

Manual Hot Press Digital Dual-Zone Heating Precision Laboratory Press

Item Number: XP05



Introduction

Discover our manual hot press with digital dual-zone heating up to 300°C and 5-ton force. Compact design, monoblock leak-proof hydraulic system, and 7-inch touchscreen control for precise laboratory pressing applications. Request a quote today.

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Application	Description	Key Benefit
Solid-State Battery Electrolyte Lamination	Producing dense, crack-free ceramic or polymer electrolyte layers for solid-state cells by applying controlled heat (up to 300°C) and uniform pressure.	Real-time digital force feedback prevents over-pressurization, which can cause micro-fractures in fragile electrolyte films.
Polymer Membrane Manufacturing	Hot-pressing a variety of thermoplastic polymer films, including polyimide (PI), polyester (PET), and polyether ether ketone (PEEK), and elastomer sheets to achieve desired thickness and crystallinity.	Dual-zone independent heating ensures uniform platen temperature, avoiding localized cold spots that cause film warping or inconsistent properties.
FTIR/XRF Pellet Preparation	Compacting fine-powder samples such as KBr, mineral dust, or pharmaceutical ingredients into transparent or dense discs for spectroscopy.	Compact design allows use inside glove boxes, and the manual lever action gives fine control over disk thickness and transparency.
Electronic Substrate Lamination	Bonding multilayer PCBs, flexible circuits, and heat-sink interfaces under precise temperature and pressure profiles.	Uniform pressure distribution eliminates delamination and voids, improving electrical and thermal conductivity.
Thermoplastic Composite Molding	Fabricating fiber-reinforced thermoplastic parts for automotive and aerospace prototyping by consolidating prepreg layers.	Multi-step temperature ramp-up ensures complete resin flow and cross-linking without scorching or premature cure.
Pharmaceutical R&D Tableting	Developing small-batch tablet formulations with heat-sensitive APIs, where pressure and temperature must be tightly controlled.	Gentle manual pumping allows gradual compression, and uniform heating prevents degradation of active ingredients.
Optical Film Lamination	Bonding protective films to optical lenses or displays, requiring flawless clarity and no trapped air bubbles.	High-flatness platens and precise pressure control eliminate optical distortions, ensuring Class-A surface quality.

Specification	Value
Mechanical & Structural Force	
Model Designation	XP05
Hydraulic Press Force	0 – 5.0 Tons (0 – 50 KN) Max
Actuation Method	Manual lever-arm pumping with damped return valve
Hydraulic System Design	Monoblock integrated leak-proof valve block
Power Consumption	700 W
Electrical Supply	AC 220V / 50Hz Single-Phase (110V optional)
Thermal & Control Systems	
Temperature Range	Ambient (RT) to 300.0 °C
Active Heating Area	100 × 100 mm (Anodized, high-flatness alloy platens)

Specification	Value
Vertical Clearance (Daylight)	50 mm (Maximum platen opening)
User Interface Panel	7-inch Programmable Color Touchscreen Controller
Thermal Stability	±1.5 °C
Physical Mass & Footprint	
Net Weight	55 Kg (Solid steel anti-tip heavy base)
External Dimensions	250 × 230 × 390 mm (W × D × H)
Compliance Standards	CE Certified