



KINTEK SOLUTION

Coal, Coke & Ore Physical Testing Catalog

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KINTEK SOLUTION

COMPANY PROFILE

>>> About Us

KinTek Group Limited is one technology orientated organization, team members are devoted to probing the most efficient and reliable technology and innovations in the scientific researching equipment, fields like biochemical reacting, new materials researching, heat treatment, vacuum creating, refrigerating, as well as pharmaceutical and petroleum extracting equipment.



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.

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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

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

Automatic Coke Reactivity And Post Reaction Strength Determination Apparatus

Item Number: KT-JTB



Introduction

Engineered for standard coke testing, this automated coke reactivity and post-reaction strength determination apparatus integrates silicon carbide heating, mass flow gas regulation, motorized reactor handling, and an integrated tumble drum to deliver accurate, repeatable CRI and CSR analytical metrics.

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Application	Description	Key Benefit
Blast Furnace Coke Quality Verification	Systematic qualification of metallurgical lump coke feedstocks subjected to simulated shaft furnace thermochemical gasification and mechanical tumbling.	Maximizes ironmaking permeability, reduces coke rate consumption, and protects blast furnace hearth integrity.
Coking Plant Coal Blending Optimization	Benchmarking CRI and CSR indices of experimental coke batches produced from varied coking coal blend formulations and coal ranks.	Lowers raw material procurement costs by enabling confident inclusion of non-coking or semi-soft coals without sacrificing structural coke quality.
Commercial Merchant Coke Inbound Inspection	High-volume third-party commercial verification of traded metallurgical fuels against GB/T 4000-2008 contractual procurement specifications.	Eliminates supplier quality disputes through objective, highly repeatable digital analytical logs and certified automated printouts.
Superalloy & Refractory Research	Testing hot-gas corrosion kinetics, degradation thresholds, and structural reactivity of specialized carbon blocks, cathode materials, and graphite elements.	Provides rigorous isothermal testing data under precise CO2 gas concentrations and high thermal regimes up to 1100°C.
Metallurgical Standard Compliance Auditing	Standardized testing across industrial regulatory bodies, institutional certification centers, and national materials testing labs.	Assures full procedural compliance with state and international standards via real-time parameter logging and unalterable digital audit trails.

Process Troubleshooting & Failure Analysis	Diagnostic testing of crushed coke breeze, unexpected furnace burden hang-ups, or uncharacteristic fines generation during ironmaking tapping cycles.	Rapidly pinpoints whether furnace irregularities stem from chemical reactivity susceptibility (CRI) or physical degradation (CSR).
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System Subassembly	Technical Parameter	Engineering Specification (KT-JTB)
Standard Compliance	Governed Testing Standard	GB/T 4000-2008 (Coke Reactivity & Post-Reaction Strength)
Thermal System	Heating Element Configuration	12× High-Density Silicon Carbide (SiC) Rods
	Furnace Rated Power	7 kW
	Maximum Rated Furnace Temperature	1450°C
	Uniform Isothermal Constant Temperature Zone	≥ 150 mm
	Temperature Measurement Transducers	Type N or Type S Thermocouple (Class 0.5)
	Thermocouple Protection Sleeve Material	GH3044 Superalloy Steel or High-Purity Corundum

SystemSubassembly	Technical Parameter	Engineering Specification (KT-JTB)
	Temperature Control Methodology	Closed-loop Fuzzy PID (Online Variable Tuning Supported)
	Standard Temperature Control Accuracy	1100°C ± 5°C
	Standard Thermal Ramp Profile	Ambient to 1100°C at 15°C/min (Fully User-Programmable)
	Isothermal Hold Duration	2 Hours at 1100°C ± 5°C
Atmosphere & Flow Control	Flow Measurement Instrument	Dual Independent High-Precision Mass Flow Controllers (MFC)
	Nitrogen (N2) Regulation Range	0 to 10 L/min (Continuous Adjustable)
	Carbon Dioxide (CO2) Regulation Range	0 to 10 L/min (Continuous Adjustable)
	Gas Flow Measurement Accuracy	±1% Full Scale (FS)
	Gas Switching Speed & Method	≤ 0.1 s Fast Solenoid Switching (Independent Auto/Manual)
	Pneumatic Circuit Pressure Tolerance	Up to 3.0 MPa
	Integrated Gas Pre-Treatment	Equipped with Dual In-Line Chemical Desiccant Drying Columns
	Real-Time Diagnostics	Real-time digital gas flow and temperature curves on PC interface
Reaction Chamber	Vessel Structural Material	Heat-Resistant Superalloy GH3044 (Rated to 1400°C)
	Reactor Inner Bore & Height	Inner Diameter Φ80 mm, Total Length 500 mm
	Loading & Unloading Mechanism	Motorized Top Mechanical Hoist Transmission
Type I Tumbler Drum	Drum Dimensions & Wall Thickness	Inner Diameter Φ140 mm, Depth 700 mm, Wall Thickness 5-6 mm
	Rotation Velocity & Total Cycle	20 rpm (600 Total Revolutions in 30 min ± 1 min)
	Operational Control	Automatic digital revolution counter and integrated auto-stop
	Drum Loading / Discharging Design	Integrated one-piece design (unloading without drum detachment)
	Standard Auxiliary Analytical Sieves	Round-hole aperture screens: 23 mm, 25 mm, and 10 mm
Automation & Safety	Standard Testing Cycle Sequence	0-400°C Ramp; 400°C N2 Purge (0.8 L/min); 1050°C CO2 Preheat; 1100°C Soak (10 min); 1100°C CO2 Reaction (5 L/min for 2 h); Auto Descent & N2 Cooling Purge (2 L/min); 100°C Tumbler Prompt Alarm
	Laboratory Air Quality Safeguard	Automatic exhaust ventilation fan actuation during active test
	Fault Diagnostics & Circuit Protection	Auto-power cut on over-temperature, thermocouple fault, SCR puncture, gas deficit, or overpressure
	Workstation Integration	Industrial PC workstation with dedicated test suite and printer

Post Drum Mechanical Sieve Shaker For Sinter And Pellet Strength Testing

Item Number: KT-JTL



Introduction

Upgrade metallurgical quality control with our post drum mechanical sieve shaker designed for sinter and pellet ore drum test classification featuring automatic timing heavy duty drive mechanism sealed dust control enclosure and standardized screening plate precision.

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Application	Description	Key Benefit
Blast Furnace Sinter Quality Control	Mechanical screening of iron ore sinter charges immediately following tumble drum degradation testing to determine the shatter index.	Delivers consistent, operator-independent index figures essential for blast furnace burden permeability control.
Pellet Ore Cold Crushing and Drum Testing	Automated classification of fired and cold-bonded iron ore pellets after rotational abrasion impact testing in QA assay labs.	Accurately segregates sub-6.3 mm and sub-5.0 mm fines, preventing manual error in abrasion index reporting.
Metallurgical Research and Burden Evaluation	Evaluating novel binders, flux mixtures, and sintering thermal profiles within academic and corporate metallurgical R&D centers.	Standardizes experimental sieving parameters across prolonged testing campaigns for reproducible comparative data.
Port and Terminal Mineral Inspection	Bulk mineral transshipment hubs evaluating the degradation resistance of imported iron ore sinters and pellets during offloading.	Handles high throughput batch testing with rapid cycle times, accelerating commercial grading verification.
Mining Assay and Mineral Processing Labs	Sizing coarse run-of-mine aggregates and pilot-scale agglomerates following mechanical tumbling and crushing trials.	Resilient drive system withstands abrasive ores without premature mechanical wear or frame deformation.
Steel Plant Raw Material Intake Audits	Compliance verification of third-party sinter deliveries against contracted mechanical strength and degradation thresholds.	Provides audit-proof, repeatable sieving results that streamline dispute resolution and supplier qualification.

Specification Parameter	Specification Details (Model: KT-JTL)
Equipment Model	KT-JTL
Primary Application	Post-tumble drum mechanical screening for sinter and pellet ore
Electric Motor Power Rating	1.1 kW
Drive Transmission System	Motor-to-speed-reducer via wheel coupling, eccentric crank drive
Screening Motion	Mechanical reciprocating swing
Oscillation / Swing Angle	45°
Standard Cycle Duration	1.5 minutes per batch (automated stop)
Cycle Control Method	Integrated precision electrical time relay control
Screen Deck Dimensions	800 mm (Length) × 500 mm (Width)
Standard Screen Aperture Sizes	6.3 mm × 6.3 mm (standard) or 5.0 mm × 5.0 mm (optional interchange)
Screen Plate Compatibility	Interchangeable punched plate screen design
Frame Construction	Heavy-duty welded angle steel structural chassis
Environmental Protection	Fitted sealing top cover for airborne dust containment

Specification Parameter	Specification Details (Model: KT-JTL)
Material Unloading System	Integrated mechanical gate discharging into receiving hopper

Environmental Coke Drum Test Machine Metallurgical Coke Mechanical Strength Micum Drum Tester

Item Number: KT-JTD



Introduction

Engineered to measure metallurgical coke shatter strength and abrasion resistance, this environmental coke drum test machine features a fully sealed dust enclosure, automated revolution control, and heavy-duty mechanics to deliver consistent, safe results.

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Application	Description	Key Benefit
Metallurgical Coking Plant Quality Control	Regular monitoring of production coke batches to establish shatter resistance (M40/M25) and abrasion resistance (M10) indices prior to shipment.	Prevents off-spec fuel delivery to blast furnaces, safeguarding thermal efficiency and operational consistency.
Blast Furnace Operations & Burden Management	Assessing the structural breakdown of incoming merchant coke under mechanical tumbling to optimize blast furnace charging matrices.	Preserves gas permeability and molten iron drainage in high-capacity blast furnaces by eliminating fine coke accumulation.
Commercial Inspection & Metallurgical Trade Assay	Third-party inspection and umpire assay of bulk coke consignments at shipping ports, rail terminals, and customs transit depots.	Delivers standardized, auditable mechanical degradation data fully aligned with international purchasing specifications.
Coal Blending & Coking Research	Pilot-scale testing of coked charges derived from novel coal blends, bio-coal additions, or coking additive formulations.	Accelerates formula development by quantifying the direct correlation between coal rank blends and resultant mechanical coke strength.
Refractory & Carbon Material Attrition Testing	Evaluation of non-coke carbon blocks, electrode pastes, and dense refractory aggregates subjected to repetitive tumbling impacts.	Provides actionable comparative data regarding fracture propagation and surface wear rates under mechanical stress.
Environmental Laboratory Modernization	Replacement of antiquated, unsealed drum testers with fully enclosed containment architecture in clean metallurgical research facilities.	Eliminates carcinogenic airborne dust emissions, reducing laboratory ventilation loads and occupational health risks.

Specification Parameter	Standard Variant (KT-JTD)	Semi-Sealed Variant (KT-JTD-A)	Fully Sealed Eco-Friendly (KT-JTD-B)
Model Number	KT-JTD	KT-JTD-A	KT-JTD-B
Enclosure Configuration	Open Frame / Conventional	Semi-Sealed Dust Hood	Fully Enclosed Eco-Friendly Housing
Compliance Standard	GB/T 2006-2008	GB/T 2006-2008	GB/T 2006-2008
Drum Internal Diameter	1000 mm	1000 mm	1000 mm
Drum Internal Length	1000 mm	1000 mm	1000 mm
Drum Rotational Speed	25 r/min	25 r/min	25 r/min
Preset Revolution Count	100 revolutions	100 revolutions	100 revolutions
Preset Cycle Duration	4 min ± 10 s	4 min ± 10 s	4 min ± 10 s
Drive Motor Power	1.5 kW / 2.2 kW	1.5 kW / 2.2 kW	1.5 kW / 2.2 kW
Operating Voltage	380 V (Three-Phase, 50 Hz)	380 V (Three-Phase, 50 Hz)	380 V (Three-Phase, 50 Hz)
Drum Lifter Geometry	Angle steel lifting plates	Angle steel lifting plates	Angle steel lifting plates
Tumbling Drop Angle	> 90° free-fall initiation	> 90° free-fall initiation	> 90° free-fall initiation

Specification Parameter	Standard Variant (KT-JTD)	Semi-Sealed Variant (KT-JTD-A)	Fully Sealed Eco-Friendly (KT-JTD-B)
Dust Containment Efficiency	Basic (Ambient Extraction)	Medium (Shielded Containment)	High (Total Hermetic Capture)
Peripheral Compatibility	Pre/Post Mechanical & Manual Sieves	Pre/Post Mechanical & Manual Sieves	Pre/Post Mechanical & Manual Sieves

Industrial Coke Ball Grinding Machine For Metallurgical Sample Preparation

Item Number: KT-ZQX



Introduction

Optimize metallurgical sample preparation with our high-efficiency coke ball grinding machine. Designed to shape irregular coke lumps into uniform 23-25 mm spheres, this durable 3.3 kW system maximizes specimen yield.

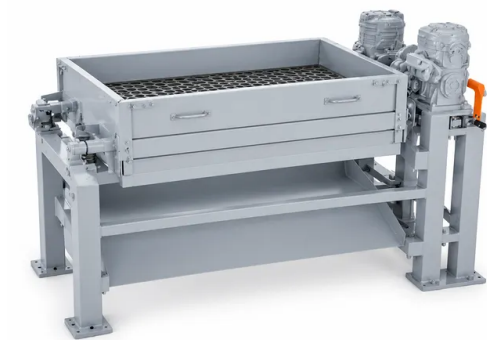
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Application	Description	Key Benefit
Coke Reactivity Index (CRI) Preparation	Refining pre-crushed coke fragments into standardized spheres for evaluation under high-temperature carbon dioxide reaction conditions.	Ensures uniform reactive surface area across all specimens, eliminating geometry-induced testing deviations.
Coke Strength After Reaction (CSR) Testing	Producing dimensionally accurate spherical samples for post-reaction mechanical tumbling and degradation resistance evaluations.	Guarantees consistent packing density and physical contact in test retorts for reproducible index scores.
Blast Furnace Coke Quality Control	Preparing daily operational samples at steelworks coking plants to assess batch-to-batch coke mechanical integrity and stability.	Dramatically boosts usable sample yield from primary crushers, lowering sample preparation cycle time.
Commercial Testing and Inspection Assays	Preparing high-precision reference spheres for third-party metallurgical inspection agencies certifying commercial coke consignments.	Delivers certified dimensional accuracy between 23 mm and 25 mm, matching international contractual standards.
Metallurgical Research and Development	Grinding experimental coking coal blends and novel bio-coke formulations into consistent spherical geometries for comparative trials.	Provides dependable geometric baselines to isolate chemical and physical variables in new carbon materials.
Refractory and Carbon Material Milling	Secondary spherical grinding of abrasive non-metallic mineral lumps and carbon blocks requiring controlled particulate spherical forms.	Demonstrates broad processing flexibility across hard, abrasive carbonaceous and mineral aggregates.

Parameter	Specification	Engineering Details
Equipment Identifier	KT-ZQX	Industrial Coke Ball Grinding Auxiliary Unit
Charge Mass Capacity	< 5,000 g per batch	High-capacity chamber handling up to 5 kg of coke feed per cycle
Feed Particle Size	≥ 23 mm	Accepts coarse, irregular coke pieces from primary crushers
Discharge Particle Size	23 mm - 25 mm	Finely calibrated spherical output matching standard test protocols
Finished Specimen Geometry	Spherical (球状)	Uniform rounded geometry without sharp angular edges
Motor Rated Power	3.3 kW	Continuous-duty industrial motor with high starting torque
Electrical Supply	AC 380V / 50Hz	Three-phase industrial laboratory power configuration
Functional Role	Auxiliary yield enhancement	Refines non-compliant crushed lumps into qualified test spheres
Target Material	Metallurgical coke & carbon	Hard, abrasive, high-carbon structured materials
Operating Mode	Batch mechanical grinding	Impact and frictional abrasion shaping mechanism

Coke Post Drum Mechanical Shaking Sieve For Metallurgical And Foundry Coke Mechanical Strength Testing

Item Number: KT-JTG



Introduction

Streamline metallurgical quality control with our automated coke post drum mechanical sieve engineered with a heavy duty crank drive precision timed shaking and standardized tiered screen plates for reproducible coke strength analysis.

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Application	Description	Key Benefit
Metallurgical Blast Furnace Coke Quality Control	Automated classification of blast furnace coke fractions following Micum (M40/M10) or Irsid (I20/I10) drum index tests.	Delivers consistent, operator-independent index verification to optimize blast furnace fuel permeability and operational efficiency.
Foundry Coke Shatter and Abrasion Testing	Sizing structural integrity and fracture resistance of large-block foundry coke after mechanical tumble testing.	Replaces laborious hand-sieving of heavy lump coke while safeguarding testing integrity through standardized 45-second screening cycles.
Commercial Coke Oven Plant Production Monitoring	Routine batch screening in coking plant process control laboratories to monitor carbonization quality and post-quenching mechanical resilience.	Rapid multi-tier separation minimizes assay turnaround times, enabling rapid optimization of coal blending formulations and coking times.
Third-Party Metallurgical Inspection Services	High-throughput contractual conformity verification for commercial cargo transshipment, shipping terminals, and independent test facilities.	Guarantees stringent inter-laboratory repeatability and complies with international metallurgical test standards across global testing networks.
Coal and Carbon Materials Research Laboratories	Granulometric and structural degradation research evaluating pilot-scale coke batches, bio-coke briquettes, and novel carbon anodes.	Facilitates flexible interchangeability of upper screen plates (25 mm or 40 mm) for variable experimental research criteria.
Ferroalloy and Non-Ferrous Smelting Quality Assurance	Mechanical grading of specialty reduction carbon and nut coke subjected to physical stress simulation drums.	Enhances sample throughput while eliminating dust exposure and manual labor through automated mechanical batch separation.

Parameter	Specification Detail (Model KT-JTG)
Equipment Item Number	KT-JTG
Primary Functionality	Mechanical post-drum shaking sieving for metallurgical and foundry coke strength determination
Motor Power Rating	1.5 kW
Drive System Architecture	Motor direct-coupled to industrial speed reducer via wheel coupling with eccentric crank linkage
Oscillation / Swing Angle	40° to 45° continuous reciprocating arc
Standard Single Sieving Cycle Duration	45 seconds (automated cycle completion with relay control)
Cycle Control Mechanism	Integrated electrical timer relay with automatic shutdown
Deck Configuration	Two-tier mechanical screening assembly with discharge gate mechanism
Upper Tier Sieve Plate Aperture	40 mm or 25 mm (perforated plate; interchangeable)
Lower Tier Sieve Plate Aperture	10 mm (perforated plate; customizable upon request)
Sieve Screen Material	High-strength abrasion-resistant structural steel plate

Parameter	Specification Detail (Model KT-JTG)
Chassis Construction	Heavy-duty welded structural angle steel framework
Material Discharge Method	Manual tilt lever/gate mechanism feeding directly into receiving collection hoppers
Operational Mode	Semiautomatic batch loading with push-button activation and timed auto-stop

Automatic Iron Ore Pellet Compressive Strength Tester

Item Number: KT-JTH



Introduction

Evaluate iron ore pellet crush resistance with this automatic compressive strength tester, featuring constant platen speed, high accuracy load cells, real time curve tracking, automated batch statistics, and direct test report printing.

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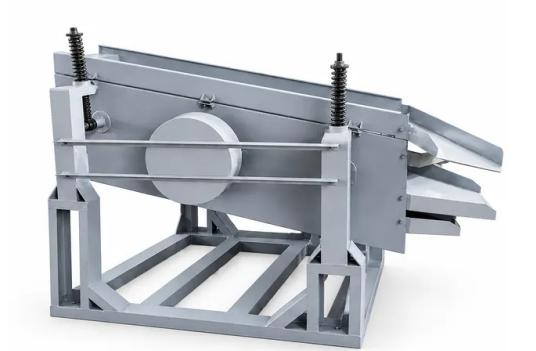
Application	Description	Key Benefit
Commercial Pelletizing Plant Quality Control	Routine quality screening of green, preheated, and indurated iron ore pellets sampled directly from traveling grate and rotary kiln discharge lines.	Ensures that fired commercial pellets satisfy contract strength thresholds, preventing catastrophic degradation and excessive dust creation during transport.
Blast Furnace Burden Optimization	Benchmarking crushing thresholds of metallic burden charges prior to charging into high-capacity blast furnaces under thermal and mechanical descent stresses.	Prevents premature in-furnace pellet breakdown, avoiding gas channel blocking and maintaining optimum furnace permeability and stable molten metal production.
Direct Reduction (DRI/HBI) Feedstock Evaluation	Evaluating compressive resilience of cold-bonded or oxidized pellets targeted as feedstock for gas-based shaft furnaces and fluidized bed reduction processes.	Confirms pellets withstand severe static shaft pressures without clustering, disintegration, or generating fine particles that foul top-gas recovery circuits.
Sintering and Pelletizing Research Laboratories	Academic and industrial R&D characterizing the structural effect of novel binders, fluxing agents, basicity ratios, and firing temperatures on pellet physical strength.	Delivers high-precision, repeatable fracture data and complete deformation profiles required to develop cost-effective pellet chemistry and firing cycles.
Transshipment Port and Terminal Ore Auditing	Receiving inspection and third-party verification of bulk iron ore pellet consignments at maritime ports, railheads, and metallurgical terminal depots.	Validates whether commercial pellet shipments have maintained physical integrity after open-sea transit, rough mechanical handling, and conveyor transfer.
Mining Beneficiation Process Auditing	Downstream mechanical testing of concentrate agglomerates to audit the effectiveness of grinding fineness, magnetic separation, and moisture management on pelletization.	Identifies upstream mineral processing inconsistencies early, allowing operators to optimize bentonite dosing and disk pelletizer moisture addition.

Engineering Category	Parameter Specification	Technical Metric / Construction Detail
Base Equipment Identification	Machine Model Reference	KT-JTH
Testing Standard Compliance	Primary Standard	GB/T 14210 (Iron Ore Pellets - Determination of Crushing Strength)
	Secondary Harmonization	ISO 4700 (Iron Ore Pellets for Blast Furnace and Direct Reduction Feedstocks)
Specimen Requirements	Target Test Specimen	Oxidized iron ore pellets, fluxed pellets, direct-reduction pellets
	Specimen Diameter Range	10.0 mm to 12.5 mm (accommodates non-standard sizing via adjustable platen travel)
	Batch Testing Quantity	Standard batch size ≥ 60 individual pellets per statistical test group
Platen Velocity & Drive	Compression Platen Speed	10.0 mm/min to 15.0 mm/min (constant speed closed-loop regulation)
	Drive Mechanism Type	Dual precision transmission lead screws housed within vertical columns
	Power Transmission	High-torque motor coupled to heavy-duty mechanical gear speed reducer
Force & Displacement Sensing	Drive Housing Location	Fully enclosed within heavy cast machine base for vibration dampening
	Load Sensing Transducer	High-precision force measurement load cell mounted directly beneath crossbeam

Engineering Category	Parameter Specification	Technical Metric / Construction Detail
Platen Geometry & Hardness	Displacement Tracking	Precision photoelectric rotary optical encoder mounted at column apex
	Contact Detection	Automatic platen pre-load contact recognition and threshold trigger
	Upper Compression Platen	High-alloy hardened tool steel, coupled directly to load sensor assembly
	Lower Compression Platen	High-alloy hardened tool steel, fixed rigidly to lower base testing table
Control, Display & Output	Platen Surface Condition	Ground and polished flat, high wear and indentation resistance
	Controller Architecture	Embedded microprocessor system with multi-channel A/D data acquisition
	User Display Interface	Industrial high-contrast liquid crystal display (LCD) on side control console
	Graphic Monitoring	Real-time force-displacement curve plotting and instantaneous peak tracking
	Statistical Calculation	Automatic batch arithmetic mean calculation and individual value logging
Safety & Operational Limits	Hard-Copy Documentation	Built-in thermal micro-printer integrated directly into side cabinet
	Workstation Connectivity	PC communication interface supported for external curve recording and printing
	Machine Protection	Mechanical limit switches, software over-travel, and load over-capacity cutoff
	Automation Cycle	One-touch test start, automatic peak fracture detection, rapid platen return

Coke Pre Drum Sizing Mechanical Sieve For Metallurgical Coke Fraction Classification And Breeze Content Analysis

Item Number: KT-JTF



Introduction

Optimize metallurgical quality control with this coke pre drum sizing mechanical sieve designed to classify particle fractions and isolate breeze content with precision. Repeatable four deck separation eliminates manual labor, reduces sampling errors, and ensures rigorous standard compliance daily.

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Application	Description	Key Benefit
Pre-Drum Tumbler Preparation	Sizing metallurgical coke samples into designated fractions before Micum (M40/M10) or Irsid (I20/I10) tumbler drum tests.	Ensures uniform feed charging compliant with testing standards, preventing sample bias in subsequent mechanical strength degradation analyses.
Blast Furnace Feed Coke Auditing	Screening incoming furnace coke deliveries to verify compliant particle distributions (typically 25 to 80 mm) and detect oversized lumps.	Maintains gas permeability across the blast furnace shaft by screening out irregular lump profiles that impede optimal counter-current reduction.
Coke Breeze Content Determination	Accurately isolating the sub-25 mm fine fraction from bulk production batches during quenching and wharf discharging.	Delivers precise tracking of yield losses and coking degradation, protecting thermal efficiency by preventing fines from entering high-temperature zones.
Coking Plant Screen Line Optimization	Verifying sizing efficiencies of primary industrial vibrating screens and scalpers by running split batch testing on product discharge streams.	Identifies worn screen media, uneven feed distribution, or aperture blinding on the production floor through calibrated bench-scale fraction verification.
Coal Blending and Carbonization R&D	Evaluating the physical lump yields and breakdown tendencies of pilot-scale carbonization ovens using alternative coking coal blends.	Delivers repeatable particle distribution data to correlate laboratory coal petrography and plastic properties with real-world lump yield characteristics.
Commercial Custody Transfer Testing	Conducting unbiased third-party particle size verification at receiving wharves, rail transshipment terminals, and bulk coke shipping ports.	Provides verifiable, machine-controlled classification records that minimize commercial disputes between coke producers and blast furnace operators.

Specification Parameter	Value / Configuration
Equipment Model Code	KT-JTF
Tier Configuration	4 Layers (Yielding 5 Output Fractions)
Screen Plate Aperture Specifications	Layer 1: 80 × 80 mm Layer 2: 60 × 60 mm Layer 3: 40 × 40 mm Layer 4: 25 × 25 mm
Separated Size Classes	>80 mm, 60–80 mm, 40–60 mm, 25–40 mm, <25 mm (Coke Breeze)
Screen Plate Geometry	Square-hole punched/welded steel plate
Screen Body Inclination Angle	11.5°
Excitation / Vibration Amplitude	6–8 mm
Electric Drive Motor Power	0.75 kW
Transmission Mechanism	Industrial V-Belt with counterweighted flywheel assembly
Framework Construction	Heavy-duty welded section steel structural chassis

Specification Parameter	Value / Configuration
Sieve Body Material	Heavy-gauge welded abrasion-resistant steel plate
Shock Isolation System	Integrated mechanical vibration-reduction damping mountings
Primary Operating Function	Mechanized classification of metallurgical coke before drum test & breeze quantification

Microcomputer Controlled Iron Ore Pellet Compressive Strength Tester Pellet Crushing Resistance Testing Machine

Item Number: KT-JTK



Introduction

Engineered for ISO 4700 compliance this microcomputer iron ore pellet compressive strength tester delivers precise ten kilonewton capacity high accuracy load sensing real time deformation analysis and automated batch statistics to ensure rigorous metallurgical quality control in production laboratories

[Learn More](#)

Application	Description	Key Benefit
Blast Furnace Feed Quality Control	Quantifying the compressive failure threshold of fired iron ore pellets prior to blast furnace charging.	Prevents in-furnace degradation, mitigating gas channeling risks and preserving furnace bed permeability.
Direct Reduction Iron (DRI) Production	Verifying the cold crushing strength of pellets destined for gas-based shaft furnaces and fluidized bed reactors.	Ensures pellets withstand shaft burden pressure without premature disintegration or dust generation.
Pelletizing Plant Optimization	Evaluating green pellet firing profiles, bentonite binder dosages, and moisture content adjustments during agglomeration.	Enables rapid feedback loops for optimizing furnace thermal profiles and raw material additive ratios.
Shipping and Handling Durability Studies	Simulating mechanical stresses induced during long-distance bulk maritime shipping, rail transfer, and conveyor discharge.	Accurately predicts generation of sub-sieve fines, preventing commercial financial penalties and cargo loss.
Metallurgical Academic Research	Investigating novel non-bentonite organic binders, composite pellets, and cold-bonded agglomeration technologies.	Provides high-precision deformation curves and quantitative peak load data for academic publications.
Third-Party Material Certification	Performing independent, standards-compliant verification of commercial iron ore pellet batches for trade settlement.	Delivers fully traceable, ISO 4700-compliant test certificates with verifiable batch statistical records.

Specification Parameter	Value / Characteristic
Product Item Number	KT-JTK
Applicable Testing Standards	GB/T 14201-93, ISO 4700-2007
Maximum Load Capacity	10 kN (10,000 N)
Testing Force Range	0 N to 10,000 N
Testing Machine Accuracy Class	Grade 1 (Indication error within $\pm 1\%$)
Force Measurement Precision	$\pm 1\%$ of indicated value
Pressure Sensor Accuracy	$\leq 0.05\%$ Full Scale (FS)
Specimen Diameter Range	5 mm to 60 mm
Crosshead Travel Stroke	500 mm
Stroke Displacement Precision	± 0.01 mm
Testing Speed Range	1 mm/min to 100 mm/min (continuously variable)
Displacement Measurement Device	High-resolution column-mounted photoelectric encoder
Force Detection Element	High-accuracy load cell mounted to underside of moving crosshead

Specification Parameter	Value / Characteristic
Drive Architecture	Electric motor coupled with reduction gearbox and column-enclosed lead screws
Control System Architecture	Column-mounted intelligent micro-control unit alongside PC microcomputer interface
Data Visualization & Outputs	Real-time LCD curve plotting, automated batch statistics, onboard micro-printer
Motor Power Rating	0.75 kW
Operating Power Supply	380V AC, 50 Hz, 3-Phase

Single Cell Flotation Machine Laboratory Mineral Processing Cell Benchtop Ore Separation Equipment

Item Number: KT-JT1



Introduction

This high-performance single cell flotation machine is engineered for precision laboratory mineral separation and metallurgical testing, delivering exceptional air suction efficiency, low power consumption, self-contained slurry circulation, and intuitive liquid level control for accurate non-ferrous and non-metallic beneficiation.

[Learn More](#)

Application	Description	Key Benefit
Non-Ferrous Metal Beneficiation	Bench-scale separation of copper, lead, zinc, nickel, and molybdenum sulfide and oxide ores.	Enables precise determination of recovery rates, collector selectivity, and optimal pulp pH parameters.
Ferrous Ore Upgrading	Processing and upgrading of fine iron, manganese, and chromium ore samples through selective flotation.	Maximizes iron grade concentrates while reducing silica and phosphorus contaminants prior to pilot testing.
Non-Metallic Mineral Purification	Purification of industrial non-metallic minerals including fluorite, talc, quartz, barite, and feldspar.	Delivers clear separation between valuable industrial minerals and gangue minerals under controlled reagent dosages.
Fine Coal Cleaning & De-Ashing	Flotation separation of ultra-fine coal pulp to eliminate ash-forming minerals and pyrite sulfur content.	Improves clean coal yields while establishing accurate washability and froth kinetics data for coal processing plants.
Reagent Suite & Kinetic Evaluation	Testing of novel collectors, depressants, dispersants, and frothing agents across variable pulp densities.	Provides scalable, highly reproducible baseline data for developing economic and efficient metallurgical flowsheets.
Metallurgical Research & Scale-Up	Pilot laboratory studies performed by university departments, mining institutes, and assay laboratories.	Allows reliable bench-scale modeling that directly correlates to full-sized industrial flotation cell performance.

Model Item Identifier	Flotation Cell Capacity (L)	Impeller Diameter (mm)	Impeller Rotational Speed (rpm)	Scraper Speed (rpm)	Feed Grain Size (mm)
KT-JT1-0.5	0.5	Ø 45	2590 / 2340 / 2130	30	-0.2 (< 0.2 mm)
KT-JT1-0.75	0.75	Ø 45	2590 / 2340 / 2130	30	-0.2 (< 0.2 mm)
KT-JT1-1	1.0	Ø 55	2100 / 1900 / 1700	30	-0.2 (< 0.2 mm)
KT-JT1-1.5	1.5	Ø 50	1910 / 1750 / 1590	30	-0.2 (< 0.2 mm)
KT-JT1-3	3.0	Ø 60	1890 / 1708 / 1544	30	-0.2 (< 0.2 mm)
KT-JT1-8	8.0	Ø 70	1400	30	-0.2 (< 0.2 mm)

Granular Activated Carbon Compressive Strength Tester

Desulfurization Denitrification Resistance Testing Instrument

Item Number: KT-JTU



Introduction

Evaluate granular coal-based activated carbon mechanical endurance using our high-precision compressive strength testing instrument built to GB/T 30202.3 standards with 0-10kN force range, 0.1N resolution, overload protection, and automated electrical control systems for demanding industrial quality assurance requirements.

[Learn More](#)

Application	Description	Key Benefit
Desulfurization & Denitrification Carbon QA	Testing crushed activated carbon granules intended for flue gas cleanup towers in coal-fired power stations and steel plants.	Ensures carbon pellets withstand mechanical compaction and fluidization without crumbling into fine dust.
Coal Chemical Manufacturing	Evaluating batch-to-batch structural integrity of extruded and spherical coal-based activated carbons during production.	Provides real-time quality feedback to optimize extrusion pressures, binder content, and activation temperatures.
Thermal Power Plant Fuel & Emission Labs	Quality audit of incoming bulk desulfurization adsorbents prior to charging fixed or moving reactor beds.	Prevents operational blockages and pressure drop spikes caused by low-strength adsorbent degradation.
Catalyst & Adsorbent R&D	Researching novel impregnated carbons, carbon molecular sieves, and heavy-metal capture adsorbents.	Provides precise force-deformation curves to benchmark mechanical improvements in experimental formulations.
Third-Party Material Testing	Executing standardized compliance testing and dispute resolution for commercial carbon suppliers and consumers.	Delivers fully traceable, standard-compliant test data suitable for formal certification and audit reports.
Solvent Recovery & Gas Treatment	Testing heavy-duty granular activated carbons used in high-flow organic solvent vapor recovery vessels.	Guarantees long service life under cyclic thermal and pressure loading in demanding gas-phase operations.

Parameter	Technical Specification (Model: KT-JTU)	Standard & Operational Details
Product Identification	KT-JTU	Granular Activated Carbon Compressive Strength Tester
Standard Compliance	GB/T 30202.3-2013	Test Method for Granular Coal-Based Activated Carbon for Desulfurization and Denitrification (Compressive Strength)
Force Measuring Range	0 – 10 kN	Broad dynamic range for granular, extruded, and pelleted carbon samples
Measurement Accuracy	±1%	Full-scale precision ensured through calibrated digital load cell processing
Force Resolution	0.1 N	Fine resolution for accurate detection of initial fracture and yield loads
Testing Speed Range	0 – 500 mm/min	Fully adjustable stepless speed control for versatile testing regimes
Displacement Resolution	0.01 mm	Linear displacement precision for exact deformation measurement
Input Voltage	220 V AC	Standard single-phase electrical supply requirement
Voltage Frequency	50 Hz	Universal industrial grid frequency compatibility
System Completeness	Fully Compliant	Integrated complete system including load frame, drive unit, and electrical controls

Parameter	Technical Specification (Model: KT-JTU)	Standard & Operational Details
Safety Protection	Automatic Overload Safeguard	Hardware and software load-limiting protection for cell safety

Dual Furnace Fully Automatic Coke Reactivity Index And Coke Strength After Reaction Determination Apparatus

Item Number: KT-JTA



Introduction

Engineered for high-throughput metallurgy laboratories, this dual furnace fully automatic coke reactivity and post-reaction strength tester delivers precise CRI and CSR determination with independent multi-zone thermal control, automated mechanical extraction, redundant gas switching, and integrated drum tumbling per ISO 18894 standards.

[Learn More](#)

Application	Description	Key Benefit
Integrated Steel Mill Quality Control	Continuous assessment of metallurgical coke feedstocks destined for large-scale blast furnace operations.	Prevents blast furnace permeability degradation by verifying that CRI and CSR metrics meet stringent hot-strength benchmarks before charging.
Commercial Coking Coal Blending	Empirical evaluation of coking coal blend formulations, coal tar pitch binders, and modified carbon additives.	Empowers carbon chemical engineers to optimize blend recipes, minimizing raw coal procurement costs while sustaining mandatory coke quality.
Merchant Coke Plant Certification	Batch release testing and certificate of analysis (COA) generation for merchant coke producers supplying domestic and export markets.	Assures rapid, audit-ready compliance with both GB/T 4000-2017 and BS ISO 18894:2006 international commercial standards.
Carbon & Refractory R&D	Thermal gasification kinetics research and high-temperature degradation studies of synthetic carbons and pre-formed graphite.	Delivers highly repeatable thermal profiling across independent three-zone chambers with accurate real-time gas flow telemetry.
Third-Party Inspection & Testing Laboratories	High-volume contract laboratory testing of solid mineral fuels, foundry coke, and specialty carbon reductants.	Maximizes sample output through autonomous dual-furnace parallel processing and automated unattended reactor manipulation.

System Subsystem	Parameter Description	Engineering Specification (KT-JTA)
Model Designation	Base Item Number	KT-JTA
Furnace Configuration	Operating Architecture	Dual furnace design; autonomous single-furnace or concurrent dual-furnace operation
Heating Technology	Resistance Wire Heating Structure	Integrated embedded furnace lining; balanced three-phase power supply
Chamber Service Life	Operational Durability	Exceeds 2,000 thermal test cycles
Temperature Range	Maximum Operating Temperature	1250°C
Thermal Uniformity	Constant Temperature Zone (Isothermal)	> 300 mm (exceeds GB/T 4000 >150 mm; compliant with BS ISO 18894:2006)
Thermal Control Accuracy	Steady-State Control Precision	1100°C ± 3°C across three independent heating zones
Thermocouple Specification	Temperature Sensing Element	Three-point S-type thermocouple, Industrial Class II standard
Thermocouple Sheath	Protective Sheathing Material	High-purity Corundum
Heating Program	Standard Ramp Profile	Ambient to 1100°C at 15°C/min; isothermal dwell at 1100°C for 2 hours
Atmosphere Regulation	Flow Control Mechanism	Dual digital Mass Flow Controllers (MFC) equipped with 2 inline drying tubes
Gas Flow Range	Adjustable Range (N2 and CO2)	0 to 10 L/min continuous regulation per channel
Gas Flow Accuracy	Measurement and Delivery Precision	±1.5% Full Scale (F.S.)

System Subsystem	Parameter Description	Engineering Specification (KT-JTA)
Gas Supply Redundancy	Cylinder Manifold Arrangement	Dual-line setup (1 active, 1 standby) for N2 and CO2 (4 cylinders total)
Gas Switching Response	Automatic Failover Duration	< 10 seconds automatic changeover upon low supply, with acoustic alarm
Gas Purification Option	Optional Secondary Purifier	Upgrades standard industrial N2 and CO2 to ~99% gas purity
Reactor Vessel	Fabrication Material	GH3044 high-temperature nickel-based superalloy
Reactor Dimensions	Internal Geometry	Inside Diameter Ø80 mm × 580 mm length
Handling Mechanism	Reactor Loading / Unloading	Bottom-driven mechanical manipulator utilizing high-precision ball screw
Unattended Operation	Post-Reaction Ejection	Automatic furnace emergence upon cycle completion; cooling alarm at 100°C
Mechanical Drum Unit	I-Type Tumbler Construction	Integrated drum design; charging and discharging without drum removal
Drum Geometry	Tumbler Dimensions & Wall Thickness	Φ140 mm × 700 mm; 5 mm to 6 mm wall thickness
Drum Speed & Revolutions	Rotational Velocity & Cycle Count	20 ± 0.5 rpm; automatic cutoff and counting at 600 total revolutions
Standard Particle Sieves	Round Hole Aperture Set	Φ23 mm, Φ25 mm, and Φ10 mm round hole test sieves (standard configuration)
Optional Particle Sieves	Square Hole Aperture Set (ISO)	19 mm, 22.4 mm, and 10 mm square hole test sieves (ISO-compliant testing)
Safety & Venting	Exhaust Management System	Automatic ventilation startup; thermal waste gas combustion prior to venting
System Protection	Hardware Interlocks & Failsafes	Dual-system protection against SCR breakdown, controller failure, over-temp, over-pressure
Software Interface	PC Communications & Analytics	Real-time logging of 3-zone temp curves and gas flow; data recovery and report printing
Electrical Power Input	Power Supply Requirement	AC 380V, Three-Phase; 7.5 kW (Single Furnace) / 15.0 kW (Dual Furnace Total)
External Dimensions	System Physical Footprint	1400 mm (W) × 900 mm (D) × 2000 mm (H)
Equipment Mass	Net Physical Weight	300 kg

Coal Rotary Drum Slime Testing Machine Coal Slurrification Index Tester

Item Number: KT-JT2



Introduction

Engineered for industrial coal preparation plants and inspection laboratories, this rotary drum slime testing machine accurately measures coal slurrification indices under standard GB/T 26918 protocols, featuring an engineered 200L drum, digital timer control, and a rugged reduction gear drive.

[Learn More](#)

Application	Description	Key Benefit
Coal Washing Plant Circuit Optimization	Evaluates the mudification kinetics of run-of-mine feed coal prior to dense medium cycloning or spiral separation circuits.	Minimizes unanticipated slime buildup in recirculating wash water and improves media recovery efficiency.
Commercial Commodity Inspection	Conducted by third-party testing agencies and customs inspection bodies to certify export and domestic coal durability grades.	Provides standardized, legally defensible slurrification ratings matching GB/T 26918 compliance guidelines.
Mining Geotechnical Exploration	Tests core and bulk exploration samples to assess secondary slurring behavior of unmined coal seams across varied strata.	Assures accurate metallurgical forecasting and informs proper tailings filter press and thickener sizing.
Washery Slurry Circuit Troubleshooting	Assesses high-clay coal batches when thickening, settling, and belt press dewatering units exhibit performance bottlenecks.	Pinpoints raw coal degradation root causes versus chemical flocculation deficiencies in the water circuit.
Mineral Processing Academic Research	Facilitates empirical studies on coal particle breakage mechanisms, clay dispersion, and attrition dynamics in aqueous media.	Delivers repeatable kinetic test conditions with precise control over tumbling duration and rotational velocity.
Anthracite and Lignite Comparative Studies	Compares degradation thresholds and fine particle generation differences across varying metamorphic ranks of coal.	Yields empirical data for custom-blending raw coals to prevent filter cloth blinding and slurry contamination.

Parameter	KT-JT2 Specification
Equipment Item Number	KT-JT2
Compliance Standard	GB/T 26918-2011 (Rotary Drum Slime Test Method for Coal Washing Plants)
Drum Internal Volume	200 L
Drum Effective Height / Length	1000 ± 2 mm
Drum Rotational Speed	20 r/min
Single-Batch Sample Weight	25 kg
Drive Motor Model	Y2-112M-6
Motor Rated Power	2.2 kW
Motor Rated Speed	960 r/min
Reduction Gearbox Model	WD120
Gear Reduction Ratio	1:47
Cycle Timing Setting Range	0 - 99 min (freely adjustable / digital countdown)
Electrical Power Supply	380 V / 50 Hz, 3-Phase

Parameter	KT-JT2 Specification
Structural Composition	Support Frame Chassis, Rotating Drum, Reduction Gear Drive, Discharge Mechanism, Digital Control Unit
Bearing Configuration	Dual heavy-duty pillow block bearing assemblies with heavy-gauge support shafts
Target Applicable Materials	Bituminous coal, anthracite, lignite, raw washed coal, and associated carbonaceous rock

Coke Crushing And Ball Making Machine For Metallurgical Sample Preparation

Item Number: KT-ZQJ



Introduction

Engineered for metallurgical testing, this advanced coke crushing and ball making machine automates rough specimen shaping, transforming bulk lumps below 100 mm into uniform polyhedral blanks while maximizing yield and reducing testing preparation labor.

[Learn More](#)

Application	Description	Key Benefit
Metallurgical CRI / CSR Specimen Preparation	Initial mechanized sizing of metallurgical coke into polyhedral blanks for standardized ISO and ASTM reactivity testing.	Ensures repeatable sample geometries while eliminating human error and manual chisel damage.
Steel Mill Quality Control Laboratories	Daily intake inspection of blast furnace coke shipments to verify hot-strength properties and structural degradation rates.	Rapid sample processing cuts preparation time by over 60%, accelerating batch approval decisions.
Merchant Coking Plant Process Control	In-line monitoring of battery coking parameters, carbonization uniformity, and blend formulation performance.	Maximizes specimen extraction from small production core samples with negligible fines generation.
Commercial Inspection and Certification Assays	Independent analytical testing of export and import metallurgical coke consignments at shipping terminals.	Provides strict compliance with international mechanical preparation standards, eliminating testing disputes.
Coal and Carbon Research Institutes	Evaluation of pilot-scale oven carbonization blends, bio-coke composites, and non-recovery coke alternatives.	Enables precise specimen preparation from limited test-oven batches without consuming valuable research material.
Foundry Coke Structural Evaluation	Pre-shaping heavy, dense cupola foundry coke specimens for high-temperature compression and abrasion degradation tests.	Overcomes extreme coke hardness through high-torque 5.5 kW mechanical slicing without tool deflection.

Parameter	Specification (KT-ZQJ)
Product Model Number	KT-ZQJ
Processing Principle	Mechanical Cutting and Precision Grinding
Maximum Feed Grain Size	< 100 mm
Discharge Grain Size	≥ 23 mm
Target Output Geometry	Regular Square Polyhedron (Pre-Spherical Blank)
Specimen Recovery Rate	High-Yield Mechanized Output
System Workflow Role	Stage 1 Primary Shaping Machine (in 3-Machine Integrated Ball Making System)

Parameter	Specification (KT-ZQJ)
Rated Motor Power	5.5 kW
Power Supply Requirements	AC 380V ± 10% / 50 Hz, Three-Phase
Motor Enclosure Rating	Industrial IP54 Dust and Splash Resistant
Overload Protection	Integrated Thermal-Magnetic Breaker and Phase Monitor

Parameter	Specification (KT-ZQJ)
Structural Framework	Heavy-Duty Reinforced Structural Steel Plate
Cutting Tool Composition	Abrasive-Resistant Hardened Alloy Tooling

Sinter And Pellet Drum Testing Machine Sinter Ore Tumbler Test Equipment

Item Number: KT-JTM



Introduction

Engineered to YB/T 5166 standards, this sinter and pellet drum testing machine accurately evaluates tumbler and abrasion indices. Featuring robust gear drives, automated revolution counting, and integrated screening units, it delivers repeatable results for rigorous metallurgical quality control environments.

[Learn More](#)

Application	Description	Key Benefit
Blast Furnace Quality Assurance	Evaluates the mechanical strength of sinter and pellet batches prior to furnace burden charging.	Prevents blast furnace shaft permeability loss by detecting weak agglomerates before they generate excessive burden fines.
Sintering Plant Process Tuning	Continuously monitors the tumble index and abrasion index to evaluate fuel mix ratios, bed depth, and ignition settings.	Delivers immediate empirical feedback to optimize sintering furnace thermal profiles and raw mixture basicity.
Pelletizing Plant Quality Verification	Assesses cold crushing resilience and resistance to degradation during transport for green and fired iron ore pellets.	Ensures pellet binders and induration firing temperatures achieve the mechanical hardness required for bulk distribution.
Commercial Metallurgical Inspection	Serves third-party analytical and inspection laboratories conducting contractual acceptance testing for ore shipments.	Provides audit-compliant test methodology that matches binding commercial specifications and commodity trading contracts.
Pyrometallurgical Research	Allows university and institutional research facilities to measure the mechanical properties of alternative fluxed ores and low-carbon agglomerates.	Yields high-precision comparative data on experimental binders, hydrogen-reduced sinters, and biochar-infused iron burdens.
Bulk Port Material Handling	Assesses aggregate degradation risks across transfer chutes, stacker-reclaimers, and ship loading conveyors.	Establishes realistic handling limits and degradation allowances for maritime and rail ore transit networks.

Subsystem	Parameter	Specification (KT-JTM Standard)	Specification (KT-JTM-E Environmental)
General	Compliance Standard	YB/T 5166-1993(2005)	YB/T 5166-1993(2005)
	Enclosure Type	Open Heavy-Duty Chassis	Sealed Dust-Containment Hood
Tumbling Drum	Drum Inner Diameter	1000 mm	1000 mm
	Drum Inner Length	500 mm	500 mm
	Rotational Speed	25 rpm	25 rpm
	Preset Revolution Count	200 Revolutions	200 Revolutions
	Drum Motor Power	1.5 kW	1.5 kW
	Electrical Supply	380V / 50Hz, 3-Phase	380V / 50Hz, 3-Phase
	Revolution Counter	STS-3 Digital Display Counter	STS-3 Digital Display Counter
Pre-Drum Sieve	Deck Surface Area	1600 × 500 mm	1600 × 500 mm
	Deck Layers	2 Layers	2 Layers
	Primary Screen Apertures	40 × 40 mm, 25 × 25 mm	40 × 40 mm, 25 × 25 mm

Subsystem	Parameter	Specification (KT-JTM Standard)	Specification (KT-JTM-E Environmental)
	Secondary Screen Apertures	16 × 16 mm, 10 × 10 mm	16 × 16 mm, 10 × 10 mm
	Deck Inclination Angle	10° - 11.5°	10° - 11.5°
	Vibration Amplitude	6 - 8 mm	6 - 8 mm
	Sieve Motor Power	2.2 kW	2.2 kW
Post-Drum Sieve	Deck Surface Area	800 × 500 mm	800 × 500 mm
	Swing Angle	45°	45°
	Standard Screening Cycle	1.5 min per batch	1.5 min per batch
	Screen Plate Dimensions	800 × 500 mm	800 × 500 mm
	Screen Aperture Sizes	6.3 × 6.3 mm (or 5.0 × 5.0 mm)	6.3 × 6.3 mm (or 5.0 × 5.0 mm)
	Sieve Motor Power	1.1 kW	1.1 kW

Automated Coke Ball Preparation System For Metallurgical Testing And Thermal Reactivity Analysis

Item Number: KT-ZQT



Introduction

Streamline metallurgical sample prep with this automated coke ball preparation system featuring integrated cutting, grinding, and dust extraction to deliver uniform 23 to 25 mm spherical specimens for highly repeatable thermal reactivity and strength testing.

[Learn More](#)

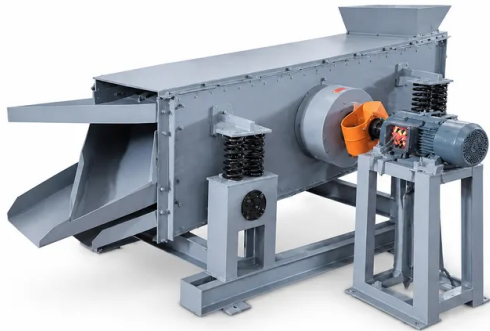
Application	Description	Key Benefit
Coke Reactivity Index (CRI) Testing	Preparing standardized spherical coke specimens to evaluate high-temperature gasification reactivity against carbon dioxide atmospheres.	Eliminates geometric variance to isolate true chemical reactivity kinetics without edge-effect anomalies.
Coke Strength After Reaction (CSR) Evaluation	Fabricating uniform spherical charges for post-reaction mechanical tumbling and abrasion resistance assessments.	Guarantees identical starting geometries, ensuring dependable correlation with blast furnace degradation profiles.
Blast Furnace Feed Quality Benchmarking	Routine screening and verification of delivered metallurgical coke consignments across ironmaking facilities.	Accelerates sample turnaround times while ensuring representative multi-point quality sampling across bulk shipments.
Metallurgical Coal Blending Optimization	Evaluating the hot strength and structural integrity of carbonized cokes produced from experimental coal blend formulations in pilot ovens.	Conserves scarce pilot-oven test coke through high-yield specimen processing from smaller sample batches.
Academic and Pyrometallurgical Research	Generating identical spherical carbon bodies for kinetic rate modeling, optical microscopy, and gas-solid reaction studies.	Delivers isotropic, geometrically uniform test bodies that conform precisely to mathematical diffusion boundary models.
Third-Party Quality Inspection Labs	High-throughput commercial sample preparation for certified compliance reporting and cross-vendor validation.	Eliminates human sample-shaping bias, ensuring defensible and audit-proof inter-laboratory reproducibility.

System Component	Parameter	KT-ZQT Specification
Complete System	System Configuration	Integrated Crushing-Shaping-Screening Unit, Ball Grinder, Dust Collector
Complete System	Target Sample Geometry	True Spherical Specimen (No Sharp Edges)
Complete System	Final Specimen Output Size	23 mm – 25 mm
Complete System	Operating Voltage / Frequency	AC 380V $\pm$ 10%, 50 Hz, 3-Phase
Crushing & Shaping Unit	Feed Particle Size Limit	< 100 mm
Crushing & Shaping Unit	Discharge Sizing Fraction	$\geq$ 23 mm (Polyhedral Precursors)
Crushing & Shaping Unit	Drive Motor Power Rating	5.5 kW
Crushing & Shaping Unit	Operating Principle	Mechanical Cutting, Impact Shaping, Integrated Sizing Screen
Ball Grinding Unit	Maximum Batch Loading Mass	< 5,000 g
Ball Grinding Unit	Feed Intermediate Particle Size	$\geq$ 23 mm
Ball Grinding Unit	Grinding Output Morphology	Spherical (23 mm – 25 mm)
Ball Grinding Unit	Drive Motor Power Rating	3.3 kW

System Component	Parameter	KT-ZQT Specification
Ball Grinding Unit	Finishing Chamber Principle	Multi-Axis Tumbling and Peripheral Edge Grinding
Environmental System	Dust Extraction Compatibility	Integrated Industrial Dust Collection Flanges & Ducts

Pre Drum Multi Deck Mechanical Vibrating Screen For Iron Ore Sinter And Pellet Classification

Item Number: KT-JTO



Introduction

Engineered for industrial testing, this pre-drum multi-deck mechanical vibrating screen delivers automated size classification for iron ore sinter and pellets. Featuring heavy-duty damping springs, tiered decks, and programmable timers, it enhances metallurgical lab productivity and repeatability.

[Learn More](#)

Application	Description	Key Benefit
Sinter Tumbler Index (ISO / GB/T) Preparation	Pre-classifying furnace sinter charges into standard granulometric fractions (+40 mm, 25-40 mm, 16-25 mm, 10-16 mm, -10 mm) prior to drum tumbling.	Replaces inconsistent manual screening with reproducible particle fractions required for ISO 3271 and GB/T 24531 tumble and abrasion testing.
Cold Pellet Compressive Strength Sizing	Isolating uniform pellet cohorts (typically within designated size bands) from fired or green iron ore pellet production lines.	Ensures tight particle size uniformity, eliminating diameter variations that compromise statistical validity in compressive crush testing.
Blast Furnace Burden Quality Control	Continuous verification of direct-reduced iron (DRI), blast furnace lump ore, and agglomerates delivered to smelting charging bins.	Mitigates blast furnace permeability issues by rapidly detecting and quantifying unwanted fines before charge loading.
Metallurgical Research & Pelletizing Pilot Plants	Laboratory-scale fractioning of novel agglomeration recipes, flux additions, and binder mixtures subjected to cyclic thermal and physical stress.	Delivers rapid, batch-to-batch fractionation with configurable runtimes to establish baseline degradation indices for experimental raw material mixes.
Mining & Beneficiation Plant Process Auditing	In-line or near-line verification of industrial vibrating screens, secondary crushers, and sintering disc discharge streams.	Identifies screen mesh wear or crusher bypass in upstream operations by conducting rapid, highly repeatable verification sieving.
Refractory & Heavy Mineral Aggregate Testing	Classification of dense refractory grog, ferroalloys, bauxite, and coarse slag materials requiring aggressive amplitude sieving.	High-torque mechanical drive and robust spring suspension effortlessly process high-density, sharp-edged mineral samples without frame fatigue.

Parameter	Specification (KT-JTO-2D Variant)	Specification (KT-JTO-4D Variant)
Base Product Item Number	KT-JTO-2D	KT-JTO-4D
Governing Standard	GB/T 24531-2009	GB/T 24531-2009
Number of Sieve Decks	2 Layers	4 Layers
Standard Screen Aperture Sizes	40×40 mm, 25×25 mm (or customized pairs)	40×40 mm, 25×25 mm, 16×16 mm, 10×10 mm
Screen Deck Dimensions (L × W)	1600 mm × 500 mm	1600 mm × 500 mm
Effective Screening Area per Deck	0.8 m²	0.8 m² (3.2 m² total stacked area)
Screen Deck Inclination Angle	10° - 11.5°	10° - 11.5°
Vibrational Amplitude (Stroke)	6 - 8 mm	6 - 8 mm

Parameter	Specification (KT-JTO-2D Variant)	Specification (KT-JTO-4D Variant)
Excitation Frequency	960 strokes/min (vibrations/min)	960 strokes/min (vibrations/min)
Drive Motor Power	2.2 kW	2.2 kW
Operating Voltage / Electrical Supply	380 V, 3-Phase, 50/60 Hz	380 V, 3-Phase, 50/60 Hz
Screening Timing Control	Fully automatic, digital user-adjustable	Fully automatic, digital user-adjustable
Core Mechanical Assembly	Base foundation, support frame, screen body, sieve decks, spring brackets, damping coil springs, feed inlet, motor, transmission mechanism	Base foundation, support frame, screen body, sieve decks, spring brackets, damping coil springs, feed inlet, motor, transmission mechanism

Vertical Nut Shell Activated Carbon Mechanical Strength Tester

Item Number: KT-JTR



Introduction

Engineered for precise catalyst carrier and adsorbent quality control, this vertical mechanical strength tester delivers standardized tumbling abrasion analysis, precision steel ball impacts, and reliable drum index determination under GB/T 13803.5 test protocols.

[Learn More](#)

Application	Description	Key Benefit
Vinyl Acetate Catalyst Carriers	Evaluates the structural survivability of nut shell carbon carriers subjected to high gas velocities in synthesis reactors.	Prevents in-reactor bed attrition, channel formation, and premature catalytic dusting.
Precious Metal Catalyst Substrates	Assesses granular carrier strength before impregnating costly platinum, palladium, or ruthenium catalysts.	Eliminates expensive precious metal catalyst loss caused by carrier fracture during bed packing.
Industrial VOC Solvent Recovery	Analyzes coconut and fruit shell carbons used in fluidized and fixed-bed solvent vapor recovery units.	Minimizes fines generation and reduces downstream filter blinding during continuous regeneration cycles.
Gold Extraction (CIP/CIL Processes)	Measures attrition resistance of hard nut shell carbons subjected to severe mechanical agitation in mineral slurries.	Lowers soluble gold loss by preventing micro-particulate carbon detachment in pulp processing.
Potable Water Deep Filtration Beds	Tests granular activated carbon before deployment in deep municipal and industrial filtration columns.	Guarantees long service life under high backwash pressures without particulate breakdown.
Ultra-Pure Gas Scrubbing Media	Validates the physical hardness of high-capacity adsorbents designed for electronic and specialty gas filtration.	Prevents particulate contamination of sensitive downstream semiconductor production processes.
Carbon Manufacturing QA/QC	Serves as an end-of-line batch release testing apparatus for activated carbon production kilns and activation facilities.	Ensures strict commercial grading and standardized compliance reporting for commercial distribution.

Specification Parameter	KT-JTR Value / Dimension
Equipment Model Number	KT-JTR
Operational Orientation	Vertical Console / Horizontal Drum Axis
Testing Standard Conformity	GB/T 13803.5-1999
Test Drum Inner Diameter	108 mm ± 1.5 mm
Test Drum Effective Length	110 mm ± 1.5 mm
Drum Rotational Speed	66 rpm ± 1 rpm
Grinding Media Specification	Ø14 mm Precision Alloy Steel Balls
Material Elevation Mechanism	Internal Radial Lifting Baffle Plates
Material Free-Fall Angle	Elevation Exceeding 90° Prior to Drop
Motor Power Rating	0.55 kW
Operating Electrical Supply	380 V AC, 50 Hz (3-Phase)
Preset Automated Run Duration	15 Minutes (Integrated Auto-Shutoff)
Primary Material Target	Nut Shell & Fruit Shell Activated Carbon Granules

Specification Parameter	KT-JTR Value / Dimension
Test Metric Output	Drum Index / Mechanical Strength Percentage
Structural Chassis	Welded Industrial Structural Steel with Anti-Corrosive Coating

Coke Drum Tester Micum Drum Mechanical Strength Testing Machine

Item Number: KT-JTC



Introduction

Determine metallurgical coke mechanical strength and abrasion resistance using this precision drum tester. Engineered for standard index testing, the robust system provides automated revolution control, durable construction, and dependable data for industrial quality assurance.

[Learn More](#)

Application	Description	Key Benefit
Blast Furnace Feedstock Screening	Routine mechanical screening of incoming coke batches to determine M40 and M25 shatter indices prior to furnace charging.	Prevents blast furnace permeability loss, reduces hanging or slipping events, and stabilizes ironmaking production rates.
Coking Plant Process Control	In-line quality monitoring of coke batches exiting quench towers to evaluate coal blend formulas and coking carbonization schedules.	Allows immediate tuning of coal blending formulations and coking times to minimize raw material expenses while maintaining target physical strength.
Commercial Commodity Inspection	Third-party verification of export and import metallurgical coke quality at port terminals, rail heads, and trading hubs.	Generates undisputed, standard-compliant mechanical durability data for contractual settlements and commercial trade certifications.
Metallurgical Research & Development	Laboratory assessment of non-recovery coking, biomass briquette coking, and new binder agents under standardized abrasion stresses.	Delivers precise baseline data for academic research, carbon emissions reduction initiatives, and novel metallurgical coke development.
Foundry Coke Evaluation	Mechanical durability testing of large-size cupola foundry coke to verify resistance to crushing under deep bed static loads.	Guarantees that cupola charges retain interstitial spacing for optimal combustion air distribution and efficient iron melting temperatures.
Carbon Anode Material Verification	Mechanical impact testing of formed carbon blocks, graphite electrode stock, and prebaked anode materials for aluminum smelting.	Confirms fracture toughness and resistance to spalling under mechanical handling prior to electrolytic cell installation.

Parameter Category	Specification Item	Nominal Value / Requirement
Model Identification	Equipment Item Number	KT-JTC
Dimensional Parameters	Internal Drum Diameter	Φ1000 mm
	Internal Drum Length	1000 mm (Φ1000 mm profile)
Operational Parameters	Rotational Velocity	25 r/min
	Preset Revolutions	100 revolutions (automated stop)
	Testing Standard Compliance	GB/T 2006-2008
	Evaluation Indices	M40, M25 (shatter resistance), M10 (abrasion index)
Electrical Specifications	Motor Power Rating	1.5 kW
	Input Operating Voltage	380 V (Three-phase industrial standard)
	Electrical Enclosure	Integrated industrial control console
Mechanical Construction	Drum Material	High-durability wear-resistant structural steel
	Drive Mechanism	High-torque mechanical gear reduction drive
	Charge Access	Hinged inspection hatch with mechanical locking lugs

Parameter Category	Specification Item	Nominal Value / Requirement
	Foundation Requirements	Industrial reinforced level concrete floor pad

Automatic Coke Shatter Test Apparatus For Foundry And Metallurgical Coke Drop Strength Testing

Item Number: KT-LQ



Introduction

Engineered for strict compliance with standardized test protocols, this automated coke drop strength apparatus accurately evaluates the shatter resistance of metallurgical and foundry coke through precision mechanical lifting, automated bottom-door discharge, and reliable motorized drive control.

[Learn More](#)

Application	Description	Key Benefit
Blast Furnace Quality Assurance	Evaluates the shatter index and mechanical impact degradation of metallurgical lump coke before blast furnace charging.	Prevents blast furnace permeability loss and uneven gas distribution by identifying friable, low-strength coke batches prior to loading.
Foundry Coke Evaluation	Measures the drop breakage characteristics and structural cohesion of large-size foundry coke used in cupola melting operations.	Ensures optimal bed permeability, prolonged combustion efficiency, and minimal carbon bed breakdown during heavy metal melting.
Coking Plant Process Optimization	Serves as a vital bench-scale quality control checkpoint for evaluating the efficacy of coal blending, coking times, and quenching methods.	Delivers rapid empirical feedback to coking engineers, allowing proactive adjustments to coal blends to maximize final mechanical yields.
Commercial Cargo Verification	Provides neutral third-party inspection laboratories and maritime shipping terminals with standardized shatter strength certification.	Resolves contractual disputes and certifies compliance with international merchant coke physical quality benchmarks prior to dispatch.
Coal & Carbon Materials Research	Enables metallurgical research institutes and universities to investigate the microstructural strength and fracture kinetics of carbonaceous fuels.	Facilitates data-driven development of non-recovery coking techniques, binderless briquetting, and novel bio-coke formulations.

Sinter Plant Raw Material Screening	Assesses the mechanical breakdown tendencies of coke breeze and nut coke fractions during aggressive transit and chute transitions.	Optimizes sizing distribution across sintering lines, minimizing unburned carbon loss and improving operational thermal balance.
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Parameter Category	Specification Details	Unit / Value
Product Item Number	Model Series Reference	KT-LQ
Applicable Standard	Testing Methodology Compliance	GB/T 4511.2-1999
Sample Box Dimensions	Internal Length × Width × Height	710 × 455 × 380 mm
Drop Base Dimensions	Working Impact Base (L × W × H)	220 × 965 × 200 mm
Drop Elevation Height	Standardized Lifting Height (Selectable Stop)	1830 mm
Electric Drive Power	Input Motor Power Rating	1.5 kW
Power Supply Requirements	Operating Voltage / System Phase	380V ± 10% (3-Phase, 4-Wire)
Speed Reducer Model	Industrial Heavy-Duty Worm Reducer	WPA-80
Speed Reduction Ratio	Drive Transmission Ratio	1:50-E
Total Equipment Mass	Total Dry Operational Weight	400 kg
Operational Mechanism	Mechanical Elevation & Bottom Discharge	Motorized lifting, automated bottom gate release
Control Architecture	Dedicated Electrical Enclosure	Integrated limit switches with automatic stop control

Coke Reactivity Index And Coke Strength After Reaction Cri Csr Tester

Item Number: KT-JT



Introduction

Engineered for precise CRI and CSR determination under GB/T4000-2008 standards, this robust high-temperature testing apparatus features dual PID thermal regulation, automated gas switching, and a heavy-duty tumbling drum to deliver accurate, reproducible industrial metallurgical coke quality assessments.

[Learn More](#)

Application	Description	Key Benefit
Blast Furnace Coke Quality Assurance	Routine screening of metallurgical coke batches prior to blast furnace charging in steelmaking complexes.	Prevents blast furnace operational disruptions by ensuring coke maintains adequate mechanical strength under thermo-chemical stress.
Coal Blending & Coking Optimization	Evaluation of trial coke specimens derived from experimental coal blending ratios in commercial coking facilities.	Lowers raw material procurement costs by enabling substitution of premium coals while keeping CRI/CSR within process specifications.
Metallurgical Research & Development	High-temperature gasification research examining coke microstructural degradation, alkali catalyst effects, and pore structure evolution.	Provides high-resolution temperature curves and accurate mass-loss kinetics required for advanced academic and industrial research.
Third-Party Inspection & Compliance	Commercial testing and quality validation of export or merchant coke consignments against regional and international trade metrics.	Delivers indisputable, repeatable test reports compliant with GB/T 4000-2008 for contract verification and dispute resolution.
Foundry & Non-Ferrous Smelting Control	Determining fuel degradation and structural integrity for specialized cupola furnaces and non-ferrous reduction operations.	Optimizes foundry cupola melt rates and reduces fuel bed collapse through verified high-strength carbonaceous reductants.
Refractory & Material Gasification Studies	Assessing carbon-bearing refractory bricks and synthetic carbon blocks under elevated CO2 environments and high heat.	Quantifies carbon loss and mechanical erosion kinetics under severe thermo-chemical degradation conditions.

Subsystem	Parameter	Specification (KT-JT)
System Identification	Model Identifier	KT-JT
Standard Compliance	Applicable Standard	GB/T 4000-2008
Thermal Performance	Temperature Range	Ambient to 1100°C (Standard Test Profile)
	Maximum Furnace Temperature	1250°C
	Isothermal Stage	1100°C held continuously for 2 hours
	Temperature Control Accuracy	±2°C at 1100°C isothermal plateau
	Power Consumption (Peak)	17 kW maximum
Furnace Heating Element	Holding Power Consumption	4 to 7 kW at steady 1100°C state
	Heating Element Type	Silicon Carbide (SiC) Heating Rods
	Element Geometry	Diameter: Ø18 mm; Active Heating Length: 400 mm
Furnace Core & Chamber	High-Alumina Outer Sleeve	ID: 140 mm; OD: 160 mm; Length: 640 mm
	Reaction Chamber Cylinder	ID: 80 mm; Total Height: 500 mm

Subsystem	Parameter	Specification (KT-JT)
	Temperature Sensing Probe	Outer Sheath: Ø8 mm; Core Wire: Ø0.5 mm × 650 mm
Atmosphere & Flow Control	Carbon Dioxide (CO ₂) Flow	5.0 L/min
	Nitrogen (N ₂) Flow	0.8 to 2.0 L/min
	Gas Switching Response Rate	0.1 s independent rapid switching
	Gas Piping Pressure Rating	1.5 MPa maximum working pressure
	Gas Pre-Conditioning	Dedicated electrically heated CO ₂ pressure regulator
Gas Conditioning Station	Buffer Vessel Capacity	6000 mL with dedicated retention clamp
	Gas Washing Bottle	500 mL capacity
	Drying Tower	500 mL capacity
Post-Reaction Drum (Type I)	Drum Construction	Monolithic Stainless Steel Pipe (Ø140 × 700 mm)
	Drum Rotation Velocity	20 ± 1 r/min
	Drive System	Integrated electric motor, reducer gearbox, and rigid chassis
	Rotation Counter & Control	Automated revolution count prediction, real-time digital readout, and non-volatile memory
Control & Computing	Control Architecture	Dual microcomputer and manual hardware override with air-cooled instrumentation bay
	Temperature Algorithms	Segmented PID parameters targeting thermal lag; dynamic online auto-tuning
	Hardware Fail-Safe	Auto-completion of test profile even upon supervisory computer disconnection
	Data Management	Real-time dual-color graphing, BMP curve capture, historical overlays, and full database export
	Network Interface	TCP/IP compatible via 2×0.52 mm shielded twisted-pair cable

Sealed Coke Drum Test Machine Metallurgical Coke Mechanical Strength Micum Tester

Item Number: KT-JTE



Introduction

Engineered for precise metallurgical coke mechanical strength determination this sealed coke drum test machine delivers reliable shatter resistance and abrasion index measurements featuring automated cycle timing robust structural steel construction and effective environmental dust containment ensuring consistent standard laboratory compliance

[Learn More](#)

Application	Description	Key Benefit
Blast Furnace Coke Quality Control	Routine tumble testing of metallurgical coke lots prior to blast furnace charging to assess lump degradation tendencies.	Prevents blast furnace burden collapse and gas permeability issues by rejecting substandard, fragile coke.
Merchant Coking Plant Operations	Verification of coking oven carbonization quality, blending strategies, and coal blend formulations against client specifications.	Ensures consistent compliance with commercial grade certifications and client contractual strength guarantees.
Port and Logistics Bulk Inspection	High-throughput mechanical strength screening of export and domestic metallurgical coke at railhead terminals and maritime bulk docks.	Rapidly validates mechanical durability and cargo degradation potential across multi-stage maritime and rail shipping.
Pyrometallurgical Research & Development	Formulation screening of novel coal-tar binder pitches, petroleum coke additions, and non-coking coal substitutions in trial ovens.	Delivers dependable baseline degradation metrics to optimize coal blending economics without sacrificing mechanical strength.
Foundry Coke Evaluation	Sizing and shatter resistance auditing of large-block foundry coke destined for cupola melting furnaces.	Maximizes structural coke support in the cupola stack, minimizing furnace pressure drops and fuel consumption spikes.

Third-Party Material Certification	Execution of accredited compliance testing for certified testing laboratories, metallurgy universities, and inspection authorities.	Delivers fully traceable mechanical test cycles compliant with GB/T 2006 standard requirements.
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Parameter	Standard Base Unit (KT-JTE)	Semi-Sealed Model (KT-JTE-A)	Eco-Friendly Fully Sealed Model (KT-JTE-B)
Regulatory Standard Compliance	GB/T 2006-2008	GB/T 2006-2008	GB/T 2006-2008
Primary Function	Mechanical strength (shatter & abrasion)	Mechanical strength (shatter & abrasion)	Mechanical strength (shatter & abrasion)
Enclosure Architecture	Open frame chassis	Semi-sealed safety hood	Fully sealed environmental containment
Airborne Dust Containment	Ambient venting	Partial baffle containment	Complete perimeter positive enclosure
Drum Internal Diameter	1000 mm	1000 mm	1000 mm
Drum Internal Length	1000 mm	1000 mm	1000 mm
Operating Rotational Velocity	25 r/min	25 r/min	25 r/min
Preset Revolutions per Test	100 revolutions	100 revolutions	100 revolutions
Standard Cycle Duration	4 min ± 10 s	4 min ± 10 s	4 min ± 10 s
Motor Drive Rating	1.5 kW / 2.2 kW	1.5 kW / 2.2 kW	2.2 kW
Nominal Operating Voltage	380 V (Three-Phase)	380 V (Three-Phase)	380 V (Three-Phase)
Lifter Flight Plate Configuration	High-strength internal drop plates	High-strength internal drop plates	High-strength internal drop plates

Parameter	Standard Base Unit (KT-JTE)	Semi-Sealed Model (KT-JTE-A)	Eco-Friendly Fully Sealed Model (KT-JTE-B)
Compatible Pre-Drum Sizing Systems	Optional mechanical grading screen	Optional mechanical grading screen	Optional mechanical grading screen
Compatible Post-Drum Sizing Systems	Optional mechanical separation screen	Optional mechanical separation screen	Optional mechanical separation screen
Manual Sieving Integration	Compatible manual screen set	Compatible manual screen set	Compatible manual screen set

Intelligent Pellet Compressive Strength Tester

Item Number: KT-JTI



Introduction

Engineered for metallurgy, mining, and foundry QA, this intelligent pellet compressive strength tester delivers high-precision servo loading, automated crushing force calculation, and durable gantry stability across a broad 1 kN to 50 kN testing envelope.

[Learn More](#)

Application	Description	Key Benefit
Iron Ore Pellet Quality Control	Rapid verification of crushing resistance for blast furnace and direct reduction iron (DRI) pellets according to international ISO and ASTM standards.	Prevents in-furnace degradation, fines generation, and furnace permeability loss by screening sub-standard pellet batches before charging.
Mining and Mineral Beneficiation	Evaluation of green, pre-heated, and fired mineral agglomerates produced across disk and drum pelletizers in mine-site processing plants.	Provides immediate feedback for binder optimization (bentonite, organic binders) and moisture adjustment during the pelletization process.
Foundry Core and Briquette Testing	Mechanical load testing of foundry sand cores, binder-consolidated briquettes, and metal swarf compacts subject to mechanical handling.	Minimizes mold collapses and metal casting inclusions by verifying green and cured structural compression thresholds.
Sintered Metallurgical Aggregates	Crushing strength profiling of roasted catalyst supports, sintered bauxite, and ferroalloy pellets subjected to static storage pressure.	Ensures high mechanical survival rates during bulk hopper stockpiling, pneumatic transfer, and high-temperature shaft furnace operations.
Ceramic Proppant Characterization	High-load crush resistance assessment of ceramic spheres and proppants used in hydraulic fracturing and geological engineering.	Confirms resistance against borehole closure stress, maximizing fracture conductivity and operational longevity under underground pressure.
Advanced Composite Material Testing	Mechanical characterization of non-metallic composite spheres, spherical matrix granules, and granular energy-storage media.	Delivers precise stress-strain curve mapping, peak failure loads, and modulus data for structural engineering and material synthesis R&D.

Parameter Category	Specification Attribute	Value / Performance Metric
Model Identifier	Equipment Part Number	KT-JTI
Capacity & Force	Maximum Rated Test Force	50 kN (5,000 kgf)
	Test Force Measurement Range	1 kN – 50 kN
	Load Cell Attenuation Ranges	×1, ×2, ×5, ×10 (automated or manual scaling)
	Test Force Measurement Accuracy	±1% of indicated value (from 20% of each range)
Speed & Displacement	Test Speed Adjustment Range	0.01 mm/min – 200 mm/min (stepless control)
	Speed Accuracy & Control	Closed-loop digital AC servo drive regulation
	Displacement Measurement Resolution	0.01 mm
Mechanical & Envelope	Frame Configuration	Bench-top / Floor-standing dual-column gantry frame
	Drive Mechanism	Precision preloaded lead screw subjected strictly to tensile stress
	Compression Daylight (Vertical Clearance)	0 mm – 450 mm
	Compression Platens	Hardened high-alloy steel, ground and polished parallel surfaces
Automation & Control	Operating Modes	Standalone digital LCD control / PC microcomputer management

Parameter Category	Specification Attribute	Value / Performance Metric
Power & Environmental	Automatic Functions	Peak force capture, fracture detection, automated crosshead return
	Data Acquisition Channels	Force channel, displacement channel, time channel
	Power Supply Requirements	220 VAC $\pm$ 10%, single phase, 50 Hz
	Operating Noise Level	Low acoustic emission (<65 dB at full operational speed)

Vertical Coal Based Granular Activated Carbon Mechanical Strength Tester Tumbler Index Testing Equipment

Item Number: KT-JTP



Introduction

Assess the mechanical durability of granular activated carbon with this vertical strength tester. Built for standardized tumbler index testing, the system provides a precision drum, lifter plates, and automated timing to deliver consistent laboratory data.

[Learn More](#)

Application	Description	Key Benefit
Potable Water Filtration QA	Testing granular carbon attrition before bed loading to ensure long-term physical stability under rapid gravity and pressurized water flows.	Prevents filter media loss, down-stream piping fouling, and excessive bed compaction in municipal and industrial filters.
Industrial Off-Gas Purification	Evaluating the impact and abrasion resistance of virgin and regenerated carbon granules used in volatile organic compound adsorption towers.	Minimizes channeling, high pressure drops, and dust carryover within high-velocity industrial exhaust streams.
Chemical Catalyst Support Verification	Assessing the crushing and tumbling resilience of activated carbon pellets used as substrate carriers for noble metal catalyst deposition.	Guarantees mechanical survivability under rapid turbulent fluidization and heavy liquid-gas contact loops.
Solvent Recovery Facilities	Measuring the durability of carbon matrices subjected to repetitive thermal desorptions, steam stripping, and cooling cycles.	Extends operational lifetime of carbon beds and mitigates solvent retention issues caused by pulverized fines.
Activated Carbon Manufacturing QC	Benchmarking production lots directly at the kiln or activation furnace exit to guide parameter adjustments.	Ensures shipped materials consistently meet contractual tumbler index guarantees and national testing standards.

Academic and Materials Research	Conducting comparative degradation studies on novel precursors, pitch formulations, and modified surface treatments.	Delivers highly repeatable baseline attrition metrics to isolate the impact of specific activation parameters.
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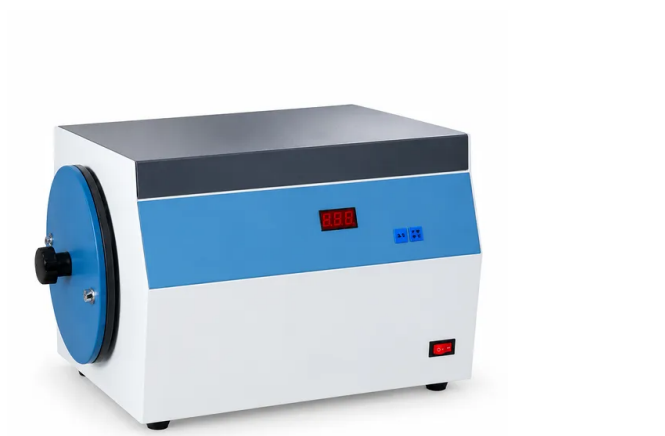
Parameter	Specification (KT-JTP)
Applicable Standard	GB/T 7702.3-2008
Drum Internal Diameter	80 ± 0.2 mm
Drum Length	126 ± 0.5 mm
Drum Rotational Speed	50 ± 2 r/min
Tumbling Ball Specification	Φ14.3 mm Hardened Steel Balls
Motor Power Rating	0.55 kW
Operating Voltage	380 V (Three-Phase, 50 Hz)
Preset Operating Cycle	5 min (Automated Digital Shutoff)
Tumbler Index Range	0 – 70
Frame Orientation	Vertical Laboratory Bench Configuration

Ancillary Apparatus	Recommended Specification	Purpose in Testing Workflow
Standard Sieve	Φ200 mm Frame, 1.0 mm (or 0.5 mm) Aperture	Pre-test sample separation and post-tumbling retained fraction measurement

Ancillary Apparatus	Recommended Specification	Purpose in Testing Workflow
Mechanical Sieve Shaker	280-320 r/min Rotation, 140-160 taps/min Tapping Rate	Automated, standardized screening to isolate intact particles from abraded fines
Analytical Balance	0.1 g Readability	High-accuracy gravimetric determination of initial and retained mass fractions
Constant Temperature Drying Oven	HW202-1 Forced Convection Model	Complete moisture removal from carbon test samples prior to physical tumbling

Activated Carbon Abrasion Resistance Tester Granular Carbon Mechanical Attrition Strength Testing Apparatus

Item Number: KT-JTT



Introduction

Evaluate granular activated carbon structural integrity with this precision abrasion resistance tester. Manufactured to GB/T 30202.3-2013 standards, it features digital LED controls, steady drum speed, and durable construction for industrial coal-based carbon quality testing.

[Learn More](#)

Application	Description	Key Benefit
Desulfurization & Denitrification Carbon QC	Testing coal-based granular carbon designed for thermal power plant flue gas treatment.	Ensures carbon media withstand high-velocity gas flows without breaking down into fine dust.
Gas Purification & Solvent Recovery	Evaluating activated carbon pellets used in packed beds for VOC capture and air purification.	Prevents bed settling and airflow channeling caused by mechanical particle degradation.
Municipal & Industrial Water Treatment	Assessing attrition resistance of granular carbon installed in deep-bed liquid filtration columns.	Minimizes backwash loss and structural erosion during fluidization and backwashing cycles.
Carbon Manufacturing & Production QA	Conducting continuous batch testing during activated carbon thermal activation and extrusion processes.	Provides rapid feedback for optimizing binder formulations, kiln temperatures, and carbon hardness.
Material Receipt Inspection	Performing incoming quality checks for industrial procurement teams purchasing bulk carbon shipments.	Verifies vendor specifications compliance before loading material into expensive industrial reactors.
R&D Carbon Formulation Studies	Quantifying the mechanical strength improvements of novel binder additives or novel feedstocks.	Yields precise, repeatable wear rate data for benchmarking experimental activated carbon samples.

Specification Parameter	Value / Detail
Product Identifier	KT-JTT
Governing Test Standard	GB/T 30202.3-2013 (Coal-based granular activated carbon for desulfurization and denitrification)
Drum Rotation Speed	50 ± 2 r/min
Display Interface	LED Digital Display
Default Time Setting	20 min
Adjustable Time Range	0.1 min to 540 min
Input Power Supply	220 V AC, 50 Hz
Motor Input Power	80 W
Testing Drum Inner Diameter	200 mm
Testing Drum Length	70 mm
Internal Baffle Height	30 mm

Intelligent Pellet Compressive Strength Tester Automated Iron Ore Pellet Crushing Strength Testing Machine

Item Number: KT-JTJ



Introduction

Designed for rigorous metallurgical quality control, this intelligent pellet compressive strength tester delivers high precision crushing load evaluation in full compliance with ISO 4700 and GB/T 14201 standards for blast furnace pellets, direct reduction feedstocks, and industrial catalyst spheres.

[Learn More](#)

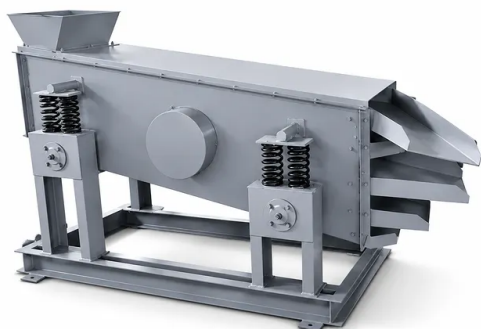
Application	Description	Key Benefit
Iron Ore Pellet Quality Control	Rapid verification of crushing strength for commercial iron ore pellets prior to blast furnace charging.	Prevents in-furnace degradation, minimizes fines generation, and maintains optimal bed permeability.
Direct Reduction (DRI) Feed Evaluation	Compressive mechanical assessment of oxidized and pre-reduced pellets used in shaft and rotary furnaces.	Ensures pellet integrity under static reduction loads, reducing dust losses and gas channel blockage.
Industrial Catalyst & Sorbent Testing	Mechanical crushing evaluation of spherical or cylindrical extruded chemical catalyst carriers.	Validates resistance against operational attrition and thermal-mechanical pressure in fixed-bed reactors.
Pelletizing Binder Optimization	Comparative mechanical testing of green and fired pellets formulated with varied organic or bentonite binders.	Accelerates binder formulation screening and lowers production costs without compromising structural toughness.
Coking & Coal Agglomerate Inspection	Load-bearing capacity characterization of composite briquettes, formed coke, and carbonaceous compacts.	Assures handling resilience during bulk storage, pneumatic conveying, and high-temperature metallurgical descent.
Academic & Metallurgical Research	High-accuracy compression testing for mineral processing departments and materials certification centers.	Generates publication-grade mechanical deformation data adhering strictly to recognized global standards.

Parameter	Specification
Product Item Number	KT-JTJ
Frame Architecture	Single-arm / Single-column electromechanical structure
Maximum Test Force	5 kN (5000 N)
Force Range Staging	0 N to 5000 N continuous
Effective Measurement Range	2% to >99% of full rated force (100 N to 5000 N)
Metrological Accuracy Class	Grade 1 (Class 1)
Force Indication Accuracy	±1% of indicated value
Test Force Resolution	0.01 N
Displacement Resolution	0.01 mm
Deformation Accuracy	±1%
Speed Control Range	1 mm/min to 300 mm/min (stepless regulation)
Maximum Test Stroke	200 mm
Vertical Compression Space	200 mm

Parameter	Specification
Operator Interface	LCD screen with menu-driven navigation
Display Content	Test force, displacement, deformation, running speed, operating status
Overload Protection	Automatic electronic motor cutoff upon load threshold breach
Limit Protection	Upper and lower adjustable mechanical/electrical limit switches
Applicable Standards	GB/T 14201-1993, ISO 4700-2007
Electrical Requirements	220V AC $\pm 10\%$, 50 Hz

Pre Drum Multi Deck Mechanical Vibrating Screen For Sinter And Pellets Sieve Grading

Item Number: KT-JTN



Introduction

Engineered to satisfy GB T24531 standards, our automated multi deck mechanical vibrating screen optimizes sinter and pellet gradation before drum tumbling tests, reducing manual labor while boosting laboratory throughput with precise programmable timing and durable multi deck separation.

[Learn More](#)

Application	Description	Key Benefit
Iron Ore Sinter Pre-Drum Analysis	Grading blast furnace sinter batches to isolate precise particle fractions before standard tumbler and abrasion resistance testing.	Eliminates manual screening bias and guarantees compliance with national and international metallurgical standards.
Oxidized Pellet Quality Verification	Sizing fired and fluxed iron ore pellets prior to compressive strength and drum index mechanical integrity screening.	Delivers clean fraction cuts without chipping or degrading brittle agglomerates during mechanical excitation.
Blast Furnace Feedstock Optimization	Routine quality auditing of ironmaking burden constituents directly sampled from blast furnace bunker conveyor feeds.	Provides immediate, accurate grain size distribution curves to help operators fine-tune furnace permeability.
Mineral Agglomeration R&D	Laboratory-scale screening of newly formulated binders, green pellets, and cold-bonded briquettes across research facilities.	Delivers consistent, programmable vibration cycles to support comparative degradation and strength research.
Sinter Plant Process Control	In-line QA/QC testing along continuous sintering strands to determine burn-through uniformity and product breakage properties.	Lowers labor intensity while delivering fast feedback on sintering grate and ignition hood operational efficiency.
Third-Party Inspection & Assaying	Independent testing of metallurgical bulk shipments at port terminals and transshipment yards prior to commercial verification.	Guarantees legally reproducible screening results utilizing certified standard-compliant aperture dimensions.

Specification Parameter	Value / Detail
Equipment Model Code	KT-JTN
Manufacturing Standard	GB/T 24531-2009
Screen Deck Configurations	2 Decks / 4 Decks
Screen Mesh Aperture Dimensions	40 × 40 mm, 25 × 25 mm, 16 × 16 mm, 10 × 10 mm
Screen Surface Dimensions (L × W)	1600 × 500 mm
Deck Inclination Angle	10° - 11.5°
Vibrational Amplitude	6 - 8 mm
Excitation Frequency	960 cycles/min
Drive Motor Rated Power	2.2 kW
Electrical Power Supply	380 V (Three-Phase)
Operational Timing Control	Integrated automatic digital timer with user-defined settings
Structural Components	Base chassis, support brackets, vibrating screen box, screen decks, spring brackets, damping springs, feed chute, drive mechanism, electric motor



Kintek Solution

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