed here are damaged or incomplete, please contact your supplier.

We recommend storing the packaging material for later use. Only with this packaging material may the residual solder sucker be safely packed, stored and handled.

4.2 Scope of delivery

Description	Item number
SC 550 Scavenger residual solder sucker consisting of supply unit and swivel arm	0SC550
2 x 1.25 m silicone hose, transparent, outer Ø 10 mm / inner Ø 6 mm, up to 200 °C	6SSIL10X6
1.5 m hose, outer Ø 10 mm, inner Ø 7.5 mm	6BO526
Safety foot switch	0HR200-15
2 m power cable	3K120KR053075
Accessory case	363375
Four cylinder screws M04X045, V2A, ISO4762 (DIN912) to fasten the swivel arm to the Rework system	6M04X045E0912
Nozzle Ø 1.5 mm, for residual solder removal	0SC520-015
Nozzle Ø 2 mm, for residual solder removal	0SC520-020
Nozzle Ø 2.5 mm, for residual solder removal	0SC520-025
Nozzle Ø 3 mm, for residual solder removal	0SC520-030
Instruction manual	3BA00248-01

4.2.1 The accessory case

The accessories case contains the following parts for adjustments and maintenance work.

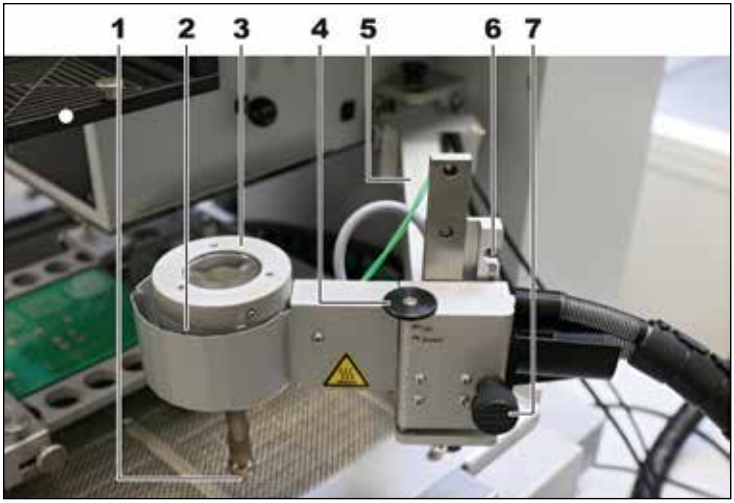
Description	Item number
Nozzle holder	328737
Nozzle Ø 1.5 mm, for residual solder removal	328764
Nozzle Ø 2 mm, for residual solder removal	328760
Nozzle Ø 2.5 mm, for residual solder removal	328762
Nozzle Ø 3 mm, for residual solder removal	328763
Knurled wrench SW12, to change the suction nozzle	363551
Hand drill handle, for cleaning the suction channel	364382
Drill chuck with hexagonal shank	363458
HSS spiral drill Ø 1.0 mm, DIN 340	363541
HSS spiral drill Ø 1.5 mm, DIN 340	363542
HSS spiral drill Ø 2.0 mm, DIN 340	363543
HSS spiral drill Ø 2.5 mm, DIN 340	363544
HSS spiral drill Ø 3.0 mm, DIN 340	363545
HSS spiral drill Ø 3.3 mm, DIN 340	363546
HSS spiral drill Ø 3.4 mm, DIN 340	363547
HSS spiral drill Ø 3.5 mm, DIN 340	363558
Pipe cleaning brush Ø 3.5 mm, M4, stainless steel	333004

4.3 Installation and assembly

The residual solder sucker can be operated with both nitrogen and compressed air. Ersa recommends the use of nitrogen. When it is operated with nitrogen, there is less oxidation at the suction point.

To install the residual solder sucker, a flat, sufficiently stable surface, at least 60 cm wide and 50 cm deep, must be available on the right of the Rework system. The foot switch is to be placed under the Rework system.
The current,nitrogen or compressed air supply required on site is specified in Chapter “2. Technical data“ on page 6. The residual solder sucker is assembled by an Ersa service employee.

4.3.1 The single components of the swivel arm



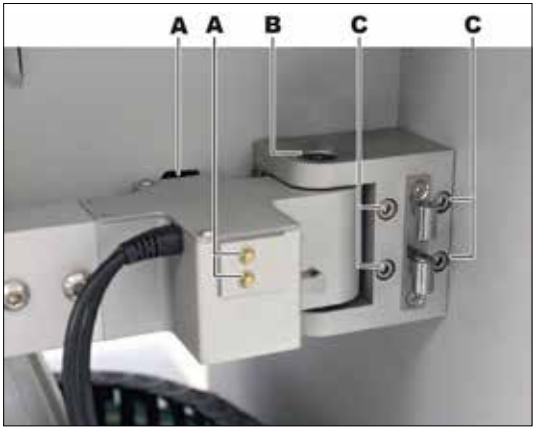
The assembled swivel arm with nozzle block

①	Suction nozzle.  **CAUTION! Burn danger!** The suction pipe and nozzle get very hot! Hot nitrogen/ air can escape!
②	Residual solder container. Must be emptied regularly after use. Read about this in “9.1 Emptying and cleaning the residual solder container“ on page 37.
③	Cover of the residual solder sucker. To clean the residual solder container, unscrew its cover by turning it counter clockwise. The internal baffle tray can be removed for cleaning.

④	Fine adjustment screw for adjusting the suction nozzle height. Works only in the suction nozzle lower locking position.
⑤	Swivel arm. For positioning the suction nozzle. It has a switching function in three swivel arm positions: • Swiveled to the right: Standby mode. The heating goes into standby temperature. Swiveling backwards into standby mode in the “cleaning” step will end this step. • Swiveled to the middle position: Warm-up mode. The heating has a preheating temperature. The blowing air is switched on. • Swiveled under the heating head, and foot switch operated: Heating mode. The heating heats up to working temperature. The blowing air and suction air are switched on.
⑥	Notch for the upper locking position of the nozzle block. The upper locking position is the prescribed position when swiveling under the heating head. **Caution! Risk of material damage:** When swiveling under the heating head, always lock the nozzle block into the upper position ⑥. In the lower position, the suction nozzle can hit the PCB or other components!
⑦	Locking knob for adjusting the nozzle block in the upper position ⑥. To release, first lift the nozzle block, then pull out the locking knob. **Caution! Risk of material damage:** When swiveling under the heating head, always lock the nozzle block into the upper position ⑥. In the lower position, the suction nozzle can hit the PCB or other components!

4.3.2 Assembling the swivel arm

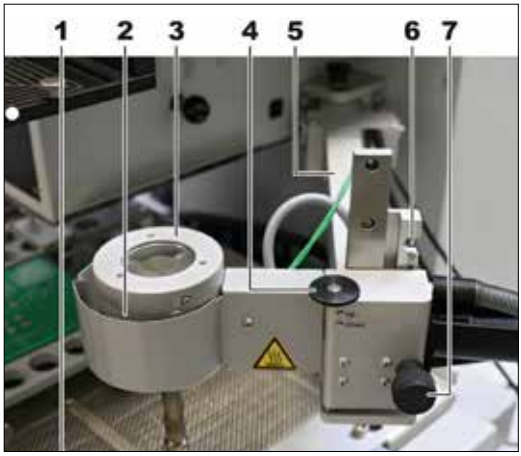
To assemble the swivel arm with the suction head, screw it on to the right side of the Rework system, as described below. If the holes needed for this operation are not available, please contact Ersa.



Swivel arm mounted

- Swivel the swivel arm mechanism into the operating (left) position, see figure.
- Fasten the swivel arm to the Rework system with the four screws Ⓒ provided.

Caution! Risk of material damage!
When swiveling the swivel arm to the Rework system, always lock the suction head into the upper position ⑦ in order to avoid hitting the PCB or any components! Read about this in “4.3.1 The single components of the swivel arm“ on page 13.



- To lock the suction head into the upper position, first lift the nozzle block and pull out the locking knob ⑦ , then push the nozzle block upwards until it locks in place in this position ⑥.
- By moving the swivel arm, ensure that the two limit switches Ⓐ (upper illustration) audibly switch into the end positions of the swivel arm!
- The hardness of the suction head ratchet in the end positions can be adjusted by varying the screw-in depth Ⓑ.
- Lock the swivel arm into the front position.

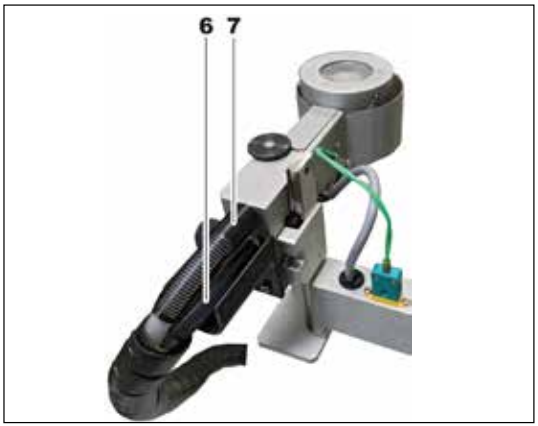
4.3.3 Installing and connecting the supply unit

The supply unit supplies the blowing air needed to heat the suction head and the PCB to be processed, as well as the suction air for sucking up and evacuating the residual solder into the specific container.

CAUTION! Eye injury danger!
Danger due to hose lines whipping and parts being hurled away! When working on the pneumatic/nitrogen system and on pressurized machine components, wear suitable safety goggles! Beware of stored energy!

- Place the supply unit to the right of the Rework system with the compressed air indicators facing forward.

Connect the following connectors to the connections on the left:



- Fit the suction air hose (observe the corresponding label) into connection ①, and attach it to the suction head through the upper connection ⑦ (observe the corresponding label) (see figure under “4.3.1 The single components of the swivel arm“ on page 13).

CAUTION! Risk of material damage!
The suction air and blowing air connections must not be confused!

- Fit the blowing air hose (observe the corresponding label) into connection ②, and attach it to the suction head through the lower connection ⑥.
- Pull the protective spirals on the two connections of the suction head over the connection points (⑥ and ⑦).
- Plug in the foot switch ③.
- Place the foot switch under the Rework system.
- Connect the heating plugs ④ and limit switches ⑤ and lock the fasteners.

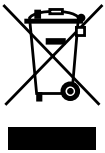
- Ⓓ Connect the factory-adjusted nitrogen/ compressed air connection (6 mm hose plug connection, max. 6 bar) at the rear of the supply unit. As to this, please also read Chapter “2. Technical data“ on page 6.
- Ⓔ Connect the factory suction air connection (push-in connection 6 mm hose, max. 6 bar). Please also read chapter “2. Technical data“ on page 6.
- Ⓐ Make sure that the intended line voltage matches the values specified on the nameplate.
- Ⓑ Plug in the supply cable on the right-hand side of the supply unit.
- Ⓒ Ejector (vacuum generator). If not already attached, screw in and tighten by hand.
- Check all cables and hoses for proper routing.

4.3.4 Attaching the nozzle holder and a suction nozzle

Note: The amount of suction air depends on the nozzle diameter. Smaller nozzles suck up less air.

- Take the knurled wrench, the nozzle holder and a suitably sized nozzle out of the accessory case for the first cleaning process.
- How to attach the nozzle holder and the suction nozzle is described in chapter “6.1 Changing the suction nozzle size“ on page 23.

CAUTION!
Disposal
Solder waste is hazardous and must not be disposed of with household waste!
a) Make sure any operating and auxiliary materials as well as replacement parts are disposed of in a safe and environmentally friendly manner!
b) Ensure the machine is disposed of in a safe and environmentally friendly manner!



Disposal information pursuant to Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment:
Products that are marked with the symbol of the crossed-out wheeled bin“2. Technical data“ on page 6 may not be disposed of with unsorted municipal waste. Specific collection points have been set up by municipalities for this purpose. Please enquire with your city or local authorities about the options available for the separate collection of old equipment. In doing so, you are making your contribution to reusing old equipment, or using it in other forms, to protect our environment and human health.

5. Start-up

5.1 The control elements on the supply unit

①	Suction air flow meter (normal liters NL/min.). Setting between 10 - 30 NL/min. For the blowing air/nitrogen, set the same value, or max. a 5 NL/min. higher value than suction air/nitrogen
②	Display
③	i-OP rotary encoder for menu operation.
④	Blowing air/nitrogen flow meter (normal liters NL/min.). Setting between 10 - 40 NL/min. For the suction air, set the same value, or max. a 5 NL/min. lower value than the blowing air. The higher the setting, the more cooling for the suction nozzle. **CAUTION: Risk of material damage!** Never operate the residual solder sucker without switching on the blowing air! The blowing air must always be switched on to avoid damaging the heating! Suction/blowing air is particularly needed at temperatures above 100 °C.

⑤	Suction air regulating knob. Counter clockwise rotation increases the suction air quantity. Suction air strength displayed in ①.
⑥	Blower. Do not cover!
⑦	Blowing nitrogen/air regulating knob. Counter clockwise rotation increases the hot gas flow. Blowing air strength displayed in ④.
⑧	Main switch
⑨	Blowing air maintenance unit
⑩	Ejector cartridge

CAUTION! Handling nitrogen system / pneumatic equipment
Oxygen can be displaced by nitrogen enrichment in the breathing air, therefore ventilate regularly or provide for air exchange.

5.2 Switching on the residual solder sucker

- Swivel the swivel arm to the position on the right (standby).
- Use the main switch ⑧ to turn on the residual solder sucker.

CAUTION: Risk of material damage!
Never operate the residual solder sucker without switching on the blowing air! The blowing air must always be switched on to avoid damaging the heating! (Setting 20 - 40 NL/min.). Suction/blowing air is particularly needed at temperatures above 100 °C!

CAUTION! Burn danger!
The suction nozzle is immediately activated after switch-on, with hot nitrogen/air flowing out! Also the parts bearing the suction nozzle can be very hot!

- The display shows the switch-on dialog box for 2 seconds.
- The residual solder sucker will then switch to the work dialog.
  The suction nozzle is heated to the preset standby temperature (e.g. 100 °C). Suction/blowing air is off.
  How to clean off residual solder is described in Chapter “6. Tutorial: Cleaning off residual solder“ on page 23.

5.3 Switching off the residual solder sucker

- Swivel the swivel arm to the position on the right (standby).
- Wait for the suction nozzle to cool down and for the temperature display to show the standby temperature.
- When the standby temperature is exceeded, the cooling air is switched off.
- Use the main switch (on the lower right of the basic unit) to turn off the residual solder sucker.

5.4 Display indicator

①	The position of the swivel arm and the preset temperature of the suction nozzle. Standby in the adjacent example figure: The swivel arm is swiveled to the position on the right. Heating is set to standby temperature. Suction/blowing air is off. Note: The default temperatures can be changed in parameter mode.
②	The position of the swivel arm determines the heating mode: Standby, warm-up or heating. See the following descriptions. Default settings: Standby temperature 100° C / 212 °F Warm-up temperature 200° C / 392 °F Heating temperature 320° C / 608 °F
③	Current temperature of the suction nozzle. It is determined by the swivel arm position.
④	Target temperature (working temperature) of the suction nozzle when the swivel arm is in the front operating position, and the foot switch is operated. This value can be changed at any time by turning and then pressing the i-OP.
⑤	Bar display of the current heating output.

If the settings have been password protected, a key symbol will appear on the bottom left.

5.4.1 Swivel arm switch positions in the display indicator

- When the swivel arm is swiveled to the position on the right, it is in standby position. The suction nozzle is heated to standby temperature (Default value 100 °C/212 °F). Blowing air is only flowed when it is necessary for cooling. The standby heating switches off after 5 minutes to save energy.

CAUTION! Burn danger!
The suction nozzle is heated immediately after switch-on, with hot nitrogen/air flowing out! Also the parts bearing the suction nozzle can be very hot!

- When it is swiveled to the middle position, the suction nozzle is heated to warm-up temperature (preheat temperature, default value 200 °C / 392 °F). The suction/blowing air is switched on.

Caution! Risk of material damage: Always lock the nozzle block into the upper position when swiveling under the heating head. In the lower position, the suction nozzle can hit the PCB or other components!

- If the swivel arm is swiveled to the front position under the heating head, the ready position will be reached (default value 290 °C/608 °F).
- The residual solder sucker is in cleaning mode (heating) when the swivel arm is swiveled into the operating position at the front, under the heating head, and the foot switch is operated. The suction nozzle is heated to the working temperature (in the adjacent example figure 290 °C). The blowing air and suction air are switched on.
  The working temperature is permanently displayed at the bottom. It can be changed at any time by turning and then pressing the i-OP.

Preset values and setting ranges		
Default setting Standby temperature	100 °C	Adjustable from 100 °C to 200 °C
	212 °F	212 °F to 392 °F
Default setting Warm-up temperature	200 °C	Adjustable from 150 °C to 300 °C
	392 °F	300 °F to 575 °F
Default setting Heating temperature	320 °C	Adjustable from 150 °C to 450 °C
	608 °F	300 °F to 842 °F

6. Tutorial: Cleaning off residual solder

To operate the residual solder sucker, you will also need to read the Rework system instruction manual.

Note! Use a solder fume extractor!
Solder fumes are dangerous to health. That is why you should always use a solder fume extractor. We recommend the Ersa “Easy Arm” solder fume extractor with pre-filter, HEPA particle filter and activated carbon filter. A suitable connection for the solder fume extractor is available on the appliance. The solder fume extractor also prevents the appliance from quickly getting dirty.

6.1 Changing the suction nozzle size

Note: The amount of suction air depends on the nozzle diameter. Smaller nozzles suck up less air.
The suction nozzle size must be suitable for the suction point. There are three other nozzle sizes to choose in the accessory case. The available nozzle outer diameters are: Ø 1.5 mm, Ø 2 mm, Ø 2.5 mm and Ø 3 mm. Use the largest possible nozzle for your requirements. Please read chapter “11. Spare parts“ on page 43.

CAUTION! Burn danger!
The suction nozzle is heated immediately after switch-on, with hot nitrogen/air flowing out! Also the parts bearing the suction nozzle can be very hot! Wait for the nozzle area to cool down and use the knurled wrench.

CAUTION! Wear protective gloves!
Touch hot surfaces only with heat-resistant protective gloves!

- Switch off the residual solder sucker. As to this, please read Chapter “5.3 Switching off the residual solder sucker“ on page 21.
- Swivel the swivel arm to the position on the right (standby).

Use the knurled wrench in the accessory case to screw on and unscrew the suction nozzle. The nozzle is held by the nozzle holder.

- Unscrew the nozzle holder (see following illustration). To avoid material damage, do not exert any strong lateral forces on the nozzle tube.

Place the knurled wrench on the nozzle holder, ready for screwing.

- Take the nozzle out of the nozzle holder and apply the new nozzle; see the following figure.

Nozzle and nozzle holder

- Screw on the new suction nozzle. The connection must be airtight.

6.2 Precisely adjusting the suction height and setting up the suction point

Setting the proper distance between the suction nozzle and the guide plate surface is important for cleaning. Set the distance between nozzle and solder to approx. 0.5 mm. To precisely adjust the suction height, the suction nozzle must be swiveled over the PCB suction point.

Suction nozzle in operating position

- Make sure that the nozzle block is locked into the upper position.

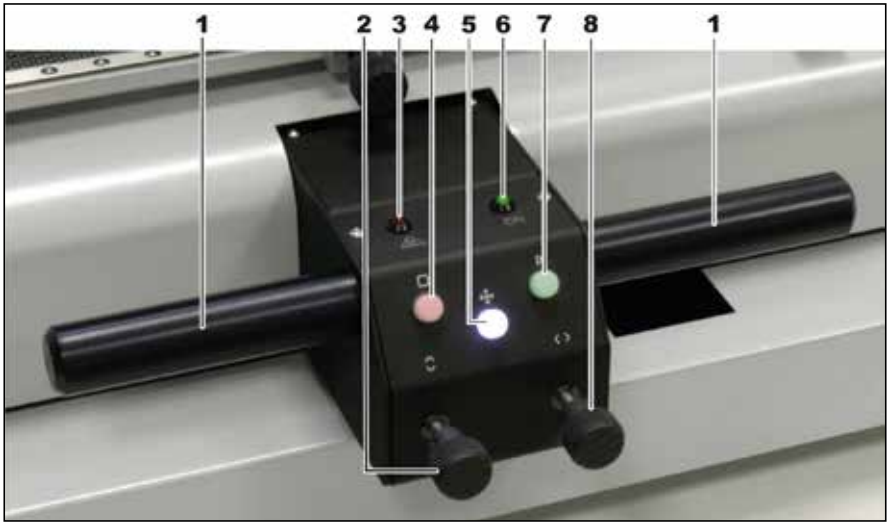
Caution! Risk of material damage!
Always lock the nozzle block into the upper position when swiveling under the heating head. In the lower position, the suction nozzle can hit the PCB or other components!

- Swivel the suction nozzle to the front position.

CAUTION: Risk of material damage!
Avoid any excessively long abidance of the suction head over the PCB to prevent hot gas from delaminating/burning the PCB!

Caution! Risk of material damage!
Should the suction nozzle laterally abut any components or solid solder, the components or the suction nozzle may be damaged!

- Bring the point with the residual solder to be sucked under the suction nozzle.
  To do so, on the HR 55 0 rework system, hold down the white lit unlock button ⑤ on the Rework system's control panel for the cross table to be moved horizontally. As to this, please read the Rework system instruction manual.

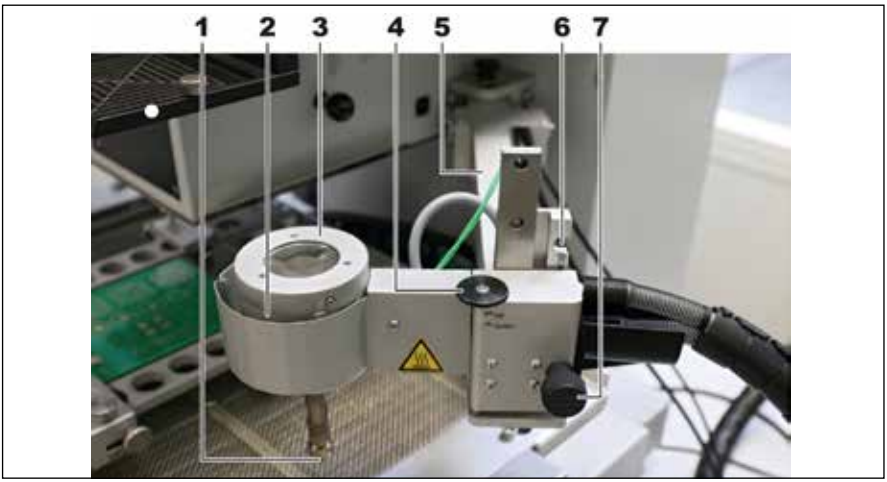


HR 550 rework system: ⑤ Unlock button for the cross table

- Use the joystick of the HR 550 XL rework sytem control unit to move the bottom heating. Keep the track clear, risk of collision! As to this, please read the Rework system instruction manual.

HR 550 XL rework system: ④ Joystick to move the bottom heating. Keep the track clear, risk of collision!

- On the suction point, use the fine adjustment knob (④ following figure) to set an approx. 0.5 mm distance between the solder and the suction nozzle.



④ *Fine adjustment knob for the suction nozzle height*

6.3 Cleaning off residual solder

CAUTION! Burn danger!
The suction nozzle is heated immediately after switch-on, with hot nitrogen/air flowing out! Also the parts bearing the suction nozzle can be very hot!

CAUTION! Risk of material damage!
Never operate the residual solder sucker without switching on the blowing air! The blowing air must always be switched on to avoid damaging the heating! Suction/blowing air is particularly needed at temperatures above 100 °C.

Caution! Risk of material damage!
Always lock the nozzle block into the upper position when swiveling under the heating head. In the lower position, the suction nozzle can hit the PCB or other components!

Note! Use a solder fume extractor!
Solder fumes are dangerous to health. That is why you should always use a solder fume extractor. We recommend the Ersa “Easy Arm” solder fume extractor with pre-filter, HEPA particle filter and activated carbon filter. A suitable connection for the solder fume extractor is available on the appliance. The solder fume extractor also prevents the appliance from quickly getting dirty.

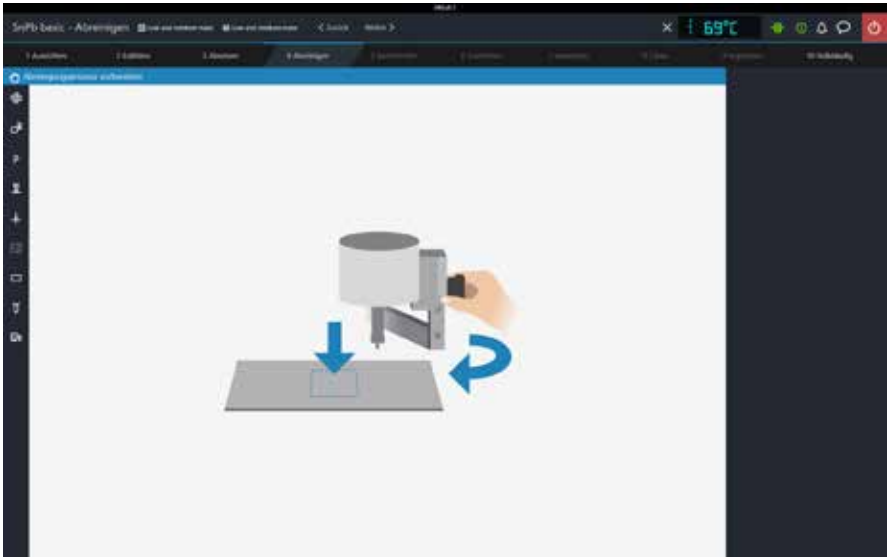
Please read Chapter “5.2 Switching on the residual solder sucker“ on page 20.
The default temperatures for the work steps and further presets for cleaning off residual solder can be set through the display. Read about this in “7. The [Parameter] menu“ on page 32.

The default temperatures for the work steps and further presets for cleaning off residual solder can be set through two menus. With regard to this, please read the Chapters from no. “7. The [Parameter] menu“ on page 32 onwards.

The hot gas of the residual solder sucker interacts with the bottom heating of the Rework system. The PCB thickness is critical for the necessary heat input. In particular, adjust the bottom heating to your specific requirements.

Requirements:

- The Rework system is in the [Cleaning] step, the dialog box [Preparing the cleaning process] is displayed.



- All parameters, in particular [Bottom heating temperature (T5 on the heating curve)] and [Maximum bottom heating run time], have been properly set on the Rework system.
- The swivel arm is swiveled to the position on the right. “Standby” is shown on the display.
- The appropriate suction nozzle has been inserted.
- The nozzle block is locked into the upper position.

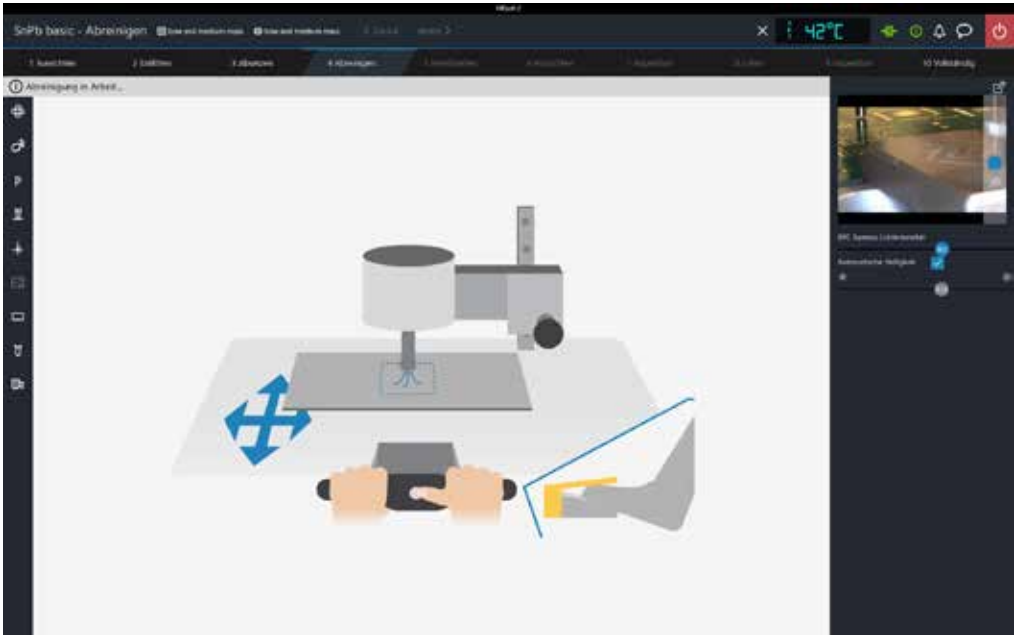
- Make sure that the working temperature has been properly set for cleaning off residual solder. It is shown at the bottom of the display. The working temperature can be changed at any time by turning and then pressing the i-OP.
- Place the thermocouple in a suitable location that is not affected by the hot gas from the suction nozzle. The Rework system heats to the specified temperature during cleaning.
- Visually check how the residual solder is distributed, and what the vertical distribution is. Residual solder must have melted before it can be sucked up.

CAUTION! Risk of poisoning through inhalation!
During cleaning, harmful emissions occur. Ensure adequate ventilation or a fume extractor. Adhere to the safety data sheets for the flux materials used.

- Apply some liquid flux material to the area to be cleaned.
- Swivel the swivel arm to the middle position (45-degree angle). The cooling air and the blowing air are switched on. [Warm up] is shown on the display. The [Cleaning in progress] graphic text is displayed on the Rework system.
- Swivel the suction nozzle into the front position and lock it in place. “Ready” is shown on the display. The cooling air is switched off.

CAUTION: Risk of material damage!
Avoid any excessively long abidance of the suction head over the PCB to prevent hot gas from delaminating/burning the PCB.

- The dialog box [Cleaning in progress] is displayed on the Rework system:



- Bring the spot with the residual solder to be sucked under the suction nozzle.
  To do so, on the HR550 rework system, hold down the white lit unlock button on the Rework system's control panel for the cross table to be moved in the X and Y directions. As to this, please read the Rework system instruction manual.
  To move the bottom heating, use the joystick of the HR 550 XL rework system control unit. Keep the track clear, risk of collision for the bottom heating! As to this, please read the Rework system instruction manual.
- Check on the screen of the Rework system whether the temperature measured by the thermocouple matches the heating energy required for the bottom heating.
- To lower the nozzle block, lift it up while pulling out the locking knob, then carefully lower the nozzle block. Set the distance between nozzle and solder to approx. 0.5 mm.
  On the HR 550 rework system, grasp the control panel by the handles and hold down the unlock button. Move to the start position of the cleaning process. Should there be any hindrances, lift the nozzle block by hand.

- Use the joystick on the control unit to move to the cleaning start position on the HR 550 XL rework system. Should there be any hindrances, lift the nozzle block by hand.
- When the suction nozzle is positioned over the suction point, press the foot switch. “Heating” is shown on the display. The temperature rises to working temperature and the suction nozzle starts operating.
- Press the foot switch for as long as the sucker should work.
- Observe the display on the Scavenger to see the temperature of the hot gas flowing out.
- Move the bottom heating to suck up the residual solder across the PCB. Adjust the movement speed. Bear in mind that residual solder must have melted before it can be sucked up.
- To pause cleaning, place the locking knob for adjusting the nozzle block height into the upper position. Do not swivel the swivel arm to the position on the right (standby), otherwise the [cleaning] step will be ended. The swivel arm can be swiveled into the middle position (warm-up) to continue cleaning afterwards.
- After cleaning, swivel the swivel arm to the position on the right (standby). The cooling air will cool the suction nozzle until the standby temperature is reached.
- Click on the [Next] button to switch to the next work step.

After several cleaning processes, check whether the residual solder container needs to be emptied. Read about this in “9.1 Emptying and cleaning the residual solder container“ on page 37.

To switch off the residual solder sucker, please read Chapter “5.3 Switching off the residual solder sucker“ on page 21.

7. The [Parameter] menu

For operation through the display, two menus can be called up: the parameter menu and the configuration menu. Standard settings for the work process are made in the [Parameters] menu.

7.1 Calling up the [Parameter] menu

- Hold down the i-OP for 2 seconds. The parameter menu is displayed.
  An info text on the selected menu item is displayed at the bottom.

7.2 Editing a parameter value in a menu

- Select the desired parameter by turning the i-OP.
- Press the i-OP to select the parameter value.
- Edit the parameter value by turning the i-OP.
- Press the i-OP to save the settings.
- To leave the parameter menu, select the **END** menu item and press the I-OP.

7.3 The [Standby temperature] menu item

- Temperature of the suction nozzle in standby mode, when the swivel arm is swiveled to the position on the right.

7.4 The [Preheat temperature] menu item

- Temperature of the suction nozzle in warm-up mode (preheating) when the swivel arm is in the middle position.

7.5 The [Target temperature] menu item

- Temperature of the suction nozzle in heating mode (working temperature) when the swivel arm is swiveled to the front, into the operating position, while pressing the foot switch at the same time.
  In the [Configuration] menu, a temperature window for the working temperature (target temperature) can be determined, with an optical

and acoustic signal when this temperature window is entered and left.
The target temperature is permanently displayed at the bottom, and can be edited there at any time by turning and then pressing the i-OP.

7.6 The [Calibration temperature]

- Do not edit the +000 °C set value.

7.7 The [Energy] menu item

- Define the heating performance with the [low], [med.] or [high] parameters in order to define the inertia of temperature re-adjustment.
- [low]: Slow re-adjustment.
  For residual solder operations with low heat requirements.
- [med.]: Normal re-adjustment.
  For residual solder operations with average heat requirements.
- [high]: Quick re-adjustment.
  For residual solder operations with high heat requirements.

7.8 The [Idle condition] menu item

- Time period in which the standby temperature is maintained in standby mode (swivel arm swiveled to the position on the right) before the heating switches off. If the swivel arm is moved, the heating (as well as the suction air and the blowing air) will switch on again.

8. The configuration menu

For operation through the display, two menus can be called up: the parameter menu and the configuration menu. Standard settings for the residual solder sucker are made in the [Configuration] menu.

8.1 Calling up the [Configuration] menu

- When switching on the residual solder sucker, hold down the i-OP for two seconds.

- [EDIT]: Open the [Configuration] menu.
- [EXIT]: Leave the configuration range.
- [DEFAULT]: Restore the factory settings of all parameters in the configuration menu.

The following settings can be adjusted in the [Configuration] menu:

- Process alarm (acoustic signal for temperature window)
- Password (protects settings against editing)
- Unit (°C or °F)
- ↑ Temperature window upper limit
- ↓ Temperature window lower limit

- Calling up a menu item and editing parameters as in the [Parameters] menu.
- To leave the configuration menu, select the **END** menu item and press the I-OP.

8.2 The [Process alarm] menu item.

If the process alarm is switched on, a double beep indicates that the target temperature range has been reached. A simple beep indicates that the temperature range has been exited.
Defining the [Temperature range with both ↑ and ↓ menu items].

8.3 The [Password] menu item

- The current settings of the station can be protected with a four-digit password (0001-9999). Password protection is not activated at the factory and [0000] is displayed in the password input window.
- The key symbol indicates that a password has been set.

Memorize the password or write it down and keep your note in a safe place. A forgotten password can be re-activated by Ersa only.

8.3.1 Defining a password

- Activate the [Configuration] menu upon switch-on.
- Select the [Password] menu item and activate it by pressing the i-OP.
- Select the desired password (number between [0001] and [9999]) by turning the i-OP. Note the password down.

- Confirm the password by pressing the i-OP. [Password activation] is displayed.
- To cancel a defined password, select [Cancel] or the [>>>] function, whereas to define a password, confirm by pressing the i-OP. [Password activation] is displayed:

- Select the password once more and confirm by pressing the i-OP.
  The password has been set. [PASSWORD PROTECTION: ACTIVE] is displayed at the bottom.

8.3.2 Editing the password

If the user wants to edit a password, the active password protection must first be canceled by entering the current password.
After the correct entry, the new password can be set. If the number is fully entered by using the PUSH function, a message will appear that password protection has been enabled. This message is intended to make the meaning of this function clear to the user.
If the function is canceled, the previous state will be retained.
If the user continues the [>>>] dialog, the password must be repeated again for activation.

8.3.3 Editing parameters after setting the password

If parameter values are to be edited without deactivating the password, you will be prompted to enter the password when you try to edit it. If the correct password is entered, the user has approx. 30 s to make the change.

8.3.4 Defining a password

If you have forgotten your password, it can only be deactivated again by Ersa Service. Please contact Ersa GmbH with your address, name, invoice number and soldering station serial number (see nameplate).

8.4 The [Unit] menu item

Selection of the temperature unit Degrees Celsius [°C] or Fahrenheit [°F].

8.5 The [Language] menu item

Selection of the display language.

8.6 The [Temperature range] ↑ or ↓ menu items

A temperature range can be defined for the suction nozzle by an upper and a lower temperature value. If the suction nozzle temperature is within this range, the display will show [OK]. This only happens in the work position.

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

In the [Process alarm] menu item, an acoustic signal can also be switched on to indicate that the temperature range has been reached and exited.

9. Service and maintenance work

To ensure reliable operation and guaranteed performance, use original Ersa consumables and spare parts only!

WARNING! Electric shock danger!
Do not open the appliance! There are only maintenance-free parts inside the appliance.

DANGER! Risk of electric shock!
Always pull out the mains plug before opening the device!
Voltage also present when main switch is turned off!
Maintenance work inside the device must always be carried out by a qualified electrician!

CAUTION! Wear protective clothing!
Wear appropriate protective clothing (protective gloves, safety goggles, etc.) when working!

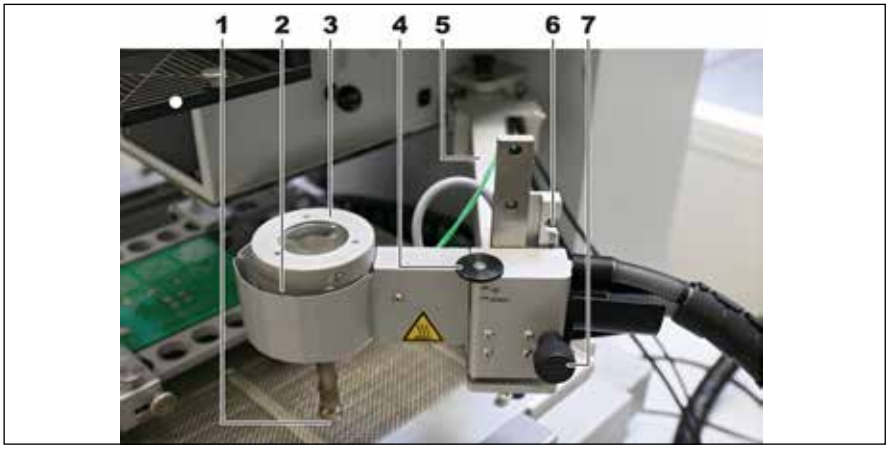
9.1 Emptying and cleaning the residual solder container

The residual solder container must be emptied and cleaned regularly.

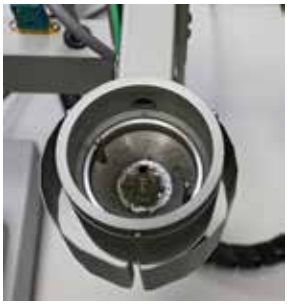
CAUTION! Burn danger!
Switch off the appliance before starting work and let it cool down!

CAUTION! Wear protective gloves!
Touch hot surfaces only with heat-resistant protective gloves!

- Unscrew the cover of the residual solder sucker ③ by turning it counter clockwise.



- With a scraping object, e.g. a screwdriver, scrape out any solder residue on the underside of the cover (figure on the left) and in the baffle tray. The internal baffle tray can be removed for cleaning. Use the steel brush included in the accessories to rub the baffle tray.



Checking and cleaning the cover and baffle tray

CAUTION! Dispose of old materials safely!

Solder waste is hazardous and must not be disposed of with household waste. Make sure any operating and auxiliary materials as well as replacement parts are disposed of in a safe and environmentally friendly manner. Adhere to municipal waste disposal regulations.

9.2 Cleaning the suction channel and the suction nozzle

If the amount of suction air is permanently insufficient, the suction channel and/or the suction nozzle must be drilled out using the drill available in the service tools.
Clogging in the suction channel can also be recognized by visually inspecting the free suction channel after removing the residual solder container cover.

CAUTION! Burn danger!
Switch off the appliance before starting work and let it cool down!

CAUTION: Risk of material damage!
When working with the drill, the drilling tool must only be directed exactly into the hole! The suction tube must not be exposed to any compressive, tensile or torsional forces! The residual solder container must not be moved during the drilling procedure!
Work extremely carefully - the suction tube is slightly suspended!

Careful drilling

To clean the nozzles, use 1.0 to 2.5 mm drill bits.
Use the 3.0 and 3.4 mm drill bits to clean the top tube of the residual solder container.

- Switch off the residual solder sucker. As to this, please read Chapter“5.3 Switching off the residual solder sucker“ on page 21.
- Swivel the swivel arm to the position on the right.
- Stabilize the swivel arm with one hand when drilling. First use a thin drill, then work free with a thicker drill. Stabilize the swivel arm with one hand when drilling.

9.3 Check the vacuum filter at the nitrogen/air inlet and the filter control valves

To ensure unhindered passage, the vacuum filter of the nitrogen/air inlet and the filters of the control valves must be checked occasionally for permeability. See also chapter “11. Spare parts“ on page 43.

- Check the white vacuum filter ① and the blue filters of the control valves in the window sight glasses ② for contamination, permeability and wear.

The white vacuum filter of the suction air ① and the blue control valve filters ②.

- Severe discoloration indicates that the filters must be replaced.
- The residual solder suction is switched off.
- Unscrew the vacuum filter ① or unscrew the lower part with the sight glass ②.
- Now unscrew the filter and replace it.
- Screw the cover back on.
- Finally, check the hose connectors for leaks, discoloration and porosity. Have a skilled technician replace it if necessary.

9.4 Checking the ejector cartridge for dirt and cleaning it

The ejector generates the suction air. In order to guarantee the unobstructed passage of suction nitrogen/air, the ejector cartridge must be checked for permeability. To do so, visually check the ejector cartridge and clean it if necessary:

- Unscrew the ejector cartridge on the back of the supply unit with a size 14 open-ended spanner, see figure.
- Remove the cartridge and check it for dirt, see figure below.
- Clean if necessary. To do so, blow off with air or clean under running water.
- When the cartridge is dry, fit it in again and tightly screw on the ejector cartridge.

The cartridge removed for cleaning

10. Troubleshooting

10.1 General errors

Note that a defective fuse may also indicate a deeper cause of failure. Simply changing the fuse is therefore generally not sufficient.

10.2 Error indication

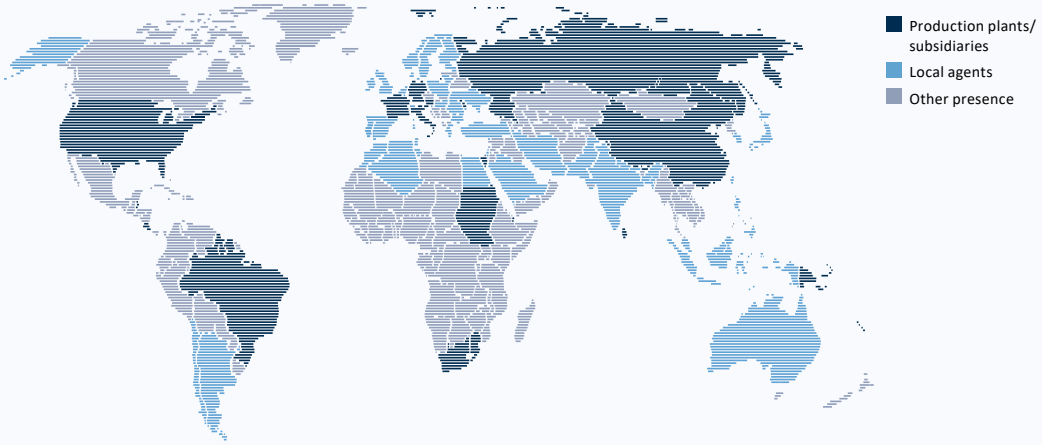
If errors occur, an error code is displayed. A triangular pictogram with an exclamation mark appears in the display of the soldering station with the error code. An info text is displayed at the bottom.
Only after the error has been eliminated and acknowledged with the i-OP can the residual solder sucker be put back into operation.

Code	Displayed text	Cause	Remedy
7	[H.E. PLUGGED? THERMOCOUPLE?]	Heating element improperly installed. Temperature sensor error.	Properly install heating elements Have soldering tools checked
71		Error in heating winding	Replace heater assembly
8	[HEATING ELEMENT?]	Defective heating element.	Check the heating element. Check the station

11. Spare parts

Description	Item number
Silocon tube, Ø 10mm/Øinner 6 mm, up to 200° C, 2,5 m	6SSIL10X6
Filter cartridge for vacuum filter 1/4	381371
Filter cartridge filter control valve MS4-LFP	381372
Residual solder sucker nozzle, Ø 1.5 mm	0SC520-015
Residual solder sucker nozzle, Ø 2 mm / packed	0SC520-020
Residual solder sucker nozzle, Ø 2.5 mm	0SC520-025
Residual solder sucker nozzle, Ø 3 mm	0SC520-030
Heating element exchange assembly	0SC540-01
Residual solder container exchange assembly	0SC540-02
Thermo couple, MTE207 Type K	337846

Electronics Production Equipment
worldwide present



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

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

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

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

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

Ersa France
Division de Kurtz France S.A.R.L
15 rue de la Sucharde
21800 Chevigny Saint Sauveur
France
Phone +33 3 80 56 66 10
info-efr@kurtzersa.com
www.kurtzersa.com

Kurtz Holding GmbH & Co.
Beteiligungs KG
97892 Kreuzwertheim/Germany
info@kurtzersa.de
www.kurtzersa.com

kurtz ersa