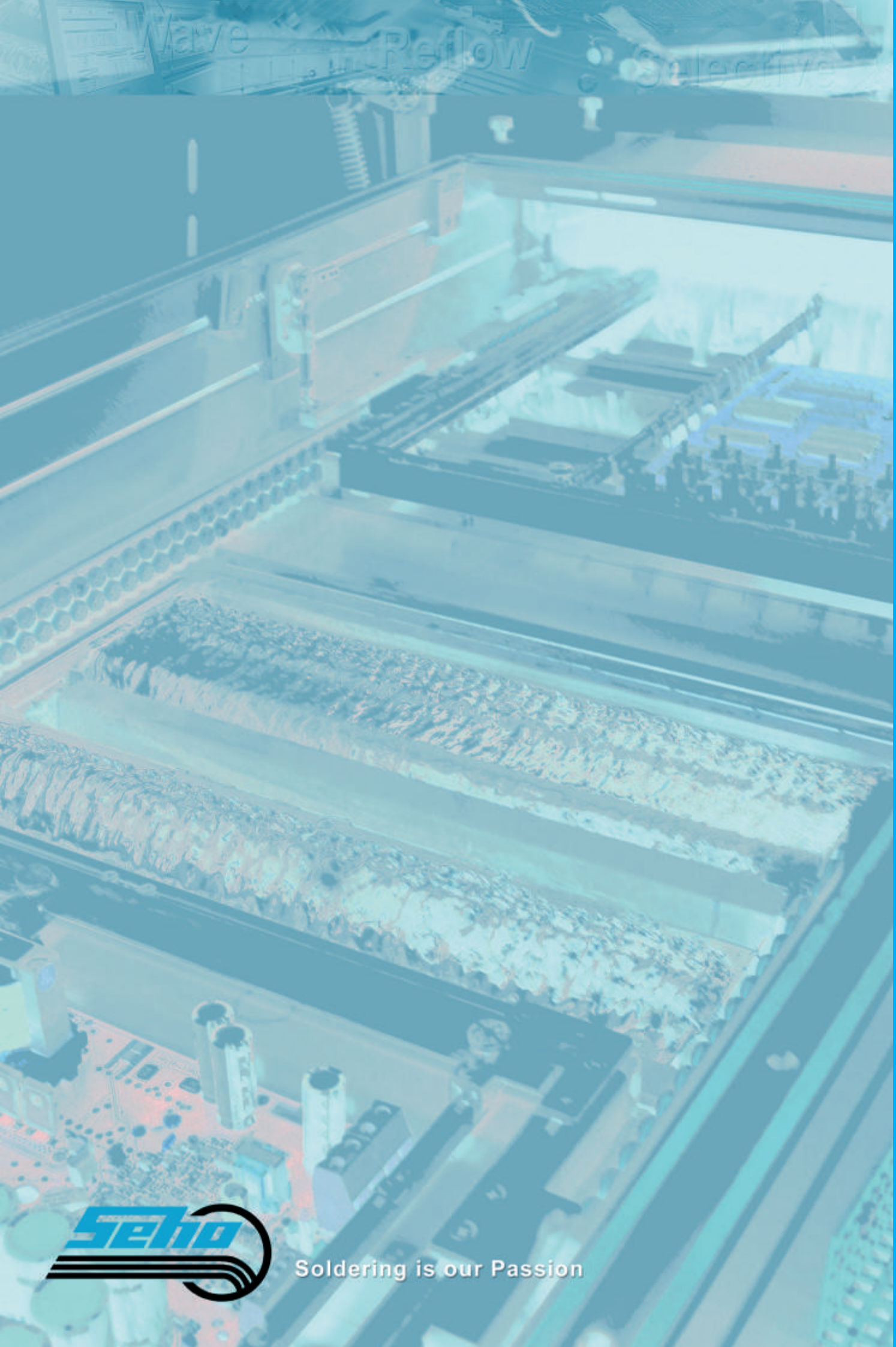


Wave Soldering System MWS 2300 and MaxiWave 2300 C

Soldering is our Passion

MWS 2300 and MAXIWAVE 2300 C

Flexible and Progressive

- **The modular construction of the MWS 2300 allows customized configuration to suit your specific manufacturing requirements and the system grows with your production.**
- **Low residual oxygen value at minimum nitrogen consumption resulting in extremely low operating costs.**
- **Patented tunnel design without expensive gate-technology.**
- **Innovative fluxer area with HVLP technology.**
- **High process reliability due to homogeneous heating of the printed circuit boards.**
- **Large process window due to sectionized soldering.**
- **Intelligent soldering channel suspension.**
- **Superb soldering quality with dual-wave system also for demanding SMD assemblies.**
- **Ideal wetting activity in the soldering area due to patented dip apron.**
- **MWS 2300 with integrated cooling module.**
- **Flexible concept of MWS 2300 to suit different configuration requirements:**
  - **choice of fluxing systems**
  - **choice of preheating systems and lengths**
  - **choice of different nozzle designs.**
- **Superbly suited for lead-free soldering processes and mixed production due to quick-change solder pots or dual solder pot for processing of two different solder alloys without change-over.**
- **Integrated filters and exhaust reduce maintenance costs to a minimum.**
- **Ideal access to all areas.**
- **Progressive with modular open-ended control.**

The Concept: Each Detail Thoroughly Considered

The MWS 2300 is ideally suited to solder demanding printed circuit boards - even at high throughputs.

The flexible pre-heating zone configuration of 1800 mm [70.8 inches] active length - extendable up to 3300 mm [129.9 inches], makes it possible to suit your specific production requirements. Should your requirements change in the years to come, simply - and without great expense - change the configuration of the soldering machine!

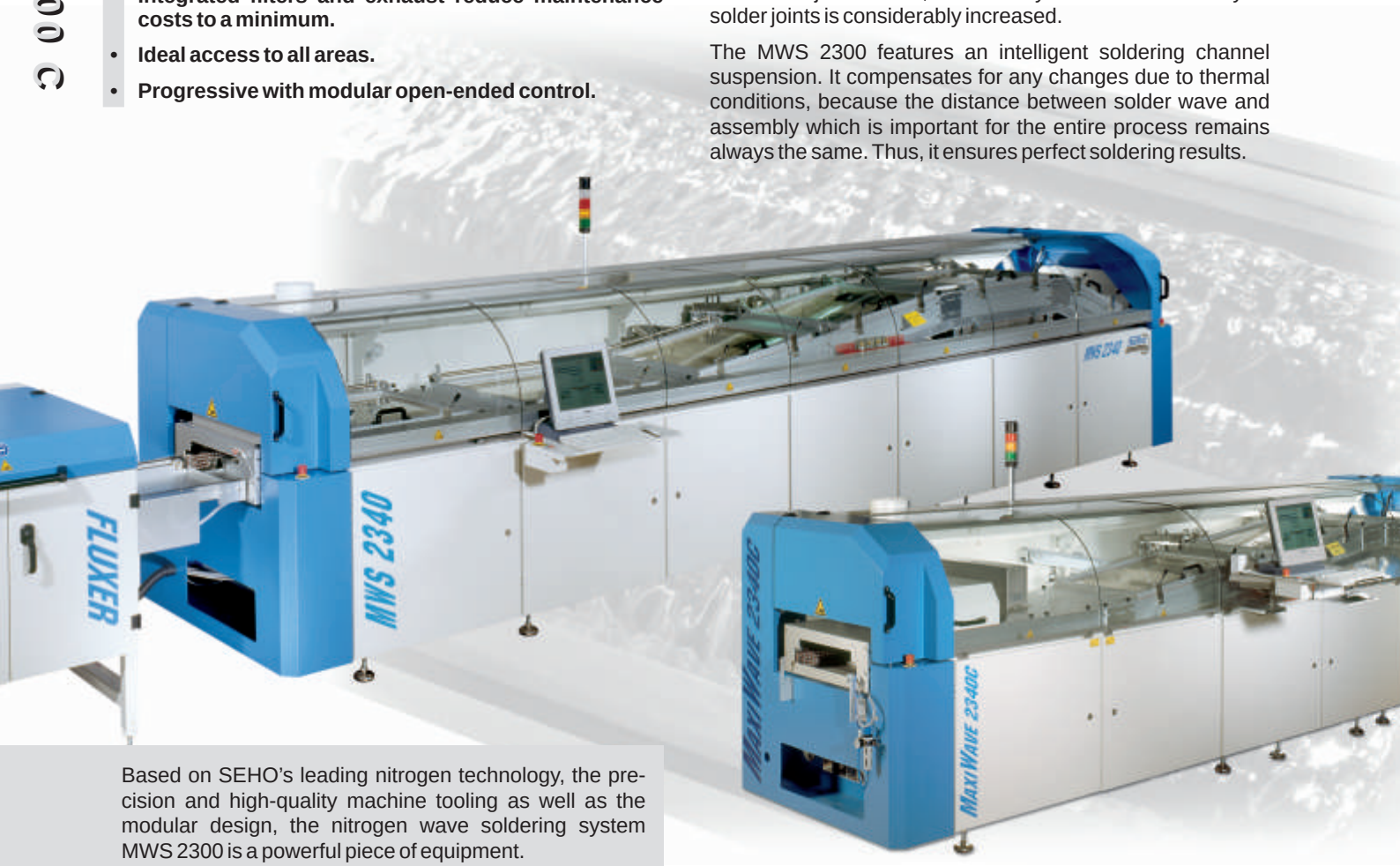
The fluxing unit may be integrated in the machine or used as an external module - according to requirement.

Several factors ensure a clean process area and consequently the lowest possible maintenance costs: As a standard the MWS 2300 is equipped with filters at the infeed and unloading end, collecting the condensates in a defined manner.

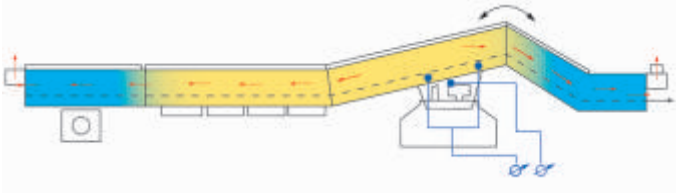
Beyond this, the machine may be equipped with a controlled and integrated exhaust 4-stage filtering system. In addition, a process gas cleaning unit is available optionally.
The savings which are achieved in maintenance costs are impressive.

A very special technical innovation of SEHO's MWS 2300 is its integrated temperature-controlled convection cooling module. Thus, the assemblies are cooled below liquidus before they are leaving the machine. This is important - particularly at high temperature applications, e. g. when using lead-free solder alloys. Comprehensive test series and studies have proved that an effective and quick cooling results in a positive influence on the metallurgical structure of the solder joints. Both, the stability as well as elasticity of solder joints is considerably increased.

The MWS 2300 features an intelligent soldering channel suspension. It compensates for any changes due to thermal conditions, because the distance between solder wave and assembly which is important for the entire process remains always the same. Thus, it ensures perfect soldering results.



Based on SEHO's leading nitrogen technology, the precision and high-quality machine tooling as well as the modular design, the nitrogen wave soldering system MWS 2300 is a powerful piece of equipment.



Nitrogen Technology: The World Leader

With its special geometric tunnel design SEHO introduced a nitrogen technology, which operates - without extensive mechanical effort - absolutely efficiently and above all with low maintenance requirements.

Gas nozzles in the soldering area flood the system with nitrogen, thus displacing the oxygen in the entire process chamber. At the inlet and the unloading end of the machine the oxygen as well as all evaporation products are sucked off. The advantage of this nitrogen technology is the low residual oxygen value in the process area, which is built-up within an extremely short time and at minimum nitrogen consumption.
Of additional benefit is that the patented tunnel design does not require any expensive or maintenance-intensive gate technology.

Flap-baffles ensure ideal access to the full length of the tunnel. Additional heat-resistant glass covers ensure minimum thermal radiation and moreover they permit to observe the soldering process.

The Fluxing Area: Flexibly Configurable

The MWS 2300 is equipped with an innovative fluxer area which ensures minimum flux consumption and reduced maintenance.

The spray head uses HVLP technology (high volume - low pressure) which generates atomization of the flux with a comparatively low pressure. This ensures a stable spray jet with a very homogeneous spray pattern and an extremely good boundary at the outer edges to enable a remarkable reduction of the flux consumption.
Overall, this low pressure system creates considerably less spray mist which results in a notable reduction of soiling in the fluxer area. As a result, maintenance requirements are minimized.

For higher throughputs or for computer-controlled spraying with two different fluxes an optional second spray nozzle may be integrated.
Additionally, an automatic dosing system can be installed. This allows a defined flux application, programmable via the software, for each particular board to be soldered.

The fluxing unit either may be integrated inside the soldering system or it may be installed as an external module in front of the machine.
In the latter case any soiling of the process area with condensed flux flumes is absolutely excluded. This then reduces maintenance costs additionally.

Moreover, an external fluxer module features the possibility of further extending the preheating area in case increasing throughput demands require this.

The entire fluxing area of MWS 2300 is made of stainless steel.
The chemical composition of the flux is thus of no importance at all.
Even water-based fluxes may be processed without any problem.

The Preheating: As You Want It

Due to the modular design of the MWS 2300, the preheating length from 1800 mm up to 3300 mm may be individually configured and it may even be changed or extended at a later date.

The preheating area is integrated in the machine to create a closed heat tunnel with high convection ratio. This offers several additional advantages. For one, it ensures the absolutely homogeneous heating of the printed circuit boards. Furthermore, the machine achieves excellent energy efficiency. Consequently, even high throughputs consume little energy.

The entire preheating area may be arranged according to your specific needs. Convection preheat zones, with or without the support of quartz heaters, convection top preheat zones, longwave infrared heating zones or quick reacting quartz zones can be combined to perfectly suit your production concept.

The heating cassettes are integrated in the machine, making their exchange child's play. "Plug & play" connections ensure short exchange times. Thus, your wave soldering machine MWS 2300 may be re-configured quickly and easily to meet new production requirements.

Conveyor System: Flexible and Robust

The MWS 2300 features a sectional conveyor system with up to five separate units.

This machine design presents a horizontal entrance to ideally realize simple inline integration.

Depending on the assemblies to be processed the various conveyor sections, e.g. in the fluxer, preheating or soldering area, can be set to individual transport speeds. This is of enormous advantage because with many applications the process window will be extended considerably due to this higher machine flexibility.

To ensure highest process reliability, the contact surface of the conveyor is provided with ESD compliant, non-skid caps.

The conveyor may be changed quickly and easily, without special tools. Thus, it is possible to simply implement additional heating or cooling modules at a later date. Furthermore, this design provides extraordinarily high maintenance simplicity.

Control Unit: Designed for the Future

The control concept of MWS 2300 is open-ended and consequently a system ready for additions, e.g. to integrate additional sensors, heating zones or cooling modules.

Operation of the MWS 2300 is made with a PC featuring an all-graphic Windows surface. It goes without saying that an automatic production data acquisition for each printed circuit board is part of the comprehensive software package. This also applies for a long-distance diagnostics function which is included in the basic system enabling the SEHO engineers to support you in optimizing your soldering process.

MWS 2300 and MaxiWave 2300 C

Soldering: Highest Quality

With the MWS 2300 all nozzles and gas-units as well as all parts coming into contact with the solder are integrated in the solder bath. The complete soldering unit may be moved out of the system automatically and exchanged quickly using plug-in connections. Thus it becomes economical to use different solder alloys in one machine.

With its function of sectionized soldering the MWS 2300 offers its user an enormously wide process window and a maximum in flexibility. Via the software, the parameters of wave height and conveyor speed may be programmed differently for up to 16 board sections.
The advantage quickly becomes obvious, because with this a component-specific defined soldering profile and peel-off turns into reality.

The soldering aggregate of the MWS 2300 consists of a dual-wave, which ensures quality soldering, also of complex SMD geometries. Depending upon application, different innovative nozzle designs may be used to obtain highest quality soldering results.

A convection heater directly in front of the solder waves establishes an extremely low temperature jump between pre-heating zone and solder bath, avoiding temperature stress for the assemblies.

A particular feature of SEHO machines is the patented dip-apron in the wave soldering area. It contributes to an essential reduction of the residual oxygen value. It also efficiently reduces the oxides in the wave soldering area, thus creating the highest possible wetting activity of the solder.

Minimum Investment Costs at Maximum Performance: MaxiWave 2300 C

Based on the high-performance machine parts of the MWS 2300, the MaxiWave 2300 C especially attracts with low investment costs.

The MaxiWave 2300 C features a fluxing module which is integrated in the base frame. To avoid flux evaporation within the process area, the fluxer is equipped with an exhaust hood.

The preheating area consists of up to nine heating zones, providing a total heating length of up to 2700 mm. You have the choice between infrared, quartz or powerful convection preheat modules which we integrate into the machine in different configurations to optimize your production process.

The heart of the MaxiWave 2300 C is the innovative soldering module which is absolutely identical with the soldering area of MWS 2300.

The low-cost alternative for the modern, high-class electronic production: MaxiWave 2300 C.

Technical Data and Machine Options

Fluxer Area	
ATS spray fluxer with HVLP technology	○
dual spray head	○
flux dosing system	○
external fluxer module	○
Preheating Area	
long wave-length infrared preheat zone	○
quartz emitters (quick reacting)	○
convection module	○
top-side preheater	○
length of preheating area	1800 - 3300 mm [70.8" - 129.9"]
Soldering Unit	
single solder pot for up to two nozzles or dual solder pot for two different alloys	○
solder level indicator	●
different innovative solder nozzle geometries	○
composit coating for processing of lead-free solder alloys	●
Conveyor	
maximum conveyor width	500 mm [19.7"]
conveyor angle fixed at	7°
finger conveyor or solder frame conveyor	○
Cooling Area	
integrated convection cooling module	○
Process Zone	
exchangeable filters at the inlet and outlet	●
integrated exhaust and 4-stage filter system	○
process gas cleaning unit	○
Control Unit	
microprocessor control with PC	●
closed loop control	●
statistical process control	●
high precision CAN bus motors for pumps and conveyor	●

Further options upon request. ● Standard ○ Option

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Soldering is our Passion