



POWERFLOW e N<sub>2</sub> wave soldering system substantially reduces the unit cost attributable to the process.

The machine incorporates well-proven components, and – with innovative fluxer and preheating concepts as well as enamelled stainless steel solder pot – it offers its user optimal conditions for an outstandingly stable and repeatable process. Machine operation and continuous monitoring of all operating data is simple and safe due to the clearly structured visualization. ersa assures your success, as well, with flexible preheating concepts, high-quality materials and many years of experience in lead-free production lines. In the field of wave soldering technology, it has to be clearly differentiated between process requirements and machine hardware requirements since the parameters' interaction is many times greater than it is for reflow soldering, as the lead-free wave soldering process affects all modules of the machine.

### Fluxer

Spray flux systems are currently leading-edge technology and represent the optimal solution for the lead-free process. If VOC-free, water-based fluxes are used, it is essential to consider material compatibility. It can become necessary to reduce flux application by up to 50 %. Complementary flux nozzles, adjustable dosage and stainless steel-based materials are thus basic features of the ersa POWERFLOW e N<sub>2</sub> wave soldering system.

### Preheating

The ideal configuration of the preheating section for the lead-free soldering process always ensures an even heating of any PCB layout and assembly. The modular construction of the ersa POWERFLOW e N<sub>2</sub> offers infrared emitters in combination with convection heaters. The IR emitters are very effective. They react immediately, making them highly suitable for mixed production. Convection modules basically offer the same benefits as they do for reflow soldering. They are especially suitable for the processing of heavy-mass components that require heating on the placement side or when heat-sensitive components are being used that must not be overheated during the preheating process. The ersa POWERFLOW e N<sub>2</sub> is particularly suited to meet these requirements.

### Solder module

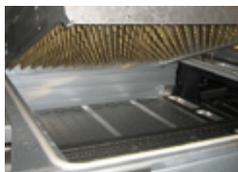
Many lead-free solders are considerably more aggressive towards currently used metals and stainless steels than the established SnPb solders. This fact is a huge challenge for solder modules. For this reason, the Ersa POWERFLOW e N<sub>2</sub> is manufactured with high-quality materials, the surfaces of which are additionally subjected to a multilevel treatment. This renders them passive so that the solder does not react with them. The solder nozzles design has to meet changing requirements, depending on whether the nozzles are working within an N<sub>2</sub> or a normal atmosphere, with lead-free or Pb solder. The somewhat tougher oxidized skin that forms under normal atmospheric conditions requires altered nozzle designs for the solder to flow off in the direction of transport. It is also necessary to consider the somewhat greater bridging tendency caused by the solder's higher surface tension. Apart from the familiar PowerWave soldering nozzles, ersa also offers further nozzle designs, depending on the process and the application.



Maintenance-friendly spray fluxer designed to meet highest demands in lead-free soldering



Flexible preheating concept: medium and short-wave emitters



Flexible preheating concept: convection heaters

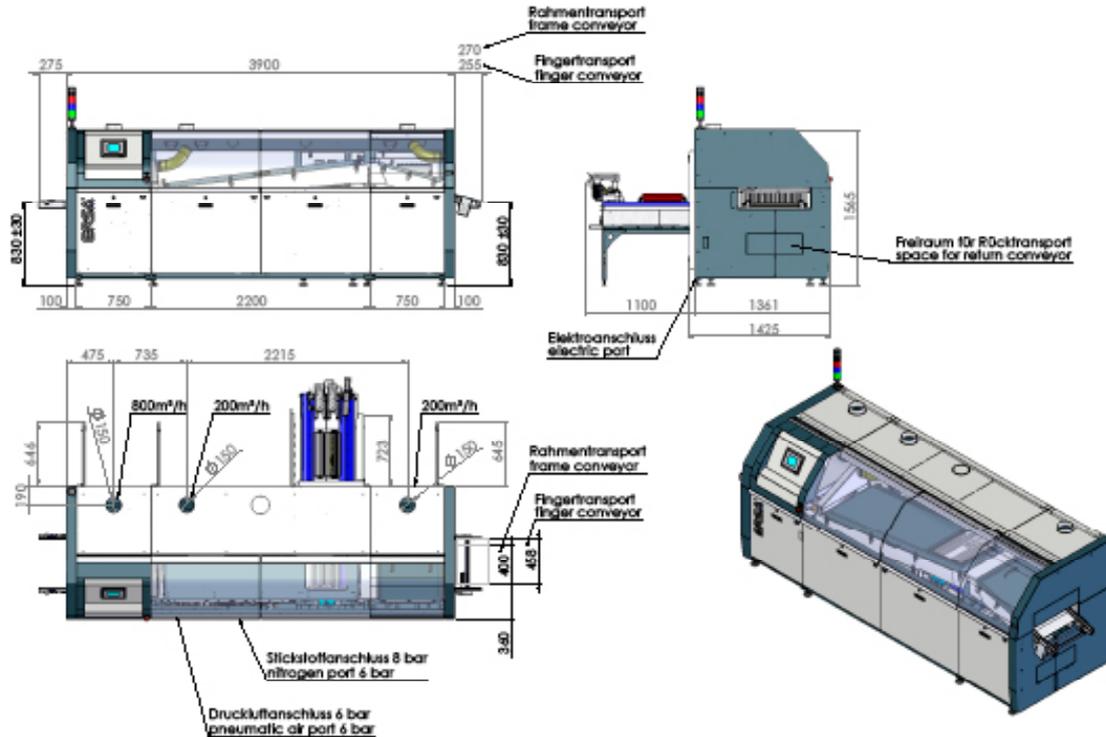


State-of-the-art control with graphic user interface and touchscreen

### Features POWERFLOW e N<sub>2</sub>

Integrated, complete lead-free capability and reliability when using VOC-free, water-based flux	■
Spray fluxers with robust, high-repeatability drive	■
Modular, flexible and to the front expandable preheating concept with convection heaters and IR emitters	■
Exchangeable solder pot with trolley	□
Finger or pallet conveyor	■
Modern control concept	■
Simple to operate via touchscreen	■

standard ■ / option □



### Dimensions

Length:	3,900 mm (4,445 mm incl. conveyor)
Width:	1425 mm
Height:	1580 mm
Weight:	approx. 2300 kg
Paint:	RAL 7035 / 7016

### Pneumatic system

Inlet pressure:	min. 6 bar
Air consumption:	approx.. 5 - 10 m³/h

### Inert gas

Inlet pressure:	8 bar
Required inert gas class:	99,999 %
N <sub>2</sub> consumption:	approx. 15 m³/h

### Extraction

Exhaust connections:	1 x 800 m³/h and 2 x 200 m³/h
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### Environmental specifications (factory)

Ambient temperature:	10 – 35 °C
Humidity:	20 – 95 % (non-condensating)

### Noise level:

Permanent noise level:	< 65 dB (A)
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### Conveyor system:

Type:	finger-type conveyor, frame conveyor
Conveyor width	
finger-type conveyor:	60 - 457 mm
frame conveyor	330/400 mm
PCB length:	120 - 600 mm
PCB top-side clearance:	max. 100 mm
Conveyor speed:	0,5 - 2,5 m/min
Conveyor angle:	7° (fixed angle)

### Electrical data

Voltage:	3 x 230/400 V, N, PE, 5-wire-system
Voltage tolerance:	±10 %
Frequency:	50 / 60 Hz
Fuse rating:	3 x 80 A (slow blow)
Amperage:	74 A
Capacity:	46 kW

### Flux module

Flux storage tank:	10 l
Spray pressure:	0,9 – 2,5 bar
Flux system:	pneumatic

### Bottom-side preheat module

Type:	dynamic short-wave emitter
Capacity:	max. 7.8 kW (controlled)
Dimensions:	length 500 mm
Type:	medium-wave emitter
Capacity:	max. 4 kW (closed-loop controlled)
Dimensions:	length 500 mm
Type:	convection module
Capacity:	max. 4 kW (closed loop controlled)
Dimensions:	length 500 mm

### Solder module:

Capacity:	approx. 9,2 kW
Solder volume:	approx. 525 kg (when using lead-free alloys) approx. 630 kg (when using SnPb37 EQ)
Warm-up time:	approx. 3.5 h (260 °C)
Solder temperature:	max. 300 °C
Automatic solder bar feeder	