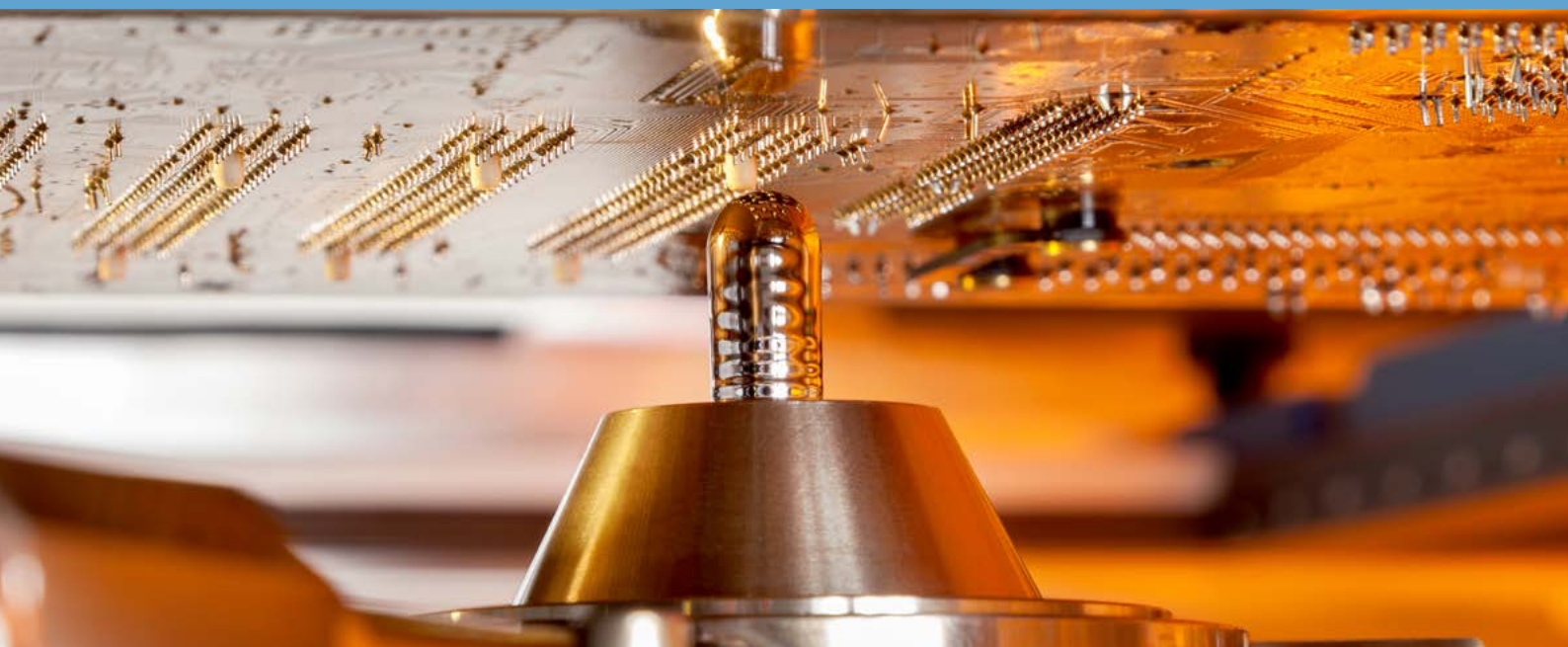# SMARTFLOW Selective Soldering System
## Compact without compromises





kurtz ersa

## Highlights of
## Ersa SMARTFLOW

- Large printed circuit board formats
- High ease of servicing
- Perfect for cellular manufacturing
- All-over heating (optional)
- Wear-free induction pump
- Modern process visualisation with
  ERSASOFT 5

## ERSASOFT 5
## operating software

- Modern user interface
- Intuitive operation
- Multi-touch operation
- Integrated graphic programming
- User guidance through assistance
  functions
- PIP function (Picture in Picture)
- Trace data in the ZVEI standard



*Ersa SMARTFLOW*
*Selective Soldering System*

# Compact selective soldering
## Smart technology
## for your electronics manufacturing

As a leader in selective soldering technology, Ersa has expanded its range of products in this sector by a compact selective soldering system. The SMARTFLOW has a smaller footprint than its predecessor from the VERSAFLOW. This batch system impresses with its latest technology and easy operability.

The SMARTFLOW manages with an area barely more than what would be required for a modern hand soldering work station. It is thus perfect as an entry-level system or for smaller productions. With the SMARTFLOW large printed circuit boards with dimensions up to 20 x 20" (508 x 508 mm) can easily be manufactured.

Going by the "Compact without compromises" motto, you do not need to dispense with anything with this system. Just like all the selective systems from the house of Ersa, this machine is also equipped with

the low-maintenance and wear-free solder pot with induction pump and has all-over preheating, which can be segmented depending on the heat requirement and assembly size. The reliable Ersa high-precision spray flux system is also used here.

SMARTFLOW is the first system to be equipped with modern ERSASOFT 5 operating software. This new version of our time-tested machine software impresses with its user-oriented structure in addition to modern visualisation. Thanks to individual user interfaces, every user group gets the required data and information at a glance. The new interface is also convenient when it comes to process monitoring. Thanks to modern PIP technology (Picture in Picture), soldering parameters and a live process picture are available at a glance, for optimum control during every single soldering process.

This system is also surprisingly smart during maintenance work. Thanks to the doors that can be opened widely, all the work can be carried out from one side of the machine. This reduces the required expenditure of time significantly and thus increases the machine availability.

The installation of the machine is just as simple as the servicing. It is ready for use in almost no time after connecting it to the current, compressed air and nitrogen supply.

Easy installation, servicing and operability make SMARTFLOW the perfect compact selective soldering system, which also impresses selective-soldering professionals with its uncompromising technology.

*High single soldering nozzle with a narrow diameter – ideal for solder joints between high components*

*right:
Mini-vario-wave soldering nozzle for optimised throughput*

# Available options
## Selective soldering designs for your production

We want to offer our customers customised solutions for every soldering task. This reflects in our machine designs. A wide range of options gives you the chance to adapt your selective soldering system perfectly to your production environment. SMARTFLOW is thus a future choice, also for smaller manufacturing processes and beginners in selective soldering technology.

We would like to present a few features for you here, which make the entry into the world of selective soldering technology very easy.

### Pre-heating
The preheating ensures optimum through heating of the printed circuit board before the actual soldering process. Assemblies that require very little heat can also be machined without additional preheating. In addition, different heating concepts can be selected from, depending on the requirements of the assembly to be soldered. Infrared lower heating as well as a combination of infrared lower and upper heating is possible. Depending on the size of the assembly, the 8 emitters of the heating modules can be partially connected in groups (4-2-2). Energy-efficient preheating is the focus here.

### Automatic solder wire feeder
The automatic solder wire feeder supports the stability of your manufacturing processes. The solder level is monitored permanently and maintained at a specified level. Manual filling of the pot and thus associated machine idle times are dispensed with.

### Process monitoring camera
This camera visualises the soldering process and allows it to be traced in detail. The quality of the solder joints is thus verifiable in real-time. Unlike other machines, SMARTFLOW does not need any $2^{nd}$ monitor for this. The user can comfortably monitor the soldering process using the PIP function directly on the control panel.

### Ersa CAD Assistant 3
Allows offline programming of soldering programs. You can use the CAD Assistant to create the printed circuit board directly on the machine or on an external PC soldering program on the basis of CAD data. The set-up times during product change or restart can thus be reduced to a minimum.

# Easy selective soldering
## Plug'n'Play



*ERSASOFT 5 with user-oriented menu navigation and PIP function for optimum overview*

The SMARTFLOW basic machine also impresses with its comprehensive basic configuration. In addition, the system can be equipped such that more complex assemblies can also be machined easily, without having to be a selective soldering professional for this.

In addition the SMARTFLOW 2020 can be enhanced with these options:

- Spray jet monitoring system
- Failure monitoring for pre-heating emitters
- Nitrogen heating
- Mini-Vario-Wave
- Handheld scanner for reading out product information
- Start button by foot
- Redundant data storage
- **Pre-heating:**
  **Lower IR pre-heating or combined upper and lower IR pre-heating**
- **Automatic solder wire feeder**
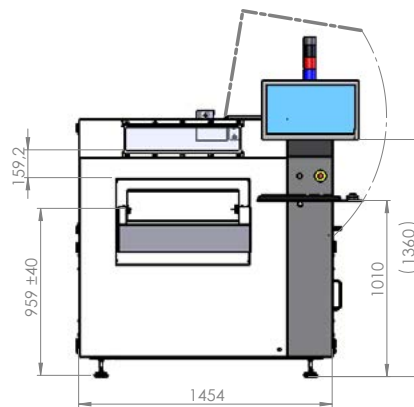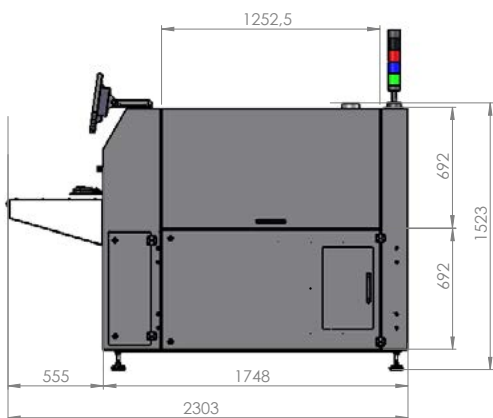- **Process monitoring camera**
- **Ersa CAD Assistant 3**

## Basic configuration

- 3-axis positioning system
- Printed circuit board adapter for a maximum printed circuit board size of 508 x 508 mm (20 x 20")
- High-precision spray flux system
- Soldering module with a low-mainte-nance electromagnetic solder pump
- Convenient PC control with touch monitor
- ERSASOFT 5 operating software
- Exhaust air monitoring
- Display of the operating status
- Process visualisation including sol-der records, Process data recorder, Monitoring function, service and malfunction information notification

# Ersa SMARTFLOW 2020
## Technical data and design



### Dimensions

| | |
|---|---|
| Length: | 1,748 mm [69"] |
| Width: | 1,454 mm [57"] |
| Height: | 1,523 mm [60"] |
| Weight: | 900 kg [1,984 lbs] |
| Paint: | RAL 7035/7016 |

### Handling System

Universal work piece carrier

| | |
|---|---|
| Working angle: | 0° fix |
| PCB width: | 15 - 508 mm [0.6 - 20"] |
| PCB length: | 15 - 508 mm [0.6 - 20"] |
| PCB top-side clearance: | max. 80 mm [3.15"] |
| PCB bottom-side clearance: | max. 60 mm [2.4"] |
| Clearance from PCB edge: | 3 mm [0.1"] |
| Working height: | 959 mm ±40 mm [37.75" ±1.6"] |
| Pallet/PCB weight: | max. 3 kg [6.6 lbs] |

### Flux module

Precision spray fluxer
installed on joint axes system

| | |
|---|---|
| Flux tank: | 1.8 l |
| Positioning speed: | 1 – 200 mm/s [0.04 – 8"/s |
| Repeatability: | ±0.15 mm [0.06"] |

### Preheating module (option)

| | |
|---|---|
| Dynamic bottom-side infrared emitters: | max. 8 kW |
| Dynamic top-side infrared emitters | max. 8 kW |

### Solder module

Stainless steel solder pot, integrated in a 3-axes positioning system (x/z), motor driven (PCB moves in y-direction)

| | |
|---|---|
| Solder nozzle: | Single-Point, high-precision nozzle |
| Smallest solder nozzle diameter: | AD 4.5 mm [0.2"] (further nozzles on request) |
| Wave height: | max. 5 mm [0.2"] |
| Solder volume: | approx. 13 kg [29 lbs] Sn63Pb; approx. 12 kg [26 lbs] lead-free alloy |
| Solder temperature: | max. 320° C [608 °F] |
| Heating time: | 75 min bis 280 °C [536 °F] |

### Nitrogen technology

| | |
|---|---|
| Nitrogen supply: | to be supplied locally |
| Nitrogen injection: | $N_2$ cover over the solder pot |
| Required pressure: | 6 bar [87 PSI] |
| Nitrogen consumption: | approx. 1.5 m³/h [53 ft³/h] |
| Particle cleanliness: | Recommended 5.0 |

### Machine exhaust (basic machine)

| | |
|---|---|
| Exhaust stack: | 1 St., AD 150 mm [6"] |
| Exhaust volume per stack: | 200 m³/h [261 yd³/h] |

### Electrical data

| | |
|---|---|
| Power: | 5-wire, 3x 230/400 V, N, PE or 4-wire, 3x 277/480 V, N, PE |
| Power tolerance range: | ±10 % |
| Frequency: | 50/60 Hz |
| Power consumption: (incl. Bottom-side preheating system) | 22 kW |
| Max. fuse rating: | 3 x 30 A |

### Ambient conditions/noise level

| | |
|---|---|
| Ambient temperature: | 15 – 35 °C [59 – 95 °F] |
| Permanent noise level: | < 60 dB [A] |

### Control

Computer-based microprocessor

Process visualization

Input of all process parameters

7 day time clock

Machine status control

Password function

Production-, process- and traceability data recording

### Basic design & construction

Solid steel construction

Easy access to all machine modules

Emergency-Stop button

# SOLUTIONS4You
## Ersa product portfolio



### ■ Screen & Stencil Printer

VERSAPRINT screen printing systems with fully integrated in-line post print inspection offer unique cost and technology benefits. The revolutionary LIST camera offers an inspection beyond compare: detection of paste on pad , print offset, bridges and stencil blockages in in-line speed.



### ■ Inspection SMT / BGA

No matter if a reworked BGA needs to be inspected or the parameters of a production line need to be verified – ERSASCOPE inspection systems for the damage free inspection of covered solder joints have become the standard in electronic productions.



### ■ Reflow Soldering

Ersa reflow soldering systems convince by their extraordinary thermal performance, highest machine availability and low operating costs. The Ersa HOTFLOW 4 series has mastered to significantly reduce the energy and N2 consumptionon a comparable performance level.



### ■ Soldering and Desoldering

Ersa soldering and desoldering stations impress by their compact size, high performance, energy efficiency and low operating costs, since inexpensive exchange soldering tips are used. Being the i-CON family's flagship it offers the user 4 tools to master demanding soldering applications.



### ■ Selective Soldering

As technology leader Ersa delivers perfect solutions for all selective soldering tasks: the scope of configurations ranges from start-up to high-end, from inline to cell production, from single to multi wave soldering and from highest flexibility to highest throughput and make the VERSA-FLOW, ECOCELL and ECOSELECT systems the ideal match for the demands of the users.



### ■ Solders, Solder wires & Fluxes

All about soldering - supplied by one source: beneath special tools, soldering tools and temperature measuring devices Ersa also offers operating supplies for the production and repair of PCBs. Ersa solder wires contain only high quality raw materials and are manufactured according to most modern standards to meet all quality requirements.



### ■ Wave Soldering

The cost-benefit ratio of wave soldering is still outstanding. But the demands of the users differ widely. Therefore Ersa offers an extensive range of individually configurable systems, from basic to high-end.



### ■ Solder Fume Extraction

Ersa solder fume extractions are the efficient and economic way to ensure clean PCBs an healthy breathing air. The big nozzles, which are available in different shapes, efficiently extract the solder fumes of an entire workspace.
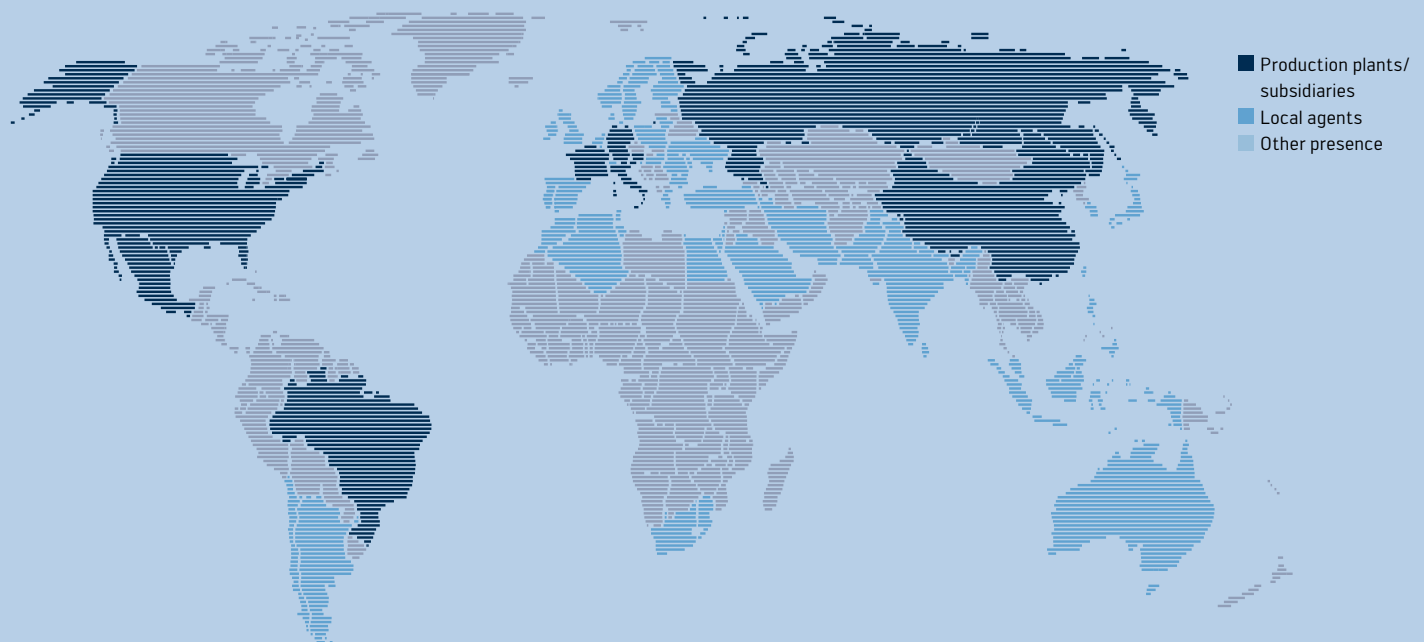


### ■ Rework

For more the a decade more then 5000 users all around the world benefit from the patented Ersa IR rework technology. Besides their excellent cost-benefit-relation Ersa systems have conquered their leading market position for their outstanding results even in demanding rework tasks.



### ■ Services/Employer Trainings

Beside the broad product range Ersa offers comprehensive services like employer training and qualification, machine and production process audits, maintenance contracts, ramp-up support, machine capability studies or online spare part catalogues. Tell us your needs - we find the solution!

# Electronics Production Equipment
## Worldwide Presence

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■ Production plants/
subsidiaries
■ Local agents
■ Other presence

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