



Luoyang Juxing Kiln Co., LTD
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TILTING ROTARY TUBE FURNACE

Technical Specifications | Model: GWDL-1000KQGA

1. Basic Technical Parameters

Item	Technical Specifications
Equipment Model	GWDL-1000KQGA
Equipment Type	Tilting Rotary Tube Furnace
Power Supply	AC 380 V
Rated Power	60 kW
Maximum Operating Temperature	1000°C
Continuous Operating Temperature	1000°C
Temperature Control Range	80–1200°C
Heating Zone Length	2000 mm
Number of Temperature Zones	3 independent temperature zones, each with independent temperature control
Furnace Tube Structure	Ø150 mm at both ends, Ø400 mm in the middle section, heating zone length of 2000 mm
Furnace Tube Material	Quartz glass tube, 10 mm thick
Heating Elements	High-temperature resistance wire, arranged above and below the furnace tube
Feeding Method	Batch feeding
Feeding System	1
Furnace Tube Rotation Speed	1–15 r/min, adjustable
Furnace Tube Inclination Angle	1–15°, adjustable
Protective Gas Flowmeters	2 float flowmeters
Temperature Sensor	Type K thermocouple, temperature measurement range: 0–1320°C
Temperature Control Accuracy	±1°C
Furnace Temperature Uniformity	±8°C (depending on furnace chamber dimensions)
Heating Rate	Maximum: 20°C/min; minimum: 1°C/h, adjustable (non-linear heating)
Exhaust Gas Incinerator Treatment	40 m³/h

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Capacity

2. Furnace Body

The furnace body is manufactured using CNC machine tools and undergoes polishing, grinding, acid pickling, phosphating, powder coating, and high-temperature baking. It features a two-tone design and a modern, attractive appearance.

The furnace body offers the following properties:

Oxidation resistance

Acid and alkali resistance

Corrosion resistance

High-temperature resistance

Easy cleaning

3. Furnace Body Structure

The electric furnace adopts an air-cooled, double-layer furnace body structure. Air-guiding partitions ensure that cooling air circulates throughout the furnace shell. The cooling air then passes over the conductive plates of the heating elements before being discharged from the furnace body.

This design helps prevent high-temperature oxidation of the conductive plates of the heating elements and maintains a suitable working environment.

4. Refractory Materials

The furnace lining is made of vacuum-formed, high-purity lightweight alumina material.

Lightweight hollow-sphere alumina boards are used in areas prone to contact during material loading and unloading, including the furnace opening and furnace bottom.

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The refractory materials feature:

High operating temperature resistance

Low heat storage capacity

Resistance to rapid heating and cooling

Resistance to cracking and shedding

Good thermal insulation performance

5. Protection System

The equipment uses an integrated modular control unit with accurate control precision. Dual-loop control and dual-loop protection are incorporated.

The protection functions include:

Overshoot protection

Over-adjustment and under-adjustment protection

Thermocouple disconnection protection

Phase-loss protection

Overvoltage protection

Overcurrent protection

Overtemperature protection

Current feedback

Soft-start protection

6. Control System

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The system uses closed-loop thyristor module triggering with phase-shift triggering control. The output voltage, current, or power can be continuously adjusted.

The system supports constant-voltage, constant-current, or constant-power operation.

The current loop serves as the inner loop, while the voltage loop serves as the outer loop. When a sudden load is applied or the load current exceeds the current limit, the output current of the voltage regulator is limited to the rated current range.

The voltage loop also participates in regulation to maintain stable output current and voltage within the available control margin.

This control method helps protect the heating elements against excessive current and voltage impacts, ensuring safe and reliable operation and control accuracy.

7. Display Parameters

The system displays the following parameters:

Temperature

Temperature segment number

Segment time

Remaining time

Output power percentage

Voltage

Current

8. Temperature Profile Settings

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The equipment uses an intelligent temperature controller with multiple control methods, including standard PID, artificial intelligence adjustment (APID), and MPT.

The controller features self-tuning and self-learning functions, with control characteristics designed to minimize overshoot and undershoot.

It supports 30-segment program control and allows heating and cooling at arbitrary rates.

Programmable and operational commands include:

Jump (loop)

Run

Pause

Stop

The program can be modified at any time during program-controlled operation.

An artificial intelligence control algorithm with curve-fitting capability provides smooth temperature profile control.

9. Multiple Temperature Profile Inputs

The system supports 50-segment program control with the following configurations:

Temperature Profile Configuration Number of Segments

One temperature profile	50 segments
Two temperature profiles	28 segments per profile
Three temperature profiles	15 segments per profile
Five temperature profiles	9 segments per profile

Multiple temperature profiles can be entered simultaneously and selected for use as required.

10. Standard Accessories

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One pair of crucible tongs

One pair of high-temperature gloves

One certificate of conformity

One sales delivery note

11. Warranty

The electric furnace is covered by a one-year free warranty.

Heating elements are excluded from the warranty. Heating elements that suffer natural damage within three months will be replaced free of charge.

12. Company Information

Company Name: Luoyang Ju Xing Kiln Co., Ltd.

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