

50 Ton 400X400Mm Automatic Hydraulic Hot Press With Dual Independent Temperature Control And Water Cooling

Item Number: XP67



Introduction

This 50-ton automatic hydraulic hot press features a 400x400mm platen, dual independent programmable temperature control up to 300°C, and integrated water cooling for rapid cooling. Ideal for laboratory sample preparation, hot embossing, and laminating, with customizable power supply.

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Application	Description	Key Benefit
XRF Pellet Preparation	Compacts powdered geological, cement, or mineral samples into stable pellets under 20–30 tons for reliable X-ray fluorescence analysis.	Eliminates binder contamination and improves analytical repeatability.
Battery Electrode Manufacturing	Calenders cathode and anode active materials onto aluminum/copper foils at controlled temperatures and pressures, crucial for lithium-ion cell consistency.	Enhances electrode density and adhesion, boosting battery capacity and cycle life.
Hot Embossing of Microfluidic Chips	Transfers micron-scale channel patterns from a master mold onto thermoplastic sheets like PMMA or COC under precise heat and pressure.	Achieves high aspect ratio replication with minimal cycle time.
Lamination of Photovoltaic Encapsulants	Bonds layers of EVA encapsulant film to solar cell strings under vacuum and heat, a critical step in photovoltaic module lamination research.	Ensures bubble-free lamination and optimal optical transmission.
Thermoplastic Film Formation	Melts and presses polymer pellets (e.g., polyethylene, polypropylene) into thin films of defined thickness for mechanical or barrier property testing.	Produces uniform, pin-hole-free films rapidly.
Ceramic Powder Consolidation	Compacts alumina, zirconia, or other technical ceramic powders into green bodies for subsequent sintering trials.	High green density reduces sintering distortion and shrinkage.
Composite Material Bonding	Laminates carbon fiber or glass fiber prepreps under controlled pressure and temperature to form high-strength composite panels for aerospace research.	Consistent interlaminar adhesion and void content reduction.
Glovebox Processing of Air-Sensitive Materials	Operates inside argon-filled gloveboxes to hot press oxygen- or moisture-sensitive electrolytes or advanced materials without degradation.	Preserves sample integrity by maintaining entire process in inert atmosphere.

Parameter	Specification	Remarks
Model	XP67	Site-facing identifier
Maximum Pressure	0 – 50 tons	Programmable multi-step pressure with dwell control
Platen Size	400 × 400 mm	Dual hardened steel heating platens
Daylight / Opening	100 mm	Accommodates various mold heights
Temperature Range	0 – 300 °C	Independent control per platen
Temperature Control	Dual programmable PID controllers, ±1°C accuracy	Ramp/soak capable, uniform distribution
Total Heating Power	5000 W (5 kW)	Quick heating across full platen area
Cooling Method	Circulating water cooling	Requires external water source or chiller
Standard Power Supply	Three-phase 380V, 50Hz	Customizable to 220V/440V 60Hz for North America
Dimensions (WxD×H)	500 × 550 × 720 mm	Compact floor-standing design

Parameter	Specification	Remarks
Net Weight	Approx. 580 kg	Actual weight per shipping packing list