

Microcomputer Caking Index Tester Automatic Roga Index Determination Apparatus For Coking Coal Analysis

Item Number: KT-TE60



Introduction

Designed for rigorous coking coal evaluation this microcomputer caking index tester measures coal bonding capacity with exceptional precision while utilizing contactless Hall sensing maintenance free gear reduction and dynamic LED tracking for dependable metallurgical laboratory quality control workflows.

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Application	Description	Key Benefit
Metallurgical Coking Coal Evaluation	Routine laboratory testing of metallurgical coking coals to assess plastic layer development and agglutinating strength during thermal carbonization. Samples are blended with standard anthracite, carbonized, and rotated in the drum to determine the Roga index and caking index (G-value).	Provides accurate classification of coal caking properties, ensuring that only compliant coking coals are charged into industrial coke ovens to yield strong, porous metallurgical coke.
Blast Furnace Coke Blending Optimization	Applied in integrated steel mills and commercial coking facilities to evaluate multi-coal blend behavior. Testing identifies the optimal balance between high-caking prime coking coals and cost-effective weakly caking or non-caking additive coals.	Substantially reduces raw material procurement costs by enabling maximum substitution of cheaper coals while maintaining the required drum strength and CSR of the final coke.
Coal Preparation and Washing Plant QC	Monitoring cleaned coal products and flotation concentrates across coal preparation plants. Evaluates the impact of ash reduction, de-sliming, and moisture adjustments on the intrinsic agglutinating strength of clean coal outputs.	Delivers rapid, repeatable feedback on washing process efficiency, preventing off-spec shipments and validating clean coal contract specifications prior to transport.
Commercial Commodity Inspection and Trade	Utilized by independent inspection agencies, customs testing facilities, and import-export terminals to certify coking coal consignments against contractual caking index benchmarks.	Eliminates commercial arbitration risks by supplying unambiguous, standard-compliant test data with minimal rotational margin of error (± 0.3 r/min).
Carbon Materials and Electrode Research	Deployed in university and industrial laboratories investigating novel coal liquefaction, carbonization kinetics, tar production, and synthetic carbon material precursors.	Supports scientific exploration of coal macromolecular structure transformations with highly repeatable mechanical agitation under strictly controlled revolutions.
Electrode and Synthetic Graphite Production	Evaluates coal-derived pitch, binder cokes, and carbonaceous raw materials used in the fabrication of carbon electrodes, anodes for aluminum smelting, and cathode blocks.	Ensures uniform bonding performance and thermal shock resistance in downstream baked carbon products through accurate tracking of binder coking behavior.

Specification Parameter	Technical Detail
Product Item Number	KT-TE60
Drum Rotational Speed	(50 ± 0.3) r/min
Automatic Control Range	(1 – 999) r, arbitrarily preset
Display Technology	LED digital display
Dynamic Display Metrics	Real-time rotational speed, cumulative revolution count, elapsed time
Reset Mechanism	Manual pushbutton reset or power-on automatic reset
Speed Sensing Switch	Intelligent microprocessor Hall-effect rotational speed sensor
Control Switching Architecture	Solid-state contactless electronic switch

Specification Parameter	Technical Detail
Transmission Reducer	Heavy-duty, sealed maintenance-free gear reducer
Motor Power Rating	120 W
Power Supply Requirements	220V $\pm$ 10%, 50Hz $\pm$ 1Hz
Overall Dimensions (L $\times$ W $\times$ H)	550 mm $\times$ 370 mm $\times$ 340 mm
Total Equipment Mass	Approximately 30 kg
Applicable Analytical Testing	Coal Caking Index (G-value) and Roga Index (RI) determination
Applicable Industries	Coal mining, metallurgical processing, coking plants, scientific research