

Coke Reactivity And Post Reaction Strength Tester Type I Tumbler Drum

Item Number: KT-TE40



Introduction

Engineered for GB/T 4000 compliance, this high precision Type I coke reactivity and post reaction strength tumbler drum features wear resistant Q345 alloy steel construction, direct drive transmission, automated 600 revolution cycle control, and modular architecture for metallurgical laboratory analysis.

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Application	Description	Key Benefit
Blast Furnace Coke Quality Control	Routine tumbling of reacted coke charges post-CO2 exposure to establish the CSR index for commercial ironmaking.	Prevents blast furnace permeability loss and raceway blockages by rejecting substandard coke batches.
Coal Blending and Coking Optimization	Comparative evaluation of coke batches produced from experimental coking blends and varying carbonization parameters.	Lowers raw material procurement costs by identifying optimal, cost-effective coal blending ratios.
Commercial Commodity Inspection	Independent verification of metallurgical coke compliance against contractual and national purchasing criteria.	Provides legally defensible, standard-compliant test data for international bulk trade arbitration.
Bio-Coke and Composite Fuel Evaluation	Mechanical testing of experimental bio-carbon composites and alternative carbonaceous reducing agents after thermal reaction.	Quantifies the mechanical viability of low-emission green coke alternatives before pilot plant deployment.
Refractory and Furnace Shaft Modeling	Simulation of coke particle size degradation and fine generation under mechanical attrition inside the blast furnace stack.	Supplies precise empirical input data for computational fluid dynamics and shaft pressure-drop models.
Academic Metallurgical Research	Fundamental investigation into high-temperature gasification kinetics and subsequent mechanical fracture mechanisms.	Delivers highly repeatable experimental baseline conditions for coal chemistry and pyrometallurgy studies.

Specification Parameter	Technical Data and Configuration
Equipment Model Number	KT-TE40
Governing Test Standard	GB/T 4000-2008 (Coke Reactivity and Post-Reaction Strength Test Method)
Drum Outer Diameter	Φ140 mm
Drum Cylinder Wall Thickness	5 mm (Integral structural wall)
Internal Usable Length	700 mm
Cylinder Construction Material	Q345 (16Mn high-strength, wear-resistant alloy steel)
Exterior Surface Finish	Full mirror hard chrome electroplating
Drivetrain Configuration	Direct-drive geared motor coupling
Drum Operating Rotational Speed	20 ± 0.5 r/min
Cycle Revolution Setting	600 revolutions (Automatic cutoff)
Standard Cycle Duration	30 ± 1 min
Drum Closure Mechanism	Ergonomic quick-thread screw-tightened lid assembly
Drum Positioning Freedom	360° fully adjustable in horizontal orientation

Specification Parameter	Technical Data and Configuration
Construction Architecture	Modular three-part system (Drum body, digital controller, support base)
Installation Modes	Integrated tabletop mounting or decoupled remote installation
Operating Power Supply Options	AC 380V $\pm$ 10%, 50Hz (3-Phase 4-Wire or 5-Wire) / AC 110V $\pm$ 10%, 60Hz (3-Phase 4-Wire or 5-Wire)
Maximum Rated Power Output	0.22 kW
Controller Standby Power	< 2 W (Maximum)
Terminal Electrical Connection	Universal interface compatible with round multicore cables or solid wiring
Physical Dimensions (W $\times$ D $\times$ H)	500 mm $\times$ 220 mm $\times$ 1380 mm
Total Equipment Weight	Approximately 42 kg