1. HT-H2000-2 Fully Automatic Coke Reactivity and Post-Reaction Strength Tester

The HT-H2000-2 is a fully automatic instrument for measuring coke reactivity and post-reaction strength, featuring a three-zone dual-control reactivity testing system.

Features:

1. Utilizes imported high-temperature heating elements with an integrated electromechanical design. The reactor loading/unloading mechanism employs bottom-mounted mechanical transmission for easy installation and operation.

2. The control system is based on Siemens PLC technology, with gas flow regulated by mass flow controllers (MFCs) for precise and real-time flow measurement and display. Features self-learning temperature control algorithms, programmable settings, and multiple control modes including open-loop stepwise and closed-loop fully automatic.

3. Temperature transmitters use two-wire solid-state modules with automatic temperature compensation and linearization.

4. Capable of simulating the entire testing process to verify system performance.

5. Automatically activates the ventilation system during testing to expel indoor CO gas, ensuring operator safety and air circulation.

6. Connects to a touchscreen computer for real-time display of temperature and gas flow curves. Includes a CO2 flow deficiency alarm.

7. Equipped with over-temperature alarm and automatic shutdown to prevent damage from thyristor failure, thermocouple damage, or signal interference.

8. Includes over-pressure protection.

9. Thermocouples are protected by GH3030 high-temperature alloy steel sleeves.

Technical Parameters:

A. Standard Control Process:

Heating from room temperature to 1100°C at a rate of 15°C/min (adjustable).

Introduces 0.8L/min N2 for protection at 400°C.

Preheats CO2 at 1050°C.

Stabilizes at 1100±5°C for 10min, then switches to 5L CO2 for a 2h reaction.

Furnace stops heating; reactor descends and exits the furnace. CO2 is cut off, and 2L N2 is introduced for protection.

An alarm sounds when the coke cools to 100°C, marking the end of the test.

The entire process is automatically controlled by a Siemens PLC.

B. Temperature Control:

Three-point thermocouples: Type S or N,Class 0.5;control accuracy: 1100°C±3°C.

Protection tube: Alumina.

Heating program: Room temperature to 1100°C at 15°C/min; holds at 1100°C for 2h.

C. Flow Control:

Automated mass flow controller (MFC); includes 2 drying tubes.

N2: 0-10L adjustable; CO2: 0-10L adjustable.

Accuracy: ±1.5% F.S.

D. Reactor:

Material: GH3044; maximum operating temperature: ≤1400°C.

Reactor dimensions: Inner diameter Φ80mm.

E. Type I Drum:

Dimensions: Φ140mm×700mm; wall thickness: 5mm.

Rotation: 20±0.5 rpm, automatically controlled for 600 rotations with automatic counting.

F. Test Sieves:

Square-hole sieves (optional, ISO standard): 19mm, 22.4mm, 10mm.

Round-hole sieves: 23mm, 25mm, 10mm.

G. Furnace:

Integrated furnace chamber; rated power: 7.5KW.

Power supply: Three-phase five-wire system with balanced load.

Three independently controlled heating zones with a 300mm uniform temperature zone. Displays upper, middle, and lower temperature control curves on the touchscreen.

Maximum operating temperature: ≤1250°C.

Dimensions: 1000mm×850mm×1800mm.

Total weight: <500kg.

2. HT-H2000 Fully Automatic Coke Reactivity and Post-Reaction Strength Tester

The HT-H2000 coke reactivity and post reaction strength tester is an instrument used to measure the reactivity indicators of coke. It is a fully automatic coke reactivity and post reaction strength tester.

Features:

Utilizes imported high-temperature furnace wires with an integrated electromechanical design. The reactor loading/unloading mechanism is driven by bottom-mounted mechanical transmission, ensuring simple and convenient installation and operation.

The control system adopts Siemens PLC design, with gas flow measured and controlled by mass flow controllers (MFCs), ensuring accurate and reliable flow rates with real-time display. Features self-learning temperature control algorithms, programmable settings, and control modes including open-loop stepwise and closed-loop fully automatic.

Temperature transmitters employ solid-state two-wire modules with automatic temperature compensation and linearization.

Capable of simulating the entire testing process to verify system operational status.

Automatically activates the ventilation system during testing to expel indoor CO gas, preventing operator poisoning and ensuring air circulation.

Connects to a touchscreen computer for real-time display of temperature and gas flow curves. Includes a CO_2 flow deficiency alarm function.

Equipped with over-temperature alarm and automatic power cutoff to prevent damage from thyristor failure, thermocouple damage, or signal interference.

Includes over-pressure protection.

Thermocouples are protected by GH3030 high-temperature alloy steel sleeves.

Technical Parameters:

A. Standard Control Process:

Room temperature to 1100°C, heating rate: 15°C/min (adjustable).

At 400°C, introduces 0.8L/min N_2 for protection.

At 1050°C, preheats CO_2.

At 1100±5°C, stabilizes for 10min, switches off N_2, and introduces 5L CO_2 for a 2h reaction.

Furnace stops heating; reactor descends and exits the furnace. CO_2 is cut off, and 2L N_2 is introduced for protection.

An alarm sounds when the coke cools to 100°C, marking the end of the test.

The entire process is automatically controlled by a Siemens PLC.

B. Temperature Control:

Three-point thermocouples: Type S or N, Class 0.5; control accuracy: 1100°C±3°C.

Protection tube: Alumina.

Heating program: Room temperature to 1100°C at 15°C/min; holds at 1100°C for 2h.

C. Flow Control:

Automated mass flow controller (MFC); includes 2 drying tubes.

N2: 0-10L adjustable; CO2: 0-10L adjustable.

Accuracy: ±1.5% F.S.

D. Reactor:

Material: GH3044; maximum operating temperature: ≤1400°C.

Reactor dimensions: Inner diameter Φ80mm.

E. Type I Drum:

Dimensions: Φ140mm×700mm; wall thickness: 5mm.

Rotation: 20±0.5 rpm, automatically controlled for 600 rotations with automatic counting.

F. Test Sieves:

Square-hole sieves (optional, ISO standard): 19mm, 22.4mm, 10mm.

Round-hole sieves: 23mm, 25mm, 10mm.

G. Furnace:

Integrated furnace chamber; rated power: 7.5KW.

Power supply: Three-phase five-wire system with balanced load.

Three independently controlled heating zones with a 300mm uniform temperature zone. Displays upper, middle, and lower temperature control curves on the touchscreen.

Maximum operating temperature: ≤1250°C.

Dimensions: 1000mm×850mm×1800mm.

Total weight: <500kg.

3.HT-2000 Coke Reactivity and Post-Reaction Strength Tester

The HT-2000 Coke Reactivity and Post-Reaction Strength Tester is an instrument used to measure the reactivity index of coke. This equipment employs PLC control and an industrial touchscreen for display. The high-temperature furnace's temperature is regulated using closed-loop fuzzy logic PID control, while the PLC system comprehensively monitors and processes the central temperature of the furnace chamber. The touchscreen allows for operation and modification of PLC parameters, with dynamic display of variable curves.

Technical Parameters:

I. Working Environment and Installation Conditions:

The electrical control system adopts TN-S wiring.

The electrical equipment casing must be reliably grounded.

The electrical equipment must be installed in an environment free from vibration, dust, and particulate matter.

Operating voltage: AC220V±10%, 50Hz±5%, three-phase five-wire system.

Altitude ≤ 2000m.

Operating environment: 5℃ ≤ ambient temperature ≤ 40℃, humidity ≤ 85%, no strong magnetic fields, and no severe vibrations.

II. Technical Performance and Parameters:

Dynamic display of the operational status of all system components.

Industrial touchscreen display.

Dynamic display of the sidewall temperature values of the high-temperature heating furnace.

Dynamic display of the central temperature curve of the high-temperature heating furnace.

Dynamic display of the gas flow curve in the gas path.

Dynamic display of the temperature setpoint of the high-temperature heating furnace.

Dynamic display of the power output value of the high-temperature heating furnace.

Dynamic display of the voltage output value of the high-temperature heating furnace.

Dynamic display of the current control value of the high-temperature heating furnace.

Dynamic display of the heating rate of the high-temperature heating furnace.

Protection functions for excessive or insufficient heating rates.

Over-temperature protection function.

Gas flow interruption fault protection function.

Thermocouple fault protection function.

High-temperature furnace: 7KW

Temperature control accuracy: 1100℃±5℃

Temperature control range: 0～1150℃, resolution 1℃.

Temperature sensor: Type N thermocouple

Maximum operating temperature: ≤1150℃

Heating element: Silicon carbide rod

Gas flow accuracy: ±1.5% F.S.

Gas flow linearity: ±(0.5～1.5)% F.S.

Gas flow repeatability: ±0.2% F.S.

Gas flow response time: 1～4 seconds.

Operating voltage: AC220V±10%, 50Hz±5%, three-phase five-wire system.

Operating environment: 5℃ ≤ ambient temperature ≤ 40℃, humidity ≤ 85%, no strong magnetic fields, and no severe vibrations.

4.JTZQ-8 Fully automatic coke ball making machine

JTZQ-8 Fully automatic Coke Pelletizing Machine (Integrated machine for crushing, pelletizing and screening)

The reactivity and post-reaction strength of coke are important indicators guiding blast furnace production. With the trend of large-scale blast furnaces, this indicator can better reflect the thermal performance of coke and its framework role in the blast furnace, and can guide the production of coke and the use of coke in the blast furnace. The test requires that the surface of the sample be basically consistent to ensure good sample repeatability. Due to the strict requirements for the particle size and shape of the samples in the test and the need for a large number of sample portions, manual sample preparation is labor-intensive and involves many human factors, which cannot meet the test requirements.

The JTZQ-8 fully automatic coke crushing, pelletizing and screening integrated machine can quickly complete sample preparation and integrate sample preparation, grinding and screening. It can directly turn irregular large coke blocks into spherical coke suitable for coke reactivity and post-reaction strength tests. The equipment adopts PLC control technology and LCD display mode, combined with fully Chinese operation buttons, which can easily complete sample preparation work. It is also

designed with an external dust removal port to remove coke powder during the test process. This equipment features high yield rate, convenient operation, time and labor-saving, environmental protection and safety, as well as fast sample preparation speed.

Technical indicators：

1. Integrated equipment

The equipment integrates crushing, chamfering, chamfering and screening, reducing the volume of the equipment and the number of operation procedures.

2. Fully sealed design

Negative pressure vacuum system reduces dust and improves the working environment.

3. One-click operation

After adding materials, it can be started with one click, eliminating the need for manual operation and reducing the labor intensity of workers.

4. Hammer knife design

It adopts a hammer-knife design, simulating a high ball output rate by human hands and eliminating the phenomenon of blocked holes caused by coke grinding!

Technical parameters：

Feed particle size：＜100mm

Output particle size：23-25mm

Voltage：Three-phase four-wire 380V

Power：6kW

Ball-making time：25 minutes (Continuous feeding is possible. The sample time can be set according to the quality of the coke required by the user.)

5.JL-70 Experimental Coke Oven Tester

The JL-70 Experimental Coke Oven Tester is used for experimental research on conventional and stamped coking. It provides test data to guide and improve production, enabling the rational utilization of coal resources and the enhancement of coke product quality. Based on the cold and hot strength indicators of the produced coke, it helps explore suitable coal blending conditions, assess the economic feasibility for production, and provide data for the rational utilization of coal resources.

Technical Parameters:

1. Experimental Coke Oven

1.1 Coal charging capacity: >70 kg (wet basis, charging density 0.72 t/m³–1.03 t/m³)

1.2 Effective dimensions of the carbonization chamber (L×W×H): 660×420×650 mm

1.3 Coal charging box dimensions (L×W×H×thickness): 620×370×590×5 mm

1.4 Coal cake dimensions (L×W×H): 580×370×(400–500) mm (20 mm asbestos insulation is added on both longitudinal sides and the top of the coal cake in the charging box)

1.5 Heating system: 6 silicon carbide heating rods on each side of the combustion chamber

1.6 Coking time: 16–24 h (normally controlled at 22 h during testing)

1.7 Flue temperature: 1050°C ± 10°C (maximum rated temperature: 1350°C)

1.8 Center temperature of coke cake: ≥950°C

2. Central Control System

The system adopts PLC control technology, with computer-regulated heating temperature. The heating elements are controlled by the computer to achieve precise temperature control. It features high accuracy, reliable operation, and user-friendly functionality, with test data storage, display, and printing capabilities.

2.1 Power supply: 380 V, 50 Hz

2.2 Rated power: ≤70 kW

2.3 Temperature control program: Customizable heating curves and soaking times.

2.4 Accuracy: Class 0.5

3. Quenching System

Wet quenching is standard, with an optional dry quenching system.

4. 1/4 Coke Mechanical Strength Testing Drum (semi-automatic door for easy operation)

4.1 Drum internal diameter: Φ1000±5 mm; drum length: 250±5 mm; drum wall thickness: 8 mm

4.2 Rotation speed: 25±1 rpm (100 rotations in 4 min ±10 s)

4.3 Motor: 1.5 kW

4.4 Operating voltage: 380 V ±10%

5. Coke Shatter Strength Testing Device

5.1 Test box: 710×455×380 mm, steel plate thickness: 3 mm

5.2 Drop height: 1830 mm

5.3 Drop platform: 1220×965×200 mm, steel plate thickness: 12 mm

5.4 Motor: 1.5 kW

5.5 Operating voltage: 380 V ±10%

6. Coke Sieve Analysis Set (manual sieving)

6.1 Effective sieve area: 1000×700 mm

6.2 Sieve plates: Made of 2 mm cold-rolled punched steel sheets with square holes (80×80 mm, 60×60 mm, 40×40 mm, 25×25 mm)

6.3 Wooden sieve frame with handle

7. Coke Drum Strength Sieve (manual sieving)

7.1 Sieve area: 1000×700 mm

7.2 Sieve plates: Made of 2 mm cold-rolled punched steel sheets with round holes (Φ40 mm, Φ25 mm, Φ10 mm)

7.3 Wooden sieve frame with handle

8. DG-01 Stamping Machine

8.1 Purpose: Adjusts the density of coal before charging.

8.2 Technical specifications:

Stamping density: 0.72–1.03 t/m³

Maximum stamping height: ≤600 mm

Stamping hammer stroke: 150 mm

Dimensions: 1300×700×1700 mm

Operating voltage: 380 V ±10%

Weight: 450 kg

6.JL-40 Experimental Coke Oven Testerv

JL-40 Experimental Coke Oven Tester is primarily used for coal blending coking tests, verifying coal blending schemes, predicting coke strength, and guiding production. The oven walls are constructed with monolithic silicon carbide bricks, offering excellent resistance to thermal shock and ease of operation and maintenance. The gas is discharged after combustion or purified through recovery, improving the working environment without pollution. Equipped with an advanced computer monitoring and coal blending management system, the temperature control system is precisely configured for high accuracy. The bottom-opening design makes it suitable for coking plants and research institutions as a coking facility.

Features:

1. The width of the carbonization chamber is close to that of industrial coke ovens, ensuring a strong correlation between the two.

2. The oven walls are made of monolithic silicon carbide bricks, providing excellent thermal shock resistance, high thermal conductivity, and energy efficiency.

The oven can be easily shut down or started, enabling true two-sided heating of the coal charge.

3. The experimental coke oven adopts a bottom-opening design, ensuring airtightness without leakage.

4. Key components in the temperature control system use durable elements, complemented by a computer monitoring and management system. It features automatic measurement, PID adjustment, programmable 10-step heating, and 4 heating curves. Once the heating program is set, it can be repeated thousands of times, ensuring consistent coking conditions with high temperature control accuracy and energy savings.

5. Silicon carbide rod heating elements are used, with a working temperature of up to 1300°C and a coking time of approximately 16–24 hours.

6. Powered by a 380V supply, the total operational power does not exceed 30 kW.

7. Only two operators are required, reducing labor intensity. No night shifts are needed—coal is loaded in the afternoon, and coke is discharged the next morning.

8. Can be equipped with a complete coke screening system, mechanical strength testing devices (1/4 Micum drum, coke drop tester), and an experimental coke oven stamping machine.

Technical Parameters:

1. Experimental Coke Oven

1.1 Coal charge: 43–50 kg (dry basis)

1.2 Effective dimensions of carbonization chamber (L × W × H): 450 × 350 × 450 mm

1.3 Heating: 6 silicon carbide rods on each side of the combustion chamber

1.6 Coking time: 13–20 hours

1.7 Flue temperature: 1050°C ± 10°C (rated temperature ≤ 1350°C)

1.8 Center temperature of coke cake: ≥ 950°C

2. Central Control System

Utilizes PLC control technology, with computer-regulated heating temperature. The system controls heating elements to achieve precise temperature regulation, offering high accuracy, reliability, and ease of use. Test data can be stored, displayed, and printed.

2.1 Power supply: 380V, 50 Hz

2.2 Rated maximum power: 40 kW

2.3 Temperature control program: Customizable heating curves and soaking time.

2.4 Accuracy: Class 0.5

7.HJL-40kg Loaded Experimental Coke Oven

The HJL-40kg Loaded Experimental Coke Oven is designed to analyze the coke yield from coal blends or individual coal types, quantitatively simulate the thermal strength indicators of coke (CRI/CSR), and conduct research on conventional and stamped coking processes. It provides experimental data to guide and improve production, optimize coal resource utilization, and enhance coke product quality. Additionally, it helps determine suitable coal blending conditions based on the cold and hot strength indicators of the produced coke, assess   economic feasibility for production, and offer insights for rational coal resource utilization.

Technical Parameters:

Main Unit Dimensions:Length: 2650mm, Width: 1300mm, Height: 3100mm.

Purification System Dimensions:Length: 1020mm, Width: 1000mm, Height: 800mm.

Furnace Body:

Chamber Dimensions:Φ460 × 700mm.

Heating Elements:Φ2mm HRE spiral heaters.

Heating Method:Three-zone independent temperature control.

Heating Structure:Zirconia-fiber-embedded spiral heating sleeves.

Heating Power:Lower section: 6KW; Upper/middle sections: 4 × 2KW (total 14KW).

Maximum Operating Temperature:≤1200°C.

Coal Sample Crucible:

- Material:

Outer wall: 310S stainless steel (oxidization-resistant, withstands >1400°C).

Inner wall: GH3044 high-temperature alloy (resistant to tar corrosion during coking).

- Operating Temperature:1150°C.
- Effective Volume:Φ360 × 620mm.
- Loading Capacity:40–50kg.

Lifting and Transport Mechanism:

- Function:Automatically moves the coal crucible and load assembly.
- Lifting/Transport Method:

Screw rod + C-type rail for smooth electric lifting with precise positioning.

Upper 4-wheel dual-rail trolley ensures stable crucible movement.

- Lifting Height: 800mm.

Coke Discharge Mechanism:

- Stamping Base:Ensures stable crucible placement during coal cake stamping.

Gas Purification System:

- Configuration:Main filter + water scrubbing.

8.JXS-5 Pre-Drum Coke Grouping Mechanical Screen

The JXS-5 Pre-Drum Coke Grouping Mechanical Screen is primarily used in metallurgical coking to determine the size distribution of coke (25–40 mm, 40–60 mm, 60–80 mm, >80 mm) and measure the coke fines content.

During operation, the material is poured into the screen's feed hopper. Under vibration, the material passes through the first sieve plate, with oversized particles discharged via the outlet chute, while undersized particles fall onto the second sieve plate for further classification. This process continues through four sieve plates, achieving five-level classification.

This mechanical screen replaces manual sieving, reducing labor intensity, improving the accuracy of coke fines measurement, and eliminating human error. Its optimized design ensures a compact structure, easy operation, and reliable performance, meeting all technical requirements of **GB/T 2005-94**.

Structure & Working Principle

The machine consists of:

Frame(welded from various steel profiles, supporting all components)

Power unit

Speed reduction unit

Vibration damping unit

Screening unit

When powered, the motor drives a flywheel with an eccentric mechanism via a V-belt, generating controlled vibration. The screen operates at a designed amplitude and excitation force, enabling efficient material classification. The machine can operate continuously as needed.

To enhance stability, increase excitation force, reduce mechanical stress, and minimize noise, the machine is equipped with a **vibration damping mechanism**.

Screening Unit

- Four-layer, five-grade sieve plates (all with square holes):
- 1st layer: 80×80 mm
- 2nd layer: 60×60 mm
- 3rd layer: 40×40 mm
- 4th layer: 25×25 mm
- Screen body: High-quality welded steel plate

Technical Specifications

- Sieve plate sizes (mm): 80×80, 60×60, 40×40, 25×25
- Number of layers: 4
- Screen inclination angle: 11.5°
- Vibration amplitude: 6–8 mm
- Motor power: 0.75 kW
- Machine weight: 600 kg
- Dimensions (L×W×H): 2300×1340×1310 mm

9.MK-8 Micum Tumbler (Coke Tumbler Test Machine)

The Coke Tumbler, also known as the Micum Tumbler, is specialized equipment for determining the mechanical strength of coke. It operates on a free-fall impact principle. After the material is discharged from the drum, the mechanical strength of the coke is measured according to standard procedures. To reduce labor intensity and improve measurement accuracy, the machine is equipped with pre- and post-tumbling mechanical screens, replacing manual coke sieving and classification. It complies with the GB/T 2006-2008 national standard.

Working Principle & Structural Features:

The tumbler consists of:

Frame

Drum body

Drum door

Motor

Gear reducer

Connecting gears

Material receiving plate

Automatic rotation counter & controller

It features reliable performance, user-friendly operation, and long service life.

Technical Parameters:

Item Specifications	Technical Lndex
Rotation Speed	100 rev/4 min±10 sec
Drum Inner Diameter	φ1000mm×1000mm±5mm
Motor Power	2.2KW
Power Supply	AC380V, 50Hz

10.JXS-2 Grade Post-Drum Combined Mechanical Screen for Coke

The JXS-2 Grade Post-Drum Combined Mechanical Screen is designed for measuring the mechanical strength of metallurgical coke and foundry coke. It replaces manual sieving, eliminating the need for hand-sifting and significantly reducing operator workload. Additionally, it enhances measurement accuracy and comparability.

Featuring a compact structure, simple operation, and reliable performance, this mechanical screen ensures efficient and consistent results. Equipped with a time-relay electrical control system, it provides precise and automated screening timing, effectively eliminating human error. The fully automated control ensures smooth and stable operation, greatly improving work efficiency.

Technical Specifications of Post-Drum Mechanical Screen:

Parameter	Specification
Model	SHG-7
Screening Area	0.7 m²

Parameter	Specification
Motor Power	1.5 kW
Oscillation Angle	40°–45°
Screening Time	45 seconds per cycle
Sieve Plate Sizes	**Upper Layer**: 40 mm or 25 mm **Lower Layer**: 10 mm
Dimensions (L×W×H)	1540 × 1150 × 1200 mm
Total Weight	340 kg

11.Coke Shatter Strength Tester

The Coke Shatter Strength Tester is designed for measuring the impact resistance of foundry coke and metallurgical coke. The complete system consists of a motor, reducer, limit device, and control box, ensuring safe and reliable operation during test chamber opening. It complies with the Chinese National Standard GB4511.2-1999 "Method for Determination of Coke Shatter Strength" and serves as specialized testing equipment for coking plants and steel companies.

Test Principle:

The test involves repeatedly dropping a coke sample from a specified height onto a steel plate to fracture it under impact. After screening, coke particles larger than 50mm are retained, and their mass percentage is calculated. The device automates the lifting and lowering of the sample box, automatically opens the box's bottom door, and discharges the coke.

Technical Specifications:

Parameter	Specification

Parameter	Specification
Sample Box (L×W×H)	710×455×380 mm (constructed from 3mm thick steel plate)
Drop Platform	12mm thick steel plate (1220 × 965 mm) with 200mm high steel frame on all sides
Lifting Bracket	Vertically raises sample box to 1830mm; adjustable to any intermediate height
Power Input	1.5 kW, operating voltage: 380V ± 10% (three-phase four-wire system)
Weight	420 kg

12.HTNJ-8A Fully Automatic Bonding Index Tester

HTNJ-8A Fully Automatic Bonding Index Tester is an instrument developed by our unit. This fully automatic bonding index tester integrates stirring, static pressure, and drum functions into a single unit. The experimental steps are fully automated, and users only need to press a button to initiate the test, making it the most advanced bonding testing instrument on the market. It is suitable for measuring the bonding capacity of coking coal—such as the Roga index and bonding index—in coal, metallurgy, coking, and laboratory research units. Complies with GB/T5447-2014 "Determination of Caking Index of Bituminous Coal."

Technical Parameters:

Drum and Stirring Parameters	
Technical Specifications	Parameters
Drum rotation speed	50±0.5 r/min
Rotation range	250 rotations

Number of samples	2
Crucible tilt angle	45°
Stirring rod speed	150r/min
Crucible rotation speed	15r/min
45° stirring time	1 minute 45 seconds
Time from 45° to vertical	15 seconds
Display method	Touchscreen display
Power supply voltage	220V 50Hz

13.HTNJ-6A Bonding Index Mixing Tester

HTNJ-6A Integrated Caking Index Stirring Tester is designed for determining the caking capacity of coal (Roga Index and Caking Index) in coal, metallurgy, coking, and research laboratories. It complies with the national standard GB/T 5447-1997 "Method for Determination of Caking Index of Bituminous Coal."

Features:

1.Innovative All-in-One Design:

Combines the drum and stirrer for caking index measurement into a single unit, representing a new generation of integrated testing instruments.

2.Real-Time Monitoring:

Dynamically displays rotation speed, time, rotation count, and stirring speed.

- **User-Friendly Operation:**

Stable performance with comprehensive functions and simplified operation.

- **Enhanced Efficiency:**

Reduces labor intensity and improves testing accuracy compared to conventional products.

Technical Parameters:

- **Drum Rotation Speed:** 50±2 r/min
- **Rotation Range:** 250 turns

- **Sample Capacity:** 2 specimens

- **Crucible Tilt Angle:** 45°

- **Stirring Rod Speed:** 150 r/min

- **Crucible Rotation Speed:** 15 r/min (45° tilt)

- **Stirring Time:** 1 min 45 sec (45° tilt)

- **Time to Vertical Position:** 15 sec

- **Display:** Digital readout

- **Power:** 40W

- **Power Supply:** 220V, 50Hz

- **Dimensions (L×W×H):** 430×380×300 mm

14.HTNJ-6 Caking Index Tester

HTNJ-6 Caking Index Tester is a specialized instrument for determining the caking capacity of bituminous coal and other coking materials, including the Roga Index (R.L.), Coke Residue Drum Index (J.Z.Z), and Caking Index (GRL). It is widely used in coal, metallurgy, coking plants, research institutions, and universities to evaluate the caking properties of bituminous coal. This instrument is an ideal tool for rational utilization of coal resources and energy conservation.

Working Principle & Structural Features:

The tester consists of a motor, reducer, rotating drum, counter, and housing.

The motor drives two drums at a speed of 50±2 r/min via a worm gear reducer, subjecting coal samples and coke blocks to strength tests. The wear resistance of the coal blocks reflects their caking capacity.

Equipped with an **electronic counter** for precise counting and user-friendly operation. Supports customizable rotation counts (1–999 turns) and auto-shutdown.

Complies with the national standard GB 5447 "Method for Determination of Caking Index of Bituminous Coal."

Technical Parameters:

- **Rotation Speed:** 50±2 r/min
- **Rotation Range:** 1–999 turns (adjustable)

- **Display:** LED digital readout | Manual/auto reset

- **Power Supply:** AC 220V±10%, 50Hz

- **Power Consumption:** 120W

15.HTJC-9 Fully Automatic Plastometer Index Tester

HTJC-9 Fully Automatic Plastometer Index Tester (Ventilated Type) is designed to determine the plastometer indices of bituminous coal, characterize coke properties, and evaluate the quality of coking coal, industrial coal, and commercial coal. As essential equipment for laboratories in coal washing plants and coking plants, it measures three key plastometer indices: maximum thickness of plastic layer (Y), contraction (X), and volume curve. Compliant with GB/T 479 "Method for Determination of Plastometer Indices of Bituminous Coal," it delivers high precision, user-friendly operation, and stable performance, making it ideal for coal quality testing in coal, metallurgy, and coking industries.

Features:

1. **Computer-Controlled Operation:**

Automatically regulates temperature and plots volume curves per GB/T 479-2000, minimizing human intervention and errors.

Integrated Ventilation System:

Equipped with a variable-frequency DC motor for efficient fume extraction, eliminating the need for external fume hoods.

- **Automatic Weight Loading:**

No manual weight attachment required; lever-free design ensures precise and effortless operation.

- **Self-Aligning Probe:**

Automatically adjusts the parallelism between the probe and paper tube for enhanced reliability.

- **Smart Robotic Measurement:**

Simulates manual probing to measure upper/lower plastic layer thickness without disturbing the sample.

- **Data Integrity & Recovery:**

Real-time data saving, historical data retrieval, and power failure recovery to resume interrupted tests.

- **Safety & Alerts:**

Automatic fault detection (e.g., temperature control failure) with alarms and power cutoff.

- **Dual-Furnace Option:**

Supports single- or dual-furnace tests; all live electrical parts are insulated for safety.

Technical Parameters:

- **Temperature Control:**Range:

0–800°C | Resolution: 0.1°C | Accuracy: ±3°C

- **Heating Program:**

0–250°C at 8°C/min (30 min) → 250–800°C at 3°C/min (160 min)

- **Measurement Precision:**

Y-value: ±1mm (Y ≤ 20mm), ±2mm (Y > 20mm)
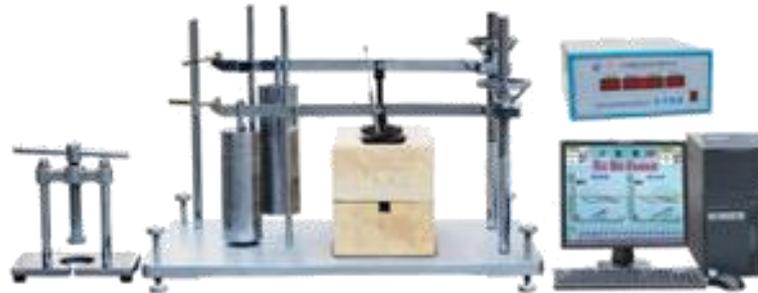
X-value: ±3mm

- **Sensors:**

Thermocouple: K-type, Class 0.5

Pressure Sensor: 0.02% FS | Volume Sensor: 0.05% | Probe Displacement: 0.01%

Power Supply: 220V, 50Hz | Power: 8 kW (dual furnace)

16.HTJC-8 Microcomputer-based Caking Index Tester

The HTJC-8 Microcomputer-based Caking Index Tester is designed to measure the caking index of bituminous coal, characterize the properties of coke, and evaluate the quality of coking coal, production coal, and commercial coal. It serves as essential equipment for laboratories in coal washing plants and coking plants. This instrument is suitable for determining the caking index of bituminous coal, including three key indicators: maximum thickness of the plastic layer (Y), final contraction (X), and the volume curve. It complies with the requirements of GB/T 479 "Determination of Caking Index of Bituminous Coal."

Featuring user-friendly design and advanced computer software control technology, the tester enables automatic measurement and graphing, significantly reducing operational complexity. With high measurement accuracy, simple operation, and stable performance, it is widely used in coal quality testing departments across industries such as coal, metallurgy, and coking.

Features of the Microcomputer-based Caking Index Tester:

1. Complies with GB/T 479-2000 "Determination of Caking Index of Bituminous Coal."

2. Enables bidirectional communication between the computer and controller for real-time monitoring.

3. Supports simultaneous dual-furnace (front and rear) control or independent front-furnace operation.

4. Automatically plots volume curves for single or dual furnaces and temperature-time curves.

5. Uses a displacement sensor instead of a drum clock, displaying real-time X volume curve trends and calculations on the computer screen.

6. Manual input of plastic layer data via computer, which then analyzes and processes the data to calculate the Y-value (plastic layer thickness) and automatically plots upper/lower plastic layer curves.

7. Automatically records furnace temperatures every 10 minutes and provides an alarm reminder every 10 minutes after reaching 250°C.

8. Automatically calculates test results and prints test records and reports.

9. Auto-recovery function: Restores operation to pre-power interruption status upon power restoration.

10. High measurement accuracy: Automatic cold-junction compensation for thermocouples, nonlinear correction, and error compensation ensure temperature display accuracy within ±3°C.

11. Stores historical test data for query and printing.

Technical Parameters:

1. **Temperature display range:** 0 – 999 °C, resolution 0.1 °C (K-type thermocouple).

2. **Time display range:** 0–999 min, resolution 0.1 min.

3. **Operating environment:** 5–40°C, relative humidity ≤80%.

4. **Heating control:** Reaches 250°C in 30 minutes; maintains a heating rate of 3°C/min between 250°C and 730°C.

5. **Time display error:** ≤10 seconds within 24 hours.

6. **Continuous operation time:** 24 hours.

7. **Cold-junction compensation:** 0–60°C.

8. **Pressure sensor range:** (0–20) kg.

9. **Displacement sensor range:** (0–200) mm.

10. **Power supply:** 220 V (±10%), 50 Hz.

11. **Power consumption:** ≤5 kW.

12. **Automatic alarm:** Sounds every 10 minutes after 250°C to prompt plastic layer data recording.

13. **Dimensions:**

14. **Main unit:** 800 × 400 × 580 mm

15. **Controller:** 330 × 290 × 120 mm

16. **Weight:** 150 kg.

Henan Hengte Technology Co., LTD

Contact person: Manager Chang

phone: +86 15639228011 (WhatsApp)

E-mail: info@httlab.com

Website: www.httlab.com

Address: Zhengzhou, China

Wechat   WhatsApp