Reflow Soldering System SEHO PowerReflow

POWERREFLOW

More Effectiveness for Your Reflow Production

- **World wide unique, thermally invisible conveyor system - distinguished with the Global Technology Award.**
- **Highest process reliability through 100 % parallelism of the transport.**
- **Efficient condensate management for minimised maintenance effort.**
- **Powerful energy transfer through new single fan technology.**
- **Low temperature settings for component-sensitive processes.**
- **Low operating costs.**
- **Two basic versions are available:**
  - for operation in ambient atmosphere
  - with complete equipment for nitrogen operation, for operation of the system in nitrogen atmosphere

SEHO PowerReflow:
Attractive Performance, Attractive Design and Attractive Price

SEHO PowerReflow has been designed for medium to large production series and excels not only by its highly efficient energy transfer but also by its modern design and exceptionally attractive price.

Like the SEHO MaxiReflow, the SEHO PowerReflow is also equipped with an innovative transport system, that is not only thermally invisible, but also ensures 100 % parallelism of the chain guiding profiles and has been distinguished with the Global Technology Award 2006.

Furthermore, the SEHO PowerReflow is equipped with a highly effective process gas cleaning system and a completely new single fan technology.

SEHO PowerReflow is characterized by flexible application for single- and double-sided reflow processes, in high-temperature processes and for curing adhesives and underfills.

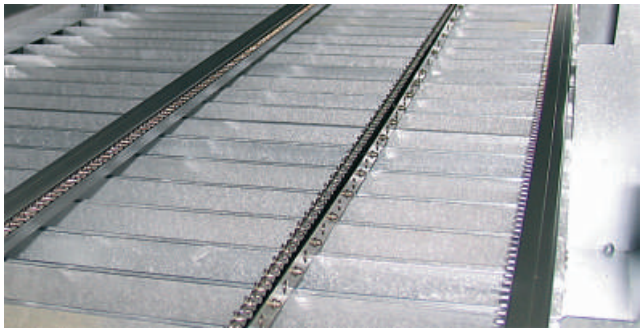
Effective Conveyor:
Highest Parallelism with the LowMassConveyor

The new 'LowMassConveyor' transport system of the SEHO PowerReflow has shown itself to be extremely innovative and unique worldwide.

The chain guide profiles are carried by continuous steel cables in this transport system, each of which is spanned with a tensile force of more than a ton through the entire system. This ensures an absolute parallel alignment of the profiles. Extremely slender chain guide profiles which are 'thermally invisible' can thus be utilized at the same time.

A similar principle is used for the center support, which cannot be 'seen' on the temperature profile either, completely independent from its position. The center support can be adjusted individually with respect to height and width, or - if necessary - it can be moved completely out of the working area and 'parked' under the fixed transport rail.

This innovative transport system has a further advantage for the area of maintenance.
Only one adjustment mechanism is still required within the process zone because the parallel alignment of the chain guide profiles is not achieved within the oven by means of spindles but solely by means of tensile force from the spanned cables.
This method results in less potentially corroding surfaces on which the contaminated process gases can condense, whereby the outlay on maintenance and the extend of possible wear are reduced to a minimum. This does not only save time but also money in your production.

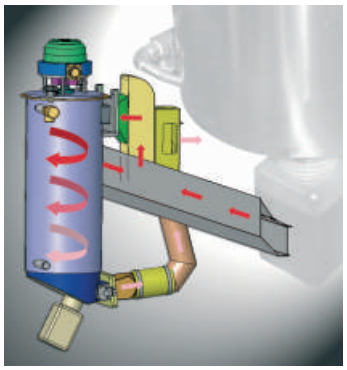


Entirely according to your particular production requirements, the SEHO PowerReflow can be equipped with various transport system variants: The chain transport system LowMass-Conveyor - with or without center support - , a belt conveyor or with a combined conveyor system, i.e. a combination of pin chain conveyor and belt conveyor.

Effective Cleaning:
The Flux Management

The significantly increased temperatures of the lead-free process inevitably lead to more evaporation from paste, components, PCB, solder mask etc. as well as products of chemical reactions between them.
Therefore, an efficient flux management with cleaning of the process gas is an absolute must for a modern reflow soldering system.

The SEHO PowerReflow is equipped with a new and highly efficient process gas cleaning system which ensures long maintenance intervals. This guarantees a remarkable cost reduction in your production and additionally makes for a high machine availability.



A new feature is that all of the heated zones are directly connected to the system for cleaning the process gas. Moreover, the removed process gas is conducted within the hot area up to the cleaning point, in order to guarantee that the condensation is controlled. The cleaning system itself is the first cold point that the process gas - which has to be cleaned - meets: a water-cooled condensing cyclone.

The entire system operates without any filters that can become clogged up unnoticed in the course of time so that they cease to function effectively.

Effective Energy Transfer:
Perfect Soldering Results with the Single Fan Technology

With a heating zone length of 2550 mm, SEHO PowerReflow has six individually controlled heating zones and therewith a flexible temperature management.

The PowerReflow is equipped with a new innovative single fan technology with tangential fans ensuring optimum reproducible soldering results.

With this new fan concept the process gas is circulated in each heating zone by a tangential fan absolutely uniformly in the top and bottom machine region. A high process gas volume and nozzle orifices specially matched to the flow conditions thereby ensure a homogeneous temperature distribution over the entire transport width at simultaneously moderate flow rates.

This results in an highly efficient heat transfer onto the printed circuit board, so that it is possible to work with relatively low temperature settings.
With present day requirements, particularly for the lead-free soldering process, an enormous advantage: All components are reliably soldered, whereas the temperature stress - particularly for the low mass components - is significantly reduced.

The effective energy transfer is also found again in the cooling area.
In the simplest variant non-regulated room air serves as cooling medium in a gas blower cooling system.

For more demanding requirements or for soldering processes in nitrogen atmosphere the SEHO PowerReflow can also be equipped with a closed cooling module with heat exchanger for a controlled cooling of the assemblies.

Effective Operation: The Software

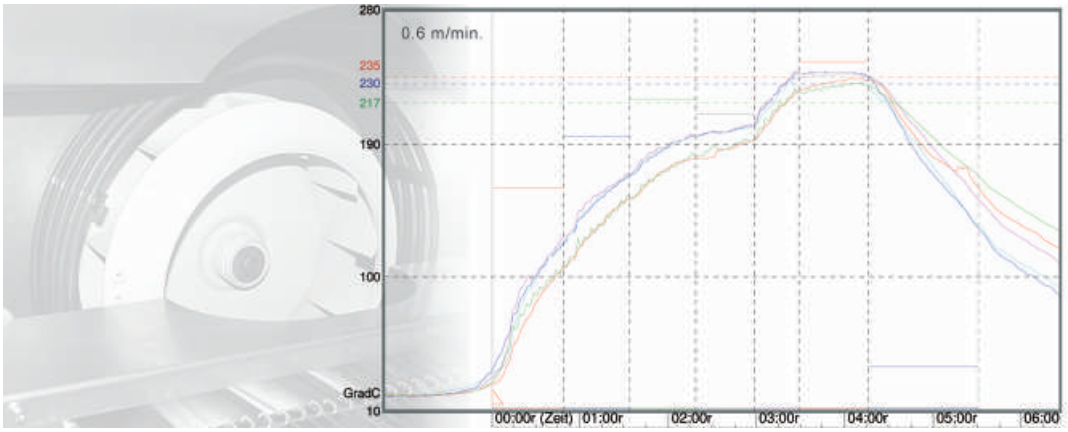
The software of the SEHO PowerReflow is easy to use and provided with a comprehensive management data tool for documentation and analyzing purposes.

All process-related functions are continuously monitored and controlled.

In order to make your daily work easier, the control unit of the PowerReflow additionally is provided with a long-distance diagnostics function.
Thus, our software and process engineers quickly and at any time may assist you optimize new soldering processes and if necessary may directly cut in on the soldering programme of your reflow system.

Access security at the different system levels is assured by individually programmable password protection.

POWERFLOW



Technical Equipment

Heating Zones	
process gas	N_2 or air
total number of heating zones [pcs]	6
total length of heating zones [mm / inch]	2550 / 100.39
number of preheat zones [pcs]	4
number of peak zones [pcs]	2
average working speed (lead-free) [m/min.]	0.55 - 0.80
time for heating up [min]	approx. 35
Available Conveyor Systems	
belt conveyor - max. working width [mm / inch]	500 / 19.68
pin chain conveyor - max. working width [mm / inch]	500 / 19.68
pin chain conveyor - min. working width [mm / inch]	40 / 1.57
electrical width adjustment	●
chain center support with electrical positioning	○
parking position for chain center support	●
max. lowering of the center support [mm / inch]	8 / 0.31
combined conveyor (chain and belt) - max. working width [mm / inch]	480 / 18.89
Cooling Area	
number of cooling zones [pcs]	1
length of cooling area, max. [mm / inch]	750 / 29.52
blower cooling with non-regulated room air	●
closed cooling module with heat exchanger	○
closed cooling module with heat exchanger and cooling aggregate	○
Flux Management	
flux management with process gas cleaning	○
Nitrogen Technology	
equipped for nitrogen operation	○
oxygen analyzer	○
oxygen analyzer with nitrogen saving control	○
nitrogen quality	5.0
pressure of nitrogen supply [bar]	6
Control Unit	
micro processor control with operation via PC	●
management data system according to ISO 9000	●
clock timer	●
interfaces for inline integration (SMEMA, Siemens etc.)	○
closed loop control of all relevant functions	●
Machine Dimensions	
length [mm / inch]	4700 / 185.03
width [mm / inch]	1500 / 59.05
height, depends on infeed height, max. [mm / inch]	1590 / 62.59

Further options upon request. ● Standard ○ Option

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