Full Convection Reflow Soldering Systems

SMT Highlights:
- Tool-free maintenance of all SMT Systems
- NEW! CATalysis - process gas cleaning
- Sustainable energy and nitrogen saving concept
- Proven Vacuum Reflow Technology (since 2009)
- NEW! Independent fan control in all zones
Quality „Made in Germany“
SMT soldering systems are distinguished amongst others by long life cycle and high process stability. An extremely low power consumption is realized in the SMT system concept due to lower process temperatures, effective insulation, and systems, that require a low exhaust air.

- Flexible machine portfolio from XXS up to Quattro Peak XL Plus
- Minimal consumption of energy and nitrogen
- Reliable conveyor system from single up to multi lane concept

Zone concept
The zone concept of all Quattro Peak systems is optimized to the process. This consists always the same ratio of pre-heating to peak zone (3 parts pre-heating and 1 part peak zone) according to standard profile specification referring to IPC.

Catalysis – Process Gas Cleaning
The new CATalys – process gas cleaning of SMT works comparable as a catalyst in a car. The cleaning process can take place due to the catalyst at lower temperatures. The effect is a better cleaning performance.

Advantages:
- decrease of contamination
- longer maintenance interval
- reduce of maintenance effort
- more efficient production

The CATalys – process gas cleaning can be installed into all SMT reflow soldering systems from the Quattro Peak L series. Depending on the system size, this may be up to 4 CATalys (up to 5 at vacuum soldering systems).

A retrofitting to the new CATalys – process gas cleaning is possible at any time at SMT reflow and vacuum soldering systems.

September 27, 2016, Chicago

... and the winner is SMT
Gas-tight fan units
- constant process gas, adjustable via frequency converter
- encapsulated, maintenance-free fan motor, no slight leakiness
  - energy and nitrogen savings

Efficient maintenance
- tool-free maintenance
- no pipe system for process gas cleaning

Intelligent Nitrogen Control
Intelligent nitrogen control with optimized control mode reduces nitrogen consumption to a minimum. In addition a usable nitrogen parameter is provided for traceability.

Benefits intelligent nitrogen control:
- Constant residual oxygen values
  - ~20% consumption
  - Process stability
  - Products are soldered with the same quality

Independent fan control in all zones
More functionality with the new frequency converters
- Active fan monitoring
- Infinitely variable regulation of the fan frequency (4 stages still in our system)
- High energy saving potential
- Monitoring of the current consumption of the fans
  - Alert if the consumption varies
- Each fan individually adjustable
- Additional setting parameters for an optimum profiling

Example: consumption graphs

Your Benefit
- Gas-tight fan units
  - constant process gas, adjustable via frequency converter
  - encapsulated, maintenance-free fan motor, no slight leakiness
  - energy and nitrogen savings

- Efficient maintenance
  - tool-free maintenance
  - no pipe system for process gas cleaning

- Precise nitrogen control by integrated lambda sensor technology and real-time continuous measurements of residual oxygen value
  - less nitrogen consumption
  - easy calibration (exchange possible by customer)

- CATalys: Cleaning process can take place due to the catalyst at lower temperatures
  - better cleaning performance

- Lowest operating costs
  - lowest energy and media consumption
  - lowest consumption of spare and wear parts
    (e.g. rails, chains, fan motors, heating elements)

* optional

www.smt-wertheim.com
### Technical Data from QP S Media up to XL Plus

#### External Data

<table>
<thead>
<tr>
<th>External Data</th>
<th>QP S Media</th>
<th>QP S</th>
<th>QP M</th>
<th>QP L</th>
<th>QP L Plus</th>
<th>QP XL</th>
<th>QP XL Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>4672 mm</td>
<td>4198 mm</td>
<td>4648 mm</td>
<td>5754 mm</td>
<td>6714 mm</td>
<td>7169 mm</td>
<td>7712 mm</td>
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<tr>
<td>Width</td>
<td>1435 mm</td>
<td>1435 mm</td>
<td>1435 mm</td>
<td>1435 mm</td>
<td>1435 mm</td>
<td>1435 mm</td>
<td>1435 mm</td>
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<tr>
<td>Weight approx.</td>
<td>2300 kg</td>
<td>2000 kg</td>
<td>2200 kg</td>
<td>2500 kg</td>
<td>2800 kg</td>
<td>3000 kg</td>
<td>3200 kg</td>
</tr>
<tr>
<td>Number / diameter feet</td>
<td>10 / 80 mm</td>
<td>10 / 80 mm</td>
<td>12 / 80 mm</td>
<td>14 / 80 mm</td>
<td>14 / 80 mm</td>
<td>16 / 80 mm</td>
<td>16 / 80 mm</td>
</tr>
<tr>
<td>Process chamber</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-heat / Peak zones</td>
<td>3 / 2</td>
<td>3 / 2</td>
<td>3 / 2</td>
<td>4 / 2</td>
<td>5 / 3</td>
<td>5 / 3</td>
<td>6 / 4</td>
</tr>
<tr>
<td>Active convolutions length</td>
<td>2061 mm</td>
<td>2061 mm</td>
<td>2511 mm</td>
<td>3143 mm</td>
<td>3630 mm</td>
<td>4091 mm</td>
<td>4628 mm</td>
</tr>
<tr>
<td>Cooling zones: 1)</td>
<td>2x=1792 mm</td>
<td>1x=1279 mm</td>
<td>1x=1279 mm</td>
<td>2x=1752 mm</td>
<td>3x=2226 mm</td>
<td>3x=2226 mm</td>
<td>3x=2226 mm</td>
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<tr>
<td>Cooling zones: 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling zones: 3)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption steady state condition:</td>
<td>approx. 9 kW h</td>
<td>approx. 7 kW h</td>
<td>approx. 7 kW h</td>
<td>approx. 8 kW h</td>
<td>approx. 9 kW h</td>
<td>approx. 9 kW h</td>
<td>approx. 11 kW h</td>
</tr>
</tbody>
</table>

2) Up to 5 cooling zones possible. Each cooling zone: 474 mm
3) Machine with chain conveyor, 220 mm transport width, fan speed reduction and no other options

#### Technical Data

- **Height (delivery condition / with warning light):**
  - 1767 / 2353 mm
- **Inlet height, adjustable by customer:**
  - 950 mm +/- 20 mm
- **Process chamber**
- **Bottom side heating in pre-heating zone:**
  - yes
- **Temperature measurement:**
  - NiCr-Ni sensors in hot gas flow
- **Heat-up time:**
  - approx. 30 min.
- **Heat-up time with economy switch:**
  - approx. 60 min.
- **Heat transfer:**
  - 100% forced convection
- **Process temperature (pre-heat/-peak zone):**
  - max. 300 °C / 350 °C

#### Transport chain conveyor

- **Usable working width:**
  - 60 ... 510 mm
- **Usable working height with PCB support:**
  - pin level -10 mm left-right
- **Fixed rail:**
  - front
- **Pass through height (top/bottom):**
  - 30/30 mm
- **Max. loading per track:**
  - 3 kg/m
- **Conveyor speed:**
  - 0.2 ... 3.0 m/min.

#### Cooling water

- **Connection thread:**
  - 2 x 1/2"
- **Quantity of / pressure of cooling water:**
  - > 15 ltr./min. / > 2.5 bar
- **Temperature of cooling water:**
  - < 15 °C

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1) Standard height: 950 mm; corresponding to a changed inlet height
2) Differing at dual or multi lane
3) Connection of a flexible, heat resistant (at least up to 100 °C) hose (available by SMT) or tube. The waste air exhausting unit with adjustable throttle valve mounted after the suction sleeves has to be installed by the user.
4) N2-supply with pressure reducer has to be mounted by the user, recommended supply of nitrogen with oxygen content < 5 ppm.
5) 1000 ppm with proportional valves and sleeping mode (options); if 500 ppm then approx. 10 m³/h
6) With PCB (220 x 220 mm), one PCB length distance, 1000 ppm; if 500 ppm then approx. 17 m³/h

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The reflow soldering systems are individually configurable. Choose from a variety of lengths from heating zone length, and the cooling zones and at transport system between a single, double or multi lane.

Ask us, we have the perfect solution for your application.

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