



KINTEK SOLUTION

Manual Heated Lab Press Catalog

Contact us for more catalogs of Laboratory Press Machine, Battery Lab Consumables & Materials, Battery Testing & Electrochemical Equipment, Electrode Fabrication Equipment, Cell Assembly & Filling Equipment, etc.

KINTEK SOLUTION

COMPANY PROFILE

>>> About Us

KINTEK Solution is a technology-driven innovator specializing in comprehensive laboratory equipment for battery R&D and advanced materials research. Our portfolio spans the entire cell fabrication workflow—from mixing, coating, and precision pressing (automatic, heated, isostatic) to cell assembly and testing. Also essential in ceramics and powder metallurgy, our systems prioritize precision, safety, and repeatability, empowering researchers and industrial labs to achieve groundbreaking results.



Laboratory Split Manual Heated Hydraulic Press Machine With Hot Plates

Item Number: PCSM



Introduction

Boost lab efficiency with KINTEK's heated lab presses—precise temperature control, durable design, and rapid cooling for consistent results. Explore now!

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Instrument model	PCSM-30T3030	PCSM-40T4040
Pressure Range	0-30.0 tons	0-40.0 tons
Piston diameter	130mm (d) in chrome plated oil cylinder	130mm (d) in chrome plated oil cylinder
Main overall structure	Equipment without sealed connections to reduce oil leakage points	Equipment without sealed connections to reduce oil leakage points
Mold heating temperature	Room temperature-300.0C/500.0C	Room temperature-300.0C
Insulation method	Imported insulation board	Imported insulation board
Cooling method	Quick cooling with water cooling [optional water cooling machine]	Quick cooling with water cooling [optional water cooling machine]
Hot platen size	300×300mm (M×N)	400×400mm(M×N)
Host size	380×350×600mm(K×P×H)	500×480×650(K×P×H)
Dimensions	700×400×600mm(L×W×H)	800×480×650(L×W×H)
Power supply	3000 W(220V/110V can be customized)	5000 W(220V/110V can be customized)
Weight	260 Kg	460Kg
Dimensional diagram of powder tablet press	See picture below	See picture below

Laboratory Manual Heated Hydraulic Press Machine With Hot Plates

Item Number: CPCL



Introduction

KINTEK's Manual Hot Press delivers precise material processing with controlled heat and pressure. Ideal for labs needing reliable bonds and high-quality samples. Contact us today!

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Instrument model	PC-900L
Pressure Range	0-5.0 tons
Pressurization process	Manual pressurization
Cylinder stroke	80mm
Heating temperature	Up to 1000°C (customizable)
Mold material	Nickel-based alloy (high temperature resistant material) or as specified
Sample size	Φ10-30mm (customizable)
Mold shape	Φ50x90mm (customizable)
The caliber of the furnace	Φ60mm (customizable)
Size of the machine (LxWxH)	Approx. 400x380x780 mm
Power supply	220V 50Hz (customizable)

Dimensional diagram of powder tablet press

24T 30T 60T Heated Hydraulic Lab Press Machine With Hot Plates For Laboratory

Item Number: PCH



Introduction

High-quality hydraulic lab presses for precise sample preparation. Choose automatic or heated models for material research, pharmacy, and more. Get a quote now!

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Instrument model	PCH-24T1010	PCH-30T2020	PCH-30T1818
Pressure Range	0-24.0 tons	0-30.0 tons	0-30.0 tons
piston diameter	95mm (d) in chrome plated oil cylinder	110mm (d) in chrome plated oil cylinder	150mm (d) in chrome plated oil cylinder
Main overall structure	Equipment without sealed connections to reduce oil leakage points	Equipment without sealed connections to reduce oil leakage points	Equipment without sealed connections to reduce oil leakage points
Mold heating temperature	Room temperature-300.0C/500.0C	Room temperature -300.0C/500.0C	Room temperature-300.0C/500.0C
Insulation method	Imported insulation board	Imported insulation board	Imported insulation board
Cooling method	Quick cooling with water cooling [optional water cooling machine]	Quick cooling with water cooling [optional water cooling machine]	Quick cooling with water cooling [optional water cooling machine]
Hot platen size	100×100mm (M×N)with chamfer	200×200mm(M×N)	180×180mm (M×N)
Host size	245×175×500mm(K×P×H)	405×260×525mm(K×P×H)	405 ×260×525mm(K×P×H)
Dimensions	500×175×500mm(L×W×H)	950×260×525mm(L×W×H)	950×260×525mm(L×W×H)
power supply	600 W(220V/110V can be customized)	1200 W(220V/110V can be customized)	1000 W(220V/110V can be customized)
Weight	60 Kg	180 Kg	180 Kg

15 Ton Manual Press Precision Thermal Compression Platform For Laboratory And Glovebox Integration

Item Number: XP16



Introduction

Precision 15-ton manual hot press with 300x300mm heated platens, dual-zone PID control up to 500°C, integrated water cooling, and glovebox-ready monolithic design. Ideal for battery research, polymer films, and ceramics. Request a quote today for custom configurations.

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Application	Description	Key Benefit
Ceramic Sintering	High-temperature densification of ceramic powders up to 500°C under controlled pressure	Uniform thermal field ensures consistent grain growth and final material properties
Battery Research	Preparation of electrode and solid electrolyte pellets in argon or nitrogen environments	Glovebox-ready design maintains inert atmosphere integrity and prevents moisture contamination
Polymer Film Pressing	Melting and forming polymer sheets for thin-film analysis or membrane fabrication	Precise pressure control prevents thickness variations and film defects
Composite Laminate Curing	Multi-stage curing of advanced composites with programmed temperature and pressure cycles	Eliminates residual thermal history effects for improved interlaminar strength
Hot Embossing	Micro- and nano-structuring of thermoplastic surfaces using heated molds	High platen parallelism and even pressure distribution replicate features accurately
Spectroscopic Sample Prep	Creating fused beads or pressed pellets for XRF, IR, and other analytical techniques	15-ton force guarantees dense, homogeneous samples with smooth surfaces for reliable analysis

Parameter	Value
Max Force	15.0 Tons / 150 kN
Platen Area	300 × 300 mm
Piston Diameter	95 mm (mirror-chromed)
Integrated Cooling	Built-in water-cooling channels in both platens
Hydraulic Design	Monolithic cast body with integrated oil reservoir
Thermal Insulation	High-density composite insulation plates

Module	Standard Specification	Upgraded / Optional Specifications	Typical Applications
Temperature Limit	RT ~ 300°C	RT ~ 500°C (high-temperature version)	High-temperature ceramic sintering, advanced composites, polyimide curing
Control System	Dual-channel digital PID display	Multi-segment programmable PID with pressure control	Complex multi-stage curing, thermal history elimination, precision rheological sample preparation
Heating Power	2 × 1200 W (total 2400 W)	2 × 1800 W (3600 W) or 2 × 2400 W (4800 W)	Experiments requiring high ramp rates or very short preheating times

Module	Standard Specification	Upgraded / Optional Specifications	Typical Applications
Daylight Opening	50 mm or 60 mm	100 mm (extended height)	Thick molds, stacked laminates, integration of in-situ sensors
Power Grid	220-230 V / 50 Hz	220 V / 60 Hz (special voltage for specific regions)	North America, Korea, and other 60 Hz mains regions
Net Weight	Approx. 180 kg	230 kg – 250 kg (reinforced frame)	Ultra-heavy-load testing, deformation-resistant structural applications

Chiller Option	Model Pairing	Capacity	Best For
Core Cooling	CW-5000	Standard cooling power	General materials labs, accelerated cooling and prevention of sample thermal deformation
Advanced Thermal Shock	CW-5200	High cooling capacity	Rapid thermal cycling tests and high-power (4800 W) configurations

Manual 30-Ton Heated Laboratory Press With Water Cooling And 250X350Mm Rectangular Platens For Material Compaction

Item Number: XP11



Introduction

Heavy-duty 30-ton manual hydraulic hot press featuring 4800W rapid heating, water cooling, 250×350mm rectangular platen, and 7-inch touchscreen controller for advanced material research, polymer molding, and solid-state compaction with precise closed-loop thermal control.

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Application	Description	Key Benefit
Advanced Polymer Molding	Compression molding of thermoplastics, thermosets, and elastomers into rectangular sheets or test specimens.	Uniform heating and high pressure ensure void-free, dimensionally stable parts.
Composite Material Fabrication	Lay-up and consolidation of fiber-reinforced composites, prepregs, and laminates.	Large platen area and controlled thermal cure cycles improve interfacial bonding and mechanical properties.
Solid-State Battery Electrode Pressing	Compaction of powder-based electrodes and solid electrolytes for next-generation batteries.	High tonnage achieves desired density, while precise temperature control prevents degradation of sensitive materials.
Thermoplastic Thermoforming	Press-forming of heated thermoplastic sheets into 3D shapes.	Rapid heat-up and programmable cooling enable efficient cycle times and accurate replication.
Ceramic Lamination	Layer stacking and densification of ceramic green tapes or substrates.	Uniform pressure distribution and micron-level parallelism ensure crack-free lamination.
Thin Film Lamination	Hot pressing of multilayer polymer films or membranes.	Water cooling quickly stabilizes layers, preventing thermal distortion.
Research & Prototyping	General materials science studies requiring variable pressure, temperature profiles, and sample sizes.	Flexible touchscreen programming and robust construction accommodate diverse experimental protocols.
Battery Research Assembly	Pressing of coin cells, pouch cells, and component stacks under controlled heat.	High precision and repeatability support development of energy storage technologies.

Parameter	Value
Model Number	XP11
Compression Tonnage Range	0.0 – 30.0 Metric Tons (0 – 300 KN)
Hydraulic Actuation	Dual-Stage High-Efficiency Manual Pump (low stage: large displacement; high stage: fine pressure control)
Maximum Platen Opening	50 mm
Platen Active Area	250 × 350 mm (Precision-ground rectangular alloy platens)
Frame Structure	Reinforced Dual-Post Gantry; 230 kg mass for extreme rigidity

Parameter	Value
Temperature Control Range	0.0 °C to 300.0 °C (Programmable multi-segment ramps)
Total Heating Power	4800 W (Dual embedded high-density heaters in upper & lower platens)

Parameter	Value
Controller Interface	7-Inch Color Capacitive Touchscreen (Temperature & Pressure HMI)
Cooling System	Built-in platen water cooling loops with quick-release ports
Electrical Supply	AC 220V - 230V / 50Hz, Single-Phase
Required Current	Dedicated 32A line (CEE 32A blue plug or hardwired; standard 10A/16A sockets prohibited)

Parameter	Value
Net Weight	230 Kg
External Dimensions (WxDxH)	458 × 473 × 466 mm
Mounting Requirement	Heavy-duty reinforced steel workbench or concrete pedestal; not suitable for standard desks
Platen Centering Rule	Sample must be positioned at the geometric center to prevent off-center loading damage
Certifications	CE Certified
Warranty	12 months

15 Ton Manual Hot Press For Battery Research And Advanced Materials

Item Number: XP15



Introduction

15-ton manual hot press with precise temperature control up to 400°C and 180x180 mm isothermal platens for battery research, polymer processing, and ceramic densification. Available in compact 50 mm or high-clearance 381 mm daylight configurations. Request a quote today.

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Application	Description	Key Benefit
Solid-State Battery Electrolyte Pressing	Used for consolidating sulfide or oxide electrolyte powders into dense ceramic pellets. The press applies uniform heat and pressure, essential for achieving high ionic conductivity without grain boundary resistance.	Produces mechanically robust, highly conductive electrolyte layers crucial for next-generation solid-state batteries.
Polymer Film Formation and Lamination	Hot pressing thermoplastic polymers, composite membranes, or multilayer films for fuel cells, filtration, or packaging research. The precise temperature and pressure control ensures uniform thickness and surface quality.	Delivers high-quality, defect-free films with tailored thickness and enhanced interfacial adhesion.
Ceramic Densification and Sintering	Employed for hot pressing advanced ceramics such as LLZO, LATP, or alumina to achieve near-theoretical density. Simultaneous heat and pressure accelerate sintering kinetics.	Eliminates porosity, increasing mechanical strength and ionic conductivity for functional ceramics.
Glovebox-Integrated Air-Sensitive Material Processing	Platform S fits inside argon or nitrogen gloveboxes, allowing pressing of lithium metal anodes, reactive sulfides, or other oxygen-sensitive compounds without contamination.	Maintains ultra-pure atmosphere, preventing oxidation and ensuring sample integrity.
Multi-Layer Die Stacking for Cell Assemblies	Suitable for pressing stacked layers of electrodes, separators, and current collectors in battery or fuel cell research. The extended daylight of Platform H accommodates multiple layers.	Achieves uniform pressure distribution across complex layered structures, essential for device performance.
High-Temperature Material Characterization	Testing thermal behavior and compression properties of novel composites, polymers, or hybrid materials up to 400°C. The press can simulate processing conditions.	Enables rapid screening of material candidates under realistic manufacturing conditions.
Powder Compaction for Sputtering Targets	Compacting metal or ceramic powders into dense discs for subsequent machining into sputtering targets or pellets. High force ensures green strength.	Produces homogeneous, high-density compacts with minimal die wear.
Hot Embossing for Microfluidic Devices	Temperature-assisted embossing of microstructures into polymer substrates for lab-on-a-chip or biomedical devices. Precise pressure and temperature control replicate fine features.	Achieves high-fidelity pattern transfer with excellent surface quality and reproducibility.

Parameter	Specification
Model Identifier	XP15
Force Capacity	0–15 Metric Tons (0–150 kN)
Fluid Actuation	Manual Hydraulic Pump
Platen Dimensions	180 × 180 mm Isothermal Platens
Control Interface	7-inch PID Touchscreen (Temperature & Pressure)
Power Supply	AC 220–240V, 50Hz Single-Phase
Certification	CE Certified
Cooling Method	Built-in copper cooling channels with quick-connect water ports

Parameter	Platform S (Compact)	Platform H (Extended Gantry)
Max Daylight	50 mm	381 mm
Piston Stroke	≤ 50 mm	130 mm
Temperature Range	Ambient–300°C (1000W) or –400°C (2800W)	Ambient–350°C (2000W)
Rated Heating Power	1000W (300°C) / 2800W (400°C)	2000W (350°C)
Dimensions (W×D×H)	300 × 300 × 420 mm	≈350 × 350 × 750 mm
Net Weight	100–130 kg	≈150 kg
Cooling Integration	Standard across platforms (quick-connect)	Same as Platform S

15T Manual Hot Press 400Mm Dual Zone Heated Platen For Polymer Composite And Battery Electrolyte Compaction

Item Number: XP14



Introduction

15T manual hot press with 400x400mm heated platens, 5400W dual-zone heating, 300°C, integrated water cooling, 210kg. For large-area polymer films, rubber vulcanization, composite panels, battery electrolytes. Contact us.

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Application	Description	Key Benefit
Thermoplastic Polymer Films	Hot press molding of large-area films for optical, packaging, or flexible electronics applications.	400mm platen and uniform heating ensure flatness and thickness consistency, reducing scrap from edge warping and improving optical clarity.
Rubber Sheet Vulcanization	Production and testing of vulcanized rubber sheets, gaskets, and seals.	Active 300°C dual-zone control with rapid cool-down locks in mechanical properties and accelerates post-cure handling, increasing throughput.
Composite Panel Fabrication	Compression molding of fiber-reinforced polymer panels and multi-layer laminates for aerospace and automotive.	15-ton force combined with wide isothermal platen eliminates voids, achieving high structural integrity and surface finish. Water cooling enables quick demolding.
Solid-State Battery Electrolyte Compaction	Pressing sulfide, oxide, or polymer electrolyte films for next-generation battery cells.	Water cooling prevents thermal degradation of sensitive materials, while precise temperature control ensures optimal ionic conductivity and interfacial contact.
Ceramic Tape Lamination	Laminating green ceramic tapes for MLCCs, LTCC modules, and SOFC components.	Gentle manual hydraulic control avoids cracking fragile layers, and uniform heating prevents delamination, crucial for electronic ceramics.
Rubber-to-Metal Bonding	Hot pressing of rubber-metal composite parts for automotive and industrial sealing.	Consistent clamping pressure and heat distribution across large platen guarantee reliable bonding without over-cure, reducing rejects.
PTFE Sheet Sintering	Sintering and shaping of PTFE sheets and films under controlled pressure and temperature.	Accurate temperature up to 300°C and programmable profiles ensure proper sintering without material degradation.
Research & Development	General material synthesis, sample preparation, and small-batch production in academic and industrial labs.	CE-certified robustness, intuitive touchscreen, and extensive support documentation make it a safe, productive addition to any lab, with the flexibility to handle diverse materials.

Parameter	Specification
Model	XP14
Mechanical & Force	
Clamping Force	0.0 – 15.0 Metric Tons (0 – 150 kN)
Fluid Actuation	Manual Hydraulic Pump with high-torque lever
Platen Daylight (Vertical Clearance)	50 mm
Platen Dimensions	400 × 400 mm
Frame Construction	4-column deflection-resistant steel gantry
Thermal & Cooling	
Temperature Range	0.0 °C to 300.0 °C (dual-zone, independent PID control)

Parameter	Specification
Heating Power	5400 W (2 × 2700 W embedded heaters)
HMI Controller	7-inch industrial touchscreen
Platen Cooling	Integrated water channels with quick-release fittings; compatible with external chiller/tap water
Recommended External Chiller	Recirculating chiller (optional, not included)
Electrical	
Power Supply	AC 220 V – 230 V / 50 Hz, Single-Phase
Current Draw	Up to 24.5 A
Power Connection Requirement	Dedicated 32 A circuit breaker or CEE 32 A industrial socket; cable cross-section ≥ 4 mm²
Physical & Compliance	
Net Weight	210 kg
Outer Dimensions (W × D × H)	580 × 550 × 500 mm
Certification	CE Certified

5 Ton Laboratory Integrated Hot Press

Item Number: XP06



Introduction

Professional 5-ton integrated laboratory hot press with 150x150mm dual-zone heated platens, precise PID temperature control up to 200°C, 7-inch intuitive touchscreen, ergonomic manual lever, and CE certification – ideal for battery electrode, polymer film, and spectroscopy pellet pressing.

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Application	Description	Key Benefit
Lithium-Ion Battery Electrode Pressing	Calendered cathode and anode sheets, as well as solid-state electrolyte films, are hot-pressed to enhance particle contact and reduce internal resistance. The uniform temperature and pressure ensure consistent coating density.	Improves electrochemical performance and cycle life by eliminating micro-voids.
Polymer Film Lamination	Thermoplastic multilayer films, including PVDF, TPU, and PTFE composites, are laminated under controlled heat and force to create void-free membranes for filtration or barrier applications.	Achieves high bond strength and optical clarity without thermal degradation.
Spectroscopy Pellet Preparation	Sample powders mixed with KBr or other binders are compressed into transparent, durable pellets for FTIR, XRF, and other spectroscopic analyses. The precise force prevents cracking while ensuring full transparency.	Produces high-quality pellets with reproducible spectra and minimal background noise.
Thin-Film Material Testing	Research on organic electronics, perovskite films, and flexible sensors requires laminates with uniform thickness and no trapped air. The press provides the gentle, controlled compression needed for delicate layers.	Yields repeatable mechanical and electronic properties across large-area films.
Compression Molding of Composites	Small-scale fabrication of fiber-reinforced polymer composites for tensile and impact testing coupons. The heated platens accelerate epoxy or thermoplastic matrix flow, consolidating the reinforcement.	High fiber-volume fractions and minimal porosity for valid mechanical testing.
Pharmaceutical Pilot-Scale Pill Making	Formulation development of immediate- or controlled-release tablets using small batches of active pharmaceutical ingredients (APIs). The manual press allows rapid iteration of compression force.	Ensures dose uniformity and dissolution characteristics without investing in large-scale equipment.
Ceramic Powder Compaction	Dry pressing of ceramic powders (alumina, zirconia) into green bodies for sintering. The precise force control prevents lamination defects and ensures uniform green density.	Improved sintered component integrity and reduced warpage.
Adhesive Bonding Development	Heat-activated adhesive films and tapes for electronics assembly are bonded to substrates under controlled pressure and temperature to optimize bond line thickness and strength.	Consistent bond quality and accelerated formulation screening.

Parameter	Value
Model Identifier	XP06
Compression Force Range	0.0 - 5.0 Metric Tons (0 - 50 kN)
Pressure Indication	Digital Sensor Display on 7-Inch HMI Screen
Clamping Actuation	Manual Ergonomic Lever-Arm
Day-Light Clearance (Max Gap)	≤ 50 mm (Best suited for thin films and thin plates)
Temperature Range	0.0 °C to 200.0 °C (Ambient to 200.0 °C)
Platen Working Dimensions	150 × 150 mm (Precision-ground anodized alloy)
Heating Element Configuration	Dual-zone independent embedded grid

Parameter	Value
Total Electrical Power	1000 W
Mains Voltage Requirement	AC 220V / 50Hz (Pre-wired with European Schuko plug)
Equipment Net Weight	65 Kg
Envelope Dimensions	270 × 250 × 390 mm (Width × Depth × Height)
Operational Certification	CE Certified
Packaging Type	Export-Grade Plywood Safety Crate
Shipping Terms	DDU (Delivered Duty Unpaid) Spain

30 Ton Manual Heated Press With Integrated Recirculating Chiller For Rapid Thermal Cycling

Item Number: XP09



Introduction

30-ton manual hydraulic hot press with integrated active cooling for polymers, composites, and electronic laminates. Precision temperature control up to 300°C, 300x300mm platens, and 260kg rigid frame ensure uniform samples. Complete with chiller for fast cycling. CE certified, ready-to-run system.

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Application	Description	Key Benefit
Polymer Vulcanization	Curing natural and synthetic rubber sheets at precisely controlled temperatures and pressures to optimize crosslinking density for gasket, seal, and tire research.	Uniform heating across large platens and rapid quench ability prevents over-cure and ensures consistent mechanical properties.
Composite Panel Lamination	Consolidating carbon fiber, aramid, or glass fiber prepregs into rigid panels for aerospace and automotive prototyping.	Zero-deflection frame guarantees uniform thickness and void-free bonding, critical for structural integrity.
Electronic Flex Circuit Lamination	Multi-layer lamination of flexible polyimide circuits, membrane switches, and RFID antenna substrates.	Ultra-flat platens and controlled cooling minimize warpage, ensuring reliable layer alignment and electrical continuity.
Battery Electrode/Sheet Pressing	Compacting cathode and anode films, solid-state electrolyte layers for lithium-ion and next-gen batteries.	Integrated chiller enables rapid quenching to stabilize metastable phases and achieve precise porosity levels.
Hot Embossing of Micro/Nanostructures	Replicating microfluidic channels, optical gratings, and surface relief patterns onto thermoplastic wafers.	Micron-level platen parallelism ensures uniform depth replication and minimal residual stress over large areas.
PTFE / High-Performance Polymer Sintering	Sintering and melt-pressing PTFE, UHMWPE, PEEK, or polyimide powders into sheets or preforms.	Large uniform heating area eliminates cold spots, achieving homogeneous crystallinity and dimensional stability.
Rubber Curing for ASTM/ISO Testing	Preparing rubber test plaques for rheometer, tensile, and hardness testing per ASTM D2084, D3182.	Precise pressure and temperature profiles deliver repeatable test conditions, ensuring valid inter-lab comparison.
Medical Device Laminating	Pressing bio-compatible films, diagnostic test strips, and transdermal patches with controlled temperature and pressure.	Delicate thermal control prevents degradation of heat-sensitive biomaterials while achieving strong lamination.
Aerospace CFRP Panel Pressing	Curing prepreg carbon fiber layers for aircraft structural parts under controlled pressure and vacuum.	Zero-deflection frame and rapid cooling achieve controlled crystallinity and minimal porosity.

Parameter	Specification
Model Identifier	XP09
Rated Clamping Force	0.0 – 30.0 Metric Tons (0 – 300 KN)
Press Actuation	Dual-Stage Manual Hydraulic Pump
Platen Daylight (Max Opening)	50 mm
Temperature Range	0.0°C – 300.0°C (dual-platen independent control)
Platen Dimensions (WxD)	300 × 300 mm
Heating System Power	3000 W (2 × 1500W cartridge heaters per platen)
Platen Cooling	Integrated copper coolant channels, quick-connect fittings

Parameter	Specification
Companion Chiller	Active Recirculating Water Chiller (included)
Power Supply	AC 220V - 230V, 50Hz, single phase
Recommended Electrical Circuit	Dedicated 16A wall outlet
Net Weight	260 kg
Outer Dimensions (W×D×H)	458 × 480 × 466 mm
Certification	CE Certified

30 Ton Manual Hot Press With Water Cooling For Laboratory Applications

Item Number: XP52



Introduction

KINTEK's manual hot press offers 30 tons pressure, heating to 300°C, and water cooling. Designed for battery research, thermoplastics, and composite molding. Precise PID control, 100x100 mm heated platens, and adjustable 0-150 mm gap ensure quality sample preparation.

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Application	Description	Key Benefit
Battery Electrode Pressing	Calendering or laminating electrode films for lithium-ion and solid-state batteries under controlled heat and pressure.	Achieves uniform density and thickness for improved battery performance.
Polymer Film Molding	Compression molding of thermoplastic films, plaques, and sheets for tensile testing or optical analysis.	Precise temperature control prevents material degradation.
Composite Lamination	Fabrication of carbon fiber or glass fiber reinforced polymer laminates for structural testing.	Uniform pressure distribution ensures void-free laminates.
Sample Preparation for Spectroscopy	Producing KBr pellets or fused beads for XRF analysis with consistent thickness and surface finish.	Reliable sample consistency for accurate analytical results.
Ceramic Powder Compaction	Cold or warm pressing of ceramic green bodies for sintering trials in materials research.	High compaction force yields dense, handleable green parts.
Pharmaceutical Tablet Development	Small-batch compression of powder blends into tablets for formulation studies using special dies.	Adjustable pressure enables optimization of tablet hardness and dissolution.
Plastic Welding Research	Joining thermoplastic components through heat and pressure for studying weld strength and process parameters.	Consistent heating and pressure ensure reproducible weld quality.
Rubber Vulcanization	Curing rubber compounds in molds to evaluate material properties and optimize crosslinking conditions.	Even temperature distribution prevents under-cure or over-cure.

Parameter	Value
Model	XP52
Working Temperature Range	0-300 °C
Heating Power	600 W
Platen Size	100 × 100 mm
Platen Gap Adjustment	0-150 mm
Working Pressure	0-30 Tons
Cooling Method	Circulating Water Cooling
Power Supply	AC 220 V, 50 Hz
Dimensions (L × W × H)	245 × 175 × 500 mm
Weight	60 kg

15 Ton Programmable Hot Press With 7-Inch Touchscreen

260Mm Narrow Footprint

Item Number: XP17



Introduction

Experience precision molding with a 15-ton programmable hot press featuring a 7-inch touchscreen, 260mm narrow chassis, and dual-zone heating. Ideal for polymer films, battery research, and advanced materials. Engineered for glovebox compatibility, delivering up to 300°C with rapid cooling options.

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Application	Description	Key Benefit
Polymer Film Preparation	Produces high-precision thin sheets for mechanical and barrier testing.	Guaranteed ±4% thickness uniformity using certified molds.
Solid-State Battery Electrolyte Development	Hot-presses ceramic-polymer composites under controlled atmospheric conditions.	260mm width fits through glovebox airlocks without disassembly.
Polyimide (PI) Film Curing	Achieves full imidization at sustained 300°C with minimal thermal gradient.	Turbo configuration reaches 300°C 50% faster than standard systems.
Aerospace Composite Lamination	Consolidates multi-layer fiber-metal laminates for research-scale panels.	15-ton force and programmable pressure curves replicate autoclave conditions.
Quality Control Specimen Production	Generates identical test coupons for ASTM/ISO material characterization.	Digital recipe management eliminates lot-to-lot variability.
Academic Material Science Research	Supports gradient pressing, dwell steps, and pulsed pressure profiles in one run.	Drag-and-drop recipe builder simplifies complex experimental designs.
Photovoltaic Encapsulation Testing	Laminates EVA/POE films onto small glass-substrate modules for reliability studies.	Uniform heating prevents bubbles and incomplete cross-linking.
Biocompatible Polymer Processing	Shapes medical-grade thermoplastics in a clean, programmable cycle.	Low-mass cartridge heaters reduce thermal inertia for delicate biopolymers.

Parameter	Specification
Max Force	0 – 15.0 Tons (0-150 kN)
Platen Size	200 × 200 mm
Open Distance	50 mm
Control Panel	7-inch Touchscreen Programmable Controller (Aura-Touch™)
Footprint (W×D×H)	260 × 347 × 422 mm (optimized layout)
Net Weight	approx. 130 kg

Parameter	XP17 Core	XP17 Turbo	Application Guidelines
Working Temperature Range	RT – 250 °C	RT – 300 °C	Core suits most polymer and composite labs; Turbo enables solid-state electrolyte and PI film curing.

Parameter	XP17 Core	XP17 Turbo	Application Guidelines
Maximum Heating Power	1600 W (2 × 800 W)	2800 W (2 × 1400 W)	2800 W high-power cartridges cut preheat time significantly.
Power Grid Compatibility	AC 220 V / 50 Hz (single-phase)	AC 220 V / 60 Hz (custom)	50 Hz standard for Europe/China; 60 Hz configurable for Korea and North America.
Cooling Method	Internal water channel interface	External industrial chiller compatible	Both versions include internal ports; Turbo allows direct connection to rapid-cool chiller.

Intelligent Desktop Manual Thermal Press With Dual Heating Real Time Mpa And Water Cooling For Glovebox

Item Number: XP02



Introduction

This compact benchtop thermal press delivers precise temperature and pressure control for materials research, with real-time MPa stress calculation, dual independent heating up to 300°C, and water-cooled thermal isolation. Ideal for glovebox-based solid-state battery development and FTIR sample preparation.

[Learn More](#)

Application	Description	Key Advantage
Solid-State Battery Pellet Pressing	Compressing sulfide/oxide electrolyte powders into dense pellets at controlled temperatures and MPa for conductivity testing.	Guarantees repeatable density and interfacial contact, which are critical for battery performance research.
FTIR Sample Preparation	Preparing transparent KBr or CsI pellets for infrared spectroscopic analysis directly under vacuum or inert conditions inside a glovebox.	Prevents moisture absorption and ensures spectral clarity with uniform thickness and pressure.
Polymer Film Lamination	Laminating multi-layer polymer films under heat and pressure to simulate barrier properties or produce lightweight composites.	Achieves consistent bonding strength and thickness through precise temperature-pressure profiles.
Ceramic Powder Compaction	Uniaxially pressing technical ceramic powders (e.g., alumina, zirconia) into green bodies for sintering trials.	High pressure and uniform heating minimize density gradients, improving the quality of sintered parts.
High-Temperature Composite Molding	Molding thermoplastic or thermoset composites using custom heating cycles up to 300 °C.	Dual-platen control ensures uniform curing and minimal warping.
XRF Pellet Preparation	Preparing pressed powder pellets for X-ray fluorescence analysis, ensuring flat and homogeneous surfaces.	Eliminates binder migration and yields highly reproducible analytical results.
Thin-Film Electrode Preparation	Pressing active material thin films onto current collectors for supercapacitors or battery cathodes.	Real-time MPa control prevents particle cracking and ensures film integrity.
Glovebox Containment Research	Performing operations requiring inert atmospheres, such as handling moisture-sensitive materials, without exposing samples to ambient air.	The compact, oil-sealed design keeps the glovebox environment pure.

Parameter	Value	Notes
Model	XP02	Unique website identifier
Maximum Design Load	0 – 5 Tons (50 kN)	Manual hydraulic drive
Drive Mechanism	Ergonomic manual lever	One-way pressure retention valve for extended dwell times
Operating Temperature Range	Room Temperature – 300 °C	PID control with ±1 °C resolution
Heater Rated Power	700 W (Total)	Embedded in both platens
Platen Dimensions (Each)	120 × 120 mm	Uniform heating area
Maximum Daylight / Platen Clearance	50 mm	Minimizes cylinder stroke for easy glovebox access
Footprint (L × W × H)	250 × 230 × 390 mm	Suitable for antechambers with diameter ≥360 mm
HMI Display	7-inch industrial touchscreen	Dual-language real-time readings

Real-Time Data	Temperature, timer, force, calculated stress (MPa)	Includes zero-offset calibration
Cooling Method	Dual-plate water cooling circuit (optional)	Rear $\Phi 8$ mm quick-connect ports
Cooling Connector	2 $\times$ $\Phi 8$ mm quick-connect fittings	Optional PTFE tubing available
Power Supply	Single-phase AC 220 V / 50 Hz (700 W)	Current draw 3.5 A; 110 V / 60 Hz configurable
Net Weight	55 kg	Well-balanced for easy handling
Safety Certification	CE	
Hydraulic Fluid Handling	Outgassing-resistant, low-volatility	Designed for glovebox inert gas protection
Optional Add-ons	Ultra-flexible PTFE glovebox hoses, high-hardness custom dies, benchtop water pump	Available upon request

Compact Manual Hot Press With Programmable Temperature And Pressure Control

Item Number: XP21



Introduction

Precision laboratory manual hot press with programmable 7-inch touchscreen, 10-ton force, up to 300°C, 260mm narrow chassis for glovebox integration. Ideal for battery research, polymer film preparation, composite molding, and advanced material synthesis. Request your personalized quote today.

[Learn More](#)

Application	Description	Key Benefit
Solid-State Battery Film Prep	Pressing uniform 100 µm solid electrolyte films using dedicated square film tooling	Consistent thin-film quality critical for battery performance
Polymer Barrier Membranes	Molding variable-thickness polymer sheets with gap-adjustable mold	Tailored thickness for flexible barrier and packaging materials
Thermoplastic Composite Lamination	Laminating composite layers under high pressure and precise temperature profiles	Strong, void-free bonds for structural and aerospace materials
Material Sintering & Curing	Running multi-segment heating and pressure cycles for advanced ceramics and composites	Automated repeatability accelerates materials research
Glovebox-Integrated Pressing	Operating within inert atmosphere gloveboxes thanks to the 260 mm slim chassis	Contamination-free processing for air-sensitive samples
General R&D Hot Pressing	Customizable force/temperature profiles for experimental material synthesis	Versatile platform supports rapid prototyping across disciplines

Parameter	XP21-2025 (Slim High Force)	XP21-2024 (Classic Compact)
Max Force	0-10.0 Tons (100 kN)	0-5.0 Tons (50 kN)
Platen Size	180 × 180 mm	180 × 180 mm
Platen Daylight	50 mm	60 mm or 65 mm (optional)
Control Panel	7-inch Programmable Touchscreen	7-inch Programmable Touchscreen
Heating Style	Embedded Heater Dual-Platen Independent Heat	Embedded Heater Dual-Platen Independent Heat
Cooling Loop	Built-in Water-Cooling Channels	Built-in Water-Cooling Channels
Compliance	CE Certified	CE Certified
Dimensions (W×D×H)	260 × 347 × 422 mm	300 × 300 × 420 mm
Net Weight	130 kg	100 kg
Electrical Standard	AC 220V-230V/50Hz; 110V/60Hz or 220V/60Hz options available	AC 220V-230V/50Hz; 110V/60Hz or 220V/60Hz options available

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

Laboratory 30 Ton Manual Hot Press With 200X200Mm Heated Platens And Touchscreen Controller

Item Number: XP08



Introduction

Manual 30-ton laboratory hot press with 200x200mm heated platens, 300°C max, 2800W dual-zone heating, 7-inch programmable touchscreen, and custom low-profile die, designed for advanced materials, battery research, and polymer films, delivering precise pressure and temperature control.

[Learn More](#)

Application	Description	Key Benefit
Solid-State Battery Electrode Compaction	Hot pressing sulfide or oxide electrolyte powders into dense pellets for conductivity testing and cell assembly.	Achieves high relative density and uniform microstructure critical for ionic conductivity.
Advanced Ceramic Sintering	Compacting ceramic powders (alumina, zirconia, LTCC) under heat to produce dense substrates or structural components.	High pressure and precise temperature control eliminate porosity and enhance mechanical strength.
High-Performance Polymer Film Lamination	Laminating multi-layer films or consolidating thermoplastic composites (e.g., PVDF, PTFE) under controlled heat and pressure.	Uniform heating and pressure prevent delamination and ensure consistent film thickness.
Powder Metallurgy Research	Consolidating metal powders (Ti, Cu, Al alloys) for prototyping lightweight components or studying sintering behavior.	30-ton capacity achieves green densities suitable for subsequent sintering processes.
Glovebox-Compatible Battery Material Processing	Hot pressing moisture-sensitive battery materials inside an inert atmosphere glovebox with the press's compact design.	Low-profile die and robust construction facilitate integration with glovebox workflows.
Research & Development Labs	General-purpose hot pressing for materials science, enabling reproducible sample preparation for analysis (XRD, SEM).	Digital data logging ensures traceability and repeatability across experiments.

Parameter	Specification
Model	XP08 (Factory Model: PCY-30T2020)
Clamping Capacity	0.0 – 30.0 Metric Tons (0 – 300 kN)
Actuation	Manual Hydraulic Lever
Platen Daylight	50 mm
Included Pellet Die	Custom Low-Profile $\phi 50$ mm Tool Steel Die ($H \leq 42$ mm)

Parameter	Specification
Temperature Range	0.0°C to 300.0°C
Heated Platen Dimensions	200 × 200 mm
Thermal Power	2800 W (Dual embedded independent heating units)
Heating Method	Embedded heaters, dual-zone independent PID closed-loop control
Cooling Method	Integrated water-cooling channels with quick-connect fittings
HMI Controller	7-inch programmable temperature and pressure touchscreen

Parameter	Specification
Power Requirements	AC 220V / 50Hz (Single-phase, requires dedicated 16A outlet)

Parameter	Specification
Reference Weight	160 kg
Safety & Compliance	CE Certified
Trade Terms	EXW (Factory delivery, excluding tax and shipping)

10T Manual Hot Press 15T Micro Thermal Press Platform

Programmable Touchscreen Control

Item Number: XP18



Introduction

Discover the 10T manual hot press from KINTEK—a 15T micro thermal press platform with 7-inch programmable touchscreen, ultra-narrow 260mm footprint, dual-zone heating up to 300°C, and scriptable multi-step curing profiles. Ideal for polymer labs and battery research. Get a quote.

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Application	Description	Key Benefit
Polymer Composite Molding	Precision hot pressing of fiber-reinforced or particle-filled thermoplastic sheets for mechanical testing specimens.	Ensures uniform thickness and void-free consolidation under controlled 4.0 mm molds.
Solid-State Electrolyte Films	Processing of thin-film solid electrolytes for next-generation Li-ion and Na-ion batteries under inert atmospheres.	Glovebox compatibility and integrated programming maintain material purity and film integrity.
Polyimide (PI) Curing	High-temperature curing of polyimide films used in flexible electronics and aerospace composites.	Rapid ramp to 300°C with 2800W Turbo module shortens cure cycles and improves throughput.
Polymer Characterization Sample Preparation	Preparation of flawlessly flat disks or plates for rheological, mechanical, and thermal analysis (DMA, DSC).	15T force and precise $\pm 1^\circ\text{C}$ control guarantee reproducible specimen geometry.
Carbon Fiber Reinforced Polymer (CFRP)	Production of CFRP laminates for aerospace and automotive lightweighting research.	Uniform 200×200 mm platen and high rigidity prevent warpage during high-pressure laminating.
Battery Electrode Calendering	Densification of coated electrode sheets (cathode/anode) for enhanced energy density and cycle life.	Scriptable multi-step profiles allow gradual compaction without damaging active material coatings.
Biopolymer Shape Memory Study	Thermo-mechanical programming of shape memory polymers for biomedical device prototypes.	Touchscreen profile storage enables exact replication of multi-stage thermal cycles.
Advanced Ceramic Tape Lamination	Pre-lamination of ceramic green tapes prior to sintering for multilayer capacitor or SOFC manufacturing.	Uniform pressure distribution and heated platens improve interlayer adhesion without binder burnout.

Parameter	Value
Model	XP18
Max Force	0 – 15.0 Tons (0 – 150 kN)
Platen Size	200 × 200 mm
Maximum Open Distance	50 mm
Control Panel	7-inch Programmable Touchscreen (Aura-Touch™)
Footprint (W × D × H)	260 × 347 × 422 mm
Net Weight	Approx. 130 kg

Specification	☐ CORE Configuration	☐ TURBO Configuration
Temperature Range	RT to 250 °C	RT to 300 °C

Specification	☐☐ CORE Configuration	☐☐ TURBO Configuration
Maximum Heating Power	1600 W (2 × 800 W)	2800 W (2 × 1400 W)
Power Requirement	AC 220V / 50Hz (single-phase)	AC 220V / 60Hz (custom)
Cooling Method	Built-in water cooling channels (connect to external chiller)	Built-in cooling channels with recommended rapid-cool chiller kit
Recommended Applications	Routine polymer testing, standard composites	Solid-state electrolytes, PI curing, high-throughput prototyping

Integrated Manual Heated Plate Hydraulic Press For Laboratory

Item Number: XP01



Introduction

The integrated manual heated plate lab press provides 0-40 tons, 300°C, 200x200mm platens, 7-inch touchscreen, and water cooling. Perfect for polymers, ceramics, and battery research. Achieve precise, consistent sample preparation with advanced over-temperature protection. Request a quote today.

[Learn More](#)

Application	Description	Key Benefit
Polymer Rheology & Curing	Pressing thin films of high-performance plastics such as polyimide (PI), epoxy resins, and PEEK under precise temperature and pressure profiles.	Uniform film thickness and controlled curing kinetics for reproducible material properties.
Solid-State Electrolyte Consolidation	Mechanical and thermal assembly of solid-state electrolyte layers and electrode interfaces in battery R&D.	Seamless integration of layers with minimal interfacial resistance, enhancing battery performance.
Composite Hot Pressing	Laminating and testing resin flow for fiber-reinforced polymers (FRP) and prepregs.	Even pressure distribution prevents voids and ensures consistent fiber-resin ratios.
Powder Metallurgy & Ceramic Preforming	Hot-pressing and sintering non-metallic powders using dies positioned between the heated platens.	High-density green bodies with uniform grain structure, improving mechanical properties.
Pharmaceutical Tablet Compression	Compacting active pharmaceutical ingredients (APIs) with excipients into tablets for formulation studies.	Accurate control over tablet hardness, density, and disintegration profiles.

Parameter	Specification
Model	XP01
Load Capacity Range	0 - 40 Tons (continuously adjustable)
Platen Working Dimensions	200 × 200 mm
Maximum Platen Gap	<50 mm
Platen Material	Precision-ground tool steel with hardened, anti-stick surface treatment
Temperature Range	Ambient (RT) to 300°C
Heating Power	1800 W
Recommended Heating Rate	≤10 °C/min
Temperature Stability	±1°C (via K-type thermocouples)
Heating Control	PID closed-loop, dual-zone symmetrical heating elements
Cooling System	Integrated labyrinth water cooling channels, dual loop; rear Ø8 mm quick-connect hose ports; requires external water supply
Pressure Gauge Accuracy	±1% full scale
Control Interface	7-inch color LCD touchscreen (HMI); real-time display and plotting of Temperature-Pressure-Time curves
Safety Features	Over-temperature alarm, pressure overload protection with automatic depressurization and heater shutdown
Default Power Supply	Single-phase 220V AC, 50Hz (110V AC/60Hz version available)
Maximum Power Draw	1800W; recommended outlet rating: 10A (220V) or 20A (110V)

Parameter	Specification
Dimensions (H × W × D)	950 × 470 × 525 mm
Net Weight	220 kg
Cabinet Construction	Chemically-resistant, powder-coated steel, fully enclosed
Cooling Water Requirement	External recirculating chiller (≥ 1.5 kW cooling capacity, ≥ 10 m pump head) or laboratory tap water with drain
Standard Accessories	XP01 main unit, 220V power cable (1.8 m), high-temperature inlet/outlet hoses (3 m) with quick-connectors, user manual
Optional Upgrades	Companion water chiller with integrated start-stop cabling; custom high-temperature heated dies; 110V-to-220V step-up transformer

30 Ton Manual Hot Press With 400X400Mm Heated Platens For Laboratory And Industrial Applications

Item Number: XP07



Introduction

Discover the 30-ton manual hydraulic hot press with 400x400mm heated platens, dual-zone 5kW heating, 380kg solid-steel gantry, and integrated water cooling. Ideal for polymer, composite, rubber, and battery pressing. Get a quote.

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Application	Description	Key Benefit
High-Toughness Polymer Pressing	Molding and consolidating advanced thermoplastics, high-temperature polymers, and elastomers.	Uniform pressure and heat eliminate weak spots and ensure isotropic properties.
Large Composite Sheet Lamination	Fabrication of carbon fiber, glass fiber, or aramid composite panels up to 400x400mm.	Large platens avoid seams and edge defects, enabling single-step consolidation.
Rubber Vulcanization	Curing rubber sheets, gaskets, and seals with precise temperature profiles.	Dual-zone heating and water cooling enable tight control of cure kinetics.
Battery Material Development	Pressing electrode sheets, solid-state electrolyte pellets, and lithium-ion cell components.	High force and cleanliness achieve optimal electrode density and interface quality.
Hot Embossing	Micro-patterning polymer films for microfluidics, optics, and flexible electronics.	Temperature stability up to 300°C allows fine replication of high-aspect-ratio features.
Powder Compaction for Sintering	Pre-densifying ceramic or metallic powders into green bodies with thermal assistance.	Elevated pressure and temperature improve green density, reducing sintering shrinkage.
Thin Film and Pellet Preparation	Creating uniform polymer thin films or sample pellets for FTIR, XRF, and other analyses.	Micron-level platen alignment guarantees uniform thickness critical for reproducible spectra.
Rubber and Adhesive Bonding	Laminating rubber layers and bonding adhesives under controlled heat and pressure.	Consistent pressure and temperature ensure strong, void-free bonds.

Parameter	Specification
Model	XP07 (Upgraded Heavy-Duty Design)
Force Capacity	0 – 30 Metric Tons (0 – 300 KN)
Hydraulic System	Dual-Ratio Manual Hydraulic Pump (Low/High Pressure Stage)
Frame Architecture	Solid-Steel Four-Column Gantry
Maximum Daylight	≤ 50 mm (optimized for films, sheets, pellets)
Platen Temperature Range	0 – 300 °C
Platen Dimensions	400 × 400 mm (high-density heat-resistant alloy steel)
Heating Power	5000 W total (2 × 2500 W independent upper and lower heating arrays)
Cooling System	Integrated Platen Water-Cooling Loops with Quick-Connect Couplings
User Interface	7-inch Industrial Full-Color LCD Touchscreen

Parameter	Specification
Electrical Requirement	AC 220-230 V / 50 Hz Single Phase
Recommended Fuse	Dedicated 32A Breaker
Net Weight	380 Kg
Outer Dimensions (W × D × H)	550 × 520 × 460 mm
Certification	CE Certified

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.

[Learn More](#)

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 °C	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

50 Ton Manual Hot Press With Dual-Zone Programmable Heating And Digital Pressure Sensor

Item Number: XP03



Introduction

This 50-ton manual hot press with digital control, dual-zone 500°C heating, and 0.2% pressure sensor accuracy provides precise lab sample preparation for composites, polymers, electronics, and battery research. CE certified with water cooling.

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Application	Description	Key Benefit
Advanced Composites Lamination	Consolidation of carbon fiber or glass fiber reinforced thermoplastic prepregs into solid laminates, using controlled heat and pressure cycles.	Uniform pressure and temperature ensure void-free bonding and precise thickness control for aerospace and automotive prototypes.
High-Performance Polymer Molding	Compression molding of polyimide (PI), PEEK, PTFE, and other high-temp resins into test specimens or functional components.	Multi-step heating programs allow controlled degassing and full cure without thermal degradation, yielding dimensionally stable parts.
Electronics & Semiconductor Packaging	Lamination of multilayer PCBs, flexible printed circuits, and solid-state battery electrolyte layers under stringent flatness requirements.	Dual-zone temperature control prevents warpage and ensures uniform bond strength across large areas, critical for reliable electronic assemblies.
Rubber & Elastomer Vulcanization	ASTM/ISO standard sample preparation for rubber compounds, including tensile, tear, and compression set specimens.	Fast cooling and consistent pressure help achieve reproducible mechanical properties across batches, supporting QC labs and material qualification.
Ceramic & Powder Compaction	Pressing of ceramic powders, battery electrode materials, or solid electrolytes into dense pellets or discs with minimal binder addition.	50-ton capacity and high parallelism produce high green density with uniform density distribution, improving sintered part quality.
Adhesive Bonding & Hot Stamping	Hot pressing of adhesive films, smart card lamination, or embossing of plastic surfaces with precise gap control.	Rapid temperature cycling and even pressure distribution improve bond integrity and throughput in process development.

Parameter	Value	Engineering Note
Model	XP03	Site-facing identifier for the 50-ton manual hot press system
Max Pressure	50 Tons (500 kN)	Meets the demands of large samples and high-density powder compaction
Pressure Drive Mode	Manual Hydraulic	Simple, reliable design with excellent tactile feedback for sensitive materials
Pressure Sensor Accuracy	±0.2% F.S. (High-precision digital transmitter)	Provides highly accurate force readings, supporting credible research data publication
Platen Size	500 × 500 mm	Ample forming area accommodates multiple molds or oversized plates
Maximum Daylight	150 mm	Optimized opening height balances ease of mold loading with clamping efficiency
Heating Platen Temperature	Room Temperature to 500°C	Extremely wide temperature range covers most thermoplastic and thermoset materials
Heating Control	Upper and lower platens independently controlled, with programmable curves	Dual-zone independent control prevents thermal imbalance; supports multi-step process ramps
Controller	7-inch color touch screen	Friendly interface provides real-time digital display of pressure and temperature curves
Frame Type	4-Column Guide	Precision cylindrical columns ensure high mechanical alignment and parallelism

Parameter	Value	Engineering Note
Cooling Method	Circulating Water Cooling	Integrated plate channels speed up cooling cycles and help control polymer crystalline structure
Power Supply	AC 3-Phase 380V, 50 Hz	Industrial-grade power ensures stable heating at high wattage
Certification	CE Certified	Compliant with EU safety and electrical standards for laboratory equipment

Laboratory Manual Hot Press For Battery Research And Material Science

Item Number: XP51



Introduction

Explore our manual hot press for precise heating and pressing up to 300°C and 30 tons. Designed for battery labs, polymer processing, and composite research with water-cooled platens. Quick heating and uniform temperature distribution ensure consistent results.

[Learn More](#)

Application	Description	Key Benefit
Battery Electrode Pressing	Calendaring and hot pressing of cathode and anode materials for lithium-ion, solid-state, and sodium-ion batteries. The controlled temperature activates binders and improves electrode density, enhancing electrochemical performance.	Uniform density and thickness across large-area electrodes improve cell consistency and energy density.
Polymer and Composite Molding	Compression molding of thermoplastic pellets, thermoset prepregs, and composite laminates into test specimens. The combination of heat and pressure ensures proper flow, wet-out, and void elimination.	Produces high-quality, void-free test plaques with reproducible mechanical properties.
Sample Preparation for FTIR/XRF	Creating KBr pellets for FTIR spectroscopy or fused beads for XRF analysis. The smooth, parallel platens and precise force yield transparent, homogeneous pellets essential for accurate spectra.	Achieves high clarity and consistency, reducing spectral artifacts and improving detection limits.
Ceramic Green Body Compaction	Uniaxial pressing of ceramic powders (alumina, zirconia, etc.) into green bodies for subsequent sintering. High pressure and optional heating can improve green density and strength.	Higher green density leads to reduced shrinkage and fewer defects during sintering.
Adhesive and Sealant Curing	Heat-curing of structural adhesives, films, or sealants under controlled pressure for bond strength evaluation or sample assembly.	Ensures complete cure and uniform bond line thickness, critical for mechanical testing.
Thin Film Lamination	Laminating layers of polymers, adhesives, or functional films onto substrates for electronic or packaging applications. Precise pressure and temperature prevent delamination and bubbles.	Achieves fault-free, multi-layer stacks with consistent thickness and optical clarity.
Composite Material Development	Fabricating fiber-reinforced polymer composites for prototyping aerospace, automotive, or sporting goods components. The press's high force and even heating are ideal for vacuum bag or matched-die molding.	Delivers near-net-shape parts with low porosity and excellent mechanical properties.
Thermoplastic Welding/Joining	Hot pressing of thermoplastic components or sheets for welding or joining applications in research and small-scale production.	Creates strong, homogeneous joints without additional adhesives.

Parameter	Value
Standard Model	XP51 (formerly PCSM-30T3030)
Platen Working Temperature	0 – 300°C
Heating Power	3500 W
Platen Size	300 × 300 mm
Working Pressure	0 – 30 T (approx. 300 KN)
Platen Opening / Piston Stroke	150 mm
Cooling Method	Circulating water chilling
Power Supply	220 V / 50 Hz (optional 220 V / 60 Hz)

Parameter	Value
Dimensions (Equipment)	Approx. 700 × 400 × 600 mm (height may vary by configuration)
Weight (Net / Packaged)	Approx. 280 Kg / 350 Kg

Manual Hydraulic Hot Press 30 Ton 7.5 Mpa Customizable Heating Tabletop Floor Type

Item Number: XP50



Introduction

Laboratory manual hydraulic hot press offering 30-ton force, 200x200mm platens, 300°C max, programmable PID control, customizable heating power (1200W-2800W). Available in tabletop or floor-standing designs with optional water cooling. Ideal for battery research, polymer molding, and precision lamination.

[Learn More](#)

Application	Description	Key Benefit
Battery & New Energy	Solid-state electrolyte pellet pressing, lithium battery electrode flat hot pressing	Achieves uniform density and adhesion for consistent battery performance
Polymer Materials	Molding and thermal lamination of plastics, rubber, resin films up to 300°C	Precise temperature and pressure control for defect-free polymer sheets
Electronics & Lamination	High-temperature precision lamination for flexible printed circuits (FPC) and membrane electrode assemblies (MEA)	Ensures interlayer bonding integrity in multi-layer electronic substrates
Academic Sample Prep	Auxiliary pressing for IR, fluorescence, and Raman spectroscopy samples in universities and research institutes	Produces flat, uniform samples for accurate spectroscopic analysis
Composite Fabrication	Hot pressing of composite interlayers and sandwich structures	High force and even heating achieve structural bonding without voids
Ceramic Processing	Uniaxial pressing of ceramic powders before sintering	Delivers high green density and shape uniformity for advanced ceramics
Adhesive Bonding	Thermal curing of adhesive films under controlled pressure	Consistent bond line thickness and cure across large areas
General Material Research	Compression molding and thermal testing of advanced materials	Reliable performance for iterative R&D processes

Parameter	Specification	Remarks
Model	XP50	Manual hydraulic integrated hot press
Force Range	0 - 30 tons	Manual pointer pressure gauge
Max Surface Pressure	≤ 7.5 MPa (approx. 75 Bar)	High-density surface pressure
Platen Size	200 × 200 mm	Dual heated platens
Temperature Range	0 - 300 °C	Supports max 300°C operation
Controller	Programmable touchscreen PID	Multi-segment heating and timing control
Cooling	Circulated water channel	Strongly recommend CW-3000 chiller
Power Supply	AC 220V, 50Hz	Standard 10A/16A socket (depends on power)
Heating Power Options	1200W (standard) / 1800W / 2800W (fast heating)	2800W version draws ~12.7A, requires 16A breaker
Dimensions (Tabletop)	950 (H) × 260 (W) × 525 (D) mm	Compact, space-saving

Parameter	Specification	Remarks
Dimensions (Floor)	1250 (H) × 395 (W) × 720 (D) mm	Heavy-duty, stable
Weight (Tabletop)	180 kg	
Weight (Floor)	258 kg	
Optional Chiller Model	CW-3000	Laboratory standard circulating water cooler
Chiller Max Flow	10 L/min	Efficiently removes platen residual heat
Chiller Cooling Capacity	50 W/°C	
Chiller Tank Capacity	9 L	
Chiller Weight	12 kg	Easy to move

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

Manual Heated Hydraulic Press 300X300Mm Platen 40 Ton Force 4.4 Mpa Independent Dual Zone Pid Temp Control

Item Number: XP49



Introduction

Manual heated hydraulic press with 300x300 mm platen, 40-ton force, 4.4 MPa, independent dual-zone PID temperature control to 300°C. Ideal for polymer film, composite, and flexible device lamination. Request a quote.

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Application	Description	Key Benefit
Polymer & Engineering Plastics	High-flatness lamination and molding of PE, PP, PTFE, and optical-grade polymer films. Achieves thickness tolerances within 0.05 mm for display and packaging applications.	Superior surface finish and precise thickness uniformity under controlled heat and pressure.
Composite Material Forming	Hot press curing of fiber-reinforced plastics (FRP) and carbon fiber/epoxy prepregs. Vacuum bag compatible design enables void-free laminate panels.	Controlled curing cycles produce high-strength, void-free composites suitable for aerospace and automotive prototyping.
Flexible Electronics & Lamination	Multi-layer precision lamination of flexible printed circuit (FPC) substrates and membrane electrode assemblies (MEA) for fuel cells. Handles delicate layers with minimal misregistration.	Uniform pressure and consistent heat bonding protect sensitive layers, improving yield and performance.
Powder Metallurgy & Ceramics	Auxiliary warm press lamination of specialty ceramic green tapes (LTCC) and ceramic matrix composites.	Even temperature and moderate pressure ensure uniform layer bonding without cracking, crucial for multilayered electronic substrates.
Laboratory Sample Preparation	Preparation of test specimens, pellets, and pins for analytical techniques such as FTIR and XRF. Consistent compression for reproducible sample quality.	Versatile tooling compatibility and precise parameter control ensure repeatable sample preparation for standard methods.
Battery Research	Compression of electrode materials, solid-state electrolyte layers, and cell assembly for lithium and next-generation batteries. Integrated heating aids electrolyte distribution.	Enables processing of advanced battery components under controlled temperature, enhancing performance and safety testing.
Adhesive Bonding & Laminating	Hot melt adhesive bonding of layered structures in manufacturing. Programmable temperature profiles mimic industrial processes.	Precise control over bonding parameters allows optimization for scale-up and quality assurance.
Pharmaceutical Tablet Compression	R&D-scale production of tablets and pill formulations; compactant homogeneity testing.	Compact, cleanroom-compatible footprint and reliable pressure generation for small-batch development.

Parameter	Specification	Remarks
Model	XP49	Original model code: PCH-40T3030 / Former code: PCSM-40T3030
Drive / Pressure Control	Manual Hydraulic	Lever-operated, safe and energy-efficient
Working Force Range	0 - 40 T	Indicated by pointer pressure gauge
Maximum Platen Surface Pressure	≤ 4.4 MPa (approx. 44 bar)	Based on precise physical calculation; gentle and even
Platen Effective Size	300 × 300 mm	Dual heated platens
Maximum Operating Temperature	0 - 300 °C	Temperature accuracy: ±1 °C
Total Heating Power	3500 W	Independent dual-zone heating control
Temperature Control Method	PID Controllers	Precision regulation, prevents overshoot

Parameter	Specification	Remarks
Platen Cooling Method	Water Cooling	Built-in cooling channels; protects pump oil seals
Power Supply Requirement	Single-phase AC 220 V, 50 Hz	Operating current approx. 16 A; dedicated 16 A circuit breaker/socket recommended
Dimensions	Approx. 700 × 400 × 600 mm (H×D×W)	Corrected dimensions
Net Weight	280 kg	Rigid four-column / thick steel plate structure

Manual Hydraulic Hot Press With Touchscreen Pid Control And Digital Pressure Monitoring

Item Number: XP53



Introduction

Discover the manual hydraulic hot press featuring 250x250mm platens, 25-ton force, touchscreen PID temperature control, digital pressure monitoring, and CE safety. Ideal for battery electrode preparation, polymer molding, and flexible device lamination, ensuring precise consistent results in R&D labs.

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Application	Description	Key Benefit
Battery & Energy Materials	Hot pressing of solid-state electrolyte pellets and calendering of lithium-ion battery electrodes.	Achieves high electrode density and interfacial contact without damaging active materials.
Polymers & Composites	Molding and thermal lamination of thermoplastics, thermosets, and fiber-reinforced composite sheets.	Uniform heat and pressure eliminate voids and ensure consistent thickness across the sample.
Flexible Circuit Lamination	Precision multi-layer bonding of flexible printed circuit (FPC) substrates and membrane electrode assemblies (MEA).	Maintains alignment and planarity under controlled heating cycles for delicate flexible layers.
Material Testing Specimens	Pre-forming of standardized tensile, shear, and compression test coupons for mechanical characterization.	Produces specimens with precise dimensions and flatness, reducing variability in testing.
Rubber & Elastomer Molding	Compression molding of rubber compounds and thermoplastic elastomers for material screening.	Even cross-linking and surface finish thanks to precise temperature control and parallel platen closure.
Ceramic & Composite Processing	Low-pressure pressing of ceramic green bodies and polymer-ceramic composites prior to sintering.	Gentle, uniform pressure prevents cracking and enables defect-free green compacts.

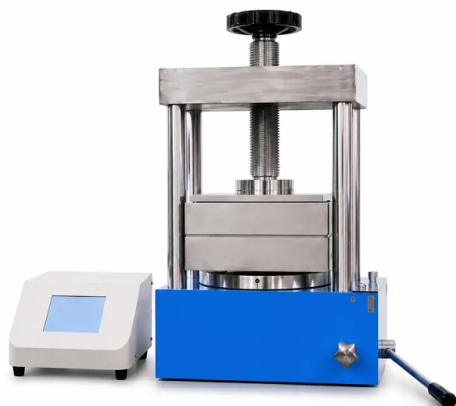
Parameter	Specifications	Remarks
Model	XP53	Original model code: PCSM-25T2525
Drive	Manual Hydraulic	Lever-operated, safe and reliable with labor-saving design
Pressure Monitor	Digital real-time display via touchscreen	High-precision pressure sensor feedback
Max Force	≤ 25 T	Adjustable range: 0 - 25 T
Plate Surface Pressure	≤ 4.0 MPa (approx. 40 Bar)	Precision medium-high pressure for dense, uniform samples
Effective Platen Size	250 × 250 mm	Dual heating platens
Piston Stroke	50 mm	-
Daylight Opening	150 mm	Maximum opening distance between platens
Operating Temperature Range	0 - 300 °C	Supports operation up to 300°C
Total Heating Power	3600 W (2 × 1800 W)	Independent dual-zone heating control
Temperature Control	PID programmable controller	Touchscreen one-touch setting with temperature ramp profiles
Cooling Method	Circulating water cooling	Built-in flow channels; compatible with external water supply or optional chiller
Power Supply	Single-phase AC 220 V, 50 Hz	Operating current approx. 16.4 A; dedicated 20 A circuit recommended

Parameter	Specifications	Remarks
Certification	CE certified	Complies with European electrical and mechanical safety standards

Split-Type Manual Hot Press 120X120Mm Platen 24-Ton Force

16.3 Mpa High Pressure Micro-Sample Preparation

Item Number: XP54



Introduction

This split-type manual hot press delivers 24-ton force and 16.3 MPa pressure on 120x120mm heated platens. Ideal for FTIR/XRF sample prep, solid-state battery R&D, micro-polymer films. Low 500W power, PID control to 300°C, integrated water cooling. Request a quote.

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Application	Description	Key Benefit
FTIR/KBr Pellet Preparation	Produces transparent KBr discs for infrared spectroscopy by pressing sample mixtures at controlled heat and high pressure to form clear, crack-free pellets.	High transparency and uniformity due to ultra-high pressure density, minimizing signal artifacts and improving spectral quality.
XRF Powder Sample Pressing	Compacts powdered materials into dense, flat pellets for X-ray fluorescence analysis to ensure reproducible excitation geometry and minimal void space.	Achieves exceptional density and surface smoothness, reducing matrix effects and improving analytical accuracy and detection limits.
Solid-State Battery Electrolyte Pelletizing	Presses solid electrolyte powders (e.g., sulfide or oxide ceramics) into high-density pellets for ionic conductivity testing and cell assembly.	16.3 MPa surface pressure ensures high ionic contact and mechanical integrity, critical for battery performance and reproducible test data.
Thermoplastic Polymer Film Lamination	Hot pressing of micro-scale thermoplastic films, liquid crystal polymers, or specialty resins for optical, barrier, or dielectric property studies.	Uniform temperature and pressure produce flat, defect-free films with precise thickness control, enabling accurate material characterization.
Electronic Sensor/Actuator Assembly	Laminates layers of piezoelectric ceramics, electrodes, and polymer substrates under controlled heat and pressure for micromachined sensors and actuators.	Low-force precision with adjustable platen gap protects fragile components during bonding, ensuring high yield and device reliability.
Composite Material Research	Fabricates small test coupons of fiber-reinforced or particle-filled polymer composites for mechanical testing and failure analysis.	Consistent temperature and high pressure achieve full matrix consolidation and minimal void content, yielding representative composite properties.
Technical Ceramic Pre-Sintering	Hot pressing of ceramic green bodies (e.g., alumina, zirconia) to increase green density before final sintering, reducing shrinkage and warping.	Higher green density leads to better sintered properties, less post-processing, and improved component tolerances.

Parameter	Specification
Model	XP54
Structure Form	Split-type design (press frame and temperature controller physically separated)
Pressure Control	Manual hydraulic drive
Maximum Force	0 – 24 metric tons
Platen Surface Pressure	≤ 16.3 MPa (approx. 163 Bar)
Heating Platen Dimensions	120 × 120 mm (dual independently temperature-controlled platens)
Daylight Adjustment Range	0 – 130 mm
Maximum Operating Temperature	300 °C (temperature control range: 0 – 300 °C)
Total Heating Power	500 W

Parameter	Specification
Temperature Control Method	PID intelligent controller with over-temperature protection
Cooling Method	Integrated water cooling channels; external water source connection for rapid cooling
Power Supply	Single-phase AC 220V, 50 Hz; operating current 2.27 A, standard laboratory outlet compatible
Equipment Weight	112 kg
Host Unit Dimensions (W×D×H)	600 × 300 × 550 mm
Controller Dimensions (W×D×H)	490 × 395 × 235 mm

Manual Laboratory Hot Press 10 Ton 300X300Mm Water Cooling

Item Number: XP58



Introduction

KINTEK manual laboratory hot press delivers precise 10-ton pressure with 300x300mm heated platens and integrated water cooling for fast temperature cycling. Ideal for composite molding, polymer films, battery lamination, and advanced research applications. Robust construction ensures reliable performance.

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Application	Description	Key Benefit
Composite Material Molding	Pressing fiber-reinforced preregs (e.g., glass fiber, carbon fiber) into flat panels or shapes under controlled temperature and pressure.	Uniform heating and large platen area ensure defect-free consolidation with minimal voids.
Polymer Film Production	Fabricating thin films from thermoplastic resins (PE, PP, specialty polymers) by hot pressing between platens to achieve desired thickness.	Achieves consistent thickness and surface finish across dimensions up to 300×300 mm.
Battery Component Lamination	Laminating pouch cells, fuel cell membrane electrode assemblies (MEAs), or electrode stacks with precise thermal and mechanical control.	Water cooling enables rapid quenching, preserving delicate electrochemical interfaces and layer integrity.
Paper and Textile Laminates	Bonding paper, non-woven fabrics, or textiles under heat and pressure for research on composite materials or packaging substrates.	Even pressure distribution prevents wrinkles and delamination, yielding uniform laminates.
Pharmaceutical Tablet Pressing	Compacting powders into solid dosage forms in a lab setting for small-scale R&D or quality control.	Manual hydraulic control offers direct feel for tablet hardness optimization.
Ceramic Powder Compaction	Uniaxially pressing ceramic powders into green bodies prior to sintering, requiring uniform density distribution.	Large platens and stable pressure ensure homogeneous compaction, minimizing defects.
Adhesive Bonding Research	Curing adhesive films or evaluating bond strength under controlled heat and pressure for aerospace or automotive applications.	Precise temperature and pressure profiles allow accurate simulation of industrial conditions.
Educational & Research Institutions	Serving as a versatile platform for teaching materials processing fundamentals or conducting experimental studies.	Simple, robust design and low maintenance make it ideal for shared lab environments.

Parameter	Specification
Model	XP58
Operation	Manual Hydraulic
Max Pressure	0 - 10 Tons (100 kN)
Temperature Range	0 - 300 °C
Total Heating Power	3600 W
Platen Size	300 × 300 mm
Platen Opening	100 mm
Cooling Method	Integrated water cooling channels, requires external circulating water system
Power Supply	220V / 50Hz (Single Phase, ~16.4 A, requires industrial socket)
Dimensions (W×D×H)	700 × 400 × 600 mm

Parameter	Specification
Net Weight	260 kg

15 Ton Manual Heating Press With Water Cooling For Laboratory Hot Pressing

Item Number: XP56



Introduction

Manual heating press with 15-ton pressure, 300°C temperature, and circulating water cooling. Ideal for laboratory hot pressing in battery research, polymer molding, and composite lamination. Features dual-platen temperature control, pressure hold, and multi-step recipe management. Request a quote.

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Application	Description	Key Benefit
Battery Electrode Pressing	Compacting cathode and anode powders onto current collectors for lithium-ion cell prototyping.	Achieves uniform electrode density and thickness, critical for reproducible electrochemical performance.
Polymer Film Molding	Forming thermoplastic films and sheets under controlled heat and pressure.	Ensures consistent molecular orientation and surface finish, essential for barrier and optical films.
Composite Lamination	Bonding reinforcing fibers with resin matrices to produce lightweight structural materials.	Precise pressure and temperature control prevents voids and delamination, maximizing mechanical properties.
Ceramic Powder Compaction	Densifying technical ceramic powders prior to sintering.	Improves green density and part homogeneity, reducing sintering shrinkage and defects.
Spectroscopic Pellet Preparation	Producing KBr or other transparent pellets for FTIR analysis.	Generates crystal-clear pellets with uniform thickness, enhancing spectral quality and repeatability.
Rubber Vulcanization	Curing natural or synthetic rubber samples under heat and pressure.	Uniform cross-linking prevents overcure and undercure zones, delivering consistent elastomeric properties.
Encapsulation and Lamination	Sealing electronic components or medical devices within protective films.	Achieves void-free encapsulation with exact thickness control, preventing moisture ingress and mechanical failure.
Dental Material Testing	Pressing ceramic or composite blocks for dental restorations.	Mimics clinical processing conditions, producing specimens with clinically relevant density and hardness.

Parameter	Value
Model	XP56
Press Type	Manual Heating Press
Maximum Working Pressure	0-15 tons
Platen Temperature Range	0-300 °C
Heating Power	800 W
Platen Size	120 × 120 mm
Platen Spacing	0-150 mm
Cooling Method	Circulating water cooling
Power Supply	AC 220 V, 50 Hz
Overall Dimensions	250 × 230 × 390 mm

Parameter	Value
Weight	58 kg

Controller Features Dual-platen temperature setting with hold time; Pressure setting with hold time and tolerance; Multi-step recipe management (1-5 steps)

Manual Heating Press With Precision Temperature Control And Hydraulic Pressure

Item Number: XP57



Introduction

Discover our manual heating press with precise temperature control up to 300°C, hydraulic pressure up to 24 tons, water cooling, and touchscreen interface for consistent lab pressing applications including battery research and material testing. Request a quote today!

[Learn More](#)

Application	Description	Key Benefit
Battery Electrode Lamination	Compaction of cathode and anode films for lithium-ion battery research.	Uniform density and adhesion for reliable electrochemical testing.
Polymer Film Production	Hot pressing of thermoplastic films for mechanical testing or spectroscopy.	Consistent thickness and flatness across the entire film.
Ceramic Pellet Pressing	Preparation of green ceramic bodies from powders for sintering trials.	High-pressure compaction minimizes porosity and enhances density.
Pharmaceutical Tablet Development	Small-batch production of drug tablets for dissolution and stability testing.	Adjustable pressure ensures tablet hardness meets pharmacopeial standards.
Composite Material Consolidation	Fabrication of multi-layer composites under heat and pressure for aerospace or automotive research.	Precise temperature control prevents thermal degradation of sensitive layers.
FTIR Spectroscopy Sample Prep	Formation of potassium bromide (KBr) pellets for infrared analysis.	Clear, uniform pellets with minimal scattering for high-quality spectra.
XRF Bead Preparation	Fusion of borate flux and sample powder to create homogeneous glass beads for X-ray fluorescence analysis.	Rapid, reproducible bead formation with minimal contamination.
Material Testing Specimen Molding	Hot pressing of polymer or metal powder into test specimens for tensile, impact, or hardness testing.	High density and consistent dimensions reduce variability in test results.

Parameter	Value
Model	XP57
Platen Working Temperature	0 ~ 300 °C
Heating Power	600 W
Platen Size	100 × 100 mm
Platen Gap	≤ 150 mm
Working Pressure	0 ~ 24 T
Cooling Method	Circulating Water Chilling
Temperature Control	7-inch Touchscreen
Power Requirements	110 V / 60 Hz or 220 V / 50 Hz (selectable)
Dimensions	500 × 175 × 500 mm

Parameter	Value
Weight	60 Kg



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