

# 30 Ton Split Type Automatic Lab Hot Press With 300X300Mm Heated Platens And Pid Control

Item Number: XP40



## Introduction

30-ton split-type automatic laboratory hot press with 300x300mm heated platens, PID temperature and pressure control, 5-step programmable recipes, water cooling, dual-zone independent heating. Standard 300°C and high-temperature 500°C versions available. Ideal for battery research and precise sample preparation. CE certified.

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| Application                           | Description                                                                                                                             | Key Benefit                                                                                             |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Battery Electrode Calendaring         | Precisely compacting coated electrode foils to achieve target porosity and thickness after coating, using controlled heat and pressure. | Increases energy density and improves adhesion, reducing delamination in cell assembly.                 |
| Solid-State Electrolyte Consolidation | Processing glass-ceramic or sulfide-based electrolyte powders into dense pellets or thin films for all-solid-state batteries.           | Achieves near-theoretical density, critical for high ionic conductivity and low interfacial resistance. |
| Polymer Membrane Fabrication          | Hot pressing thermoplastic polymers into uniform films with controlled thickness for fuel cell membranes or medical device components.  | Eliminates pinholes and ensures consistent mechanical and transport properties.                         |
| Ceramic Substrate Production          | Laminating ceramic tapes and sintering them under pressure to produce flat, high-strength substrates for electronic packaging.          | Minimizes warpage and yields substrates with excellent thermal conductivity.                            |
| Composite Material Development        | Consolidating carbon-fiber-reinforced preregs or metal-matrix composites under programmable heat and pressure.                          | Produces high-performance parts with optimized fiber volume fraction and low void content.              |
| Hot Embossing of Microstructures      | Replicating micro- or nano-scale patterns into polymer or glass substrates using a heated platen and precise pressure.                  | Enables cost-effective prototyping of microfluidic chips and optical gratings.                          |
| Pharmaceutical Tablet Formulation     | Simulating production-scale tablet compression to study excipient performance and optimize formulation under controlled temperature.    | Accelerates formulation development with small sample quantities.                                       |
| Geological Sample Preparation         | Forming fused beads for XRF analysis by pressing rock powders into homogenous glass discs under high pressure and temperature.          | Improves analytical accuracy by eliminating particle size effects.                                      |

| Parameter           | XP40-S (Standard)                                       | XP40-H (High-Temp)                                      |
|---------------------|---------------------------------------------------------|---------------------------------------------------------|
| Maximum Pressure    | 0-30 tons                                               | 0-30 tons                                               |
| Platen Size         | 300 × 300 mm                                            | 300 × 300 mm                                            |
| Working Temperature | 0-300°C                                                 | 0-500°C                                                 |
| Heating Power       | 6,000 W (2 × 3,000 W)                                   | 6,000 W (2 × 3,000 W)                                   |
| Temperature Control | PID programmable controller                             | PID programmable controller                             |
| Pressure Control    | PID closed-loop automatic pressure holding              | PID closed-loop automatic pressure holding              |
| Piston Stroke       | 50 mm                                                   | 50 mm                                                   |
| Maximum Daylight    | 150 mm                                                  | 150 mm                                                  |
| Cooling Method      | Circulating water cooling (external chiller compatible) | Circulating water cooling (external chiller compatible) |

| Parameter              | XP40-S (Standard)                                                      | XP40-H (High-Temp)                                                     |
|------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------|
| Control Interface      | 7-inch industrial touchscreen                                          | 7-inch industrial touchscreen                                          |
| Power Supply           | AC 220-240 V, single-phase, 50/60 Hz (requires dedicated 32 A breaker) | AC 220-240 V, single-phase, 50/60 Hz (requires dedicated 32 A breaker) |
| Dimensions (Main Unit) | 700 × 400 × 600 mm                                                     | 700 × 400 × 600 mm                                                     |
| Net Weight             | Approx. 280 kg                                                         | Approx. 290 kg                                                         |
| Certification          | CE                                                                     | CE                                                                     |