# POWERFLOW

# Flexible Preheating Concepts, High-Quality Materials and **Many Years of Experience in Lead-Free Production Lines**





The ERSA POWERFLOW represents a new future-oriented machine design consisting of different intelligent solutions adding value to the customer's production process. The POWERFLOW is based on a modular, flexible machine frame. Every module fully meets the requirements of lead-free soldering without any compromises. Flux, preheat and solder module can be configured individually so that board-specific properties can be considered.

### Fluxer

The spray fluxer provided in the standard equipment processes VOC-free fluxes in a safe and reproducible way. A second spray head with separate flux supply is optionally available. Flux type and the amount of flux to be deposited is selected individually for each component in the solder program. In addition, it is possible to monitor the amount of flux deposited via sensors. Spray pattern programming is effected via a userfriendly, intelligent graphic operating surface. Automatic board shape recognition is optionally available.

## **Preheating**

The high demands of lead-free soldering with regard to the preheating process were met and realized in the ERSA POWERFLOW machine design. Modular, flexible preheating lengths and configurations of up to 2.4 m assure gentle and effective heat-up of multilayers. High-mass components are safely warmed up in the POWERFLOW's preheat module. Optional topside convection heaters provide for optimal heat-up of thermally demanding boards. The preheating length

can freely be composed of short and medium wave length IR emitters as well as convection heaters thus covering numerous heat transfer possibilities. In this way, individual production requirements can optimally be met.

### Solder module

The POWERFLOW's solder module design is based on proven technologies and optimized for lead-free solders. For maintenance purposes the solder module is drawn out of the machine. Large solder capacity, RPMregulated solder pump drives and different nozzle shapes ensure constant and reproducible soldering results. An optionally available solder bar feeder provides for a constant solder level.

## Conveyor system

The conveyor system offers frame or finger conveyor. The frame conveyor can optionally be designed as a segmented conveyor so that different speeds can be realized in the preheat and solder module. The finger conveyor is installed in the solder module whereas the the remaining conveyors are pin-and-chain conveyors.

## Control

The POWERFLOW is controlled via laptop or industrial PC with touchscreen which communicates with the machine control. The operating surface is very userfriendly and clear. Due to the network interface, the machine's computer can be integrated into production networks. Thus the latest production and / or traceability data is available any time.

# **ERSA product range**

## **Soldering tools**

- NEW DIMENSION
- PROFI-LINE
- BGA / SMT rework
- CLEAN-AIR

## Soldering systems

## Wave soldering

- ETS line
- EWS line
- N-Wave line
- POWERFLOW

## Reflow soldering

- HOTFLOW 2/12
- HOTFLOW 2/14
- HOTFLOW 2/20

## Selective soldering

- VERSAFLOW line 40/50 50/60 Highspeed Multiwave Ultimate
- EAS line

## Process optimization

EPOS 1

## Accessories

 Nozzle Regeneration Workstation

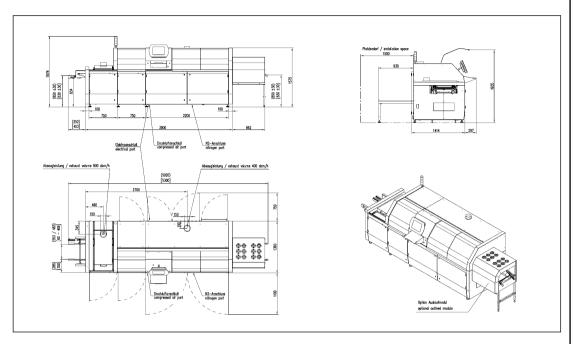
## **Inspection systems**

- ERSASCOPE
- ImageDoc software

## Seminars&Service

- Know-how seminars
- In-House trainings
- · Test soldering
- · Installation and maintenance assistance
- · Process support

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#### **Dimensions:**

Length: • with 1.4 m preheating (incl. outfeed extension):

pallet conveyor: • 3,400 mm (4,270 mm) finger-type conveyor: • 3,600 mm (4,550 mm)

Weight: approx. 1,950 kg • with 2.0 m preheating (incl. outfeed extension):

pallet conveyor: •4,150 mm (5,020 mm) finger-type conveyor: •4,350 mm (5,300 mm) Weight: approx. 2,200 kg

• with 2.6 m preheating (incl. outfeed extension): pallet conveyor: •4,900 mm (5,770 mm) finger-type conveyor: •5,100 mm (6,050 mm)

 approx. 2,450 kg Weight:

Width: •1,450 mm Height: • 1.580 mm

Paint: RAL 7035 / 7016 Pneumatic system:

Air pressure: min. 6 bar

Air consumption: approx. 5 - 10 m<sup>3</sup>/h

Nitrogen: (optionally with inerted waves)

Inert gas pressure: 8 bar

Recommended inert gas class: 99.999 % N<sub>2</sub> consumption: approx. 5 - 10 m<sup>3</sup>/h

### **Extraction:**

Exhaust connections: 1 x 800 m<sup>3</sup>/h at the fluxer and 1 x 400 m<sup>3</sup>/h at the soldering module

## **Environmental specification (factory):**

Ambient temperature: 10 - 35 °C Humidity: 20 - 95 % (non-condensating) Permanent noise level: < 65 dBA

## **Electrical data:**

Voltage: 3 x 230/400 V, N, PE, 5-wire-system

Power tolerance range: ± 10 %

Frequency: 50 / 60 Hz

Fuse rating: 3 x 125 A (slow blow)

Amperage: max. 114 A Capacity: max. 79 kW

## Flux module:

Flux storage tank: 10 l Spray pressure: 0.9...1.5 bar

## Bottom-side preheat module (type):

· dynamic short-wave emitter Capacity: max. 10.4 kW (controlled) Dimensions: length 600 mm / width 720 mm

 medium-wave emitter Capacity: max. 6 kW (closed loop controlled) Dimensions: length 600 mm / width 720 mm

· convection heater Capacity: max. 10.2 kW (closed loop controlled) Abmessungen: length 600 mm / width 720 mm

## Top-side preheat module:

Type: convection heater Capacity: max. 6 kW (closed loop controlled) Abmessungen: length 600 mm / width 720 mm

## Max. preheating length:

Standard: 1.4 m (2 x medium-wave 600 mm each,

plus bridge heater 200 mm) 2.0 m (standard + 1 x 600 mm) Option: 2.6 m (standard + 2 x 600 mm)

## Solder module:

Type: wave solder module LM 10.1 Capacity: approx. 9.2 kW Solder volume: approx. 630 kg (when using SnPb63/37 EQ), lead-free 525 kg Warm-up time: approx 5 h (260 °C) Solder temperature: max. 300 °C

## Conveyor system:

Type: finger-type conveyor or frame conveyor

Frame conveyor: 330 or 400 mm Finger conveyor: 60...406 mm (16") PCB length: 120...600 mm

PCB top-side clearance: max. 80 mm Conveyor speed: 0.5...2.5 m/min

Conveyor angle finger-type machine: 7° (fixed angle) Conveyor angle finger-type machine: 5° - 9° adjustable Asia: ERSA Asia Pacific A Division of KURTZ Far East Ltd. Suite 3505, 35/F China Resources Building 26 Harbour Road, Wan Chai Hona Kona Phone: (+852) 2331-2232 Fax: (+852) 2758-7749 e-mail: kurtz@kfe.com.hk http://www.ersa.com

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