

| Void Less. Flux Less. Ultra Clean.

centrotherm

equipment
process
solutions

VLO 6 Vacuum Soldering System

| **Designed for R&D institutes and start-ups**

The centrotherm VLO6 vacuum soldering system has been designed for Advanced Packaging and Power Semiconductor applications and achieves very high heating and cooling rates. The system meets the highest demands of Start-ups and R&D departments which use vacuum to achieve void less soldering joints. VLO6 is the small-size entry level system of centrotherm's VLO-family with a 6 liter chamber volume, yet offering the full functionality like the other VLOs. With the VLO6, the soldered area affected by voids can be reduced to less than 2 %, typical reflow soldering systems range at 20 %.

This system is ideal for production facilities and start-ups which run flux less and void less soldering processes with various gas atmospheres (N₂, H₂ 100, N₂/H₂ 95/5). The centrotherm VLO6 optionally provides wet chemical activation with HCOOH or dry chemical activation with MW plasma for ultra clean soldering joints. Even lead free paste or pre-forms can be used without additional flux.

The process control computer comes with a user-friendly touch screen for operating, process profile editing and recipe storing. A serial interface lets you transfer data to PCs for offline programming and remote service monitoring.

Typical Applications

- ▶ Advanced Packaging
- ▶ Power Semiconductors
- ▶ Hybrid Microelectronic Assemblies
- ▶ Optoelectronic Packaging
- ▶ Hermetic Package Sealing
- ▶ Wafer Level Packaging
- ▶ UHB LED Packaging
- ▶ MEMS Package Sealing

Features and Benefits

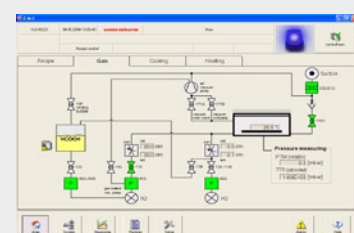
- ▶ process temperature up to 400 °C
- ▶ excellent temperature uniformity
- ▶ heating ramp up to 250 K/min
- ▶ cooling rate up to 180 K/min
- ▶ vacuum level down to 10⁻⁵ mbar
- ▶ very short cycle time, less than 5 minutes



centrotherm VLO6



Optional with lamp heating

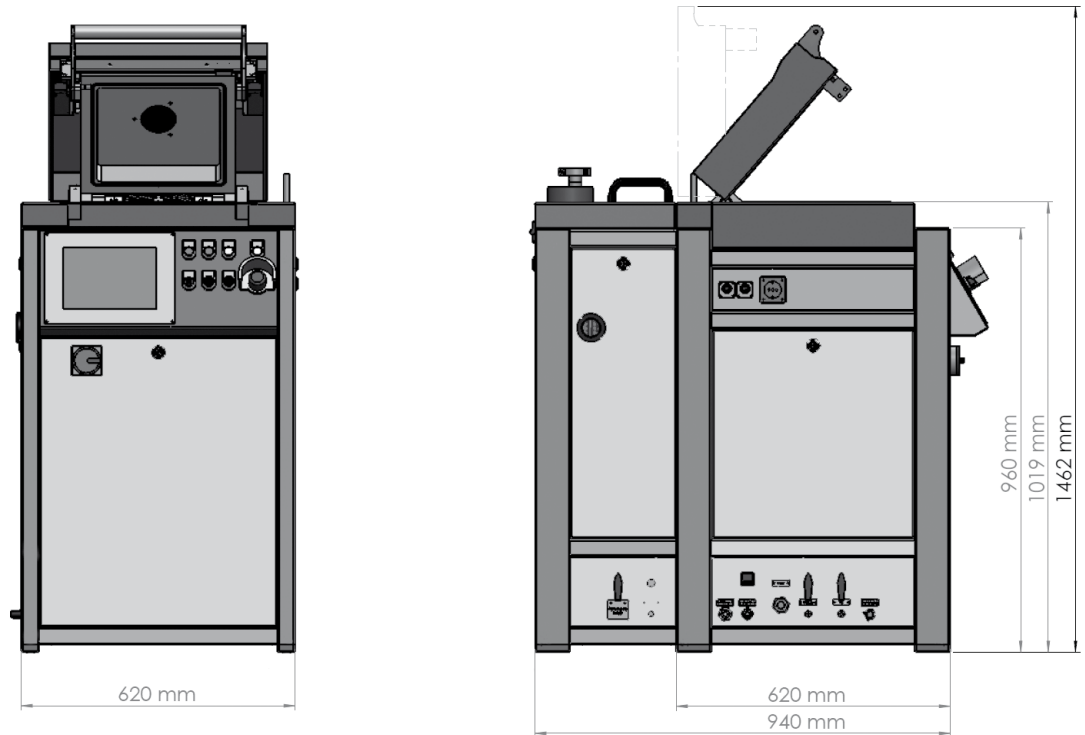


The VLO Systems provide simple operation via touch screen operated process control computer

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Dimensions



Technical Data

Model	VLO6
Field of application	R&D, institutes and start-ups
Plate size [L x W]	200 x 200 mm; 8 x 8 in.
Heating system	1 heating plate
Max. substrate height	50 mm; 1.95 in.
Chamber volume	6 l; 0.2 ft ³
Dimensions	620 x 620 x 1020 mm; 24,4 x 24,4 x 40,15 in.; base feet adjustable from 40 - 110 mm; 1.6 - 4.3 in.
Possible process gases	N ₂ ; H ₂ up to 100 %; N ₂ /H ₂ 95/5
Power supply	400 V / up to 33 A ; 5 - 13 kW peak*
Cooling water	15 l/min; 3.75 GPM @ 15–25 °C
Heat up/cool down	max. 250 K/min; max. 180 K/min
Max. load per plate	0.5 kg; 1 lbs
Weight	180 kg; 400 lbs
Vacuum level	max. 10 ⁻⁵ mbar; 7.5 x 10 ⁻⁶ torr
Vacuum speed	4 m ³ /h; 140 ft ³

* system will be modified to country-specific power supply

Options

- | 100% H₂ gas line with safeguard level 2
- | integrated HCOOH bubbler with safeguard level 1
- | microwave plasma supported solder process
- | up to 4 thermocouples for surface temperature recording
- | lamp heating with radiation heat transfer

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