

Integrated Manual Heated Plate Hydraulic Press For Laboratory

Item Number: XP01



Introduction

The integrated manual heated plate lab press provides 0-40 tons, 300°C, 200x200mm platens, 7-inch touchscreen, and water cooling. Perfect for polymers, ceramics, and battery research. Achieve precise, consistent sample preparation with advanced over-temperature protection. Request a quote today.

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Application	Description	Key Benefit
Polymer Rheology & Curing	Pressing thin films of high-performance plastics such as polyimide (PI), epoxy resins, and PEEK under precise temperature and pressure profiles.	Uniform film thickness and controlled curing kinetics for reproducible material properties.
Solid-State Electrolyte Consolidation	Mechanical and thermal assembly of solid-state electrolyte layers and electrode interfaces in battery R&D.	Seamless integration of layers with minimal interfacial resistance, enhancing battery performance.
Composite Hot Pressing	Laminating and testing resin flow for fiber-reinforced polymers (FRP) and prepregs.	Even pressure distribution prevents voids and ensures consistent fiber-resin ratios.
Powder Metallurgy & Ceramic Preforming	Hot-pressing and sintering non-metallic powders using dies positioned between the heated platens.	High-density green bodies with uniform grain structure, improving mechanical properties.
Pharmaceutical Tablet Compression	Compacting active pharmaceutical ingredients (APIs) with excipients into tablets for formulation studies.	Accurate control over tablet hardness, density, and disintegration profiles.

Parameter	Specification
Model	XP01
Load Capacity Range	0 - 40 Tons (continuously adjustable)
Platen Working Dimensions	200 × 200 mm
Maximum Platen Gap	<50 mm
Platen Material	Precision-ground tool steel with hardened, anti-stick surface treatment
Temperature Range	Ambient (RT) to 300°C
Heating Power	1800 W
Recommended Heating Rate	≤10 °C/min
Temperature Stability	±1°C (via K-type thermocouples)
Heating Control	PID closed-loop, dual-zone symmetrical heating elements
Cooling System	Integrated labyrinth water cooling channels, dual loop; rear Ø8 mm quick-connect hose ports; requires external water supply
Pressure Gauge Accuracy	±1% full scale
Control Interface	7-inch color LCD touchscreen (HMI); real-time display and plotting of Temperature-Pressure-Time curves
Safety Features	Over-temperature alarm, pressure overload protection with automatic depressurization and heater shutdown
Default Power Supply	Single-phase 220V AC, 50Hz (110V AC/60Hz version available)
Maximum Power Draw	1800W; recommended outlet rating: 10A (220V) or 20A (110V)

Parameter	Specification
Dimensions (H × W × D)	950 × 470 × 525 mm
Net Weight	220 kg
Cabinet Construction	Chemically-resistant, powder-coated steel, fully enclosed
Cooling Water Requirement	External recirculating chiller (≥ 1.5 kW cooling capacity, ≥ 10 m pump head) or laboratory tap water with drain
Standard Accessories	XP01 main unit, 220V power cable (1.8 m), high-temperature inlet/outlet hoses (3 m) with quick-connectors, user manual
Optional Upgrades	Companion water chiller with integrated start-stop cabling; custom high-temperature heated dies; 110V-to-220V step-up transformer