QUALITY „MADE IN GERMANY“
REFLOW SOLDERING SYSTEMS

SMT THERMAL DISCOVERIES

R-SERIES

FULL CONVECTION REFLOW SOLDERING SYSTEM

PROFILING PLUS

WITH **PROFILING PLUS!**



With the **UNIQUE Zone Concept & Transport System**

Optimized Heat Transfer and
lowest Energy Consumption - confirmed by TÜV.
Effective process gas cleaning with ABS Gen3
& Tool free maintenance concept.

smt-wertheim.com

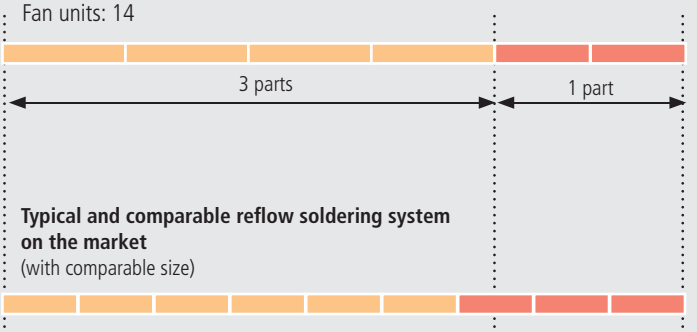
ZONE CONCEPT & CONVECTION

A reflow oven has the best reflow performance with **a high convection rate.** For that SMT Thermal Discoveries uses **bigger zones with bigger fans -> more convection, more efficient, more powerfull!**

- Small ΔT with a perfect heat transfer
- 3 parts of pre-heating (3 min) plus 1 part peak (1 min) relates to 4 min IPC-JEDEC/solder paste recommendation
- less zones for less energy consumption
- 1-Temp Profile Strategy = Profiling Plus

EXAMPLE

SMT Thermal Discoveries Zone Concept
Heating zone length: 3.2 m
Fan units: 14



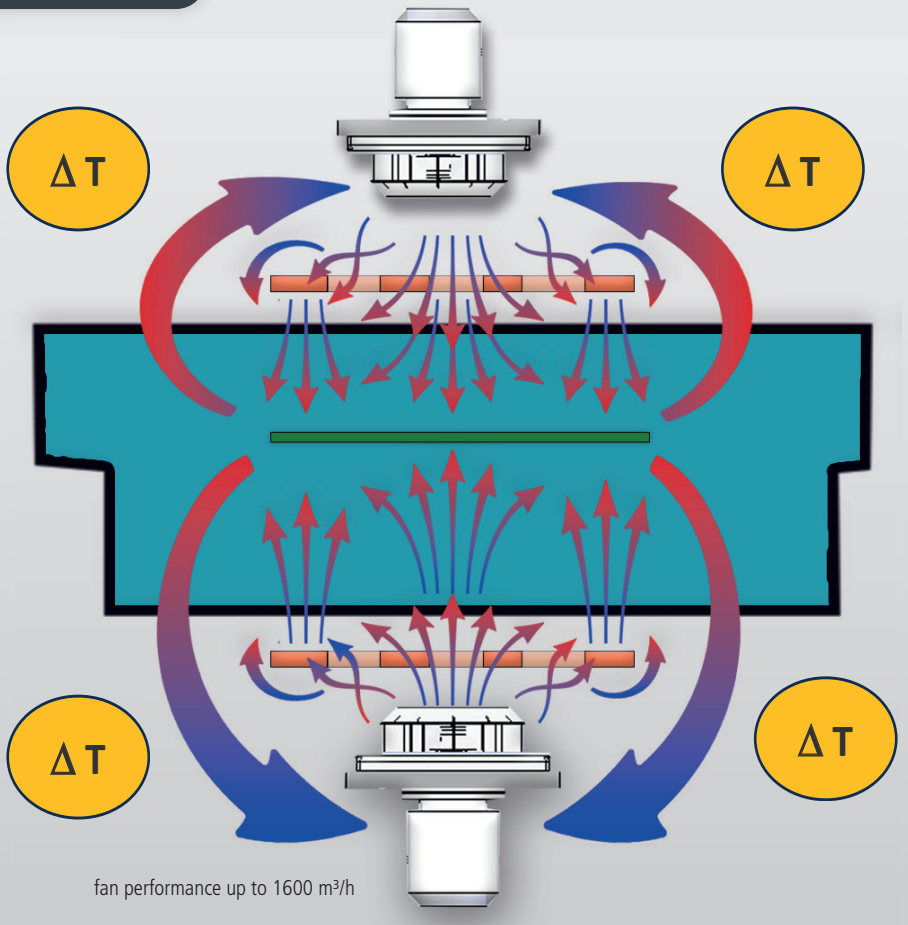
Typical and comparable reflow soldering system on the market
(with comparable size)

HIGH CONVECTION PERFORMANCE

- ★ BIG ZONES
- ★ BIG FANS
- ★ BIG IMPACT

High airflow means more convection performance!

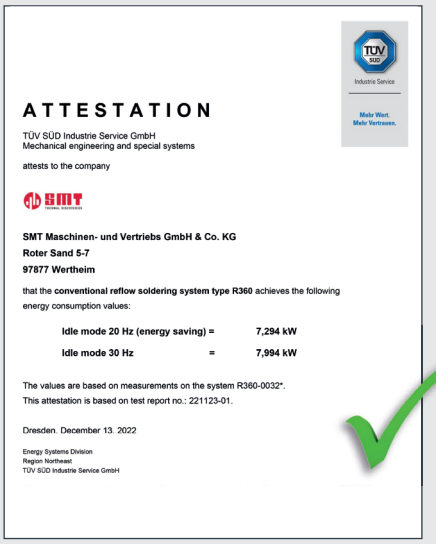
Sample Convection Volume
R320 (by SMT)**:** ~ 6000 m³/h
Others: ~ 3600 m³/h
(comparable model)



fan performance up to 1600 m³/h

PROCESS

- individually adjustable fan speed in each zone (process optimization for the flexible setting of profiles) with **Profiling Plus Technology**
- active monitoring of fans & heaters
- fan control is separated from the fan motors in the system (no thermal stress and therefore more durable)
- cooling concept for strong cooling performance from top & bottom
- Back-to-Back & Face-to-Face line-up possible
- increased energy saving potential **approved by TÜV**



ATTESTATION

TÜV SÜD Industrie Service GmbH
Mechanical engineering and special systems

attests to the company

SMT Maschinen- und Vertriebs GmbH & Co. KG
Roter Sand 5-7
97877 Wertheim

that the conventional reflow soldering system type R360 achieves the following energy consumption values:

Idle mode 20 Hz (energy saving)	=	7,294 kW
Idle mode 30 Hz	=	7,994 kW

The values are based on measurements on the system R360-0032*.
This attestation is based on test report no.: 221123-01.

Dresden, December 13, 2022

Energy Systems Division
Region Northeast
TÜV SÜD Industrie Service GmbH

INTELLIGENT NITROGEN CONTROL

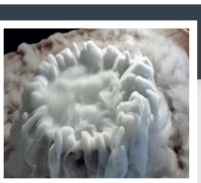
Intelligent nitrogen control with optimized control mode **reduces nitrogen consumption** to a minimum.

- Lambda probe technology
- continuous real time measurement of residual oxygen values
- probe exchange or calibration in < 10 minutes on site

★ Calib_O2

The "Calib_O2" function calibrates the residual oxygen measurement value of the lambda probe (O_2 value) to an accuracy of better than 2%! **ON SITE**





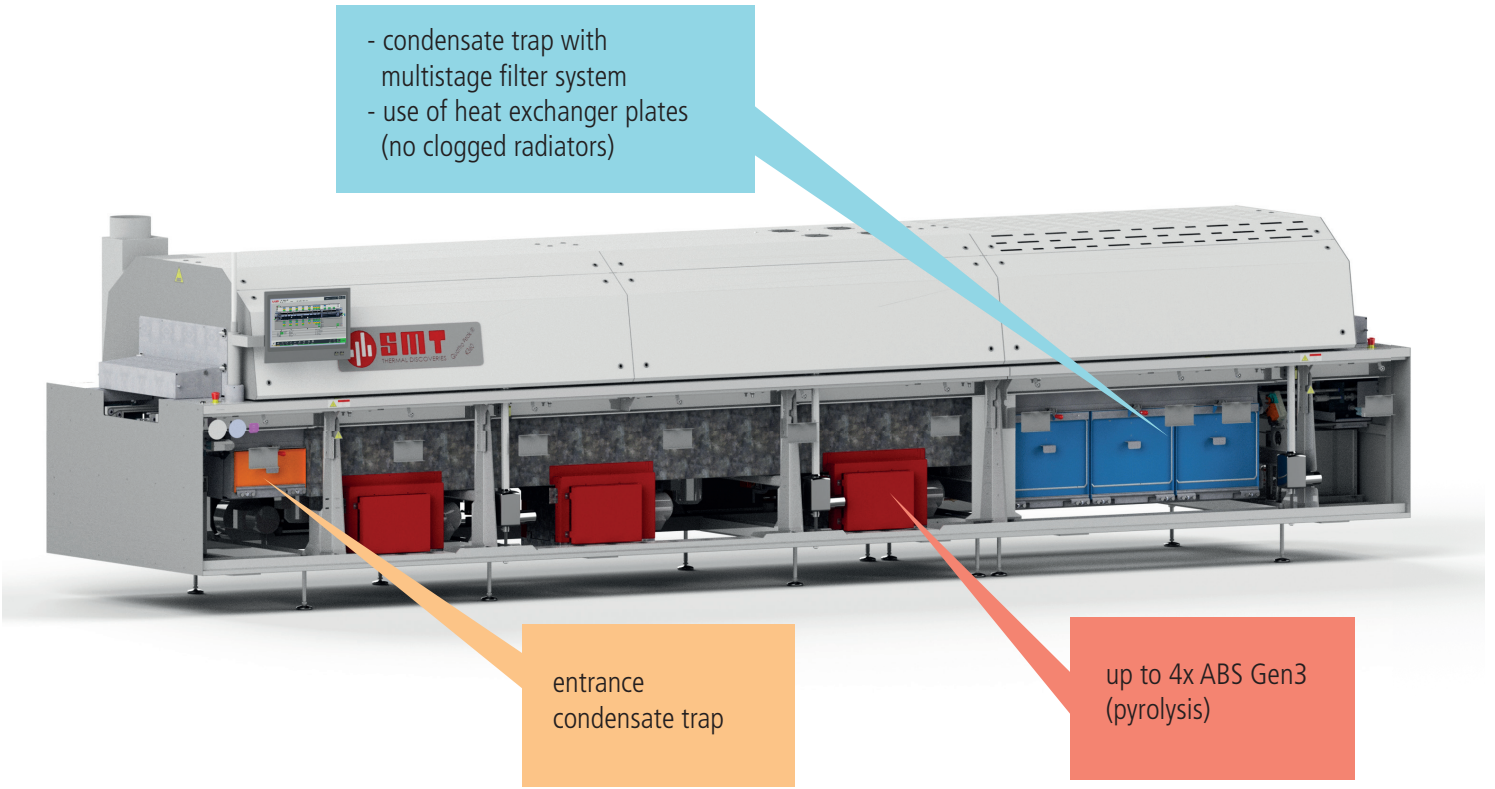


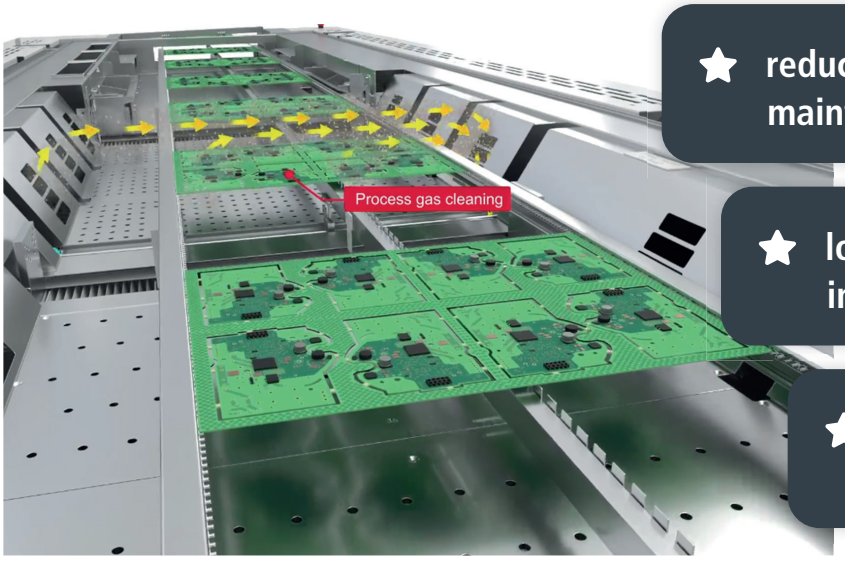
DAkkS
Deutsche Akkreditierungsstelle
D-K-15196-01-00

Measurement devices are tested independently by an accredited Dakks certified laboratory
DAkks is a signatory of the European co-operation for Accreditation (EA) and the International Laboratory Accreditation Cooperation (ILAC).

PROCESS GAS CLEANING - "ON THE SPOT" PYROLYSIS CLEANING CONCEPT WITH ABS GEN3

- Tool-free, easy maintenance & less requirements of consumables.
- Cleaning directly at the process area, suction of the process gases through piping not necessary.
- Easy accsess for maintenance from the front.





- ★ reduced maintenance effort
- ★ longer maintenance intervals
- ★ more efficient production
- ★ less contamination

TECHNICAL DATA

The reflow soldering systems are individually configurable. You can choose from different lengths for the heating and the cooling zone. Additionally there is a choice between single, dual or even triple lane.

R-SERIES	Pre-heating zones	Peak zones	Cooling zones	heating zone length	ø Transport speed[1.)]	pos. cycle time/per product[2.)]	ø Energy Consumption[3.)]	Total machine length
R210	1		0,7 m	2.1 m	0.50 m/min	24 s	6 kWh	4,2 m
R250	2		1,2 m	2.5 m	0.65 m/min	19 s	7 kWh	5,1 m
R320	2		1,2 m	3.2 m	0.80 m/min	15 s	8 kWh	5,8 m
R360	3		1,7 m	3.6 m	0.95 m/min	13 s	10 kWh	6,7 m
R410	3		1,7 m	4.1 m	1.05 m/min	12 s	11 kWh	7,1 m
R460	3		1,7 m	4.6 m	1.20 m/min	10 s	13 kWh	7,8 m

1.) transport speed based on a 4 minute reflow profile
2.) cycle time based on 150 mm PCB
3.) average production includingpyrolysis cleaning systems

Zone size is not true to scale / No. of cooling zones recommended - configurable up to 5.

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 coupplied	F C V F C V	2x 60mm - 251mm	2x 60mm - 337mm
2-Lane 1&4 fix de-coupplied	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



REFLOW HIGHLIGHTS

- **machine availabilty** → reliable transport is the heart of the 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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