



VP800

Vapour-Phase Soldering System for Laboratories, Prototyping and Close-to-Production Process Qualifications

ASSCON vapour-phase reflow soldering systems are state-of-the art. They are the innovative response to modern soldering challenges. The physical principles of the process allow fault-free soldering of the most complex SMT modules in lead-free soldering pastes in virtually any arrangement.

The ASSCON VP800 system has been developed especially for laboratories and prototyping. Thanks to its multi-chamber design, the system can also be used for implementing close-to-production process qualifications. Moreover, the system can be used for soldering very small series.

System Concept

As the processing zone is separated from the cooling zone, it is possible to apply the soldering process in the VP800 system to the standard achieved by current production lines in a compact environment. Here, the system especially stands out by virtue of its simple handling, enabling each user to solder high-quality modules fault-free.

The system is equipped with a solder piece intake with lock system at the front. Thanks to the additional top intake, even large-sized special modules can be soldered. This significantly expands the application range of the VP800 system.



The system particularly features simple mechanical processes. This simplicity of the system's design can also be found in its user- and maintenance-friendliness. Furthermore, the system is easily accessible for maintenance and service staff.

Optionally, the VP800 can be equipped with a fluid filter system. The medium which is filtered at the start of the process is re-fed into the system cycle.

The standard version of the VP800 is connected to a cooling water system supplied by the customer. The system can be optionally delivered with a closed external cooling system including electrically operated cooling unit.

Process Sequence

Via the intake at the front, the solder piece is inserted into the system. The process is then started.

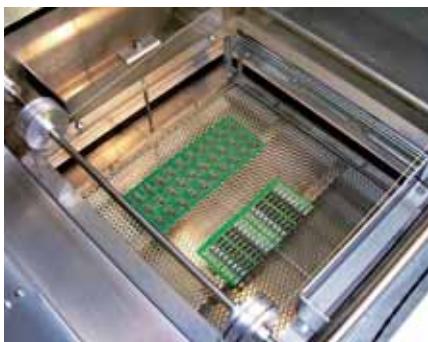
After the inner lock has opened, the soldering piece is lowered by an electric motor into the clearly defined vapour level. Depending on the selected temperature gradient, the solder piece is heated up to a predefined temperature.

Upon reaching the soldering temperature, the soldering process is terminated and the solder piece is transferred to the cooling zone. Here, fans ensure efficient evaporation and cooling-down of the solder piece, before it can be taken out of the unloading lock at the front. Termination of the process is indicated by an acoustic signal.



Technology

Through the use of liquid or vapour as an energy transmission medium, a process is used which is far more efficient than convection. Vapour condenses on the soldering piece. The solder piece is completely enclosed by condensate and the preheating and soldering process is started. By using a special liquid of type GALDEN®, an inert atmosphere is created. Thus, the entire preheating and soldering process takes place in a completely oxygen-free environment.



Thanks to variable temperature gradient control, a certain amount of vapour, which is adapted to the respective heat required by the modules, is automatically created. This means that the optimum tempera-

ture is ensured at all module positions so that even modules with a wide range of very different thermal requirements can be soldered. The temperature variations on the modules remain at a minimum.

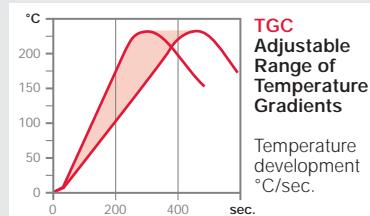
Overheating of modules, damage to components and delamination of PCBs is not possible as the maximum solder piece temperature can never exceed the boiling temperature of the GALDEN® fluid due to physical laws.

Typical Applications

- Application in laboratories for qualification and testing of soldering processes
- Creation of temperature profiles
- Safe SMT soldering of individual modules
- Close-to production process qualifications
- Soldering of very small series
- Quality control of soldering pastes and PCBs
- Module repair – unsoldering and resoldering of components

VP800 at a Glance:

- User-friendly reflow soldering system
- Ready for connection to a cooling system supplied by the customer
- Automatic fluid identification
- Continuously adjustable temperature gradient
- Ready for connection of a temperature profile measuring system
- Oxygen-free preheating and soldering process
- Lead-free soldering pastes can be used without limitation
- Optional fluid filter system including pump
- Optional closed external cooling system



Optimum process reliability through:

- ASB (automatic solder break), automatic detection of the terminated soldering process
- TGC (temperature gradient control), selectable temperature gradients in the preheating zone
- OPC (optical process control), visual process control

Technical Data

Max. solder piece format	400 x 400 mm
Max. solder piece height	85 mm
Main voltage	400V / 3 / PE / N -50 Hz
Connect load	4,1 kW
Fluid filling quantity	15 kg