

Audibert Arnu Dilatometer Expansion Tube And Expansion Rod Assembly For Bituminous Coal Testing

Item Number: KT-PZG



Introduction

Engineered for high precision coal plasticity characterization this heat resistant stainless steel Audibert Arnu dilatometer retort tube and expansion rod assembly delivers superior thermal stability leak tight threaded sealing and minimal internal friction up to six hundred degrees Celsius

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Application	Description	Key Benefit
Metallurgical Coke Oven Feed Optimization	Used to analyze the maximum contraction and dilation percentages of metallurgical coal blends prior to carbonization charging.	Prevents excessive wall pressure in coke batteries and ensures consistent mechanical strength of produced blast furnace coke.
Commercial Coal Classification & Grading	Evaluates raw and washed bituminous coals against standardized coal-ranking metrics such as the Audibert-Arnu dilation index.	Delivers certified coal quality parameters required for export documentation, international trade contracts, and pricing verification.
Carbonization and Coal Science Research	Investigates thermoplastic behavior, fluid phase transitions, and thermal decomposition of synthetic or modified coal pellets.	Supplies reproducible linear displacement data to determine precise softening points and active plastic range temperatures.
Blast Furnace PCI and Sinter Fuel Assessment	Quantifies the swelling propensity of coals utilized in pulverized coal injection (PCI) or auxiliary heating systems.	Identifies potential blockage risks and gas channel disruption within fuel injection pathways and burner assemblies.
Coking Additive and Binder Evaluation	Measures changes in coal plasticity and swelling characteristics when blending pitch binders, petcoke, or polymer modifiers.	Allows accurate benchmarking of additive efficiency in upgrading lower-tier non-coking or semi-coking coals to metallurgical grade.
Laboratory Quality Assurance and Round-Robin Audits	Acts as the reference containment cell during inter-laboratory correlation programs and equipment calibration routines.	Eliminates tooling-derived measurement bias, confirming that dilatometer displacement readouts conform precisely to standard benchmarks.

Specification Parameter	Standard Retort Tube Configuration	Standard Expansion Rod Configuration
Product Identifier	KT-PZG Retort Tube	KT-PZG Expansion Rod
Primary Function	Coal sample containment & thermal reaction vessel	Linear displacement transmission to transducer
Nominal Internal Diameter	15.0 mm (precision honed)	N/A (matched clearance for 15.0 mm ID bore)
Overall Length	Approximately 350 mm	Matched standard length for dilatometer crosshead
Maximum Working Temperature	600°C continuous	600°C continuous
Construction Material	High-temperature oxidation-resistant stainless steel	High-temperature oxidation-resistant stainless steel
Internal Surface Finish	Super-finish / mirror polished (<0.4 µm Ra)	Ground and polished outer guide surfaces
Sealing Mechanism	Detachable threaded bottom plug with gas-tight seat	Flat bottom contact face for coal pencil interface
Gas Leakage Prevention	Threaded mechanical barrier preventing fluid/gas egress	N/A
Standard Compliance	Audibert-Arnu dilatometer standard methods	Audibert-Arnu dilatometer standard methods
Heating Atmosphere	Inert gas purged / ambient volatile atmosphere	Inert gas purged / ambient volatile atmosphere
Cleaning Compatibility	Mechanical scraper, ultrasonic bath, organic solvents	Ultrasonic bath, non-abrasive mechanical wipe