Small selective soldering system with outstanding technology



Features Ersa ECOSELECT 1	
Universal pallet fastening: for PCBs up to 424 x 508 mm [17 x 20"] for PCBs up to 508 x 505 mm [20 x 20"]	
Fluxer module with precision spray fluxer	
Bottom-side preheating via short-wave, dynamic IR emitters	
Top-side convection heating	
Lead-free Single Point solder module	
Second solder pot to process two different solder alloys	
Second solder pot to process multi-up panels	
Camera/screen for solder process monitoring	
Bar code scanner (bar codes/2D)	
CAD data download of board layouts (CAD Assistant)	
Operation via touch panel	
Traceability according to ZVEI standards	
Fiducial recognition	

Standard \blacksquare / option \square

ECOSELECT 1 – fitting optimally into cell production environments

Ersa, the global technology leader in selective soldering systems, has expanded its product range by the ECOSELECT 1: a selective soldering machine requiring less than 3 m² of space - thus fitting optimally into cell production environments. In all process steps the semiautomatic ECOSELECT 1 system uses the same successful and proven Ersa Selective Soldering Technology as the large Ersa VERSAFLOW systems and does not compromise at all in quality and accuracy.

Due to its universal pallet fastening, the ECOSELECT 1 can handle PCB sizes of up to $424 \times 508 \text{ mm} [17" \times 20"].$

The fluxer provides highest positioning accuracy consuming lowest amounts of flux. Numerous control features such as spray monitoring or continuous pressure monitoring of the flux storage tank provide for the outstanding Ersa Process Safety.

Just like the VESRAFLOW product line the ECOSELECT 1 is equipped with a full-area preheating system. Its bottom-side heating consists of eight emitters that can be switched in groups to match their power with the assembly's heat requirements and size. The top-side convection heating of ECOSELECT 1 is optimally harmonized with the bottom-side heating and provides effective, reproducible and thorough

heating also of complex and demanding assemblies (Multi-Layer, Heavy-Mass). It evenly distributes the heating energy over the entire machine width consuming little resources and minimizing weight and size of the top-side heating system.

Just like in the VERSAFLOW selective soldering systems an electromagnetic solder pump works in the solder module of the ECOSELECT 1 so that the solder pots require extremely little maintenance. The pump ensures very constant flow rates thus offering an exact and precisely adjustable solder wave height.

Dynamic process parameters such as solder level, solder wave height and solder temperature are continuously monitored and documented. Not least because of the innovative "Peel-Off" Feature bridging is not an issue with the ECOSELECT 1, even when soldering on a horizontal conveyor.

The innovative dual solder pot provides flexibility, since different alloys can be processed without machine downtime due to solder pot exchange. Alternatively this system can also be operated with solder nozzles having different diameters.

The ECOSELECT 1 is operated via a PC control with ERSASOFT. Standard features of ERSASOFT are a process recorder which continuously

memorizes the actual values of all aggregates relevant for the solder process or the solder protocol storing process data for traceability according to ZVEI standards. An extensive alarm management file is also part of the supply scope. All occurring messages are stored with a time stamp and user identification. The entire data is available as XML files and can therefore easily be worked on.

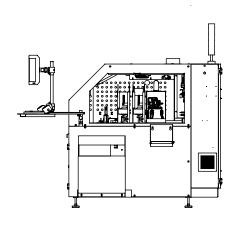
By means of the CAD Assistant DXF files of boards can be used to generate the solder program. Alternatively the user can set up the solder program based on the picture of a scanned PCB. All movements of the fluxer or solder nozzle are entered graphically in the image of the PCB and the proccess data is added. The solder program created in this way can then immediately be used in the ECOSELECT 1.

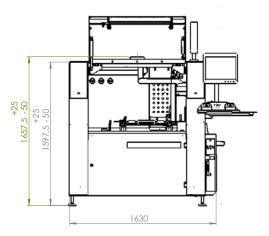


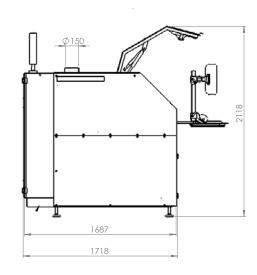
Manual infeed



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Dimensions (basic machine):		
Length:	1,700 mm [67"]	
Width:	1,500 mm [59"]	
Height:	1,612 mm [63"]	
Weight:	approx. 900 kg [1,984 lbs]	
Paint:	RAL 7035 / 7016	

Conveyor system:	
Universal pallet fastening for PCB transport	
Conveyor angle:	0° fix
PCB width:	15 – 508 mm [0.6 – 20"]
PCB length:	15 – 424 mm [0.6 – 17"]
PCB length (optional):	15 – 508 mm [0.6 – 20"]
PCB top-side clearance (basic machine):	60 – 120 mm [2 – 5"]
PCB bottom-side clearanc (subject to soldering joint	
Clearance from PCB edge:	3 mm [0.1"]
Working height:	900 mm, ±50 mm [35", ±2"]
Pallet/PCB weight:	max. 8 kg [18 lbs]

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Precision spra	y fluxer ins	talled on joint axes system
Flux tank:		21
Positioning sp	eed:	2 – 200 mm/s [0.04 – 8"/s]
Positioning ac	curacy:	±0.25 mm [±0.01"]
Spray width:	2 – 8 mm	$[0.08 - 0.3"]$ (130 μm nozzle)

Preheat module (optio	n):
Dynamic bottom-side infrared emitters:	max. 12 kW (power adjusted)
Temperature range:	0 – 200 °C [32 – 392 °F]
Dynamic top-side convection	on heater: 5 kW

Solder module:		
Stainless steel solder pot, integrated in a 3-axes positioning system (X/Y/Z), servo motor driven		
Solder nozzle:	Single-Point, high-precision nozzle	
Smallest solder nozzle diame	OD 4.5 mm [0.2"] ter: (further nozzles on request	
Wave height:	max. 5 mm [0.2"]	
PCB clearance:	min. 5 mm [0.2"]	
Solder volume: app	approx. 13 kg [29 lbs] (Sn63Pb); prox. 12 kg [26 lbs] (lead-free alloy)	
Solder temperature	: max. 320 °C [608 °F]	
Heating time:	75 min (to 280°C) [to 536 °F]	
Positioning speeds:	X/Y: 2 - 200 mm/s [0.1 - 8"/s] Z: 2 - 100 mm/s [0.1 - 4"/s]	
Soldering speed:	2 – 100 mm/s [0.08 – 4"/s]	
Positioning accuracy	y: $\pm 0.25 \text{ mm } [\pm 0.01"]$	

Nitrogen technology:	
Nitrogen supply:	to be supplied locally
Nitrogen injection:	N_2 cover over the solder pot
Required pressure:	4 bar [58 PSI]
Nitrogen consumption:	approx. 1.5 m³/h [53 ft³/h]
	per solder pot
Particle cleanliness:	5.0 recommended

Pneumatic system	
(for machine feature to	op-side heating):
Compressed air supply:	to be supplied locally
Required pressure:	6 bar [87 PSI]
Consumption:	approx. 3 m³/h [177 ft³/h]

Control:
Computer-based microprocessor (state-of-the-art control technology)
Process visualization
Input of all process parameters
7 day time clock
Machine status control
Password function
Production-, process- and traceability data recording

Electrical data:		
Power:	5-wire system, 3	c 230/400 V, N, PE
Power tolerance	range:	±10 %
Frequency:		50/60 Hz
Power consumpt	ion:	19 kW
(basic machine i	ncl. bottom-side pre	heating system)
Max. fuse rating	:	3 x 35 A

Machine exhaust (basic machine):		
Exhaust stack:	1 pc., OD 150 mm [6"]	
Exhaust volume per stack:	150 m³/h [196 yd³/h]	

Ambient conditions /	noise level:
Ambient temperature:	15 – 35 °C [59 – 95 °F]
Permanent noise level:	< 60 dB (A)

Basic design & construction:
Solid steel construction
Security glass windows
Emergency-Stop button

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