

20 Ton 500X500Mm Split-Type Automatic Hot Press With Programmable Pid Temperature Control

Item Number: XP43



Introduction

Professional 20-ton split-type hot press with 500x500mm platen, 7kW PID-controlled heating up to 300°C, and automatic pressure regulation. Ideal for polymer pressing, composite lamination, and battery electrode fabrication in lab or pilot environments. Robust split design ensures long-term reliability.

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Application	Description	Key Benefit
Polymer Sheet and Film Pressing	Compression molding of thermoplastics (PE, PP, PVC, PVDF) into large, uniform sheets for further fabrication or testing.	Delivers bubble-free, void-free sheets with precisely controlled thickness and surface finish over the entire 500x500 mm area.
Composite Laminate Consolidation	Hot pressing of carbon fiber, glass fiber, or aramid prepregs for structural components in aerospace, automotive, and sports equipment.	Accurate temperature ramps and uniform pressure ensure complete resin flow, optimal fiber wet-out, and void-content control.
Multi-Layer PCB and Flexible Electronics	Lamination of rigid-flex PCBs, coverlay application, and bonding of flexible substrates for printed electronics.	Large size accommodates full panel processing, minimizing warpage and ensuring interlayer adhesion with uniform heat transfer.
Battery Electrode Calendering	Densification and thickness calibration of lithium-ion battery anodes and cathodes, as well as supercapacitor electrodes.	Consistent pressure and temperature profiles enhance electrode density, improve electrochemical performance, and extend cycle life.
Elastomer Curing and Vulcanization	Press vulcanization of silicone, EPDM, and other rubber sheets for gaskets, medical components, or industrial seals.	Large platen enables batch curing of multiple parts or large-area molds, with uniform crosslinking and minimal post-cure shrinkage.
Thin Film and Membrane Fabrication	Hot pressing of proton exchange membranes, gas diffusion layers, and filtration media for energy and water applications.	Sensitive, low-force control prevents film rupture while achieving target porosity, thickness, and surface characteristics.
R&D Material Synthesis and Testing	Sample preparation for mechanical testing, development of novel composites, and pilot-scale process validation.	Programmable cycles and glovebox compatibility allow for systematic experimentation under controlled atmospheres.
Ceramic and Metal Powder Pressing	Cold or warm pressing of ceramic or metal powders into green bodies for sintering.	Uniform pressure distribution across large dies ensures consistent density in green compacts, reducing post-sintering defects.
Laminate Glass and Transparent Materials	Vacuum-assisted hot pressing of laminated glass or transparent conductive films for optical or electronic devices.	Uniform pressure distribution avoids optical distortion, while precise temperature prevents damage to delicate coatings.

Parameter	Specification	Remarks
Model	XP43	-
Configuration	Split-Type Automatic Hot Press	Main mechanical frame separated from electrical control cabinet
Maximum Force	0 - 20 metric tons	Closed-loop automatic pressure holding with compensation
Platen Dimensions	500 mm x 500 mm	Precision ground, hardened steel
Daylight Opening	220 mm	Adjustable; accommodates variety of tooling heights
Maximum Operating Temperature	≤ 300 °C	PID programmable controller with ±1 °C stability
Heating Power	7000 W (7 kW)	Dual-zone platen heating
Cooling Method	Natural air cooling; Optional recirculating water cooling	Water cooling requires external chiller (not included)

Parameter	Specification	Remarks
Electrical Requirements	AC 220 V, 50 Hz, single-phase	Rated current approx. 32 A; requires dedicated industrial socket or circuit breaker
Weight	560 kg	Net weight
Overall Dimensions (approx.)	1005 mm (W) × 807 mm (D) × 1200 mm (H)	Refer to factory drawing for exact layout