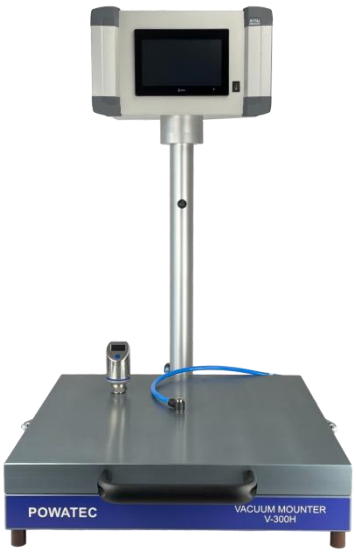
Powatec Vacuum Bonders

V-200H & V-300H



The Powatec V-200H and V-300H combine heated bonding and high-vacuum lamination to deliver reliable substrate and film adhesion for demanding applications. Controlled temperature and 2 mbar (absolute) vacuum improve tape conformability, reduce defects, and enhance process stability. Compact and repeatable, the V-H Series is built for cleanroom labs and production environments working with advanced materials.

V-200H

Web Page Link

YouTube Link

V-300H

Web Page Link

YouTube Link

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Description

POWATEC's V-200H and V-300H enable a stable and repeatable bonding process for applications with elevated mechanical or adhesion sensitivity. Precisely coordinated heating, vacuum, and bonding force allow reliable processing of structured substrates, brittle substrates, and advanced dicing tapes that require temperature support to achieve uniform adhesion.

The system is designed for efficient single operator use, with throughputs of up to 60 bonds per hour via an intuitive touchscreen interface. Process parameters can be freely adjusted during development and secured with password protection for controlled production operation. As with all V-Series systems, adhesive tape must be bonded to the frame in a separate preparatory step using a frame bonder.

The V-H Series accommodates a broad range of materials, including silicon, glass, ceramics, polymers, and specialty substrates. Custom configurations are available for non-standard substrate formats, geometries, and extended process options such as substrate bonding.

Key Product Features

- ✓ Heated vacuum bonding with controlled adhesive activation
- ✓ Uniform heating for improved tape conformability
- ✓ Reduced edge lift and bonding defects
- ✓ Minimal mechanical force on fragile substrates and films
- ✓ Suitable for silicon, glass, ceramics, polymers, and custom shapes
- ✓ 10" touchscreen display
- ✓ Adjustable temperature, vacuum, and bonding speed
- ✓ Password-locked parameters for production runs
- ✓ Designed and manufactured by Powatec GmbH, with over a decade of field use in cleanroom semiconductor applications.
- ✓ Table-top device
- ✓ Clean room application

Visualization of the bonding process in the vacuum chamber

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Technical Specification

	V-200H	V-300H
Frame size	up to Ø8” (DTF 2-8-1)	up to Ø300 mm (DTF 2-12-1 or 2-12)
Frame Type	Disco or K&S, Steel only	Disco or K&S, Steel only
Substrate size	up to Ø 8”	up to Ø 300mm
Substrate Type	Flat	Flat
Substrate Thickness	80 µm – 3 mm	80 µm – 3 mm
Max Structure / Bump Height	170 µm	170 µm
Maximum Temperature	Up to 100 °C / 212 °F	Up to 100 °C / 212 °F
Mechanical Dimensions		
Width	385 mm (15.2”)	470 mm (18.5”)
Depth	600 mm (23.6”)	750 mm (29.5”)
Height	815 mm (32.1”)	893 mm (35.2”)
Weight	40.4 kg (89 lbs)	43 kg (95 lbs)
Temperature Control Unit (x2 per device)		
Width	260 mm (10.2”)	260 mm (10.2”)
Depth	240 mm (9.4”)	240 mm (9.4”)
Height	180 mm (7.1”)	180 mm (7.1”)
Weight	9 kg (20 lbs)	9 kg (20 lbs)
Power	110V|60Hz, 240V|50 Hz	110V|60Hz, 240V|50 Hz
Required ultimate vacuum (absolute)	2 mbar (1.5 Torr)	2 mbar (1.5 Torr)
Vacuum connection	Festo PUN-10, Ø10 mm	Festo PUN-10, Ø10 mm
Pumping speed (recommended)[1]	19 m^3/h (11.2 ACFM)	19 m^3/h (11.2 ACFM)
Required compressed air pressure[2]	4-6 bar (60-90 psi)	4-6 bar (60-90 psi)
Compressed air connection	Festo PUN-4, Ø4 mm	Festo PUN-4, Ø4 mm
Input voltage/frequency	100-240 VAC, 50/60 Hz	100-240 VAC, 50/60 Hz
Clean Room Application	Up to ISO 4-5	Up to ISO 4-5
Conformity	CE Certified	CE Certified

[1]Pumping speed specified at atmospheric inlet conditions; SCFM and ACFM are equivalent at these conditions.

[2]Customer to supply dry, oil-free compressed air.

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