

25 Ton 200X200Mm Vacuum Hot Press With Programmable P-T-T Control

Item Number: XP26



Introduction

Engineered for demanding laboratory applications, this 25-ton desktop vacuum hot press provides precise P-T-t synchronization, up to 500°C temperature range, inert gas/vacuum atmosphere, and adaptive power matching, enabling high-density sintering and bonding in solid-state battery, ceramic, and composite research. Compact, CE-certified system with dynamic pressure derating for long-term reliability.

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Application	Description	Key Benefit
Solid-State Battery R&D	Densification and solid-solid interface bonding of sulfide/oxide electrolytes under high temperature and pressure.	Chamber high airtightness allows long-term pressure-holding sintering under N ₂ /Ar, preventing active lithium oxidation.
Advanced Ceramics & Composites	Oxygen-free vacuum diffusion sintering of ceramic powders and non-metallic matrix composites.	SUS304 stainless steel chamber with -0.1 MPa vacuum rapidly removes volatile gases for defect-free components.
Flexible Electronics & MLCC	Multi-step heated lamination of polymer films and multilayer ceramic capacitors with delicate layers.	Programmable soft-start pressure as low as 100g prevents fracture of brittle thin sheets during initial pressing.
Diffusion Bonding of Metals	Atomic diffusion welding of dissimilar metals/alloys under high-temperature vacuum.	High-parallelism 200x200 mm ground platens ensure uniform stress distribution, minimizing voids and defects.
Powder Metallurgy Compaction	High-density consolidation of metal, ceramic, and composite powders under vacuum.	Eliminates trapped gases, reduces porosity, and enhances mechanical strength and electrical conductivity.

Parameter	Standard Configuration	Professional/Upgraded Configuration
Platen Size	200 × 200 mm	-
Maximum Temperature	300 °C (natural cooling)	500 °C (requires recirculating chiller)
Temperature Control Accuracy	≤ 3 °C	≤ 1 °C
Maximum Heating Rate	≤ 3 °C/min	-
Maximum Pressure (Cold State)	25 Tons (250 kN)	-
Maximum Pressure (Hot State)	-	15 Tons (150 kN) @ 500°C
Pressure Control Accuracy	±0.1 Ton (closed-loop feedback)	-
Daylight Opening	50 mm	100 mm (suitable for large molds)
Heating Power	1800 W / 2400 W	3000 W / 3500 W
Vacuum Chamber Size	-	400 × 400 × 400 mm
Chamber Material	SUS 304 Stainless Steel	-

Parameter	Standard Configuration	Professional/Upgraded Configuration
Ultimate Vacuum	-0.1 MPa (with 240 L/min dual-stage pump)	-
Platen Cooling Method	Ambient air	External recirculating chiller
Control Interface	7-inch programmable PLC touchscreen	-
Power Supply Options	AC 220 V / 50 Hz	AC 110 V / 60 Hz or AC 440 V / 60 Hz
Net Weight (approx.)	270 kg (varies by configuration)	-
Compliance	CE certified	-