

Electric Isostatic Pressing Machine 40 Tons Automatic Laboratory Powder Compacting Press

Item Number: PWDC



Introduction

Optimize materials research with this premium electric isostatic pressing machine for laboratory powder compaction featuring a smart touch screen control and integrated safety shield for consistent high density specimen fabrication across diverse industrial sectors and advanced academic research environments.

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Application	Description	Key Benefit
Solid-State Battery Research	Compacting solid-state electrolyte powders such as sulfides, oxides, and halides into thin, defect-free separator layers.	Eliminates voids and micro-cracks, maximizing lithium-ion conductivity across interfaces.
Advanced Ceramics Processing	Preparing uniform green bodies from raw alumina, zirconia, and silicon nitride powders prior to high-temperature sintering.	Prevents warp, uneven shrinkage, and internal structural cracking during thermal processes.
Energetic & Explosive Compounds	Controlled compression of reactive chemicals and energetic powder compounds within a shielded environment.	Achieves precise density formulations safely while minimizing friction and electrostatic risks.
Pharmaceutical Formulations	Compacting complex pharmaceutical blends, multi-active tablets, and deep-release medical compounds.	Ensures exact structural density and uniform dissolution rates for superior dosage accuracy.
Powder Metallurgy & Alloys	Consolidating hard refractory metal powders, alloy matrices, and carbide tooling components.	Dramatically improves green strength and material density, cutting down post-sinter machining.
Target Material Fabrication	Fabricating ultra-pure, high-density physical vapor deposition (PVD) sputtering targets for semiconductor manufacturing.	Guarantees complete density uniformity, extending target lifespan and deposition consistency.

Technical Parameter	Specification Metric / Value
Equipment Model	PWDC
Tonnage Operational Range	0.0 to 40.0 Tons (Adjustable)
Piston / Cylinder Spec	Φ130 mm (Chrome-Plated Premium Alloy)
Structural Framework	Seal-Free Monolithic Design (Leak Prevention)
Pressure Display Resolution	0.1 Ton
Control Interface	4.3-inch Color Resistive Touchscreen Panel
Maximum Piston Stroke	50 mm (T)
Standard Operator Shield	High-Impact Shatterproof Plexiglass Enclosure
Pressurization Modes	Fully Automatic Programmed Ramp / Manual Slow Ramp
Pressure Calculations	Intelligent Automatic MPa Conversion based on Geometry
Guide Column System	4-Column Heavy-Duty Parallel Alignment Frame
System Safety Protection	Active Electronic Overload Pressure Release Protection

Technical Parameter	Specification Metric / Value
Slow Pressurization Control	Program-adjustable ramp speeds and decompression rates
Operating Temperature Tolerance	10°C to 40°C
Chamber Configuration A (300 MPa)	Specimen Size: Φ 40 mm x 150 mm (M x N)
Chamber Configuration B (500 MPa)	Specimen Size: Φ 30 mm x 150 mm (M x N)
Power Rating	500 Watts (Configurable for 220V or 110V single-phase)
Equipment Net Dimensions (L x W x H)	355 mm x 450 mm x 710 mm
Shipping Container Dimensions	725 mm x 620 mm x 890 mm (Crated)