



QUICKY 300

Vapor-Phase Soldering Machines for Laboratory and Single Piece Production

ASSCON's Vapor-Phase Reflow Soldering Systems set the benchmark in soldering technology. The physical laws of the process permit the 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 highest quality results.

The vapor-phase soldering machines of the QUICKY series are designed for the laboratory and for prototype productions.

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

Machine Design

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. The process zone with lift unit and work-piece carrier is integrated in the self supporting structure. The large surface heater units are attached to the outside and are insulated against external heat-radiation. The electronic control includes temperature sensors for the heaters, fluid and vaportemperatures and therefore ensures absolute process reliability.

Vapor production is activated via the SPS. The process may be observed through the sight window. Following fusion, the soldering process may be terminated by the user or via the ASB automatic-solder-break control. Subsequently the product is manually moved to the removal position. The cooling water tank is emptied via a cooling coil in the process chamber and therefore cools the process medium, resulting in the collapse of the vapor blanket. After the collapse of the vapor the machine may be opened safely to remove the soldered product.

Typical Process Applications

- Laboratory use to qualify and to test soldering processes
- Dependable SMT-soldering of single assemblies
- Quality-control of solder pastes and printed circuit boards
- Repair of assemblies, desoldering and resoldering of components

Process Sequence

After opening the machine cover, the product is placed on the work-piece carrier and lowered into the process chamber by means of a manual crank. Subsequent to filling the cooling water tank the soldering process starts. Depending upon the required temperature gradient one of two heating stages may be selected.



Work-piece carrier in feed-in position with assembly and desoldering unit

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During the vapor-phase soldering process physical laws ensure extremely stable process conditions.

Using vapor as heat-transfer medium the solder product, independent of its size and weight, will be heated absolutely homogeneously to preheat and peak temperature levels. 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, the damaging of components or the delamination of printed circuit boards cannot occur, as the maximum possible solder-product temperature can never exceed the boiling temperature of the medium. For lead-free applications e.g. 230°C. Any transfer of heat-energy occurs during the condensation of the vapor on the assembly. By controlling the energy supply during the heating and soldering process the temperature gradient may be set.

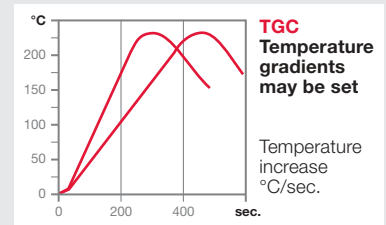


Entering the assembly into the process area

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

QUICKY 300 at a glance:

- Laboratory-Reflow-Soldering-System
- Mobile and usable for
 - Repair of Assemblies
 - Quality control
- Oxygen-free-process, oxygen-free pre-heating and soldering process
- Lead-free capable without restrictions and with regard to choice of temperature gradient:



Optimal Process Consistency because of:

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

Description of Models

Maximum solder product format	300 x 300 mm
Maximum solder product height	60 mm
Electrical supply	240 V/50 Hz
Power drawn	2 kW
Medium quantity	1 kg
cooling water content	2 ltrs
Process ready after	10 min