

Automatic Laboratory Hot Press 400X400 Mm With Programmable High Temperature And Hydraulic Force Control

Item Number: KT-ZD4



Introduction

This advanced automatic laboratory hot press features 400x400mm heated platens, 50-ton hydraulic force, and 500C programmable heating, engineered for precise powder metallurgy, advanced materials research, and demanding industrial quality control testing applications, delivering unparalleled reliability and process repeatability.

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Application	Description	Key Benefit
Advanced Ceramics Sintering	Compacting and co-firing technical ceramic powders like alumina and zirconia.	Achieves near-theoretical density and eliminates micro-pores for maximum fracture toughness.
Powder Metallurgy Processing	Sintering high-melting-point metallic powders and composites under controlled compression.	Bypasses traditional casting limitations to produce complex metal alloys with homogeneous grain structures.
Solid-State Battery Development	Lamination and hot-pressing of solid-state electrolyte sheets and active material layers.	Ensures seamless interface contact and high ionic conductivity across composite battery layers.
Catalyst Pellet Fabrication	Compressing reactive catalytic materials into durable solid pellets for industrial chemical reactors.	Yields high mechanical strength pellets that resist crushing and attrition under high-velocity gas flows.
Geological Sample Preparation	Compacting rock, ore, and mineral powders into dense, flat discs for optical or elemental analysis.	Produces highly uniform, flat surface samples to prevent measurement errors in XRF and FTIR spectroscopy.
Diamond Tool Manufacturing	Embedding synthetic diamond grit within metallic binders using high thermal and mechanical force.	Creates a highly secure structural bond between diamonds and the metal matrix, preventing premature tool wear.
Thermoplastic Composite Lamination	Hot-pressing layered resin sheets and reinforcing fibers to manufacture advanced composites.	Promotes optimal resin flow and complete fiber wet-out for defect-free, lightweight structural components.

Parameter	KT-ZD4 Specification / Value
Instrument Model Code	KT-ZD4
Heating Temperature & Power Options	<ul style="list-style-type: none"> • KT-ZD4-300: RT to 300°C (Power: 4 kW) • KT-ZD4-500: RT to 500°C (Power: 6 kW)
Pressure Force Range	0.01 to 50 Tons (T)
Pressure Setpoint Accuracy	0.01 Tons (T)
Display Screen Size	7-Inch Color Resistive Touch Screen
Control Panel Hardware	Silver-plated contact keys with a certified lifespan > 100,000 cycles
Safety Systems	Dual protection: Acrylic protective door (auto power-off upon opening) and heavy-duty physical emergency stop switch
Programmable Process Control	Multi-segment recipe manager (up to 18 individual program steps for pressure, temperature, and water-cooling control)
Water-Cooling System	Integrated manual activation and multi-segment automatic rapid water-cooling options
Speed Adjustment Capabilities	Adjustable hydraulic pressurization (boosting) speed and programmable thermal heating rate

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Remote Operation & Softwares	Optional computer interface supporting data monitoring, real-time comparison, curve plotting, and USB data export
Platen Dimensions (L x W)	400 mm x 400 mm
Working Space Height & Width	420 mm x 90 mm
Power Supply Configuration	220V AC / 110V AC (Customizable upon request)
Equipment Dimensions	680 mm x 680 mm x 1280 mm (L x W x H)
Net Equipment Weight	Approximately 1130 kg
Package Dimensions	900 mm x 800 mm x 1400 mm (L x W x H)
Gross Shipping Weight	Approximately 1200 kg