

5 Ton Laboratory Integrated Hot Press

Item Number: XP06



Introduction

Professional 5-ton integrated laboratory hot press with 150x150mm dual-zone heated platens, precise PID temperature control up to 200°C, 7-inch intuitive touchscreen, ergonomic manual lever, and CE certification – ideal for battery electrode, polymer film, and spectroscopy pellet pressing.

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Application	Description	Key Benefit
Lithium-Ion Battery Electrode Pressing	Calendered cathode and anode sheets, as well as solid-state electrolyte films, are hot-pressed to enhance particle contact and reduce internal resistance. The uniform temperature and pressure ensure consistent coating density.	Improves electrochemical performance and cycle life by eliminating micro-voids.
Polymer Film Lamination	Thermoplastic multilayer films, including PVDF, TPU, and PTFE composites, are laminated under controlled heat and force to create void-free membranes for filtration or barrier applications.	Achieves high bond strength and optical clarity without thermal degradation.
Spectroscopy Pellet Preparation	Sample powders mixed with KBr or other binders are compressed into transparent, durable pellets for FTIR, XRF, and other spectroscopic analyses. The precise force prevents cracking while ensuring full transparency.	Produces high-quality pellets with reproducible spectra and minimal background noise.
Thin-Film Material Testing	Research on organic electronics, perovskite films, and flexible sensors requires laminates with uniform thickness and no trapped air. The press provides the gentle, controlled compression needed for delicate layers.	Yields repeatable mechanical and electronic properties across large-area films.
Compression Molding of Composites	Small-scale fabrication of fiber-reinforced polymer composites for tensile and impact testing coupons. The heated platens accelerate epoxy or thermoplastic matrix flow, consolidating the reinforcement.	High fiber-volume fractions and minimal porosity for valid mechanical testing.
Pharmaceutical Pilot-Scale Pill Making	Formulation development of immediate- or controlled-release tablets using small batches of active pharmaceutical ingredients (APIs). The manual press allows rapid iteration of compression force.	Ensures dose uniformity and dissolution characteristics without investing in large-scale equipment.
Ceramic Powder Compaction	Dry pressing of ceramic powders (alumina, zirconia) into green bodies for sintering. The precise force control prevents lamination defects and ensures uniform green density.	Improved sintered component integrity and reduced warpage.
Adhesive Bonding Development	Heat-activated adhesive films and tapes for electronics assembly are bonded to substrates under controlled pressure and temperature to optimize bond line thickness and strength.	Consistent bond quality and accelerated formulation screening.

Parameter	Value
Model Identifier	XP06
Compression Force Range	0.0 - 5.0 Metric Tons (0 - 50 KN)
Pressure Indication	Digital Sensor Display on 7-Inch HMI Screen
Clamping Actuation	Manual Ergonomic Lever-Arm
Day-Light Clearance (Max Gap)	≤ 50 mm (Best suited for thin films and thin plates)
Temperature Range	0.0 °C to 200.0 °C (Ambient to 200.0 °C)
Platen Working Dimensions	150 × 150 mm (Precision-ground anodized alloy)
Heating Element Configuration	Dual-zone independent embedded grid

Parameter	Value
Total Electrical Power	1000 W
Mains Voltage Requirement	AC 220V / 50Hz (Pre-wired with European Schuko plug)
Equipment Net Weight	65 Kg
Envelope Dimensions	270 × 250 × 390 mm (Width × Depth × Height)
Operational Certification	CE Certified
Packaging Type	Export-Grade Plywood Safety Crate
Shipping Terms	DDU (Delivered Duty Unpaid) Spain