

Precision Automatic Heating Servo Press Machine

Item Number: KT-SF



Introduction

Engineered for demanding material testing this high precision automatic heating servo press delivers closed loop force control up to one ton independent dual platen heating reaching three hundred degrees Celsius circulating water cooling and programmable touchscreen automation for research laboratories

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Application	Description	Key Benefit
Solid-State Battery Assembly	High-precision thermal consolidation of solid electrolyte membranes, lithium metal foils, and composite cathode layers under controlled force.	Eliminates interfacial void formation and optimizes ionic conductivity through uniform low-tonnage compression and heating.
Thin Film Polymer Laminating	Thermal fusion and compression of multi-layer thermoplastic, fluoropolymer, and polyimide films up to 300°C with uniform heat soaking.	Prevents air entrapment and surface wrinkling via micro-force servo descent and precise platen parallelism.
Hot Embossing & Micro-Replication	Imprinting microfluidic channels, optical microstructures, and micro-scale textures into cyclic olefin copolymers and PMMA substrates.	High displacement repeatability and programmable dwell cycles ensure sub-micron feature fidelity without substrate cracking.
Composite Specimen Preparation	Curing and consolidation of fiber-reinforced polymer test coupons, prepreg laminates, and advanced preforms for mechanical characterization.	Dual-plate independent ramping prevents resin squeeze-out while accelerating complete thermal matrix cross-linking.
Semiconductor Die Underfill & Encapsulation	Thermal curing and hot-press leveling of advanced electronic packaging substrates, thermal interface materials (TIM), and underfill resins.	Exact ± 1 kg pressure regulation protects fragile silicon dies, micro-bumps, and wire bonds from mechanical shock.
Functional Ceramic Green Body Compaction	Low-tonnage uniaxially heated compaction of specialized piezoelectric, dielectric, and structural ceramic powders into uniform compacts.	Delivers consistent green body density distribution without pressure spikes, mitigating sintering distortion and delamination.
Laboratory XRF & FTIR Pellet Preparation	Compaction and thermal consolidation of fragile powder mixtures, binder materials, and polymer blends for analytical spectroscopy.	Clean oil-free operation prevents spectroscopic contamination while programmable loading yields highly repeatable optical discs.

Parameter	Technical Specification
Equipment Model Code	KT-SF
Working Pressure Force Range	0 - 1 Ton (Servo motor drive pressuring)
Pressure Control Accuracy	± 1 kg
Pressure Control Mode	Fully programmable pressure and holding dwell control
Platen Working Temperature Range	Ambient to 300 °C
Heating Control Architecture	Double plates independent programmable control with ramp
Heating Power	1500 W
Platen Dimensions	150 mm x 150 mm
Maximum Platen Clearance Distance	50 mm
Platen Cooling Method	Integrated circulating water cooling
Operator Interface & Controller	7-Inch industrial touch screen controller
Main Power Supply Requirements	AC 220 V / 60 Hz

Parameter	Technical Specification
Compliance & Safety Certification	CE Marked
Mechanical Actuation Type	Clean electromechanical servo-driven screw mechanism
Frame Enclosure Configuration	Benchtop self-contained unit with front protective barrier