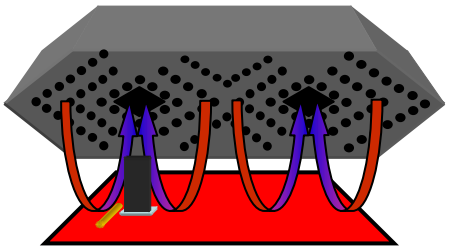
Know-how in Reflow

SMT Reflow Systems – Made in Germany

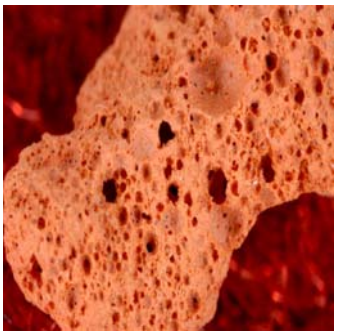
In reflow soldering systems, SMT in Wertheim has assumed a pathfinder role in resource protection and accordingly cost reduction also. The environmental philosophy stated in the company's own articles of association is based on three tenets.
These shape the search for the lowest possible energy consumption, nitrogen use and maintenance expenditure. The results achieved make a clear statement.

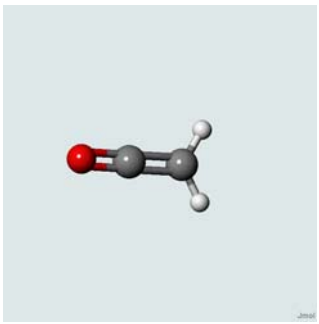
Heat transfer

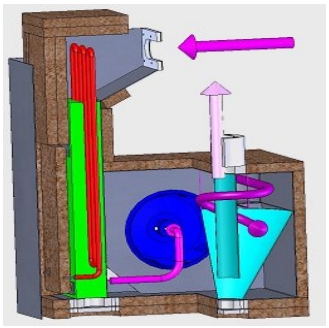


Efficient and optimum heat transfer is not only a guarantee for best soldering results, it also ensures a positive energy balance. SMT, Wertheim has equipped all its machines with Power Nozzle technology. The enhanced geometry allows an even more perfect process gas conveyance. Power Nozzle is a special nozzle system that operates on the basis of a high fan performance while simultaneously maintaining low flow speeds.
Absolute temperature stability in the soldering chamber is the result and this in turn ensures consistent warming of the modules. Agitating large air masses while at the same time maintaining low flow speeds results in hot air flow directly over the module where it is most effective.
By introducing Power Nozzle technology, SMT has not only taken another step forward in the direction of quality enhancement but has also quite consciously and consistently advanced its existing energy-saving policy.

ABS-Process gas cleaning







Soldering processes are always linked with out gassing from PCBs, lacquer and flux residues. So absorption systems that operate optimally have a decisive impact on the quality of the soldering system, cleaning costs and downtimes and therefore on the overall efficiency of the complete system.

SMT, Wertheim has equipped all its systems with an optional double chamber absorption system and has thus reduced maintenance time, costs and downtimes substantially. Process gases are no longer cooled down and cleaned with the usual condensation process but instead are bound in a granulate keeping the gas warm. This has considerable advantages.

The granulate allows much longer operational times and only has to be renewed after approx. every 3000 hours of operation. The process area is kept free of deposits. The gas guide ways have been greatly shortened. Heating of the pipes to prevent temperature fluctuations is not necessary. A pleasant side effect is even lower energy consumption.

SMT
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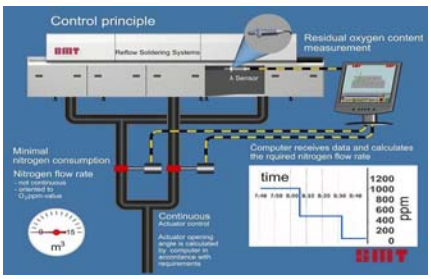
With its double-chamber absorption system, SMT has a convincing solution for process gas purification that, in addition to higher reliability, also sets a technically clear course.

- minimum cleaning effort
- minimized downtime
- high productivity
- tremendous cost saving
- motivated employees
- no additional cleaning equipment
- disposal via solid waste recovery

Intelligent Nitrogen control



SMT succeeded in lowering the consumption significantly by means of intelligent nitrogen management. The saving effect is achieved by automatic matching of the pass-through apertures and the nitrogen feed with different PCBs and a flow tunnel at the inlet and outlet with variable opening height. Proportional valves are regulating the nitrogen flow to the minimum necessary. A Standby mode e.g. for change over periods is reducing the consumption additionally.

- high process stability
- low loss rate
- low consumption
- low costs
- calculable costs

Cooling concept

With this modular concept cooling stages between 1 and 5 can be selected for all Quattro Peak ovens to achieve the required outlet temperature. Products can be handled, packed or inspected further on without any idle time. Our multilevel cooling zone is completely separated from the heating zones and the filter system is positioned below the transport to prevent any dripping sucked filter on the board. With an optional control the temperature in the cooling zone within certain limits can be selected freely.
Heating or cooling is then effected respectively. This prevents light component assemblies from cooling down too much. The control can be switched on and off. A cooling aggregate can be integrated. Heat exchange is effected via a specially designed heat exchange plate. The CFC-free coolant guarantees stable and safe operation of the heat exchanger.

- minimum cleaning effort
- minimized downtime
- high productivity
- no additional space for cooling aggregate

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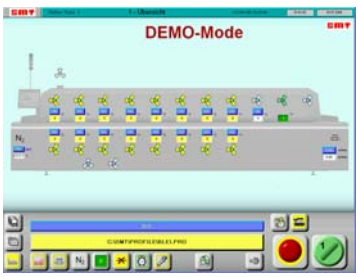
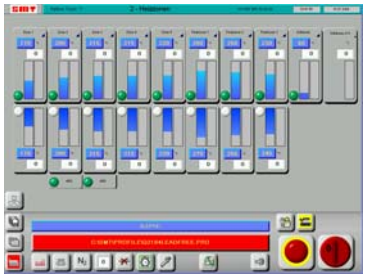
Know-how in Reflow

Heating zones

Bulk heads reduce the opening down to the minimum: the width of the PCB, reduction of nitrogen and power consumption and clear temperature separation of the zones
Each zone can be adjusted separately. The SMT patented power nozzle system guarantees a perfect temperature distribution in all heating zones.

Software






The control regulates and monitors all functions of the system fully automatically. Distinguishing features of the control's user interface are its clarity and most especially its ease of use. All soldering parameters are accessed, modified or saved via the 15-inch flat-touch-screen (EMC-safe). All nominal and actual values are displayed. Different coloured symbols in the software make it easy to use. The password protection with its three user levels that is delivered as a standard, allocates the appropriate access rights to each user and so prevents unauthorised modifications in the process flow. Data are collected for the documentation of production processes and saved in XML format for later verification. This meets the requirements for data collection in compliance with DIN/ISO 9000 ff.

SMT

Progress, innovative technology that takes the preservation and protection of resources and the environment into consideration is the philosophy of SMT. Not without reason is SMT the manufacturer of the most energy-saving and easiest to maintain reflow soldering systems in Germany

More technical information you will find on our Presentation CD-Rom which we are pleased to submit to you if requested.

SMT will be happy to support you on any kind of question around reflow soldering.

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