# Coal Caking Index Crucible Rack High Temperature Laboratory Holder

## Item Number: KT-GGJ

## Introduction

Engineered for accurate coal caking index determination, this heat resistant crucible rack provides exceptional structural rigidity, uniform thermal exposure, and extended operational longevity, ensuring reliable analytical repeatability and seamless sample handling in demanding metallurgical, power, and quality inspection laboratories.

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| Application | Description | Key Benefit |
|---|---|---|
| Metallurgical Coking Coal Evaluation | Routine assessment of caking properties (G index) in coking coal blends and metallurgical coal shipments entering steelmaking operations to determine coking capacity and structural coke strength. | Ensures strict compliance with blast furnace feedstock specifications while minimizing testing variability and blend formulation errors. |
| Coal Preparation & Washing Plant Monitoring | Quality screening of clean coal fractions, middlings, and blended clean products directly at coal washing and processing facilities to calibrate flotation and gravity separation efficiencies. | Enables rapid, high-throughput verification of product grade consistency and prompt operational adjustment of washing circuits. |
| Thermal Power Generation Quality Assurance | Evaluation of coal combustion characteristics, volatile release behavior, and agglomeration tendencies in boiler fuel supplies across utility-scale power generating stations. | Prevents unintended slagging, irregular boiler tube deposition, and unburned carbon losses through precise pre-combustion fuel characterization. |
| Commercial Third-Party Mineral Testing | High-volume contract testing of export and import coal consignments adhering to domestic and international standard determination methods for independent quality certification. | Maximizes daily crucible throughput with rapid furnace cycling while guaranteeing defensible, reproducible test data for commercial trade arbitration. |
| Coke Oven By-Product & Carbon R&D | Academic and industrial research characterizing thermoplastic phase transitions, swelling parameters, and binder pitch interactions of unconventional coal types and carbonaceous composites. | Provides uniform, repeatable thermal conditions across all crucible stations to isolate experimental variables during advanced thermal kinetics studies. |
| Geological Survey & Mine Core Sampling | Benchmarking raw coal seam samples obtained from exploratory drilling and field assays to classify deposit suitability for future metallurgical or energy extraction projects. | Delivers reliable classification data from limited core samples, reducing analytical uncertainty during resource valuation and mine feasibility studies. |

| Technical Parameter | Specification Variant KT-GGJ-4 | Specification Variant KT-GGJ-6 | Specification Variant KT-GGJ-8 |
|---|---|---|---|
| Product Item Number | KT-GGJ-4 | KT-GGJ-6 | KT-GGJ-8 |
| Crucible Station Capacity | 4-Position | 6-Position | 8-Position |
| Well Layout Configuration | 2 × 2 Matrix | 2 × 3 Matrix | 2 × 4 Matrix |
| Crucible Well Internal Diameter | 40 mm (Standard Coal Crucible) | 40 mm (Standard Coal Crucible) | 40 mm (Standard Coal Crucible) |
| Well Retention Collar Height | 35 mm | 35 mm | 35 mm |
| Structural Material | High-Grade Heat-Resistant Ni-Cr Alloy | High-Grade Heat-Resistant Ni-Cr Alloy | High-Grade Heat-Resistant Ni-Cr Alloy |
| Continuous Operating Temperature | Up to 900°C | Up to 900°C | Up to 900°C |
| Maximum Excursion Temperature | 1000°C | 1000°C | 1000°C |
| Standard Test Temperature Setting | 850°C ± 10°C | 850°C ± 10°C | 850°C ± 10°C |

| Technical Parameter | Specification Variant KT-GGJ-4 | Specification Variant KT-GGJ-6 | Specification Variant KT-GGJ-8 |
|---|---|---|---|
| Overall Dimensions (L × W × H) | 110 mm × 110 mm × 180 mm | 160 mm × 110 mm × 180 mm | 210 mm × 110 mm × 180 mm |
| Handling Interface | Central Loop / Dual Fork Channels | Central Loop / Dual Fork Channels | Central Loop / Dual Fork Channels |
| Thermal Shock Resistance | Direct ambient air quench from 850°C | Direct ambient air quench from 850°C | Direct ambient air quench from 850°C |
| Applicable Test Standards | GB/T 5447, ISO Caking Index Norms | GB/T 5447, ISO Caking Index Norms | GB/T 5447, ISO Caking Index Norms |
| Atmosphere Suitability | Air, Inert Gas (N2, Ar), Coal Volatiles | Air, Inert Gas (N2, Ar), Coal Volatiles | Air, Inert Gas (N2, Ar), Coal Volatiles |
| Base Frame Architecture | Anti-Deformation Perimeter Bracing | Anti-Deformation Perimeter Bracing | Anti-Deformation Perimeter Bracing |
| Surface Finish | Oxidation-Passivated Bright Polish | Oxidation-Passivated Bright Polish | Oxidation-Passivated Bright Polish |