Ultra-High Temperature Automatic Hot Press With 40 Ton Force And 300X300Mm Platens

Item Number: XP70

Introduction

Engineered for extreme laboratory conditions, this ultra-high temperature automatic hot press delivers 500°C precision heating, 40-ton programmable force, and dual 300x300mm independent platens, complemented by an active CW5200 water chiller system to ensure safe, long-lasting performance for advanced material research.

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Application	Description	Key Benefit
Advanced Ceramics Sintering	Utilizes temperatures up to 500°C to densify ceramic powders such as alumina, zirconia, and silicon carbide into high-density, near-net-shape components. Programmable pressure profiles help eliminate porosity and improve mechanical properties.	Achieves high-density ceramics without separate furnace steps, saving time and energy.
Battery Material R&D	Ideal for pressing solid-state electrolyte pellets, electrode films, and coin cell components under controlled temperature and pressure. Dual independent platens ensure uniform thickness and density, critical for reproducible battery performance.	Enables precise control over electrode microstructure for consistent electrochemical results.
Polymer Film Production	Processes high-temperature thermoplastics, polyimide films, and PTFE sheets. Independent temperature control prevents film sticking and ensures consistent gauge across the entire 300×300 mm area.	Produces high-quality films for electronics, aerospace, and biomedical applications with minimal thickness variation.
Powder Metallurgy Compaction	Compacts metal powders (e.g., iron, titanium, aluminum) into green bodies, then sinters them at elevated temperatures under controlled pressure to achieve high strength and density in a single process.	Reduces processing steps and improves material homogeneity compared to separate compaction and sintering.
Composite Material Lamination	Fabricates multi-layer composites, including carbon fiber reinforced polymers and metal matrix composites, using precise heat and pressure cycles to achieve void-free bonding and optimal fiber wet-out.	Enhances interlayer adhesion and mechanical properties through tightly controlled process parameters.
High-Temperature Adhesive Bonding	Bonds components using specialty adhesives that require curing at temperatures up to 500°C. Programmable ramp and hold features ensure complete cross-linking without thermal damage to sensitive substrates.	Delivers maximum bond strength and reliability for aerospace, automotive, and electronics assembly.
Mold Testing and Validation	Evaluates the performance of molds and tooling under realistic high-temperature and high-pressure conditions. Real-time curve tracking helps identify design weaknesses before full-scale production.	Saves costs by detecting potential mold failures early in the development cycle.
Academic and Government Research	Supports fundamental studies in materials science, geology, and engineering by providing a versatile platform for exploring novel processing windows. Recipe storage and intuitive UI facilitate reproducible experimentation.	Empowers researchers to push the boundaries of material behavior with confidence.

Parameter	Specification
Model	XP70
Pressure Range	0 – 40 Tons (hydraulic, programmable pressure & hold)
Platen Size	300 × 300 mm (dual heated)
Maximum Platen Distance	50 mm (please confirm mold thickness before purchase)
Maximum Temperature	500°C

Parameter	Specification
Temperature Control	Dual-plate independent programmable ramp & soak control
Heating Power	5000 W (5 kW)
Cooling System	CW5200 Industrial Water Chiller (included)
User Interface	7-inch color touchscreen, curve display & recipe storage
Overall Dimensions (Press Body)	400 × 490 × 580 mm (W × D × H, excluding chiller)
Net Weight (Press Body)	Approx. 320 kg (without chiller)
Power Requirement	Single-phase AC 220V, 50Hz, 32A dedicated circuit advised
Included Items	CW5200 chiller, tool kit, manual
Shipping & Handling (CIF Dubai)	Machine and chiller delivered to Dubai port/airport; buyer responsible for customs, duties, and inland transport
Pre-installation Notes	Requires 32A dedicated circuit, distilled/deionized water (6–8 L) for chiller, forklift or hydraulic lift for unloading (crated weight ~400 kg)