

Benchtop Activated Carbon Strength Tester Tumbler Ball Abrasion Testing Machine

Item Number: KT-JTS



Introduction

Engineered for exact standard compliance, this benchtop activated carbon strength tester delivers reliable tumbler hardness data through calibrated steel ball collisions, precise horizontal drum rotation, and automated timing cycles to optimize industrial carbon quality assurance and material verification protocols.

[Learn More](#)

Application	Description	Key Benefit
Wood-Based Activated Carbon QC	Performing compliance testing according to GB/T 12496.6-1999 to determine the hardness index of wood-derived granular carbons.	Ensures compliance with national quality standards, validating shipment specifications before commercial dispatch.
Industrial Water Filtration Media	Evaluating mechanical breakdown resistance of carbon filters subjected to continuous hydraulic backwashing and fluid friction.	Minimizes particulate attrition and bed compaction, preventing downstream filter fouling and premature media loss.
Gas Purification and Solvent Recovery	Screening extruded and pelletized carbon for resistance against attrition during high-velocity gas stream exposure.	Prevents bed fluidization dust generation, protecting extraction blowers, catalytic beds, and recovery condensers.
Carbon Reactivation Verification	Assessing the structural integrity of spent carbons before and after thermal reactivation in rotary kilns or multiple-hearth furnaces.	Quantifies thermal-stress degradation, assisting plant operators in balancing reactivation yield against media strength.
Coal-Derived Carbon R&D	Conducting comparative mechanical durability testing on bituminous and anthracite-based carbon variants with process adjustments.	Delivers comparative attrition baselines to guide binding agent selection, extrusion formulations, and carbonization parameters.
Catalyst Support Evaluation	Testing the mechanical robustness of precious-metal-impregnated activated carbon substrates prior to reactor charging.	Mitigates physical carrier breakdown in pressurized chemical synthesis vessels, safeguarding process yields.
Environmental Scrubbing Sorbents	Verifying abrasion resistance of specialized sorbents used for mercury capture, flue gas desulfurization, and acid gas abatement.	Ensures carbon pellets maintain dimensional integrity under continuous thermal and gravitational shear inside scrubbing towers.

Parameter Classification	Specification Detail	Operational Tolerance / Nominal Value
Primary Equipment Identifier	KT-JTS	Benchtop Activated Carbon Strength Tester
Applicable Test Standard	GB/T 12496.6-1999	Test Methods of Wooden Activated Carbon - Determination of Strength
Drum Internal Diameter	Chamber Inner Bore	80 ± 2 mm
Drum Internal Length	Axial Working Span	120 ± 10.5 mm
Drum Rotational Speed	Operating Horizontal Velocity	50 ± 2 r/min
Grinding Media Charge	Hardened Steel Ball Quantity	10 pieces
Grinding Ball Diameter	Spherical Precision Dimension	14.3 ± 0.2 mm
Drive Motor Power	Dedicated Electric Motor	0.25 kW
Electrical Requirements	Input Power Supply	220 V AC, 50 Hz
Operational Cycle Duration	Automated Preset Timer	5 minutes
Companion Test Sieve	Analytical Separation Mesh	Φ200 mm diameter frame, 425 mesh opening

Parameter Classification	Specification Detail	Operational Tolerance / Nominal Value
Companion Sieve Shaker	Model GZS-200 Interface	Rotary frequency: 221 cycles/min; Tapping frequency: 147 impacts/min
Analytical Weighing Device	Precision Laboratory Balance	200 g maximum capacity, 0.1 g analytical sensitivity
Laboratory Timing Device	Manual Reference Stopwatch	Calibrated split-second verification timer
Specimen Drying Equipment	Constant Temperature Oven	Model HW202-1 forced convection drying chamber