

Single Punch Manual Tablet Press Machine Tdp Tablet Punching Machine

Item Number: TPM-02



Introduction

Discover our versatile single punch manual tablet press machine and TDP tablet punching machine for laboratory research and trial production. Engineered for precise powder compaction, adjustable filling depth, and custom die shaping without electrical power across diverse technical applications.

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Application	Description	Key Benefit
Pharmaceutical Formulation Trials	Compacting active pharmaceutical ingredients (APIs) and excipients into trial tablets for dissolution, hardness, and friability testing.	Enables immediate formulation screening with minimal powder quantities, preventing expensive material loss during initial drug discovery phases.
Battery Electrode & Solid Electrolyte R&D	Pressing specialized solid-state electrolyte pellets, cathode powders, and conductive additives into uniform discs for electrochemical impedance spectroscopy.	Delivers consistent pellet density and smooth surface parallelism critical for precise ionic conductivity and electrochemical characterization.
Technical Ceramics & Metallurgy	Consolidating ceramic oxides, carbides, and metallic powders into dense green bodies prior to high-temperature sintering workflows.	Ensures clean edge retention, controlled green density, and freedom from mechanical lamination or micro-cracks before furnace firing.
Catalysis & Chemical Synthesis	Forming catalyst carrier rings, cylindrical pellets, and reactant tablets from chemical carrier substrates and mineral binders.	Provides uniform mechanical durability and porous gas permeability essential for fixed-bed chemical reaction vessels.
Nutraceutical & Dietary Pill Development	Formulating herbal extracts, mineral blends, and dietary supplement formulations into compressed consumer-ready sample geometries.	Accelerates pilot recipe optimization and allows fast physical validation of tablet shape, disintegrant effectiveness, and swallowability.
Academic Instruction & Materials Research	Demonstrating powder compaction fundamentals, punch displacement curves, and granular consolidation dynamics within instructional engineering laboratories.	Offers safe, fully visible mechanical operation with direct tactile feedback, allowing students to intuitively grasp mechanical compression principles.
Hospital & Clinical Dispensary Compounding	Small-run pressing of personalized medication dosages and specialized orphan drug formulations within regulated clinical pharmacy environments.	Eliminates high-volume automated line setup while maintaining precise single-tablet weight and structural uniformity for patient-specific therapies.

Specification Parameter	TPM-02 Details	Operational Notes
Model Identifier	TPM-02	Benchtop manual single-punch tablet press system
Maximum Punching Pressure	15 kN	Continuously adjustable via upper punch mechanical linkage
Tablet Diameter Range	5 mm - 12 mm	Dependent on installed die and punch tooling set
Tablet Thickness Range	2 mm - 6 mm	Adjustable via lower punch positioning eccentric
Maximum Filling Depth	20 mm	Calibrated volumetric feed adjustment via bottom core
Production Throughput	30 - 50 pieces/hour	Dependent on manual hand-cranking cadence and powder flow characteristics
Drive Configuration	Purely manual hand-crank	Assisted flywheel rotation; zero electric power consumption
Feeding System	Automatic reciprocating feed shoe	Gravity-assisted charging synchronized with punch stroke
Tooling Supplied	1 pair (upper punch, lower punch, middle die)	Standard cylindrical profile; interchangeable with custom tooling

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Geometric Versatility	Circular, convex, concave, capsule, multi-faceted	Custom tooling compatible for lettered, numbered, or logo scoring
Packaging Dimensions (W x D x H)	535 mm x 450 mm x 630 mm	Securely packaged in heavy-duty export shipping crate
Total Shipping Weight	40 kg	Inclusive of fumigation-free wooden export crate and standard accessories
Operating Noise Level	Low mechanical noise	Motorless architecture ensures quiet cleanroom operation