



高新技术企业/专精特新企业
专业的高温加热制造工厂 (-60°C~2600°C)

中国热处理行业协会理事单位
ISO9001:质量管理体系认证
欧盟CE产品认证



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Equipment Name: 1000°C Tubular Electric Furnace



The GWL-KQGA series 1000°C high-temperature tubular furnace, as shown in the figure, integrates the control system and furnace chamber into a single design. The furnace lining uses high-purity alumina fiber and vacuum-formed fiber-reinforced lightweight board material.

This equipment uses high-temperature alloy molybdenum-containing resistance wire as the heating element. It is a specialized device developed for laboratories in universities, research institutes, and industrial and mining enterprises for the sintering, melting, analysis, and production of ceramics, metallurgy, electronics, glass, chemicals, machinery, refractory materials, new material development, special materials, building materials, metals, non-metals, and other chemical materials. The control

panel is equipped with an intelligent temperature regulator, a power switch, a main heating start/stop button, a voltmeter, an ammeter, and a computer interface for real-time monitoring of the system's operating status. This product employs reliable integrated circuitry, ensuring a good working environment and strong anti-interference capabilities. The furnace shell temperature is 45°C at its highest, significantly improving the working environment. It features microcomputer program control, programmable curves, fully automatic heating/cooling, and the ability to modify temperature control parameters and programs during operation. It is flexible, convenient, and easy to operate. Temperature

control accuracy: $\pm 1^\circ\text{C}$ with no overshoot; constant temperature accuracy: $\pm 1^\circ\text{C}$. Fast heating rate, with a maximum heating rate 45°C/min. The furnace lining is made entirely of vacuum-formed high-purity alumina lightweight material, which has high operating temperature, low heat storage, resistance to rapid heating and cooling, no cracking, no slag shedding, and good heat preservation performance (energy saving effect is more than 60% of that of old-style electric furnaces). The structure is reasonable, with inner and outer double-layer furnace jackets and air cooling, which can greatly shorten the testing cycle.

Technical Specifications:

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temperature	1000y
project	
AC voltage ,	380V
temperature control	±1y
accuracy, external dimensions/footprint, long-	1350*350*1200/1750*350*1200mm
term temperature,	900 degrees
maximum temperature,	1000 degrees
furnace tube material,	Quartz glass tube
heating zone size, number	100*250mm*4
of heating zones, flow meter,	Five temperature zones, each 250mm in length, with four sets of temperature control instruments.
vacuum pump,	Float flow meter 30L/min
furnace internal	Mechanical rotary vane pump
temperature field uniformity, temperature	±1y
measuring element and temperature measurement range.	Nickel-chromium and nickel-silicon K temperature measurement range: 0-1350y
Programming curve segment	A set of 30 segments
number of heating rate	Adjustable from 1y/h to 20y/min
Furnace body	<p>The furnace body is machined using CNC machine tools and undergoes polishing, grinding, pickling, phosphating, powder coating, and high-temperature baking.</p> <p>Made from various materials, featuring a two-tone design, a novel and attractive appearance, and possessing properties such as oxidation resistance, acid and alkali resistance, and corrosion resistance.</p> <p>Advantages include high temperature resistance and easy cleaning.</p>
Furnace body structure	<p>The electric furnace body adopts an internationally advanced air-cooled double-layer furnace body structure, and the effective air-cooled guide baffles make the furnace shell...</p> <p>The entire system circulates cold air, which eventually cools the conductive plates of the heating element before being discharged from the furnace, thus preventing the heating element from becoming conductive.</p> <p>High-temperature oxidation of the film ensures a good working environment.</p>
Furnace door opening method	<p>The furnace door opens electrically up and down, preventing the inner wall of the furnace door from scorching your arms when handling materials at high temperatures;</p> <p>The locking mechanism, located below the furnace door, uses a stainless steel latch for effective securing and to ensure proper thermal expansion and contraction of the refractory material.</p> <p>It allows for free expansion and contraction while effectively sealing.</p>
Refractory materials	<p>The furnace lining uses high-purity alumina fiber and vacuum-formed fiber lightweight board material, which is easy to handle when handling materials.</p> <p>The furnace opening and bottom are made of lightweight hollow spherical alumina plates, which have high operating temperatures, low heat storage, and are resistant to sudden heat.</p> <p>It features rapid heating and cooling, prevents cracking and flaking, and has excellent heat preservation performance (energy saving effect is more than 80% of that of old-fashioned electric furnaces).</p>
thermal insulation materials	<p>The insulation uses three layers: alumina fiber cotton, alumina fiberboard, and alumina polycrystalline fiberboard.</p> <p>Its energy-saving effect is more than 80% of that of old-fashioned electric stoves.</p>
Furnace shell temperature	For long-term use without shutting down the furnace, the outer casing temperature should be less than 45 degrees Celsius.
Protect	<p>An integrated modular control unit is adopted, ensuring accurate control precision. A dual-loop control and dual-loop protection system is also designed.</p> <p>Protection features include overshoot, overshoot, undershoot, thermocouple interruption, phase loss, overvoltage, overcurrent, overtemperature, and current feedback.</p> <p>Soft start and other protections</p>
control	<p>The thyristor module employs closed-loop technology for trigger control, using phase-shift trigger control or zero-crossing triggering methods to output electrical...</p> <p>Voltage, current, or power is continuously adjustable, exhibiting constant voltage, constant current, or constant power characteristics; the current loop is...</p>

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	The inner loop and voltage loop form the outer loop. When a sudden load is applied or the load current exceeds the current limit, the voltage regulator's output current is limited within the rated current range, ensuring normal operation of the output and the regulator. Simultaneously, the voltage loop also participates in regulation, limiting the regulator's output current within the rated current range and maintaining constant output current and voltage with sufficient adjustment margin. This protects the heating elements from excessive current and voltage surges, achieving safe, reliable, and precise control. Temperature, temperature range number, timeout, remaining time, output power
Display parameters	percentage, voltage, and current are displayed using imported buttons with a lifespan exceeding 100,000 cycles and equipped with LED
button	indicator lights. It adopts an intelligent temperature controller, equipped with standard PID, artificial intelligence
Temperature profile setting	adjustment APID or MPT and other adjustment modes. It has self-tuning and self-learning functions, excellent control characteristics with no overshoot and no undershoot, and has 30-segment program control function. It can realize temperature rise and fall control with arbitrary slope. It has programmable/operable commands such as jump (loop), run, pause and stop, and allows modification of the program at any time during program control operation. It adopts an artificial intelligence adjustment algorithm with curve fitting function, which can obtain a smooth curve control effect. The 30-segment (50-segment customizable) program control function can input settings: 30 (50) segments for one curve, 14 (28) segments/line for two curves, 9
3 Multiple curve inputs	(15) segments/line for three curves, and 5 (9) segments/line for five curves. Multiple curves can be input at the same time and can be called at will when in use.
Communication interface	The electric furnace is equipped with an RS485 communication interface with a communication distance of up to 1000 meters. It can be controlled by computer to start, pause, stop, set and read the heating curve, and set parameters. It is highly reliable and easy to operate. The computer screen displays a wealth of information, including measured values, setpoints, output values, time intervals, segment numbers, heating curves, and power percentage curves. Heating curves can be stored on the computer and can be recalled and modified at will. Setpoints and commonly used parameters can be modified. Historical curves and historical reports can be filtered by time interval (1 second to 1 hour) and can be stored long-term.
Accessories	One crucible tong, one pair of high-temperature gloves, two sealing flanges, two alumina furnace plugs, one pair of silicone O-rings, and a one-year free
Warranty coverage and period	warranty on the electric furnace.

Quotation

name	Furnace tube outer diameter	Number and length of heating zones	Voltage AND V
Tubular electric furnace	100mm	4, 250 for each temperature zone	380

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