

20 Ton 180X180Mm Programmable Lab Precision Hot Press With Touchscreen Plc And Water Cooling

Item Number: XP59



Introduction

Discover the 20-ton programmable lab precision hot press with 180x180mm heated platens, touchscreen PLC control, and integrated water cooling. Ideal for ceramics, polymers, battery R&D, and advanced material pressing. Achieve precise temperature-pressure profiling up to 300°C. Compact design, robust build. Get consistent results for research and production. Request a quote today.

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Application	Description	Key Benefit
Advanced Ceramics & Powder Metallurgy	Hot-press sintering of ceramic powders (alumina, zirconia, silicon carbide) or metal powders (titanium, stainless steel) into test specimens for mechanical and microstructural analysis.	Achieves near-theoretical density with minimal grain growth, thanks to programmable pressure-temperature profiles.
High-Performance Polymer Molding	Compression molding of PEEK, PTFE, polyimide, and other thermoplastics into thin films, tensile bars, or sealing components.	Precise control over curing kinetics ensures optimal crystallinity, mechanical strength, and chemical resistance.
Battery & Energy Storage R&D	Pressing of solid-state electrolyte pellets, lithium metal anodes, and fuel cell membrane electrode assemblies (MEAs) with controlled temperature and force gradients.	Enables uniform ionic conductivity and interfacial contact, critical for next-gen battery performance and longevity.
Multilayer Material Lamination	Bonding of multi-layer printed circuit boards (PCB), flexible electronics, or thermal interface materials under heat and pressure.	Programmable ramp and dwell sequences guarantee void-free, dimensionally stable laminates.
Composite Material Development	Fabrication of fiber-reinforced polymer and metal matrix composite panels for aerospace and automotive lightweighting studies.	Eliminates porosity and achieves uniform fiber wet-out through precisely controlled consolidation cycles.
Pharmaceutical Tablet Research	Small-batch compression of powder blends into tablets with controlled hardness, dissolution, and drug release profiles.	Enables R&D of novel formulations with exact compression parameters, scalability to pilot production.

Parameter	Specification	Remarks
Model	XP59	Standard benchtop configuration
Working Pressure	0 - 20 Tons (200 kN)	Pressure adjustable in 0.1-ton increments via PLC
Working Temperature	0 - 300 °C	Programmable ramp rates up to 10°C/min
Platen Size	180 × 180 mm	Machined from tool steel with precision ground flatness
Max. Platen Opening	180 mm	Measured between upper and lower plate; accommodates tall molds
Piston Stroke	30 mm	Hydraulic piston travel for applying force; enough for most lab processes
Heating Power	2400 W	1200 W per platen for rapid, even heating
Cooling Method	Circulating water cooling	Built-in serpentine channels; requires external chiller (not included)
Controller	Programmable touchscreen PLC	7-inch color display; stores up to 100 programs; USB data export

Parameter	Specification	Remarks
Power Supply	AC 220V / 50Hz (10.9 A)	Requires single-phase grounded outlet; cord included
Dimension (H×W×D)	950 × 260 × 720 mm	Vertical orientation; fits on standard 600 mm deep bench
Net Weight	232 kg	Heavy for stability; ensure bench can support weight