

25 Ton Automatic Laboratory Hot Press With Dual Heated Platens And Precision Control

Item Number: XP79

Introduction



Precision benchtop automatic hot press with 25-ton force, 200x200mm heated platens up to 300°C, programmable multi-segment control, and water cooling. For compression molding of polymers, rubbers, composites, thin films, with high safety interlocked enclosure, over-temperature and over-pressure protection, CE certified.

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Application	Description	Key Benefit
Polymer Compression Molding	Fabrication of consistent polymer plaques for mechanical testing, thermal analysis, or spectroscopy. The programmable multi-stage profile allows melting under controlled pressure, followed by cooling at a set rate to achieve desired crystallinity and minimize internal stresses.	Highly uniform sample thickness and flatness, ensuring representative test results across large batches.
Rubber Vulcanization	Precise curing of rubber formulations to evaluate cross-link density and physical properties. Temperature and pressure can be maintained over extended periods, with the option for staged curing cycles that simulate industrial processing conditions.	Exceptional reproducibility in vulcanization state, enabling accurate benchmark comparisons between different compound formulations.
Composite Material Consolidation	Pressing of fiber-reinforced prepregs or layered composites under controlled temperature and pressure profiles. Uniform heating prevents resin-rich or starved regions, while the large platen area supports standard 200×200 mm panel sizes.	Minimal void content and superior interlaminar bond strength, essential for high-performance structural laminates.
Thin Film Preparation	Melting polymer pellets or powder between heated platens to produce thin films for permeability testing, optical applications, or electronic substrates. The water cooling feature can rapidly quench the film to freeze in amorphous structures or prevent crystallization.	Films with precise thickness control (down to tens of microns) and excellent surface quality, free of wrinkles or bubbles.
Battery Electrode Pressing	Pressing of electrode materials onto current collectors or fabrication of solid-state electrolyte pellets. The press can be integrated into a glovebox for moisture-sensitive chemistries, with adjustable pressure to accommodate fragile materials.	High-density electrode layers with uniform compaction, critical for consistent electrochemical performance and cycle life.
Hot Embossing	Replication of micro- or nano-scale patterns onto thermoplastic substrates using heated platens. The precise control of force and temperature enables faithful pattern transfer with minimal cycle-to-cycle variation.	High-fidelity reproduction of features, suitable for microfluidic devices, optical gratings, and functional surfaces.
Laminating and Bonding	Heat-assisted bonding of multiple layers for electronics encapsulation, ID card lamination, or safety glass. The programmability allows optimization of bonding parameters for different adhesive systems and substrate combinations.	Void-free bond lines and consistent peel strength, delivering professional-grade laminated assemblies.

Parameter	Specification
Model	XP79
Max Working Pressure	25 Tons (250 KN), continuously adjustable from 0.1 to 25 tons via closed-loop control
Platen Size	200×200 mm (approx. 7.8×7.8 in), manufactured from high-grade mold steel with precision-ground surfaces
Platen Working Temperature	Ambient to 300°C; each platen independently heated and controlled with programmable ramp/soak capability
Standard Heating Power	2,200 W (optional range from 1,600 W to 2,800 W depending on voltage and application requirements)
Max Daylight (Platen Gap at Full Open)	65 mm standard; customizable to 50 mm or 60 mm based on tooling

Parameter	Specification
Working Stroke	50 mm; minimum closed gap (platen spacing when fully closed) of 15 mm
Pressure/Temperature Controller	7-inch full-color LCD touchscreen PLC with multi-segment programming for pressure, temperature, and time; recipe storage
Timer Range	0 to 999 minutes, with automatic pressure hold and countdown for timed cycles
Cooling Method	Circulating water cooling via integrated platen channels; requires external water source or optional closed-loop chiller
Safety Features	Transparent acrylic safety enclosure with automatic operation cutoff when opened; over-temperature and over-pressure automatic shutdown; CE certified
Power Supply	Single Phase, AC 220V/50Hz (110V/60Hz available with heating power adjusted to 2,100W)
Machine Dimensions (L×W×H)	Approximately 480×480×750 mm (excluding the safety enclosure; final dimensions may vary slightly with custom options)
Net Weight	Approximately 200 kg, indicative of the heavy-duty cast iron and thick steel plate frame construction