



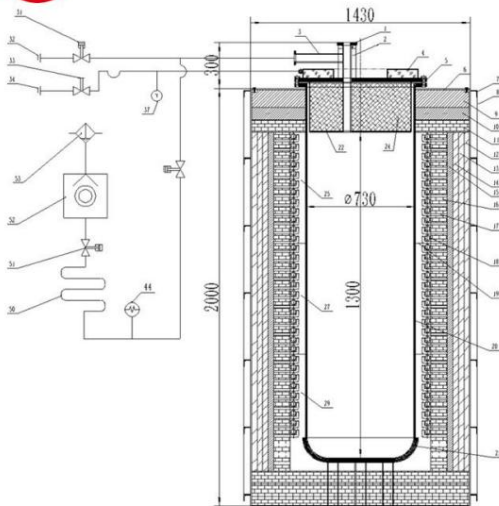
高新技术企业/专精特新企业  
专业的高温加热制造工厂 (-100~2600°C)

中国热处理行业协会理事单位  
ISO45001:职业健康管理体系认证  
ISO14001:环境管理体系认证  
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欧盟CE产品认证



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Vacuum atmosphere pit furnace model GWL-1200ZQJ



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**洛阳炬星电窑炉**  
LUOYANG TORCH STAR ELECTRIC KILN

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Technical parameters:

The GWL-ZQJ series 1200-degree vacuum atmosphere pit furnace, as shown in the figure, integrates a temperature control system and a vacuum metal furnace.

The system integrates a chamber, vacuum pump, gas circuit, pressure protection, gas flow control, positive and negative pressure display, and water circulation pump.

The ring box and the furnace body are separate units. The furnace lining is made of vacuum-formed high-purity alumina lightweight material.

It uses a high-temperature U-shaped silicon carbide rod of equal diameter as the heating element; it is specifically designed for laboratories in universities and research institutes.

Industrial and mining enterprises in ceramics, metallurgy, electronics, glass, chemicals, machinery, refractory materials, new material development, and special materials.

Specialized equipment developed for sintering, melting, analyzing, and producing building materials, metals, non-metals, and other chemical materials.

The control panel is equipped with an intelligent temperature regulator to control the power switch, main heating start/stop button, voltage, etc.

Ammeter, computer interface, water pump switch, vacuum pump switch, gas flow meter, positive and negative pressure gauges, electrical contact pressure gauges

Force gauges and valves are included to monitor the system's operating status at any time. This product uses reliable integrated circuitry and a stable operating environment.

Excellent working environment, strong resistance to interference; furnace shell temperature  $\leq 40^{\circ}\text{C}$  at maximum temperature, greatly improving the working environment; microcomputer program control.

Programmable temperature curves, fully automatic heating/cooling, temperature control parameters and program can be modified during operation, flexible and convenient operation.

Simple.

Temperature control accuracy:  $\pm 1^{\circ}\text{C}$ . No overshoot. Constant temperature accuracy:  $\pm 1^{\circ}\text{C}$ . Fast heating rate, with the fastest heating rate  $\geq 45^{\circ}\text{C}/\text{min}$ .

The furnace lining is made entirely of vacuum-formed high-purity alumina lightweight material, which has high operating temperature, low heat storage, and is resistant to rapid heating.

It features rapid thermal cooling, no cracking, no slag shedding, and excellent heat insulation (energy saving is over 60% of that of old-style electric furnaces). It also boasts a reasonable structure.

The double-layer furnace jacket, with air cooling, can greatly shorten the test cycle.

Category Parameter	1200 degrees
	Model GWL-1200ZQJ

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The maximum	380V
operating temperature of the AC	1200 degrees
power supply can be used continuously	1150 degrees
within the temperature control	50 to 1200 degrees
range of the temperature sensing element.	Thermocouple type K, temperature measurement range 0-1320 degrees Celsius (for measuring the interior of the furnace).
The heating element is mounted around the perimeter (using high-temperature alloy resistance wire) and protected by corundum mullite for damage prevention.	
Temperature control accuracy	±1 degree (integrated circuit control, no overshoot)
Furnace temperature uniformity	±1 degree (depending on the furnace size; larger furnaces can use multi-point control to achieve more precise control). Good furnace temperature uniformity)
heating rate	The heating rate is freely adjustable, with an adjustment range of up to 20 degrees Celsius per minute (20 degrees/min). The slowest heating rate is 1 degree per hour (1 degree/h).
Heating element	High-temperature alloy resistance wire (containing molybdenum).
heating element installation or replace	The sealed top cover of the vacuum atmosphere furnace is designed with a mechanical lifting mechanism, which allows for easy opening and closing of the sealed top cover. The top cover can be rotated after it is raised, saving a lot of manpower and time.
Furnace body	The furnace body is machined using CNC machine tools and undergoes polishing, grinding, pickling, phosphating, powder coating, and high-temperature treatment. Made through baking and other processes, featuring a two-tone color scheme, a novel and attractive appearance, and possessing antioxidant, acid and alkali resistant properties. Advantages include corrosion resistance, high temperature resistance, and easy cleaning.
Furnace body	The electric furnace body adopts an air-cooled double-layer structure, ensuring a good working environment.
structure,	The inner liner is sealed and made of 310S stainless steel, allowing for high-temperature removal. (To be provided by the customer)
inner liner,	Customer must provide.
water-cooled	Furnace opening, furnace door
components, vacuum pump, vacuum	A two-stage direct rotary vane vacuum pump is used (supplied by the customer).
value, vacuum	Pointer pressure gauge -0.1 MPa.
pressure detection,	One pressure gauge with both positive and negative pressure indicators (a digital vacuum gauge is optional).
gas flow meter	Two float flow meters (a digital display mass flow meter is optional for customers requiring higher accuracy).
Pressure protection	To prevent dangers caused by closed or blocked furnace exhaust ports, or excessive furnace pressure, a special design was developed. The principle behind this system is as follows: a signal is obtained from an electrical contact pressure gauge or pressure sensor to drive and control the system. The module closes the electromagnetic intake valve, activates the electromagnetic exhaust valve and alarm, releasing pressure from the exhaust port. An audible and visual alarm, triggered by a buzzer, is activated to protect the electric furnace and ensure its normal operation.
Gas leak alarm	Based on the atmosphere, prevent leaks; Function: Gas leak alarm detects (indoor) air leaks. When the concentration of toxic or hazardous gases exceeds a certain value, the drive module shuts down the electric furnace and closes the circuit. By closing the air intake and opening the exhaust port, a safer and more efficient working environment can be achieved. (Optional for customers)
Can open atmosphere	Hydrogen, nitrogen, argon, carbon monoxide, oxygen, etc.
Refractory materials	The furnace lining is made of vacuum-formed alumina lightweight material. Areas prone to contact during material handling (furnace opening, furnace lining, etc.) should be protected. The furnace bottom is made of lightweight corundum mullite material, which has a high operating temperature, low heat storage, and is resistant to rapid heating and cooling. It does not crack, does not shed slag, and has good heat preservation performance (its energy-saving effect is more than 80% of that of old-fashioned electric furnaces).

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thermal insulation materials	It employs a three-layer insulation system: aluminum silicate fiberboard, alumina fiberboard, and alumina (polycrystalline) fiberboard, achieving energy savings of over 80% compared to traditional electric furnaces. It allows for
Furnace shell temperature	continuous operation without furnace interruption, maintaining an outer shell
Protect	temperature below 45 degrees Celsius. An integrated modular control unit ensures accurate control and features dual-loop control and protection, including protection against overshoot, over-adjustment, under-adjustment, thermocouple breakage, phase loss, overvoltage, overcurrent, overtemperature, current feedback, and soft start.
control	Employing closed-loop technology with thyristor module trigger control, using phase-shift trigger control or zero-crossing triggering, the output voltage, current, or power is continuously adjustable, exhibiting constant voltage, constant current, or constant power characteristics. The current loop is the inner loop, and the voltage loop is 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, ensuring normal operation of the output and the voltage regulator. Simultaneously, the voltage loop also participates in regulation, limiting the output current of the voltage regulator to the rated current range, 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. See the electric furnace video for details.
The display parameters include temperature, temperature segment number, time segment, remaining time, output power percentage, voltage, and current. The buttons have	
Button	a lifespan exceeding 100,000 cycles and are equipped with LED indicator lights. It uses an intelligent temperature
Temperature profile setting	controller with multiple adjustment modes such as standard PID, AI-based APID, or MPT. It features self-tuning and self-learning functions, excellent control characteristics with no overshoot or undershoot, and 30-segment programmable control. It can achieve arbitrary slope temperature rise and fall control and has programmable/operable commands such as jump (loop), run, pause, and stop, allowing modification of the program at any time during operation. It employs an AI adjustment algorithm with curve fitting capabilities, achieving smooth and even curve control. See the electric furnace video for details. The 50-segment programmable control function uses two 7-inch touchscreen heating elements.
Multi-curve input	
touchscreen	
accessories	
Warranty Scope and Period: The electric furnace is covered by a one-year free warranty, but the heating element is not covered by the warranty (it will be replaced free of charge if it fails naturally within three months).	



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name	Specifications and Models	Furnace dimensions (length, width, height) in mm	Temperature control area	power kW
Vacuum atmosphere pit furnace	GWL-1200ZQJ/D730/1000	D800×1300, effective temperature range D730×1000 (±5 degrees)	Three independent temperature control systems (upper, middle, and lower) 105	
vacuum system	25L/s	Includes controls, including intake and piping. Dao, etc.		
Hydrogen combustion	Automatic combustion			
platform	2*2*2	Includes stairs		
furnace tube	310S	Wall thickness 15mm, lid thickness 25mm		single set
Production cycle	Delivery in 30-40 days			

Thank you for contacting us!

Thank you to get in touch with us!

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