kurtz ersa

SELECTIVE

Soldering Systems

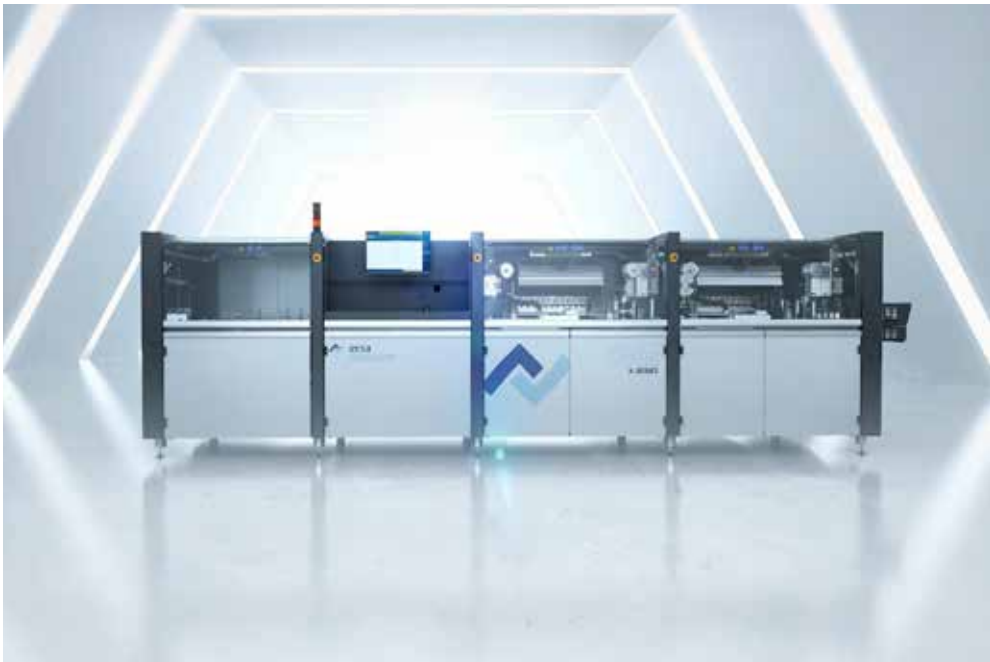
GLOBAL. AHEAD. SUSTAINABLE.

Ersa Selective Soldering Systems In a Class of its Own!

Ersa selective soldering systems combine cutting-edge technology with a modular machine layout for maximum flexibility, high throughput, and reliable process quality. Being the global technology leader, Ersa offers a wide range of models to match your production volume, component variety, and budget.

Maximum flexibility, highest throughput

The VERSAFLOW series offers maximum flexibility and the highest throughput, with soldering machines ranging from the established VERSAFLOW 3 and 4 to the new VERSAFLOW ONE and VERSAFLOW FIVE. The ECOSELECT models offer compact performance and are designed as stand-alone solutions for lean manufacturing concepts. Over 3,000 systems have been installed worldwide. This emphasizes Ersa's market leadership in automated selective soldering.



This is how selective soldering systems work:

Fluxing

The fluxer of a selective soldering machine must meet several technical requirements: precision, speed, and above all, reliability! It is crucial for the soldering result that all areas to be soldered are wetted with flux in a targeted manner. Multidrop flux heads do not atomize the flux but apply it in individual droplets to predefined areas.

Preheating:

The purpose of preheating is to heat the printed circuit board evenly before transferring it to the soldering module. Up to 50 percent of the heat energy is supplied by infrared emitters to prevent thermal shock when the electronic assembly comes into contact with the liquid solder.

Soldering module:

The soldering module is at the heart of every selective soldering system. Ersa's selective soldering modules feature electromagnetic solder pumps which, thanks to the technology used, require very little maintenance and ensure a constant flow rate of the solder.

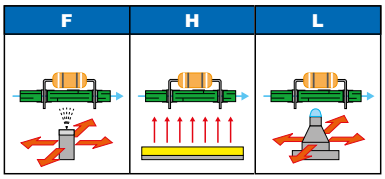
Further information

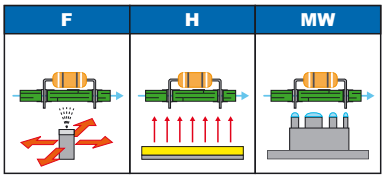
Ersa mini wave solder module – maximum flexibility for all your needs!

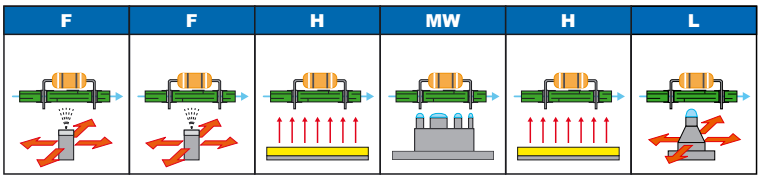
For an optimal processing of electronic assemblies, the solder pots can be positioned on either the same or on different axes in the solder module, depending on customer requirements. A wide range of nozzle geometries ensures excellent solder joint wetting, even with complex assemblies. Dual pot systems increase flexibility, allowing the use of different solder alloys or nozzle geometries without the need for changeovers.

Ersa Multiwave solder module – mimimized cycle times

In high-volume production, simultaneous selective soldering processes are necessary in order to meet the cycle times required. Multiwave soldering technology enables all solder joints on an assembly to be soldered in a single operation, achieving very short soldering times of two to three seconds. The soldering tool is manufactured specifically for each product. It is equipped with soldering nozzles that are individually adapted to the soldering joints.



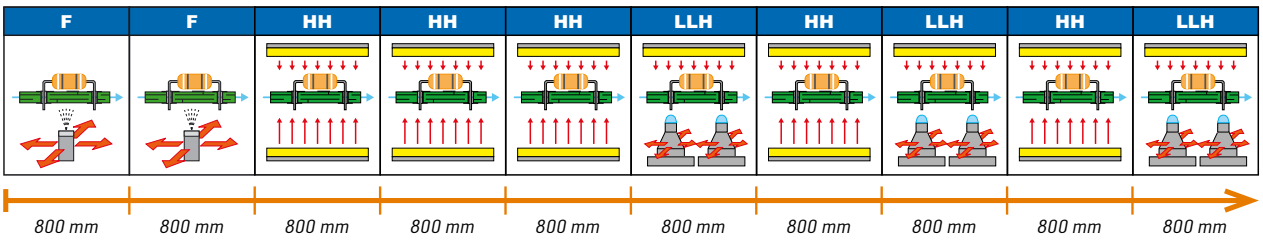


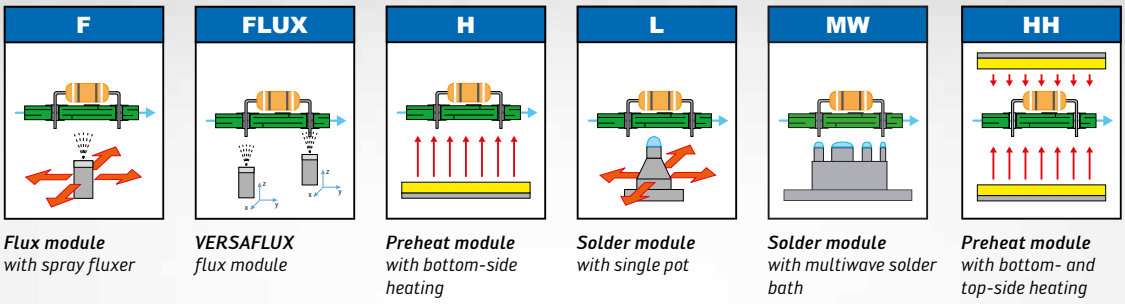


The Ersa Modular System

We optimize the soldering process for your specific needs

Maximum machine configuration





Flux module
with spray fluxer

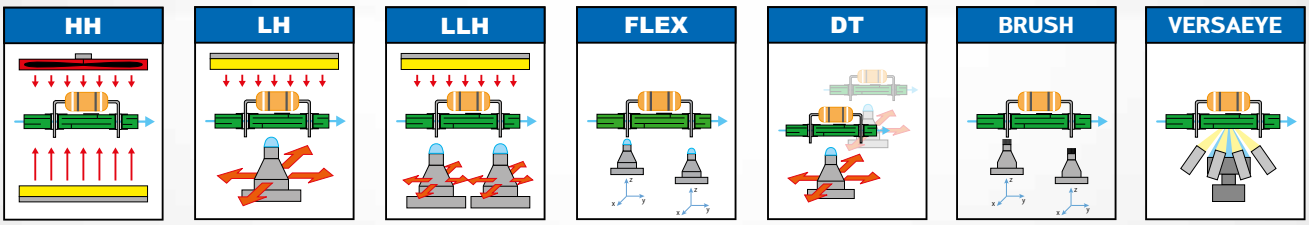
VERSAFLUX
flux module

Preheat module
with bottom-side heating

Solder module
with single pot

Solder module
with multiwave solder bath

Preheat module
with bottom- and top-side heating



Preheat module
with top-side power convection and bottom-side heating

Solder module
with single pot and top-side heating

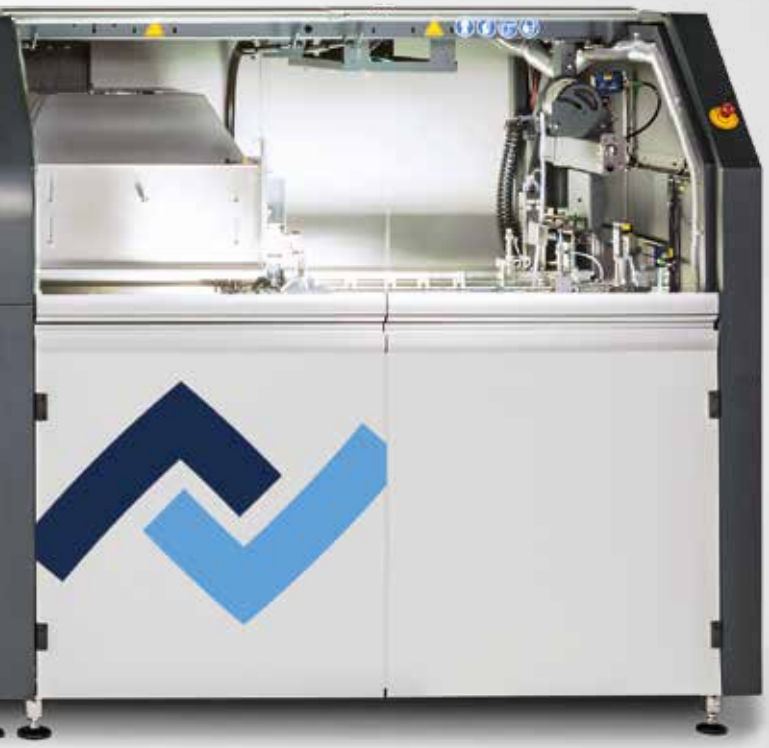
Solder module
with dual pot and top-side heating

VERSAFLEX
solder module

Dual track feature
with two parallel single wave units

Brush module
with VERSABRUSH

VERSAEYE
for optical inspection of solder joints from below



The combinations of modules depicted here show only some of the many variations possible with the extremely flexible Ersa modular system. Corresponding to the customer's needs, throughput can be substantially increased by implementing a dual solder pot or dual track conveyor system, without taking up more floor space. On account of its modular design, the soldering system can be extended: Options or complete modules can be individually configured and retrofitted. This saves the investment in a new production line. Existing floor space and production resources used will be optimally used, and productivity will be increased.

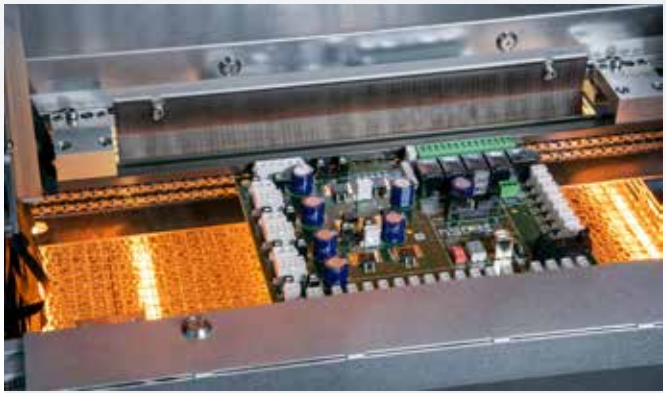
Advantages:

- Increased throughput
- Maximum flexibility
- Optimally tuned to the process
- Retrofitable

THE ONE.
FOR EVERYONE.

THE ONE. FOR EVERYONE.
Ersa VERSAFLOW ONE

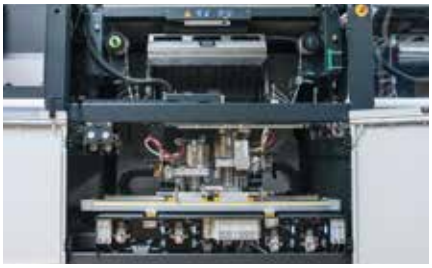
The VERSAFLOW ONE is the entry into the excellence class of selective soldering – compact in footprint, powerful in throughput, and without compromises on quality. Available as F-SERIES with a single pot soldering module or as X-SERIES with a dual pot module and X-variability, the ONE scales to your requirements. In short: world-leading technology, fast time-to-production, strong price-performance ratio.



VERSAFLOW ONE – highest quality and highest throughput at compact system dimensions.

Intuitive user interface

With ERSASOFT 5 and the integrated CAD Assistant 4 editor, operators can create soldering programs quickly and intuitively offline while the machine is in operation. The absence of a complicated start-up phase means that new economic efficiency will be achieved more quickly.



VERSAFLOW ONE – X-variability

The VERSAFLOW ONE X and XX models feature solder pots arranged in the X-direction. This increases throughput significantly when processing circuit boards with many identical solder points or when soldering PCB panels. A solution with two additional stoppers is suitable for small boards (with a length of 120 – 350 mm). Using this technology, it is possible to simultaneously proccess up to 8 PCBs with the VERSAFLOW ONE XX (10 PCBs in the machine).

Technical highlights:

- Proven VERSAFLOW technology with a strong price-performance ratio
- Fast time-to-production
- 4 fixed machine configurations.
- Energy savings thanks to improved cross-section of the preheating
- Up to 2 soldering modules, each with one or two solder pots
- Processing of up to 8 printed circuit boards simultaneously

F-SERIES

X-SERIES

The entry into the excellence class of selective soldering

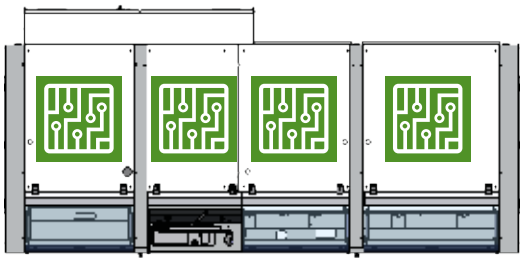
Available as F-SERIES and X-SERIES for maximum throughput

Great performance for highest quality and throughput with compact dimensions

Intuitive operating concept with ERSASOFT 5

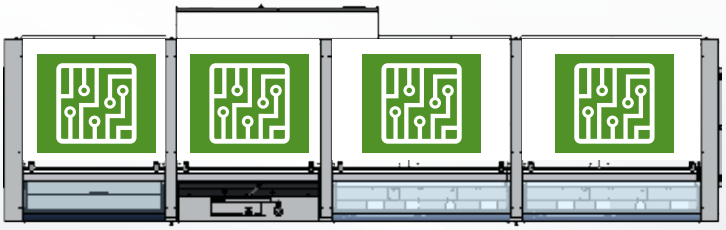
A future-proof investment – technology and services from the global market leader

VERSAFLOW ONE F-SERIES and X-SERIES
Maximum PCB sizes and maximum number of boards processed in parallel



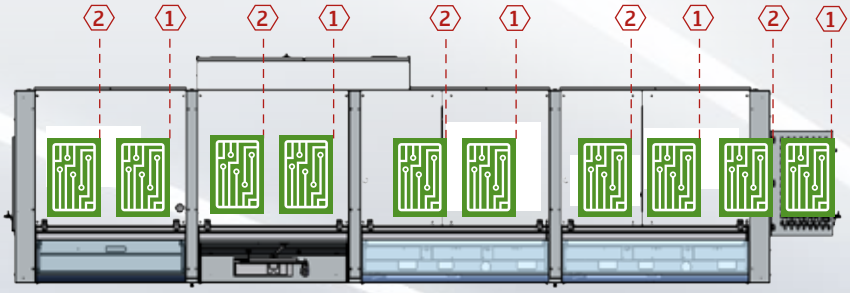
VERSAFLOW ONE F
3 PCBs with max. 508 x 508 mm in the machine at one time.

VERSAFLOW ONE FF
4 PCBs with max. 508 x 508 mm in the machine at one time



VERSAFLOW ONE X
3 PCBs with max. 610 x 508 mm in the macchine at one time.

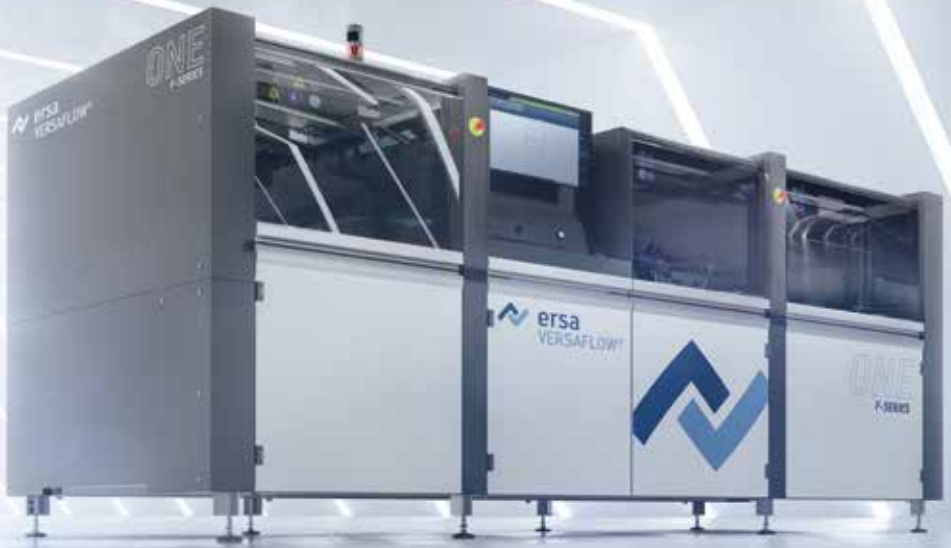
VERSAFLOW ONE XX
4 PCBs with max. 610 x 508 mm in the machine at one time



Due to an additional stopper, small PCBs can be processed synchronously, which doubles throughput.

VERSAFLOW ONE X
8 PCBs with max. 350 x 508 mm in the machine at one time

VERSAFLOW ONE XX
10 PCBs with max. 350 x 508 mm in the machine at one time



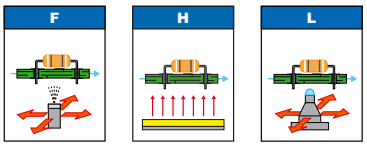
VERSAFLOW ONE F-SERIES with single pot – 2 configuration options:

VERSAFLOW ONE F

Configuration:

- Programmable conveyor width adjustment
- Segmented pin-and-chain conveyor, 3 mm
- Flux module with spray head 130 µm, stainless steel
- Bottom-side preheater, IR emitters
- 1 solder pot
- Automatic solder wire feeder
- Automatic nozzle activation
- Process monitoring camera
- SMEMA – inline interface for in- and outfeed
- Top-side heating combined with roller conveyor optionally available for solder module

Modules:



Flux module *with spray fluxer* | ***Preheat module*** *with bottom-side heating* | ***Solder module*** *with single pot*

Dimensions:

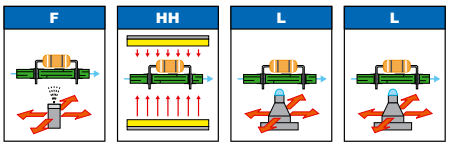
- Length: 2,771 mm
- Width: 1,791 mm
- Height: 1,577 mm

VERSAFLOW ONE FF

Configuration:

- Programmable conveyor width adjustment
- Segmented pin-and-chain conveyor, 3 mm
- Flux module with spray head 130 µm, stainless steel
- Preheating with bottom-side IR emitters and top-side convection
- 2 solder modules with one solder pot each
- 1x automatic solder wire feeder per solder pot
- 1x automatic nozzle activation per solder module
- 1x process monitoring camera per solder pot
- SMEMA inline interface for in- and outfeed
- Top-side heating combined with roller conveyor optionally available for solder module

Modules:



Flux module *with spray fluxer* | ***Preheat module*** *with bottom-side heating* | ***Solder module*** *with single pot* | ***Solder module*** *with single pot*

Dimensions:

- Length: 3,871 mm
- Width: 1,791 mm
- Height: 1,577 mm

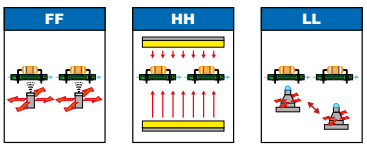
VERSAFLOW ONE X-SERIES with dual pot, x-variable, available with or without stopper – 2 configuration options:

VERSAFLOW ONE X

Configuration:

- Programmable conveyor width adjustment
- Segmented 3 mm pin-and-chain conveyor, solder module with roller conveyor
- Flux module with 2 spray heads, 130 µm each, stainless steel
- Preheating with bottom-side IR emitters and top-side convection
- 1 dual solder pot
- 1x automatic solder wire feeder per solder pot
- Automatic nozzle activation
- 1x process monitoring camera per solder pot
- SMEMA – inline interface for in- and outfeed
- Additional stoppers available

Modules:



Flux module *with 2 spray heads* | ***Preheat module*** *with top- and bottom-side heating* | ***Solder module*** *with dual pot, x-variable*

Dimensions:

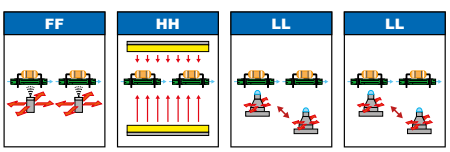
- Length: 4,430 mm
- Width: 1,791 mm
- Height: 1,577 mm

VERSAFLOW ONE XX

Configuration:

- Programmable conveyor width adjustment
- Segmented 3 mm pin-and-chain conveyor, solder module with roller conveyor
- Flux module with 2 spray heads, 130 µm each, stainless steel
- Preheating with bottom-side IR emitters and top-side convection
- 2 solder modules with one dual solder pot each
- 1x automatic solder wire feeder per solder pot
- 1x automatic nozzle activation per solder module
- 1x process monitoring camera per solder pot
- SMEMA inline interface for in- and outfeed
- Additional stoppers available

Module:



Flux module *with 2 spray heads* | ***Preheat module*** *with top- and bottom-side heating* | ***Solder module*** *with dual pot, x-variable* | ***Solder module*** *with dual pot, x-variable*

Maße:

- Length: 6,030 mm
- Width: 1,791 mm
- Height: 1,577 mm

Ersa VERSAFLOW 3/45

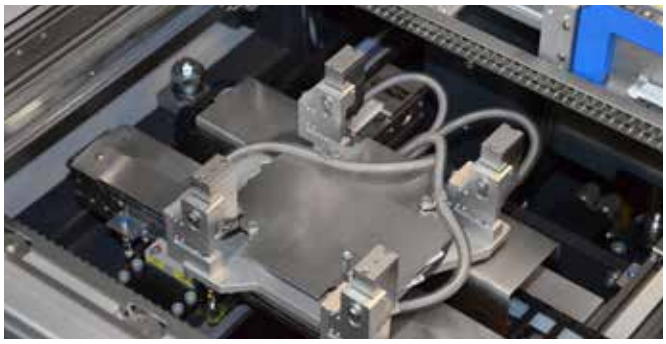
The world‘s best-selling inline selective soldering platform
Ersa VERSAFLOW 3

The VERSAFLOW 3 series are flexible, modular selective soldering systems equipped with flux, preheat, and solder modules as well as a segmented conveyor system in the basic configuration. Depending on the application and throughput requirements, additional flux, preheat, or solder modules can be integrated. In its maximum configuration, the VERSAFLOW 3 series can manage up to three solder modules, each with up to two single-wave pots. A preheating module can be connected upstream of each soldering module. Both preheating and solder modules with single-wave pots can also be equipped with top-side heating systems.The dual-track option doubles the throughput rate without enlarging the machine's footprint.
If the size of the assembly allows the preheat modules to be segmented, it is possible to achieve an even higher throughput rate. When all features are utilized, the VERSAFLOW 3 can process up to 22 assemblies simultaneously. A unique feature of the VERSAFLOW 3/45 is its use of multi-wave pots, which maximize throughput.

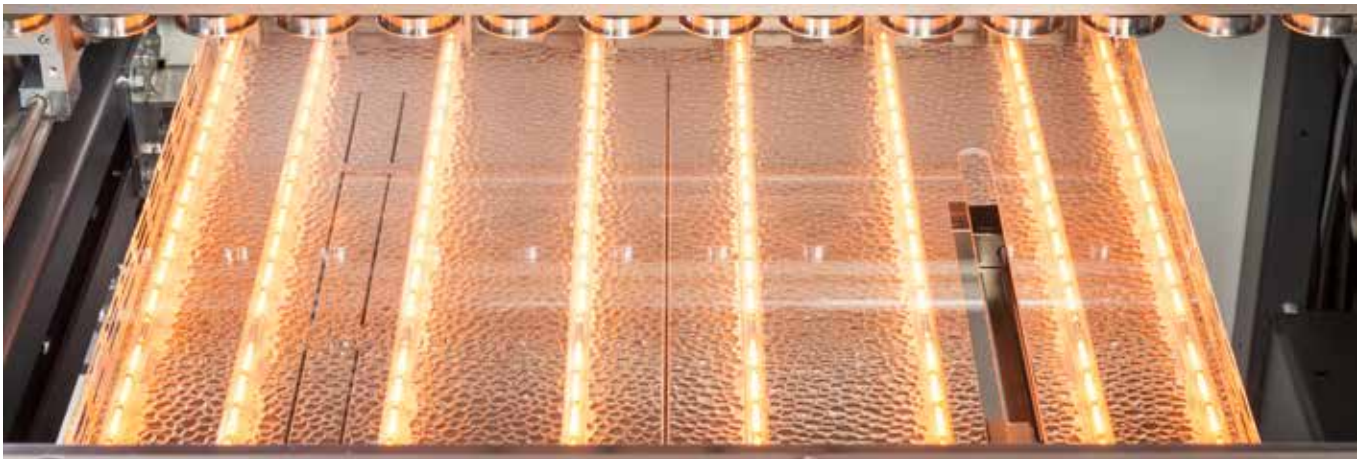
The VERSAFLOW 3/66 is designed for large PCB sizes of up to 610 x 610 mm.

As a special solution, the VERSAFLOW 3/66 XL can process PCB sizes of up to 3,000 x 610 mm.

Dual-track conveyor



Flux unit with 4 spray heads



Infrared emitter in the preheating module

Technical highlights:

- Processing area:
  - VERSAFLOW 3/45: 508 x 406 mm (option 508 x 508 mm)
  - VERSAFLOW 3/66: 610 x 610 mm
- Parallel process through separation of fluxing, preheating, and soldering
- Use of up to 4 spray heads
- Up to 5 bottom-side preheaters with optional top-side convection heating

Further information

Flexibly expandable modular concept

Dual-track conveyor for maximizing throughput on the same footprint

Up to 22 assemblies can be processed simultaneously

Mini wave soldering for high flexibility or multi-wave soldering for high-volume applications

Product changeover without downtime, even for multi-wave processes

VERSAFLOW 4/55

VERSA® BRUSH
SELECTIVE BRUSH

VERSA® FLUX
SELECTIVE FLUX MODULE

VERSA® EYE
SOLDER JOINT DETECTION

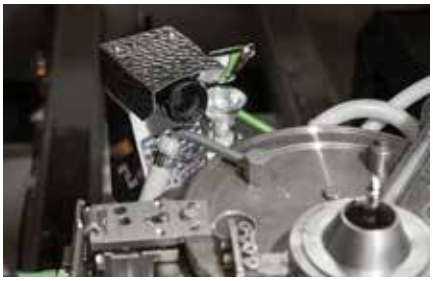
Agility in manufacturing
Ersa VERSAFLOW 4

The VERSAFLOW inline selective soldering system meets highest demands for flexibility and throughput. The VERSAFLOW 4 series is designed to match production reqirements from high volume/low mix to high mix/low volume.

With almost endless possibilities of configurations, the modular VERSAFLOW 4 series can ideally be custom-fittetd to any requirement. Up to 4 spray heads can be installed in the flux module. The flux application to the printed circuit board is monitored by a laser system which ensures a reliable automated process.

Apart from infrared emitters and convection heating, the heating module of the VERSAFLOW 4 series can also be equipped with power convection heating ensuring efficient, safe, and homogeneous warm-up of even most complex electronic assemblies. Up to three soldering modules with one or two single wave pots per module can be integrated into the machines of the VERSAFLOW 4 series.

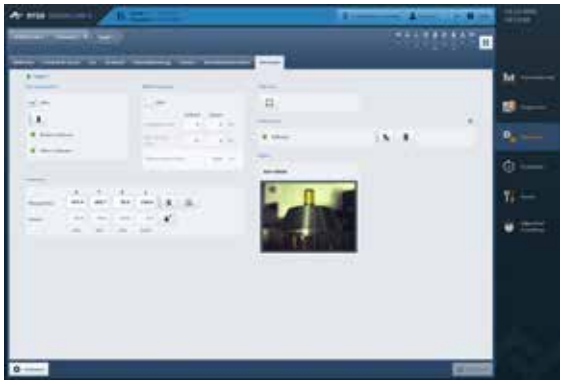
The VERSAFLOW 4 XL is also part of this machine generation. This machine type can solder extra large PCBs sizing up to 680 x 610 mm (option 1,200 x 610 mm). Using VERSAFLUX and VERSAFLEX modules here, solder joints can be processed completely independently of each other.



VERSACAM

Automatic nozzle activation

VERSAFLEX soldering module available for VERSAFLOW 4 XL



ERSASOFT 5

With its intuitive software, ERSASOFT 5 allows for seamless monitoring and visualization of processes. It reduces the time spent on parameter configuration, manages all process data, and offers interfaces for traceability implementation.

Fluxer, Y variable

Power convection

Dual pot, Y/Z variable

Technical highlights:

- Maximum PCB size
  - VERSAFLOW 4/55: 508 x 508 mm
  - VERSAFLOW 4 XL: 1,200 x 610 mm
- Fluxer, Y variable
- Power convection
- Dual pot Y/Z variable

Further information

Automatic nozzle activation

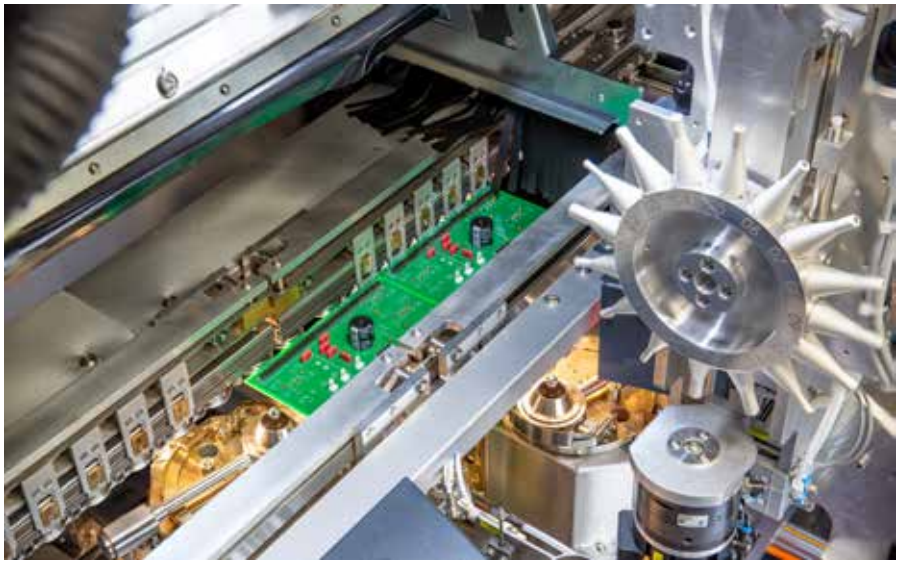
Solder level and solder wave monitoring

Precision spray fluxer with spray test function and flux level monitoring

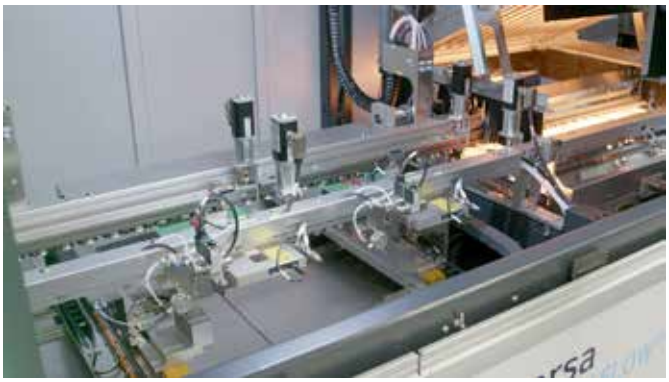
Intuitive operating concept with ERSASOFT 5

No compromises on flexibility or throughput.
Ersa VERSAFLOW FIVE

VERSAFLOW FIVE is the latest innovation in ultra-high-end selective soldering and sets new standards for automation and flexibility in electronics manufacturing. Designed for demanding applications in sectors such as automotive, medical technology and aerospace, it guarantees optimal production processes with maximum efficiency. Thanks to its high degree of automation, the machine enables autonomous production and increases productivity significantly. It is ideal for electronics manufacturers with high production volumes and changing requirements, as it offers maximum productivity and throughput without compromising on quality. And it is ideal for electronics manufacturers with high production volumes and changing requirements, as it offers maximum productivity and throughput without compromising on quality.



Optional nozzle changer for maximum process reliability and automated setup change



VERSAFLEX 2.0

The VERSAFLOW FIVE is the first generation of machines to feature the new VERSAFLEX 2.0 module. This module allows two printed circuit boards to be processed completely independently of each other and in parallel within a single module, eliminating any waiting times and maximizing throughput and batch sizes.

Synchronous mode:

The axes move in parallel at a fixed distance from each other, which shortens cycle times and increases output during panel processing.

Asynchronous mode:

The two axis systems operate autonomously, each with its own soldering program, for processing two different flat assemblies or large printed circuit boards, without any waiting times.

Technical highlights:

- Independent axis systems with 20 mm more stroke (Z-axis)
- Collision monitoring for the solder pots
- Automatic nozzle activation

Safe processing of XL assemblies measuring up to 685 x 508 mm

Technical highlights:

- VERSAFLEX 2.0 with synchronous and asynchronous mode
- Automated nozzle changer
- Module-specific LED strips facilitate error diagnosis and improve user-friendliness thanks to clear status displays.

Further information

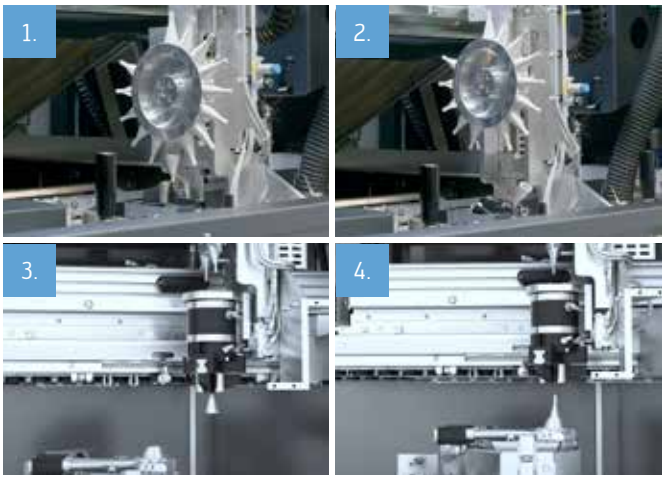
Autonomous production

Component-friendly & energy-saving matrix heating

Perform different soldering tasks independently of each other for high flexibility and high throughput.

Assembly sizes up to 685 x 508 mm

CAD Expert Mode



Advantages:

- Higher overall equipment effectiveness (OEE) due to shorter setup times
- Higher process reliability
- Predictable machine availability
- Ideal for unattended operation

Automatic nozzle changer

The automatic nozzle changer is a new feature of the VERSAFLOW FIVE, especially for scenarios with frequent program changes and limited operator presence. It replaces manual nozzle changing, thereby increasing efficiency and process reliability throughout the entire soldering process.

Automatic change during operation

The nozzle changer can operate on an event-driven basis according to runtime or board counter, or it can be started manually at any time. When the program starts, it automatically inserts the specified soldering nozzle.

Safety during setup

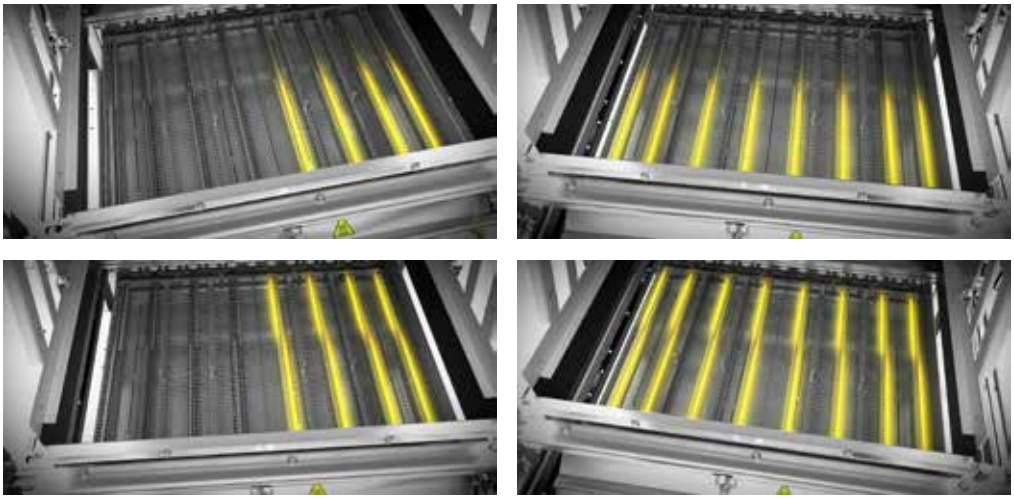
VERSACAM can optionally be used for optical setup control.

Automatic flux nozzle cleaning

The automatic flux nozzle cleaning significantly reduces the need for manual intervention. It automatically removes contamination from Dropjet spray heads, thus maintaining consistent spray quality. This is especially important during periods of low staff availability, such as night shifts or line start-ups, as it ensures high process reliability and minimizes downtime.

CAD Expert Mode

The Expert Mode in CAD Assistant 4 enables manual routing of fluxer and solder modules to further optimize throughput and cycle time. This feature allows you to specify the order in which the fluxer and solder modules process a board. Expert Mode is available in both synchronous and asynchronous modes for two-stopper operation.



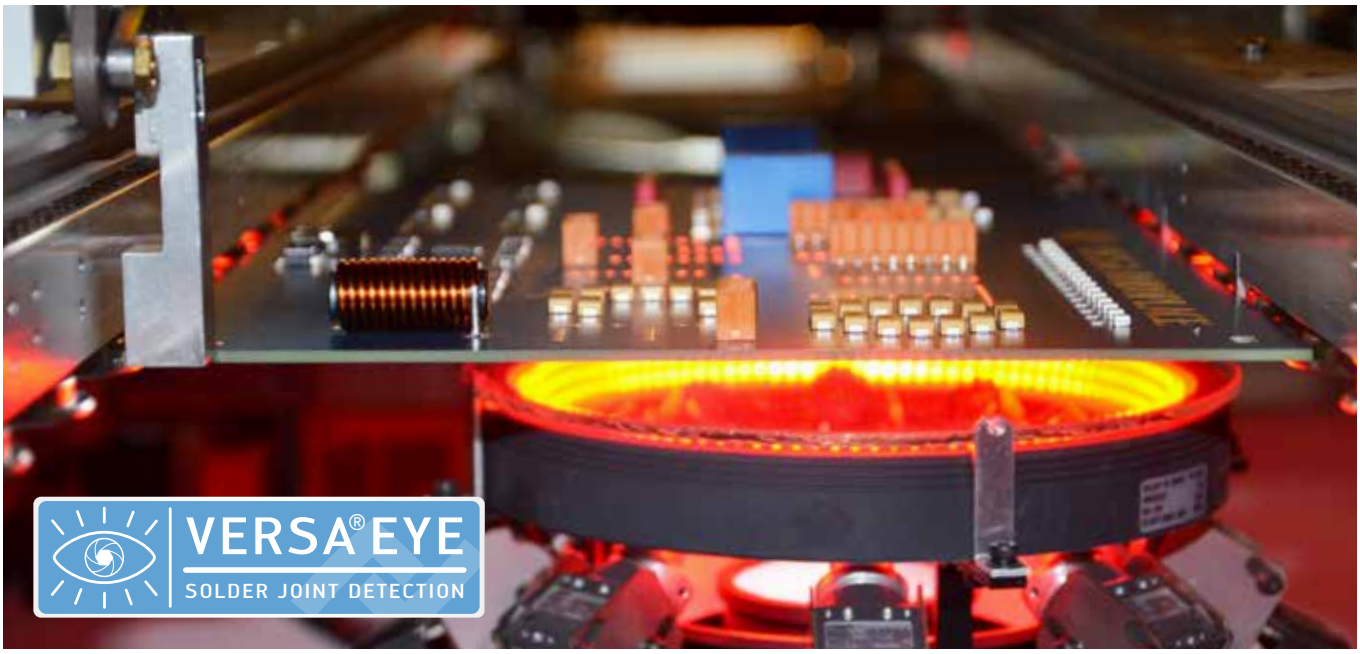
Matrix heating

The VERSAFLOW FIVE's matrix heating is an innovative heating system that allows the heating area to be adjusted to the PCB size in order to increase energy efficiency.

Segmented heating surfaces:
The matrix heater consists of several segments that can be controlled individually. This enables targeted and homogeneous heating of assemblies, even on complex boards.

Flexibility in heating:
The segmented structure allows up to six different heating areas to be mapped, enabling precise adaptation to the specific requirements of the printed circuit boards.

The next step toward autonomous manufacturing: VERSAFLOW FIVE for ultimate selective soldering. Highest throughput with maximum flexibility.



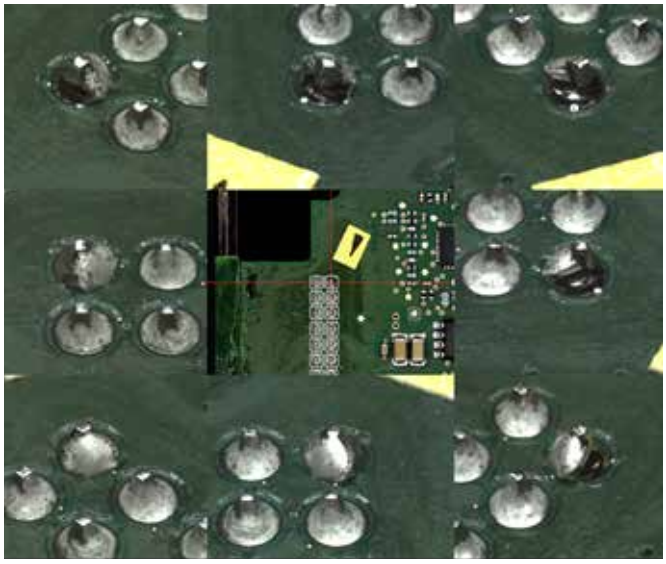
PCB inspection system

Ersa VERSAEYE

VERSAEYE is an automatic optical inspection module for quality assurance control after selective soldering. The evaluation is performed in ERSASOFT 5. Test results, images, and parameters are logged for each printed circuit board and can be transferred via Hermes/IPC CFX.

Advantages:

- Early, process-oriented detection of typical soldering defects reduces scrap
- Uniform documentation through image/data logging supports audits and root cause analysis
- Reproducible results thanks to defined lighting, precise recording, and recipe-based evaluation
- Standardized interfaces allow for seamless integration, making quality assurance scalable and reliable



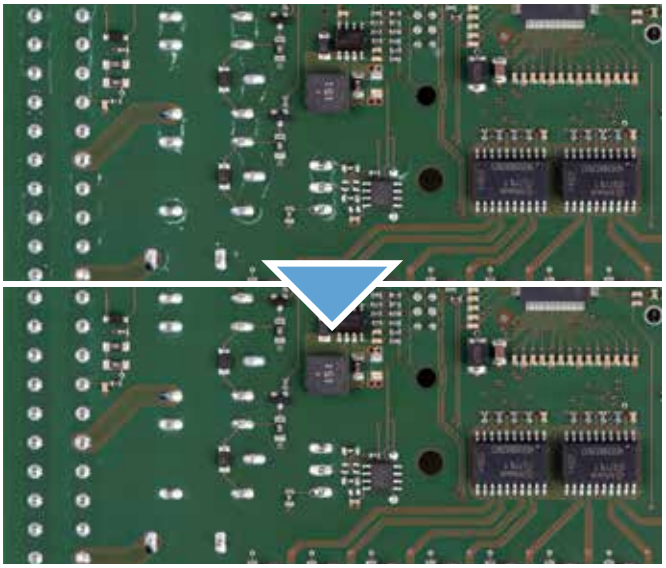
Accurate error analysis is possible with the help of the lateral cameras.

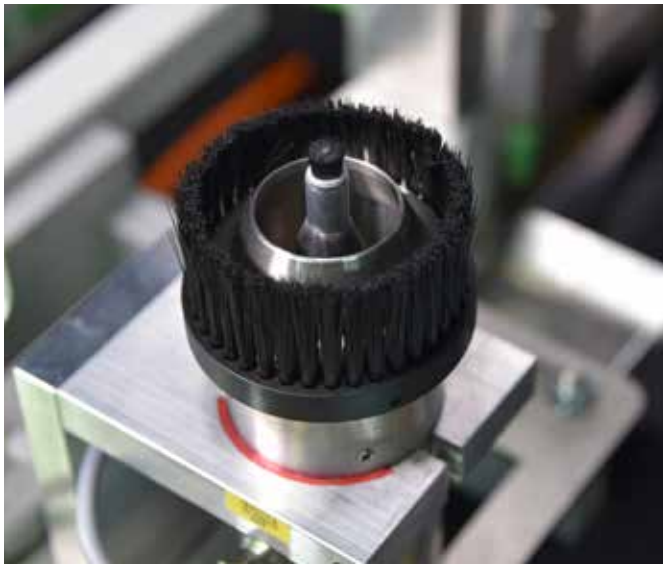
Selective brush module
Ersa VERSABRUSH

VERSABRUSH is an automated brush module that efficiently and safely removes solder balls and flux residues from printed circuit boards. The system uses the same axis system as the soldering modules and can be used as an addition to VERSAFLOW soldering systems or as a stand-alone system.

Advantages:

- Automated cleaning: fully automatic removal of solder balls and flux residues
- Precise control: 3D movement (X-Y-Z) of the brush unit without axial restrictions
- Integrated extraction: reliable removal of dissolved contaminants
- Flexible configuration: various brush configurations for different applications
- Easy programming: intuitive program creation through graphical programming using CAD Assistant 4
- Adjustable brush pressure: adaptation to different component contours
- Proven technology: based on the axis system of the VERSAFLOW selective soldering systems





PCB before and after brushing: Flux residues and solder balls have been removed.

Batch systems with high-end technology
ECOSELECT 1 & ECOSELECT 4

Further information

ECOSELECT 1:

Small dimensions – big technology. Compact batch system with up to 2 flux heads and 2 solder pots for small and customized series

Highlights of ECOSELECT 1:

- Batch system with low space requirements
- Up to 2 solder pots and 2 flux heads to increase throughput
- Full-surface IR preheating at the bottom (scalable)

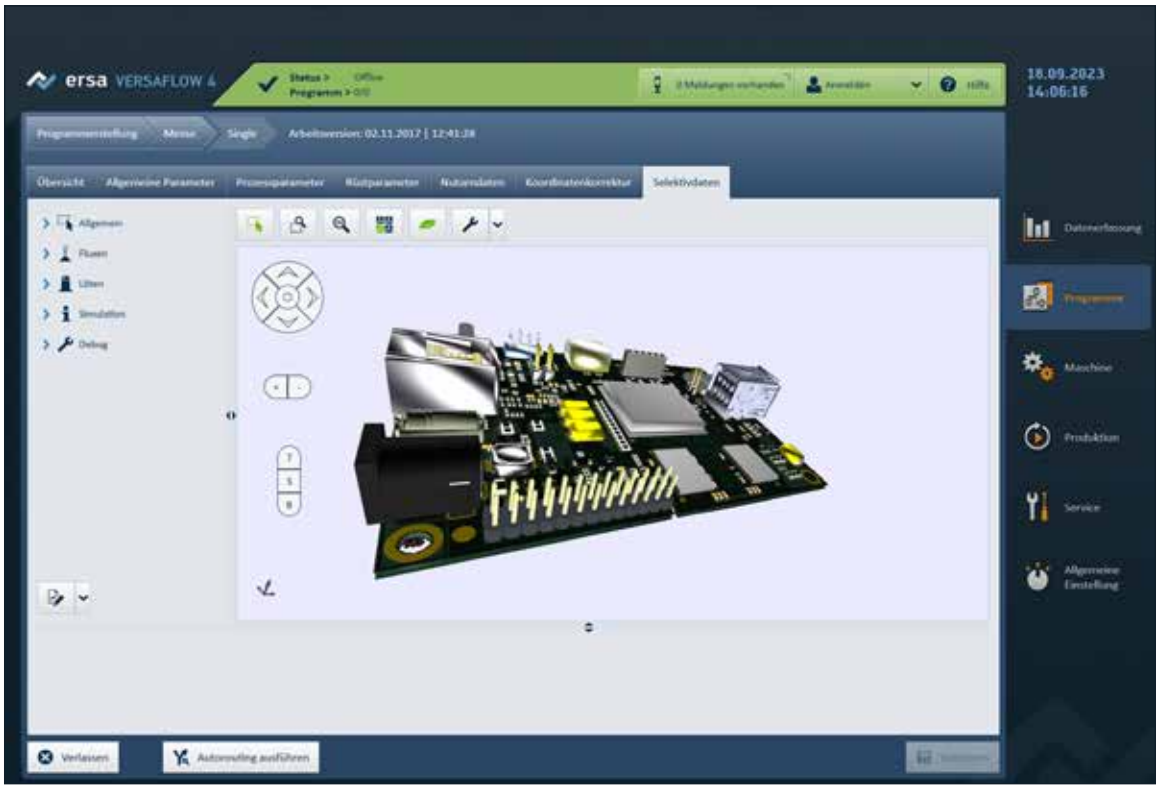
Further information

ECOSELECT 4:

Compact inline and batch system with up to 2 flux heads and 2 solder pots, power convection, VERSACAM, and 508 x 508 mm processing area.

Highlights of ECOSELECT 4:

- Batch or inline selective soldering system with low space requirements
- Up to 2 solder pots and 2 flux heads to increase throughput
- Full-surface IR preheating at the bottom (scalable)
- Top-side convection heating/power convection
- Top-side convection heating in the soldering module
- Expandable to a modular inline system



Editor for soldering program creation

CAD Assistant 4

Fast. Intuitive. Comfortable.

Ersa CAD Assistant 4 enables the efficient offline creation of complex soldering programs while the machine is in operation, maximizing machine availability. Data sets for CNC axis systems can be edited and adjusted using drag and drop. You can use CAD data or scanned images of printed circuit boards to create programs.

The movements of the fluxer or soldering axis system can be entered graphically and provided with process data. Program data can be checked by simulation and used immediately. Autorouting simplifies the creation of complex programs by automatically defining efficient travel paths.

CAD Assistant 4's Expert Mode offers an enhanced display of modules, aggregates, and their setup status. It is an extension of autorouting. Users gain full control over the manual assignment of process objects to modules and their processing sequence, enabling precise implementation of individual CNC processing requirements.

Highlights of CAD Assistant:

- Intuitive programming due to graphic user interface
- Optimized cycle times by means of auto-routing
- Automatic and optimized assignment of fluxing and soldering jobs to the available modules
- Prevention of crashes by the definition of exclution areas
- Verification of program data

Autorouting on a PCB panel

Simulation

Component information

Control and documentation
ERSASOFT 5

GERMAN DESIGN AWARD

Simple. Clear. Efficient.

Ersa selective soldering systems are equipped with the state-of-the-art ERSASOFT 5 operator software. The latest version of the machine software impresses with its modern visualization and user-oriented structure. Individual user interfaces provide each operator group with the data and information they need at a glance.

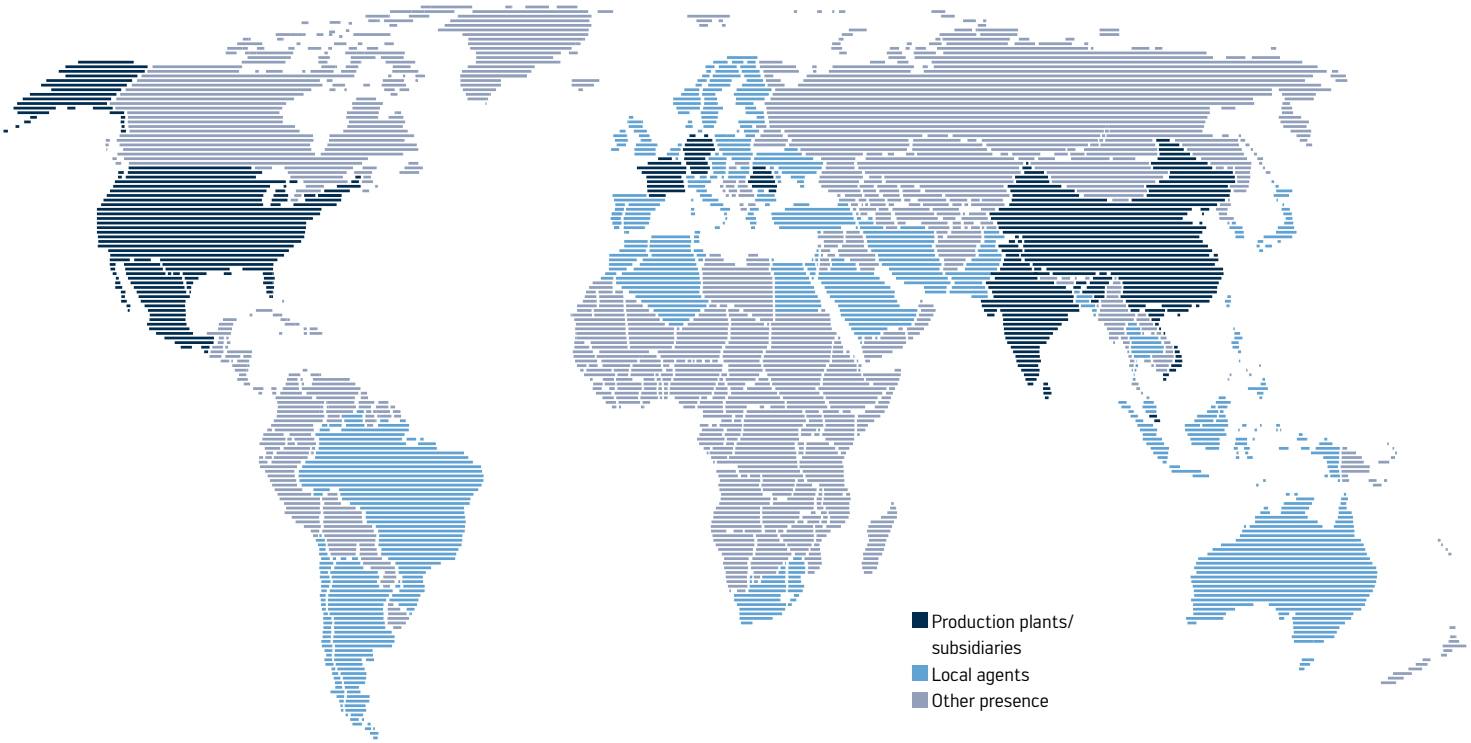
The interface is also convenient in terms of process monitoring: Thanks to modern PiP (picture-in-picture) technology, soldering parameters and a live process image are available at a glance for optimal control during the soldering process. With an additional screen, up to six single soldering nozzles can be permanently displayed for process monitoring. With a click of the mouse, the individual nozzle can be enlarged to full screen to precisely monitor the soldering process.

Highlights of ERSASOFT 5:

- Intuitive user guidance
- Modern design
- PiP function/process monitoring
- Individual user interfaces

ELECTRONICS PRODUCTION EQUIPMENT

Worldwide presence



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