



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 semi-automatic 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 406 x 508 mm [16" x 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 VERSAFLOW 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 process data is added. The solder program created in this way can then immediately be used in the ECOSELECT 1.

Features Ersa ECOSELECT 1

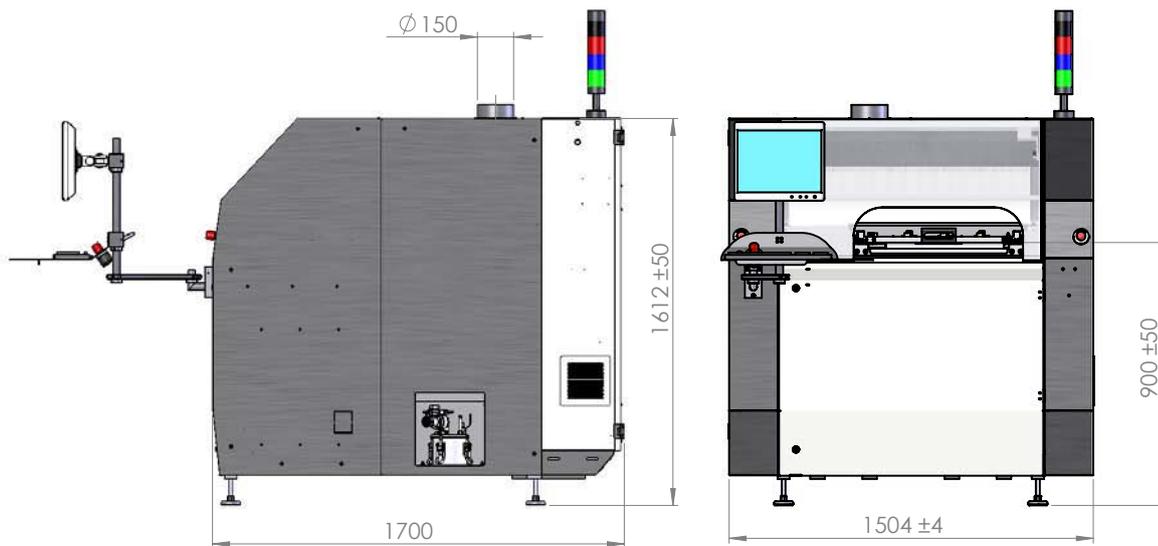
Universal pallet fastening	<input checked="" type="checkbox"/>
Fluxer module with precision spray fluxer	<input checked="" type="checkbox"/>
Bottom-side preheating via short-wave, dynamic IR emitters	<input type="checkbox"/>
Top-side convection heating	<input type="checkbox"/>
Lead-free Single Point solder module	<input checked="" type="checkbox"/>
Second solder pot to process two different solder alloys	<input type="checkbox"/>
Second solder pot to process multi-up panels	<input type="checkbox"/>
Camera/screen for solder process monitoring	<input type="checkbox"/>
Bar code scanner (bar codes/2D)	<input type="checkbox"/>
CAD data download of board layouts (CAD Assistant)	<input type="checkbox"/>
Operation via touch panel	<input type="checkbox"/>
Traceability according to ZVEI standards	<input checked="" type="checkbox"/>
Fiducial recognition	<input type="checkbox"/>

standard / option



Manual infeed

Small selective soldering system with outstanding technology



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:	63.5 - 406 mm [2.5 - 16"]
PCB length:	127 - 508 mm [5 - 20"]
PCB top-side clearance (basic machine):	60 - 120 mm [2 - 5"]
PCB bottom-side clearance:	max. 60 mm [2"] (subject to soldering joint position)
Clearance from PCB edge:	3 mm [0.1"]
Working height:	900 mm, ±50 mm [35", ±2"]
Pallet/PCB weight:	max. 8 kg [18 lbs]

Flux module:

Precision spray fluxer installed on joint axes system	
Flux tank:	2 l
Positioning speed:	2 - 200 mm/s [0.04 - 8"/s]
Positioning accuracy:	±0.25 mm [±0.01"]
Spray width:	2 - 8 mm [0.08 - 0.3"] (130 µm nozzle)

Preheat module (option):

Dynamic bottom-side infrared emitters:	max. 12 kW (power adjusted)
Temperature range:	0 - 200 °C [32 - 392 °F]

Dynamic top-side convection 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 diameter:	OD 4.5 mm [0.2"] (further nozzles on request)
Wave height:	max. 5 mm [0.2"]
PCB clearance:	min. 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 (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:	±0.25 mm [±0.01"]

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 m ³ /h [53 ft ³ /h] per solder pot
Particle cleanliness:	5.0 recommended

Pneumatic system (for machine feature top-side heating):

Compressed air supply:	to be supplied locally
Required pressure:	6 bar [87 PSI]

Consumption:	approx. 3 m ³ /h [approx. 177 ft ³ /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 x 230/400 V, N, PE
Power tolerance range:	±10 %
Frequency:	50/60 Hz
Power consumption:	19 kW (basic machine incl. bottom-side preheating 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 m ³ /h [196 yd ³ /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	