QUALITY „MADE IN GERMANY“
VACUUM REFLOW SOLDERING SYSTEMS

SMT THERMAL DISCOVERIES

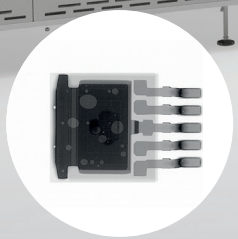
V-SERIES

INLINE REFLOW SOLDERING SYSTEM WITH VACUUM

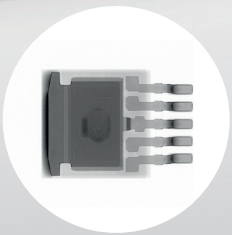
PROFILING PLUS

WITH **PROFILING PLUS!**





PROCESS WITHOUT VACUUM



PROCESS WITH VACUUM

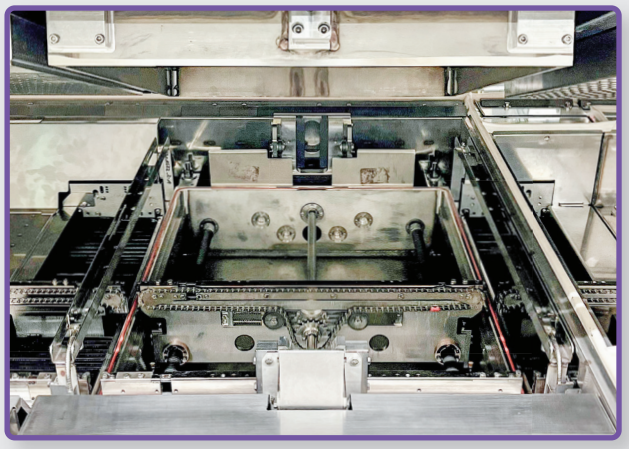
Ensures Void-free soldering - reduces Voids up to 99%

A **highly reliable system**
with the **longest experience** in the market.
For **high performance electronics**
and **easy access for maintenance.**

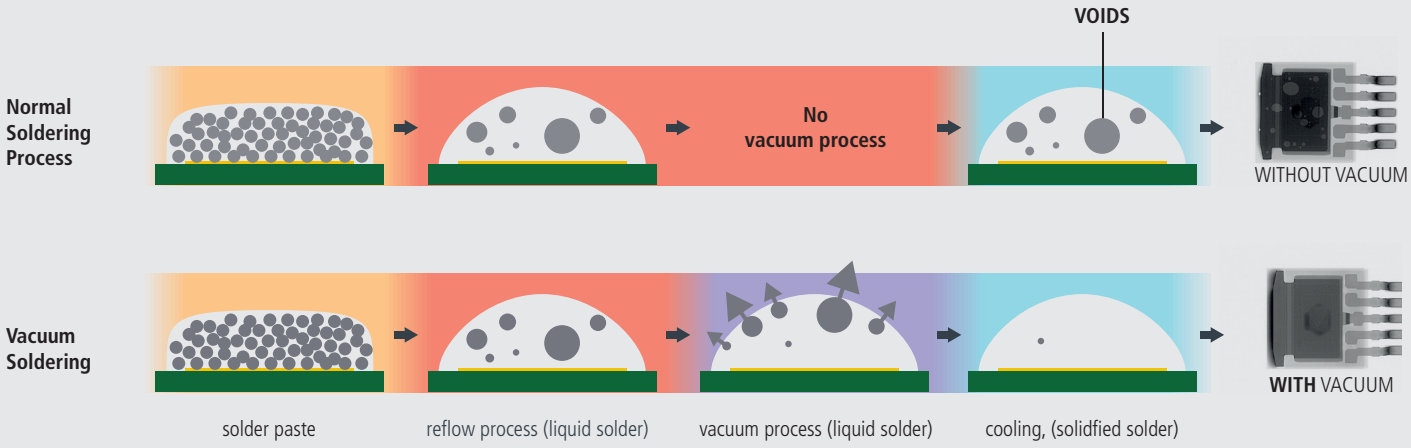
smt-wertheim.com

VOID-FREE SOLDERING SINCE 2009

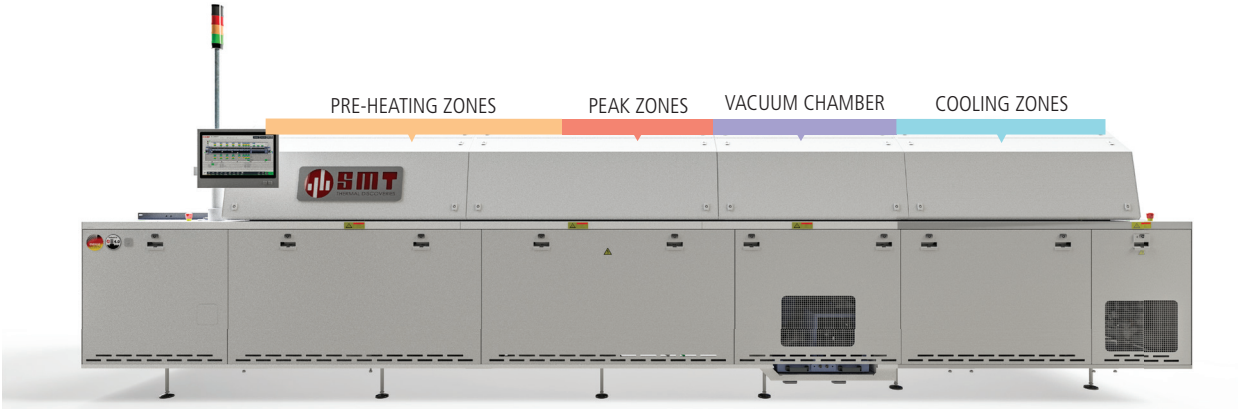
Void-free soldering is a basic requirement in high-performance electronics. Life-sustaining devices, control systems on the plane and driving assistance systems in the automotive sector have one thing in common: They have to run completely safe and error-free over an extended period of time. Basic requirement for accomplishing this is an almost void-free solder joint. Voids in a solder joint have to be reduced to an acceptable minimum.



SOLDERING PROCESS WITH AND WITHOUT VACUUM



STRUCTURE OF A VACUUM REFLOW SYSTEM

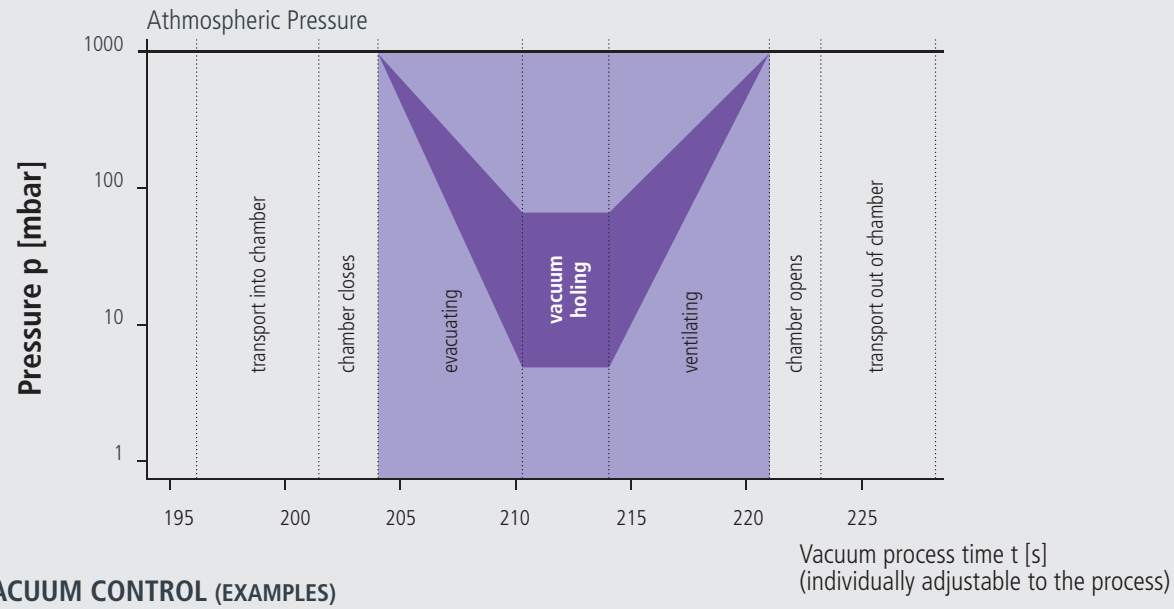


- vacuum module between peak and cooling zone
- **stainless steel vacuum chamber** (no bending)
- full convection heating concept & improved airflow, sealing and insulation concept
- intelligent nitrogen control system with Calib_O2
- vacuum and non-vacuum process possible
- all vacuum parameters are individually adjustable
- suitable for PCBs, DCB, stamping grid and carrier

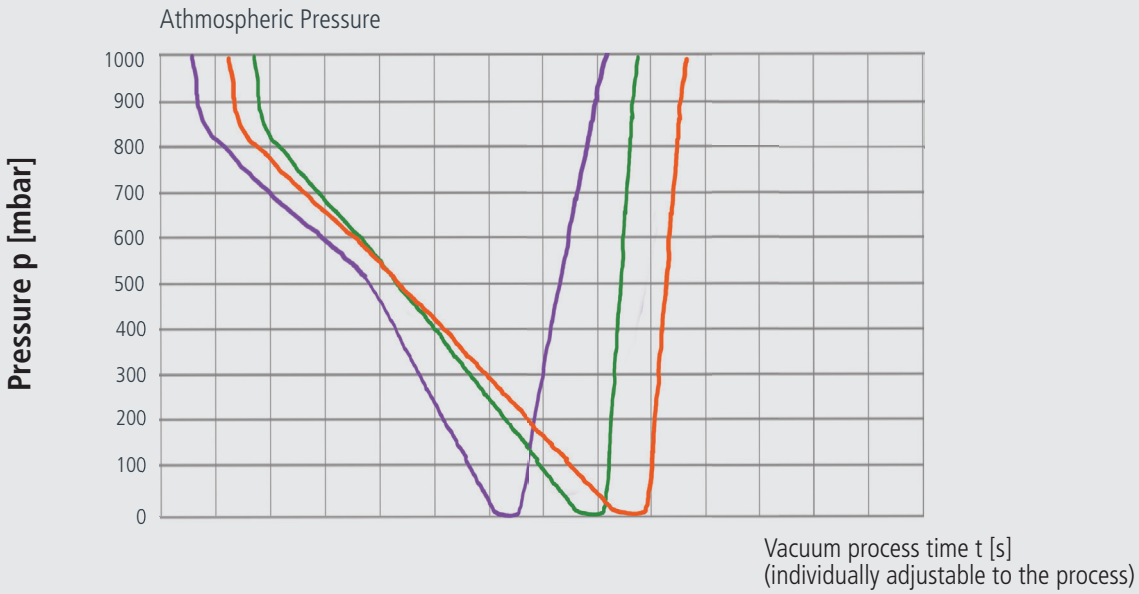
VACUUM HIGHLIGHTS

- **reliable transfer** in vacuum chamber
- **heavy duty transport** with optimized profile coating up to 10 kg/m in the vacuum system
- **small volume of vacuum chamber** (faster evacuation times & N_2 savings)
- **integrated vacuum pump** (300 m³/h)
- **enhanced vacuum chamber:** 850x700mm products possible
- **intelligent vacuum control with proportional valve**
  - evacuation curve in software adjustable via gradients (pressure / time)
  - several evacuation steps possible
  - for process optimisation with critical components

PROCESS PARAMETER - CONSISTENT PRESSURES AND TIMES



INTELLIGENT VACUUM CONTROL (EXAMPLES)



REFLOW-HIGHLIGHTS

Intelligent nitrogen control

by integrated lambda sensor technology and real-time continuous measurements of residual oxygen value

- less nitrogen consumption
- easy calibration (exchange can be done by customer)
- software Calib O2 ensures correct residual oxygen readings

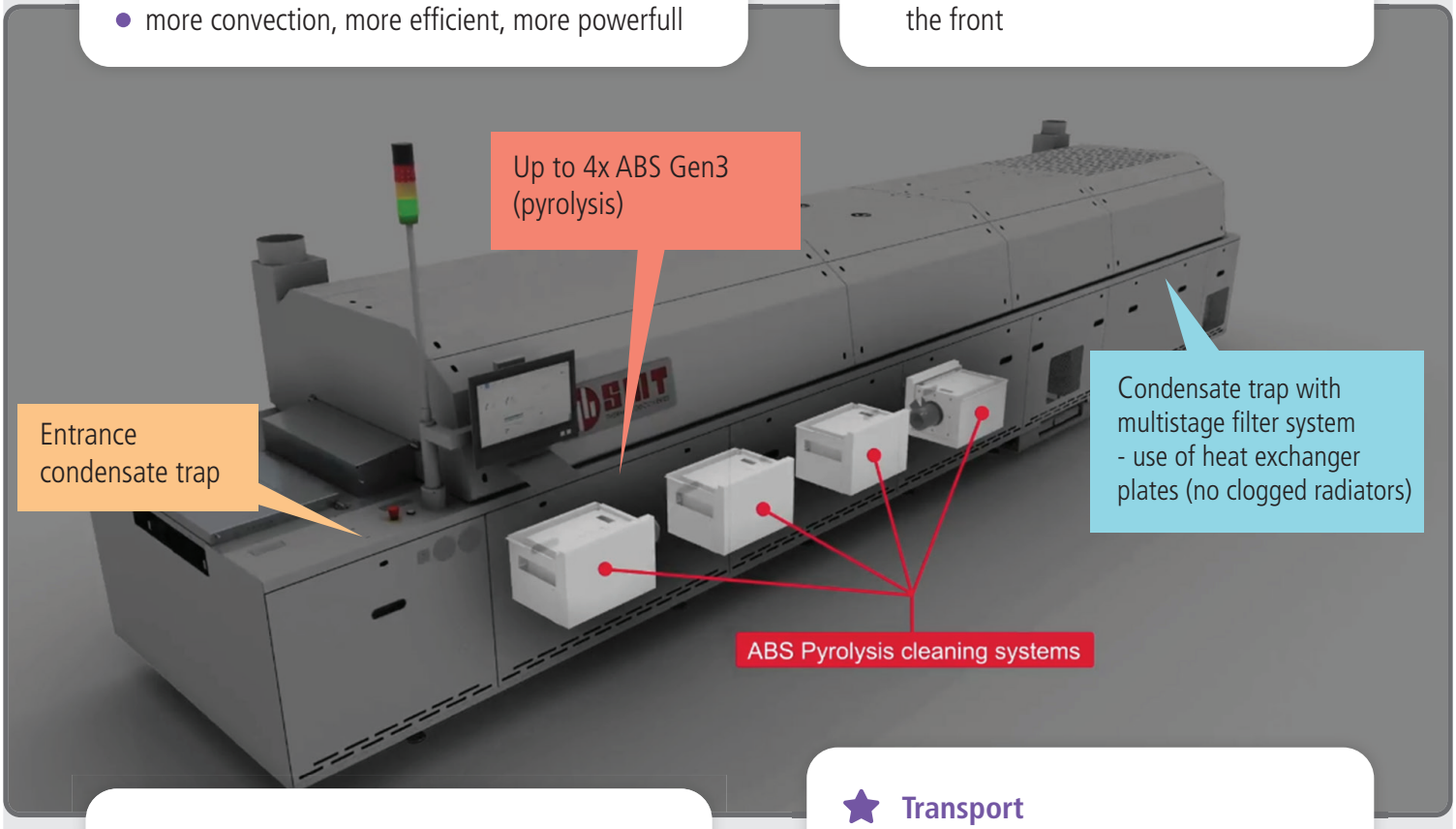
PROCESS GAS CLEANING

„On the spot" cleaning concept with Condensation & ABS Pyrolysis Box Gen 3

- better cleaning performance
- **easy access** for maintenance from the front

Zone Concept

- fewer, bigger zones with bigger fans
- more convection, more efficient, more powerfull



Process

- individual fan control in all zones
- process optimization for the flexible setting of profiles with Profiling Plus Technology

PROFILING PLUS

Transport

- transport system with no compromises in parallelism and stable condition
- reliable transfer in vacuum process
- 2- and 3-lane transport systems possible

TECHNICAL DATA

VACUUM	Pre-heating zones	Peak zones	VAC	Cooling zones	Heating zone length	ø Transport speed[1.)]	pos. cycle time/per product[2.)]	ø Energy Consumption[3.)]	Total machine length
V290		2		1,2 m	2.9 m	0.80 m/min	52 s	11 kWh	6,1 m
V350		2		1,2 m	3.5 m	1.00 m/min	42 s	12 kWh	6,7 m
V450		3		1,7 m	4.5 m	1.30 m/min	37 s	15 kWh	8,1 m
V580		3		1,7 m	5.8 m	1.65 m/min	33 s	18 kWh	9,5 m
V630		3		1,7 m	6.3 m	1.80 m/min	29 s	20 kWh	11,0 m

● Vacuum time without holding time, 250 mm product size, 100 mbar, transport speed based on a 4 minutes reflow profile.

No. of cooling zones recommended - configurable up to 5.

1.) transport speed based on a 4 minute reflow profile
2.) cycle time based on 150 mm PCB
3.) average production (in vacuum mode) including pyrolysis cleaning systems

Subjects to change without notice.

TRANSPORT SIZES & DETAILS

- reliable laying transport system with no compromises in parallelism and stable condition
- split rails - no bending rails
- Single-, Dual- & Triple-Lane Transport available (also as heavy-duty-transport-configuration)
- other multiple lane transports possible **- ask for details**

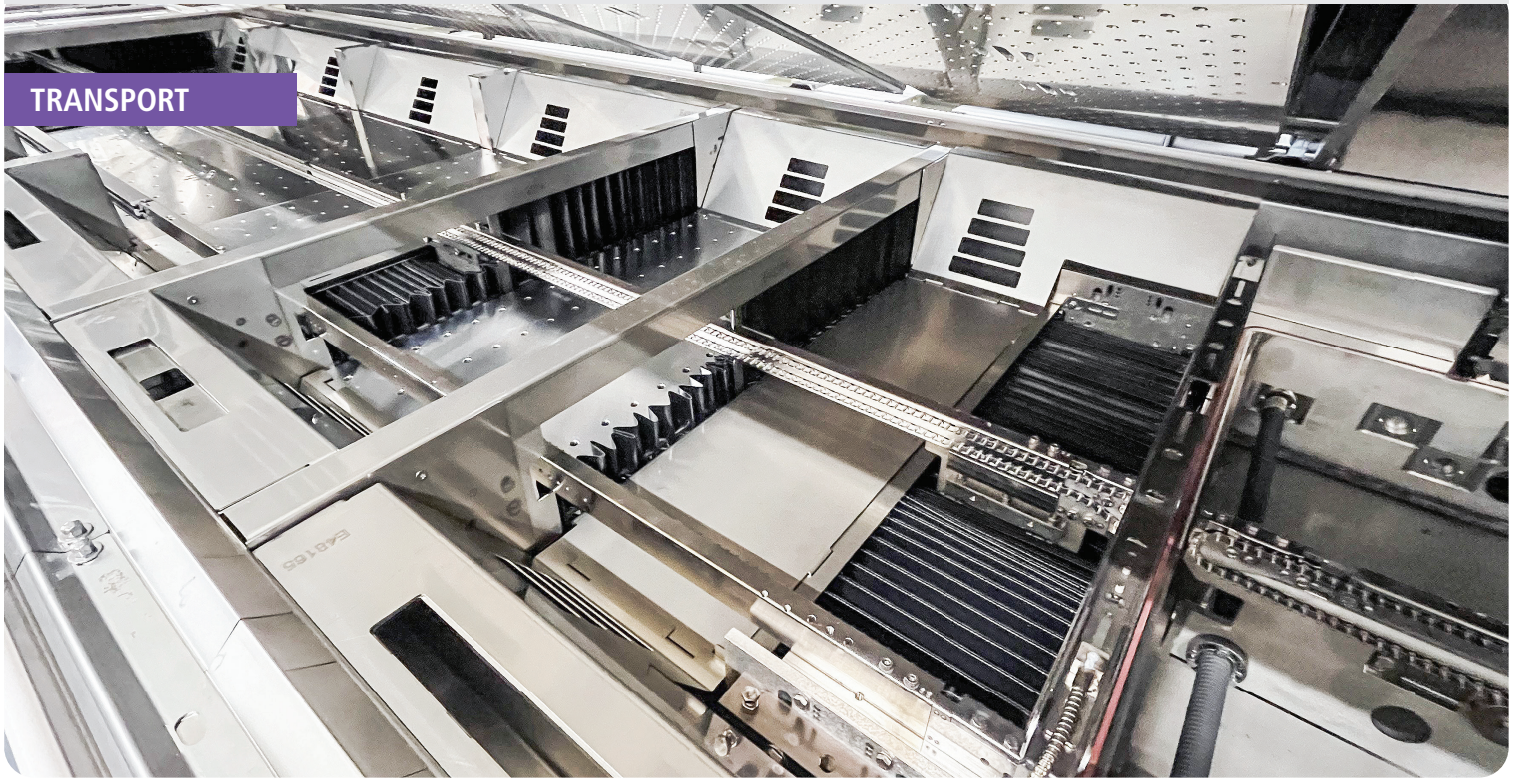
Compatible to all common Pick&Place Configurations!

Transport	Configuration	Dimensions*	Optional
1-Lane	F C V	60mm - 573mm	60mm - 710mm
2-Lane 1&3 fix coupled	F C V F C V	2x 60mm - 251mm	2x 60mm - 337mm
2-Lane 1&4 fix de-coupled	F C V V C F	2x 60mm - 265mm 1x 60mm - 470mm	2x 60mm - 331mm 1x 60mm - 609mm

F fixed Rail V variable Rail C CBS - optional

*other dimensions on request

TRANSPORT



VACUUM HIGHLIGHTS

- **Quality - Voids will be reduced up to 99%** → optimized solder joint quality
- **machine availabilty** → reliable transport is the heart of the Vacuum-Reflow-System
- **lowest total cost of ownership** → low energy & spare parts consumption
- **tool free maintenance concept**
- **high quality process** → also for complex needs

ABOUT SMT

- a **family-owned company** in central Europe / Germany estd. in 1987
- **innovation leader with global presence**
- thermal processes **experts in convection technology**
- **100% „Made in Germany"** production
- **ISO 14001 & ISO 9001 certified**

Quality Made in GERMANY





Machines for Thermal Processes

Reflow Soldering | Vacuum Soldering | Temperature Treatment | Power Semiconductors

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