ASSCON
SYSTEMTECHNIK

QUICKY 450

Vapour-Phase Soldering Machines for Laboratory and Single Piece Production

ASSCON Vapour-Phase-Reflow-Soldering Systems set the benchmark in soldering technology. The physical laws of the process permit defect-free soldering of the most complicated SMT assemblies in any required geometry even when using lead-free solder pastes. Components such as QFPs, BGAs, Flip-Chips as well as hybrids are processed with verry high quality results.

The QUICKY Series is designed to be used in the laboratory and for prototype production.

Due to its compact design the machine may be used any place and without preparatory set-up. Just a 240 V supply connection is required to operate the unit.

Work piece carrier with assembly at feed-in position

Machine Design Concept

The machine is impressive due its simplicity, ease of use and through providing the ability to solder high quality assemblies defect-free. Due to the small dimensions of the machine and its independence of fixed supply systems, the unit may be used at different workplaces without restrictions. Integrated in the self-supporting structure is the process zone with electrically operated lift-unit and the work piece carrier. The electronic control includes temperature sensors for the heaters, fluid and steam temperatures and therefore ensures absolute process reliability.
An automatic measuring cycle recognizes the medium used.
A closed cooling system is integrated in the base of the machine.

Process Sequence

After opening the machine cover the solder product is placed on a work piece carrier. The process is started. An electric motor moves the work piece carrier – with the assemblies to be soldered into soldering position. The vapour reservoir is opened. The SPS controls vapour production according to the set temperature gradients.
Having reached the soldering temperature the work piece carrier is moved to the cooling position. The vapour reservoir closes and the cooling blower is switched on. After the cooling time has expired, a signal indicates release for the removal of the work piece.
The whole process may be observed through a sight window.

Typical Applications

- Laboratory use for qualification and to test soldering processes
- Establishing temperature profiles
- Reliable SMT soldering of single assemblies
- Soldering of small series
- Quality control of solder pastes and printed circuit boards
- Assembly repairs, desoldering and resoldering of components

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The physical laws during the vapour-phase soldering process ensures extremely stable process conditions.

Using vapour a as heat-transfer medium the solder product, independent of its size and weight, will be heated to preheat and peak temperature levels in an absolutely homogeneous fashion. Geometric parameters such as the form of components or packaging density do not influence the heating process. Due to the high density of the medium oxygen is displaced from the heating and soldering zone. The whole process takes place in an oxygen-free atmosphere.

Overheating of the assemblies, damage to components or de-lamination of printed circuit boards cannot happen, as the maximum possible solder product temperature can never exceed the boiling temperature of the medium. E.g. 230 °C when using a lead-free process.

Any transfer of heat energy occurs during the condensation of the vapour on the assembly. Due to the control of the energy supply during the heating and soldering process the temperature gradient may be set.

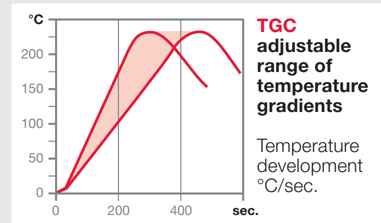
The energy distribution across the whole assembly is homogeneous. Therefore three-dimensional assemblies may be processed without any problem.

Cooling unit and control box

Operational panel

QUICKY 450 at a Glance:

- Conveniently operating laboratory reflow soldering system
- Integrated cooling system
- Automatic process procedure
- Automatic medium recognition
- Continuously adjustable temperature gradient
- Prepared for use of a temperature profile measuring system
- Oxygen-free-process, oxygen-free heating and soldering process
- Lead-free capable without restriction



Optimum process reliability through:

- ASB (automatic-solder-break), automatic recognition of a completed soldering process
- TGC (temperature-gradient-control), adjustable temperature gradients in the pre-heating zone
- OPC (optical-process-control), visual process control

Technical Data	
Maximum solder piece format	450 x 450 mm
Maximum solder piece height	60 mm
Electrical Supply	230 V / 50 Hz
Power drawn	3,3 kW
Medium quantity	2 kg

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11/2009