

Vertical Wood Granular Activated Carbon Mechanical Strength Tester

Item Number: KT-JTQ



Introduction

Evaluate the mechanical durability and abrasion resistance of wooden activated carbon with this standardized vertical testing apparatus designed for high precision rotational ball impact analysis strict compliance with national quality protocols and dependable laboratory performance across quality control workflows.

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Application	Description	Key Benefit
Wood Activated Carbon Manufacturing	Routine batch-release testing and quality assurance verification of virgin wood-derived granular carbons after steam or chemical activation.	Validates hardness metrics prior to bulk dispatch, minimizing transit crumbling and client rejection rates.
Municipal Drinking Water Treatment	Assessment of mechanical strength for virgin and thermally regenerated granular carbons used in fixed-bed biological filtration basins.	Prevents hydraulic bed compaction and excessive head-loss caused by crushed carbon fines during backwash cycles.
Industrial VOC and Solvent Recovery	Attrition resistance evaluation of specialized activated carbons deployed in solvent vapor recovery and continuous gas adsorption columns.	Protects industrial blowers and downstream ducts from abrasive carbon dust abrasion and flow channel fouling.
Food and Beverage Decolorization	Quality control testing of granular carbon grades utilized for sugar syrup, organic acid, and edible oil purification systems.	Ensures granular matrix stability against turbulent fluid mixing, reducing filtration load on polishing stages.
Academic and Materials Research	Comparative degradation research into carbonization temperatures, bio-char binders, and activation parameters on mechanical resistance.	Delivers highly reproducible mechanical wear indicators to correlate physical activation depth with bulk hardness.
Environmental Engineering QA Labs	Third-party compliance auditing and contract verification testing against standard customer and industrial specifications.	Provides undisputed standardized testing data strictly compliant with regional and national protocols.

Specification Parameter	Detail / Value (KT-JTQ)
Model Designation	KT-JTQ
Applicable Standards	GB/T 12496.6-1999 (Testing Methods of Wooden Activated Carbon - Determination of Strength)
Drum Rotational Speed	50 ± 2 r/min
Steel Cylinder Inner Diameter	80 ± 0.2 mm
Steel Cylinder Working Length	120 ± 1.5 mm
Steel Cylinder Wall Thickness	3.0 mm
Cylinder Internal Surface Roughness	Ra 6.3
No. 1 Cylinder Configuration	Smooth internal bore (80 mm ID × 120 mm length)
No. 2 Cylinder Configuration	Fitted with two 180° symmetrical ribs (10 mm height × 4 mm width × 120 mm length)
Impacting Steel Balls	10 pieces, Diameter: 14.3 ± 0.2 mm
Test Sequence Timing	Preset standard 5 min (adjustable automatic cutoff)
Motor Rated Power	0.55 kW
Input Electrical Voltage	380 V (Three-phase)

Specification Parameter	Detail / Value (KT-JTQ)
Standard Analytical Sieve Compatibility	Φ200 mm frame, 425 mesh opening size
Matching Mechanical Sieve Shaker (GZS-200)	Shaking frequency: 221 rpm; Tapping frequency: 147 rpm
Required Auxiliary Laboratory Balance	Capacity: 200 g, Readability/Sensitivity: 0.1 g
Required Auxiliary Thermal Oven	HW202-1 Constant Temperature Drying Oven
Operational Orientation	Vertical structural mount with horizontal axial drum rotation