SMARTFLOW Selective Soldering System
Compact without compromises

Please also adhere to our separate catalogue – Ersa Selective Soldering Systems – In a class of its own!
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
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 workstation. 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.
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 2nd 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.
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

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.
Ersa SMARTFLOW 2020
Technical data and design

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: N₂ 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: 4-wire, 3 x 277/480 V, N, PE
Power tolerance range: ±10 %
Frequency: 50/60 Hz
Power consumption: 22 kW (incl. Bottom-side preheating system)
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

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
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 LST camera offers an inspection beyond compare: detection of paste on pad, print offset, bridges and stencil blockages in in-line speed.

- **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 consumption on a comparable performance level.

- **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 VERSAFLow, ECOCELL and ECOSELECT systems the ideal match for the demands of the users.

- **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.

- **Rework**
  For more than a decade more than 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.

- **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.

- **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.

- **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.

- **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.

- **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!
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Presence in 135 countries

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