Manual Hydraulic Laboratory Hot Press 40 Ton 200X200Mm Platens 10 Mpa Pressure 300Mm Daylight

Item Number: XP48

Introduction

40-ton manual hydraulic hot press with 200x200mm heated platens, 10 MPa pressure, and 300mm daylight. Ideal for powder compaction, polymer molding, and composite curing up to 300°C. Integrated lab design for consistent results.

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Application	Description	Key Benefit
XRF & FTIR Spectroscopy Sample Preparation	Compresses metal powders, geological samples, or polymer granules into solid, flat-surfaced pellets required for reliable X-ray fluorescence or infrared spectroscopy.	The 10 MPa surface pressure produces dense, smooth pellets that minimize spectral interferences and improve detection limits.
High-Performance Engineering Plastics Molding	Heats and compresses high-temperature polymers such as PTFE, PEEK, and polyimide into sheets, disks, or near-net shapes for prototyping and small-scale production.	Uniform heating to 300°C and consistent force prevent thermal degradation and ensure parts with tight tolerances and low internal stress.
Battery Research & Solid-State Electrolytes	Laminates and densifies solid electrolyte layers, electrode composites, and multi-layer cell stacks under controlled temperature and pressure.	Precise pressure profiling and even heat distribution prevent cracks and delamination, yielding symmetrical, high-performance cells.
Multilayer Ceramic Capacitors (MLCC) & Sensors	Presses alternating layers of ceramic tape and electrode paste into compact stacks before sintering, essential for producing miniature electronic components.	Consistent pressure across 200×200 mm ensures uniform layer thickness, preventing short circuits and capacitance variations.
Carbon Fiber & Composite Curing	Cures pre-impregnated carbon fiber fabrics and resin systems under simultaneous heat and pressure to fabricate high-strength, lightweight panels.	The large platen area and high pressure promote full resin flow and void elimination, achieving aerospace-grade laminate quality.
Powder Compaction for New Material R&D	Compacts experimental metal, ceramic, or cermet powders into green bodies for evaluation of sinterability, mechanical properties, and microstructure.	Variable force and temperature settings support rapid formulation screening and process optimization.
Adhesive Bonding & Lamination	Bonds metal-to-plastic, ceramic-to-metal, or polymer film lamination using heat-activated adhesives.	Even platen temperature and pressure prevent bondline voids and ensure strong, uniform adhesion across large-area assemblies.
Thin Film & Membrane Fabrication	Presses polymer films, membranes, or thin composite layers to achieve precise thickness and surface finish.	300 mm daylight accommodates roll-to-plate lamination rigs, enabling continuous film processing in a benchtop format.

Parameter	Specification
Model	XP48
Structure Type	Integrated Desktop (Pump and press combined)
Drive Method	Manual Hydraulic
Force Range	0 – 40 tons
Max Surface Pressure	≤ 10 MPa (approx. 100 Bar)
Platen Size	200 × 200 mm (dual heated platens)
Daylight	300 mm

Parameter	Specification
Temperature Range	0 – 300 °C, accuracy ±1 °C
Heating Power	2000 W (independent dual-zone control)
Cooling Method	Integrated water cooling circuit
Power Supply	AC 110 V, 60 Hz / AC 220 V, 50 Hz (optional; 110 V draws ~18 A, requires 20 A breaker)
Weight	230 kg
Approximate Dimensions	950 × 525 × 600 mm (H×W×D)