

Automatic Microcomputer Plastometer Bituminous Coal
Plastometric Indices Determination System

Item Number: KT-TE23



Introduction

Engineered for industrial coal testing, this automatic system accurately determines plastic layer thickness and contraction values. It features dual furnace control, automated temperature curves, quartz drum recording, and complete test reporting for quality verification.

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Application	Description	Key Benefit
Metallurgical Coking Coal Classification	Quantitative determination of plastic layer thickness (Y) and contraction (X) to classify coking coal ranks according to national and international standards.	Guarantees accurate feedstock classification, preventing improper grade usage in industrial coke ovens.
Blast Furnace Coke Blending Optimization	Evaluation of thermoplastic behavior across single coals and coal blends to balance plastic zone overlap and optimize blend formulations.	Lowers overall coal procurement costs while preserving the structural integrity and cold/hot strength of produced coke.
Coal Washing and Preparation Quality Control	Routine monitoring of washed and raw bituminous coal fractions to verify the consistency of thermal softening and contraction parameters.	Identifies process variations early, ensuring shipped coal consignments meet commercial contract specifications.
Carbonization and Coking Mechanism Research	Academic and industrial investigation into coal thermal decomposition kinetics, gas evolution dynamics, and semi-coke transition phases.	Delivers high-resolution volumetric shrinkage profiles and temperature curves for advanced fuel science research.
Commercial Coal Inspection and Trade Audits	Independent laboratory certification of coking properties for bulk export, import, and domestic distribution contracts.	Provides indisputable, automated documentation with color-printed graphical records and auditable test logs.
Blast Furnace Operation Risk Mitigation	Screening coking coals for excessive expansion pressure and irregular contraction curves that can damage refractory oven walls.	Extends coke oven refractory service life by preemptively eliminating hazardous high-swelling coal blends.

Parameter Specification	Value / Technical Rating
Product Identification Code	KT-TE23
Temperature Measurement Range	0 °C to 999 °C
Temperature Resolution	1 °C
Temperature Measurement Error	±2 °C
Sensor Configuration	K-type Thermocouple Assembly
Maximum Control Current	12 A
Operating Mode	Continuous Industrial Operation
Controller Accuracy Class	Class 0.5
Recording Drum Mechanism	Quartz Recording Drum Assembly
Drum Linear Velocity	1 mm/min
Drum Linear Displacement Precision	160 ± 2 mm over 160 min
Heating Program Parameters	0 °C to 250 °C within 30 min; 3 °C/min linear ramp above 250 °C
Heating Control Power	4 kW × 2 (Dual Furnace Capability)

Parameter Specification	Value / Technical Rating
Power Supply Requirements	AC 220 V $\pm$ 5%, 50 Hz
Supported Operating Systems	Windows 98 and later releases
Measurable Analytical Indices	Maximum Plastic Layer Thickness (Y), Contraction Value (X), Volumetric Curve Type, Coke Technical Properties
Temperature Logging Interval	Automatic recording of front and rear furnace temperatures every 10 min
Graphical Output	Color printout of test records, volumetric contraction curves, and temperature curves