5 Ton Benchtop Thermal Compression Press With Dual Zone Heating And Programmable Touchscreen Control

Item Number: XP04

Introduction

Explore our benchtop thermal compression press with 5-ton force, dual-zone heating up to 300°C, active water cooling, and a 7-inch programmable touchscreen. Ideal for battery research, materials science, and pharmaceutical sample preparation in a compact glovebox-compatible design.

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Application	Description	Key Benefit
Solid-State Battery Development	Pressing electrode-electrolyte layers and assembling coin or pouch cells under controlled temperature and pressure.	Uniform compaction and heating improve interfacial contact and battery performance.
Polymer Composite Processing	Molding and curing thermoplastic or thermoset composite samples for mechanical testing.	Precise pressure and temperature profiles ensure repeatable sample quality.
Pharmaceutical Sample Preparation	Compressing powder blends into tablets for drug formulation research or quality control.	Consistent tablet density and thickness with programmable multi-step profiles.
Materials Science Research	Sintering, laminating, or forming ceramic, metallic, and composite specimens.	Fine control over force and heat accelerates material characterization studies.
Thin Film Lamination	Bonding functional films onto substrates for electronic or sensor applications.	Uniform heating and pressure eliminate air bubbles and delamination.
Glove Box Integration	Operating entirely inside inert gas glove boxes for air-sensitive materials.	Factory-outgassed unit preserves inert atmosphere integrity.
Educational and Training Labs	Demonstrating principles of thermal compression and material processing.	Compact benchtop design fits standard laboratory benches.

Parameter	Specifications	Note
Model	XP04	Laboratory Benchtop Series
Working Pressure	0 – 5 Tons	Manual hydraulic pressurization
Platen Dimensions	120 × 120 mm	Fine-ground pressing surface
Platen Opening Distance	50 mm	Maximum daylight clearance
Temperature Range	Ambient to 300 ℃	Continuous operation capable
Heating Method	Embedded heating cartridge, dual-zone control	Dual-channel PID feedback
Rated Heating Power	700 W	Total thermal power
Platen Cooling Method	Circulating water cooling	Built-in channels with 1/4" quick-connects
System Controller	7" programmable touchscreen	Real-time temperature & pressure curve display
Input Voltage	110 V / 60 Hz or 220 V / 50 Hz	Configurable based on installation region
Certification	CE	Compliant with EU laboratory safety standards
Device Dimensions	250 × 230 × 390 mm	Width × Depth × Height

Parameter	Specifications	Note
Net Weight	55 kg	Rigid steel frame construction