

Model VSS-300

Vacuum Soldering System for processing of 300 mm x 300 mm substrates - also for contaminating processes



Picture similar -
Technical and design are subject to change

- For substrate size up to 300mm x 300mm
- Ramp up rate up to 120 K/min
- Control **SIMATIC®** with 7" touch panel
- Vacuum up to 10^{-3} hPa (opt. 10^{-6} hPa)
- Process gas line with MFC for N_2
- Temperature up to 450 °C (opt. 650 °C)
- Vertical automatical open/close

FEATURE

- Precise fast ramp up and fast ramp down rates
- Excellent temperature uniformity
- Up to 4 gas lines (MFC)
- Integrated data logging
- Heated by Infrared Lamps
- 50 programs with 50 steps each
- Small foot print
- 3 heating zones programmable

APPLICATION

- Reflow Solder Processes with flux
- Operation with inert gas, Oxygen, Forming gas, Formic Acid
- Lead and Lead-free SMT reflow
- Resistor paste firing
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- Vacuum Soldering oven as table top version
- Programmable temperature profiles
- Record of process data
- Process in different gas atmospheres (inert gases)
- Perfect lab tool due to small dimensions and weight



APPLICATION

The **VSS-300** Reflow Solder System is an excellent tool for various solder processes up to 300 mm diameter wafer or 300 mm x 300 mm substrate size and 50 mm height (Option: EH with 120 mm height).

Some examples for applications: Laboratory furnace for all kind of developers implementing and researching new processes, prototype research, environmental research purposes and for small pre-series or series.

PROCESS GASES

The VSS-300 can be used with standard process gases, like Nitrogen, Oxygen, Forming Gas. The chamber is sealed and can easily be cleaned.

FLOW METER

One gas line with Mass Flow Controller (MFC) for Nitrogen (5 nlm = norm liter per minute) is default, three more gas lines (Option: MFC) are possible

VACUUM

The system is vacuum capable of up to 10^{-3} hPa (optionally up to 10^{-6} hPa)

TEMPERATURE

The maximal achievable temperature is 450 °C (optionally up to 650 °C).

TEMPERATURE DISTRIBUTION

The hot plate allows an excellent temperature distribution and homogeneity.

HEATING

The system is heated by Infrared Lamps located in the bottom housing crossed aligned. This allows a excellent temperature distribution over the complete heated area. The chamber is equipped with an graphite plate where the parts can be loaded.

PROGRAMMING

The VSS-300 is equipped with a SIMATIC SPS controller and a 7" touch panel for easy programming directly on the unit and watching the process parameter. 50 programs with each 50 steps can be stored. Unlimited programs can be up- and downloaded from external data storage medium.

PROCESS CONTROL

The software allows the permanent monitoring, read-out and analysis of

- >temperature
- >process gas flow
- >cooling water level status
- >pressure value and status

COOLING

The hot plate is active cooled. For chamber housing cooling an external cooling is required (we recommend a chiller (Accessories: WC-III)

OTHERS

An interlock function as well as an Emergency-OFF-Button (EMO) are default.

SPECIAL

This oven can also be integrated into a production line. The chamber open/close is realized by push button operation. Optionally we offer the adaption into a fully automatic open/close system is possible (remote control by interface and robotics system).

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SPECIFICATION

Max. part size	300 mm x 300 mm (heated area: 310 mm x 310 mm)
Chamber material	Aluminium chamber (chamber area: 350 mm x 350 mm)
Chamber height	50 mm (Option: ET up to 120 mm)
Vacuum capability	Up to 10^{-3} hPa (optionally up to 10^{-6} hPa)
Temperature max.	450 °C (optionally up to 650 °C)
Temp. uniformity	≤ 1,5 % of set temperature
Heating	Bottom heating: 2 x 12 IR Lamps crossed aligned (18 kW) Option: top heating
Heating zones	3 heating zones are programmable
Ramp up rate	Up to 120 K/min
Ramp down rate	T= 450°C > 200°C: 90 K/min, T= 200°C > 100°C: 80 K/min
Flow Controller	1 Mass Flow controller für Nitrogen (5 nlm = norm liter per min)
Cooling Chamber	By external water cooler
Cooling Hot Plate	By external water cooler
Controller	SPS Controller, SIMATIC, 50 programs with 50 steps each

TECHNICAL DATA

Dimension oven	504 mm x 504 mm x 830 mm (W x D x H)
Weight	100 kg (estimated)
Electrical connection	230/400V, 18kW

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OPTIONS

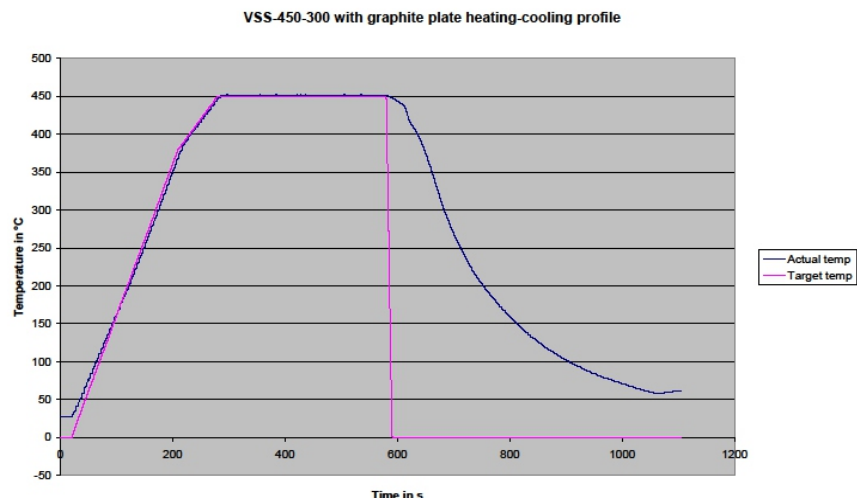
VSS-FA	Formic Acid module (Module with Vessel for using Formic acid) with gas line
VSS-FT	Flux trap
VSS-MFC	Additional gas line with Mass Flow controller (total: max 4 gas lines)
VSS-LP	Lift Pins (on request)
VSS-ET	Chamber height 120mm with viewing window (60mm diameter)
VSS-TC	Additional thermocouple to measure on device (plugged in chamber) for external measurement tool (max. 4)
VSS-TH	Top Heat in cover
VAC I	Vacuum basic for vacuum up to 3 hPa incl. vacuum sensor and valve (excl. pump)
VAC II	Vacuum comfort for vacuum up to 10^{-3} hPa incl. vacuum sensor and valve (excl. pump)
VCR	Tubing made of VCR
VSS-SI	Serial interface between VSS system and external PC
VSS-RC	Remote control of top cover opening and closing
VSS-CAB	Floor model with cabinet and integrated Universal Heat Exchanger (UHE)

ACCESSORIES



VSS-300 with cabinet

We offer a lot of different kind of closed loop water coolers and different pumps from e.g. Pfeiffer, Edwards, Leybold, Agilent. We recommend the correct configuration for your system.



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