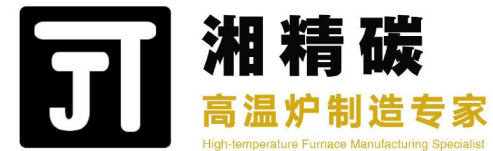


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Company Profile

公司简介



湖南精碳自动化设备有限公司是专业从事电热设备的的研究、生产与销售于一体的高科技企业,主要产品有高温石墨化炉, 碳化炉, 气氛保护烧结炉, 真空烧结炉, 真空炉、热压炉, 真空感应熔炼炉, 中频感应炉, 中频淬火设备, 锻前加热设备和汽车稳定杆加热设备等。公司生产设备广泛应用于航天、电子、交通、机械、冶金、硬质合金、难熔金属、特种陶瓷、炭炭复合材料、半导体材料及太阳能电池等几十种加工制造行业及领域中。并以优质的产品, 完善的服务赢得了广大用户的信赖与赞誉。

精碳人将恪守求实创新, 质量为本, 服务至上的宗旨, 以制作高稳定性, 高适用性的电热设备为生存原则, 为您提供更先进, 更科学的设备, 携手共创未来。

精品开拓市场, 人品开创事业! 热诚欢迎广大客户来我公司实验和考察!

Hunan Jingtan Automation Equipment Co., LTD is a professional engaged in electric heating equipment in the research , production and sales in the integration of high-tech enterprises , the main products are high temperature graphitization furnace , carbide furnace , atmosphere protective sintering furnace , vacuum sintering furnace , vacuum furnace , hot furnace , vacuum induction melting furnace , intermediate frequency induction furnace , medium frequency quenching equipment , forging heating equipment and car before stabilizer bar heating equipment , etc . The company 's production equipment is widely used in aerospace , electronics , transportation , machinery , metallurgy , cemented carbide , refractory metal , special ceramics , carbon carbon composite materials , semiconductor materials and solar cells and other dozens of processing and manufacturing industries and fields . And with high-quality products , perfect service to win the trust and praise of the majority of users .

Jingtang people will abide by the purpose of realistic innovation , quality first , service first , to produce high stability , high applicability of electric heating equipment as the survival principle , to provide you with more advanced , more scientific equipment for the customers and work together to create a better future hand in hand .

High-quality products open up the market , character to create a career ! Warmly welcome customers to our company to do experiment and investigation .



Experimental Graphitization Furnace 实验型石墨化炉

实验型石墨化炉是我厂工程技术人员消化和吸收国外的测温、控温技术、智能化、新材料技术和炉膛设计技术，推出的一种高性能智能化加热炉。适用于在真空或气体保护状态下对材料进行高温处理（碳化、石墨化、高温脱脂、除杂等）。

The experimental type graphitization furnace is a kind of high performance intelligent heating furnace. Introduced by our engineers and technicians, it absorbs and integrates with foreign temperature measurement technology, temperature control technology, intelligence, new material technology and furnace design technology. This furnace is suitable for processing materials in high temperature in the condition of vacuum or atmosphere protection (carbonization, graphitization, high temperature degreasing, impurity removal, etc.).

产品用途 Product Usage

应用于碳材料结构件（制品）、C/C复合材料制品、碳纤维制品的高温处理和石墨化，碳纤维丝的烧结石墨化及其它可在碳环境下烧结和熔炼的材料。

It is used in the high temperature treatment and graphitization process of carbon material structural parts (products), C/C composite material products, carbon fiber products, as well as the sintering graphitization of carbon fiber and other materials that can be sintered and smelted in the carbon environment.

产品特点 Product Features

- 达到极限温度3200℃，常用温度3000℃的高温炉体，满足各种材料的烧结和石墨化处理。
- 采用数显智能控温系统，全自动、高精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存40段共200条不同的工艺加热曲线。
- 采用内循环纯水冷却系统；数字式流量监控系统；
- 全面的PLC水、电、气自动控制和保护系统。

The high temperature furnace with limit temperature of 3200℃ and common temperature of 3000℃ can meet the requirements of sintering and graphitization treatment of various materials.

Digital display intelligent temperature control system is adopted to complete the temperature measurement and control process with automatic and high precision. The system can raise the temperature according to the given heating curve and store a total of 40 heating curves of 200 different processes.

The internal circulation pure water cooling system, digital flow monitoring system, and comprehensive PLC water, electricity, gas automatic control and protection system are adopted.



主要技术参数 Main Technical Parameters

极限温度 Limit Temperature	≤3200℃
常用温度 Normal Working Temperature	常温~3000℃ Normal Temperature~3000℃
高温区容积 High Temperature Zone Volume	Φ100*150、Φ200*300、Φ300*500
炉内工作气氛 Working Atmosphere in The Furnace	真空、氢气、氮气、惰性气体等 Vacuum, Hydrogen, Nitrogen, Inert Gas, etc
温度均匀度 Temperature Uniformity	≤±10℃
温度测量 Temperature Measurement	远红外线光学测温（双接头自动切换） Far Infrared Optical Temperature Measurement (automatic switching of two joints)
测温精度 Temperature Measurement Accuracy	0.2~0.75%。
温度控制 Temperature Control	程序控制和手动控制 Program Control and Manual Control
控温精度 Temperature Control Accuracy	±1℃
极限升温速度 Limit Heating Rate	80℃/分钟（空炉，视高温区容积和炉膛结构而定） 80℃/ min (empty furnace, depending on the volume of high temperature area and the structure of the furnace)
电源 Power Supply	IGBT控制，晶闸管控制 IGBT brake control

Super Large Graphitization Furnace

超大型石墨化炉

超大型石墨化炉是我公司工程技术人员在国内科研院所和大专院校的大力支持下，开发的一种具有国内技术的超高温生产型设备。设备使用温度达到3000℃。

Super large graphitization furnace is a kind of ultra-high temperature production equipment with domestic technology developed by our engineers and technicians under the strong support of domestic scientific research institutes and universities.The operating temperature of the equipment reaches 3000℃.

产品用途 Product Usage

超大型石墨化炉主要用于电池负极材料，碳材料结构件（制品）、C/C复合材料制品、碳纤维、炭素材料、碳纤维绳的烧结，磷片石墨和其它石墨材料的高温石墨化，其它可在碳环境下烧结和熔炼的材料。

Large-scale graphitization furnace is mainly used for the sintering of battery anode materials, carbon material structural parts (products), C/C composite products, carbon fiber, carbon material, carbon fiber rope, high temperature graphitization of phosphorus sheet graphite and other graphite materials, and other materials that can be sintered and smelted in the carbon environment.

产品特点 Product Features

超大型石墨化炉采用国外保温材料 and 炉膛结构，使用温度达到3000℃，其采用一台电源带多台炉体来提高生产量，由于大型石墨化炉冷却时间长，利用冷却时间进行其他炉体加热。

采用数显化智能控温系统，全自动高精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线全面的PLC水、电、气自动控制和保护系统 可一机多炉，采用PLC智能转换。

Super Large graphitization furnace adopts foreign thermal insulation materials and furnace structure, and its working temperature reaches 3000℃. It adopts one power supply with multiple furnace bodies to improve production. Due to the long cooling time of large graphitization furnace, the cooling time is used for heating other furnace bodies.

Using digital display intelligent temperature control system, automatic high precision to complete temperature measurement and temperature control process, the system can be heating according to a given temperature curve, and can store a total of 20 400 sections of different process heating curve, comprehensive PLC water, electricity, gas automatic control and protection system, can be one machine and many furnaces, using PLC intelligent conversion.



主要技术参数 Main Technical Parameters

工作温度 Working temperature	≥2000℃	≥2200℃	≥2500℃	≥2600℃	≥2800℃	≥3000℃
炉膛容积 Furnace volume	φ 500X1000	φ 600X1200	φ 700X1500	φ 800X1600	φ 900X1800	φ 1000X2000
炉体形状 Furnace body shape	分立式和卧式两种炉 two types of vertical and horizontal furnaces					
炉内工作气氛 Working atmosphere in furnace	真空、氢气、氮气、惰性气体等 Vacuum, hydrogen, nitrogen, inert gases, etc					
温度均匀度 Temperature uniformity	≤±10℃					
温度测量 Temperature measurement	远红外线光学测量 Far infrared optical temperature measurement					
测温范围 Temperature measurement range	1000-3000℃ or 0-3000℃					
测温精度 Temperature measurement accuracy	0.2-0.75%					

Bottom Discharge Graphitization Furnace 下出料石墨化炉

下出料石墨化炉适应于大型产品的加工及石墨化处理，极大的改善进出料的便捷，适用于在真空或气氛保护下对材料进行高温处理（烧结、石墨化、提纯等）。

Bottom discharge graphitization furnace is suitable for the processing of large products and graphitization treatment. It has greatly improved the convenience of material in and out process, and is suitable for high-temperature treatment (sintering, graphitization, purification, etc.) of materials under vacuum or atmosphere protection.

产品用途 Product Usage

主要用于特种复合材料或硬质合金、铜钨合金、钛合金等合金材料的真空气氛烧结，碳材料及新材料的石墨化处理。

It is mainly used in vacuum sintering of special composite materials or cemented carbide, copper-tungsten alloy, titanium alloy and other alloy materials. It is also used in graphitization of carbon materials and new materials.

产品特点 Product Features

由法兰和筒体组焊而成，由各种型钢、钢板组焊成加固承重框架用来安置炉体。

采用双层蝶形水夹层结构，炉底的升降通过电动减速机减速后经同步丝杆柔性传动，丝杆带动托架将炉底平稳的上升或下降，避免石墨坩埚在上升和下降过程中发生损坏，升降机构设有上下限位开关，炉底下降到位后由生产人员进行装取料工作。

自动可根据用户工艺要求及设备要求人工设定好，再无需人工切换，控温精度高，操作方便。

It is welded by flange and barrel. And the furnace body is placed into the reinforced load-bearing frame which is weld by all kinds of section steels and steel plates.

The furnace adopts double butterfly water inter-layer structure. We gently lift and fall the furnace bottom by synchronized screw after the electric speed reducer get slow. The synchronization screw drive bracket stably lift and fall the furnace bottom, avoiding the damages of graphite crucible in the process of rising and falling. The lifting and falling mechanism is also equipped with upper and lower limit switch, and after the furnace bottom falls in place, the workers will unload materials from the bottom of the furnace.

The automatic function can be set manually according to the user's process requirements and equipment requirements. Once it is set, no manual switching is needed any more. It has high temperature control precision and is easy to operate.



主要技术参数 Main Technical Parameters

最高使用温度 Maximum Operating Temperature	3000℃		
工作温度 Working Temperature	常温~3000℃ Normal Temperature~3000℃		
升温速率 Heating Rate	15℃/min	10℃/min	8℃/min
控温精度 The Temperature Control Accuracy	±2℃		
测量方式 Measurement Method	1000-3200℃采用双色红外仪 1000-3200℃ Using two-color Infrared Instrument		
真空度 Vacuum	6.67*10 ⁻² Pa		
炉内气氛 Atmosphere in Furnace	Ar或真空 Ar or Vacuum		
进出料方式 Material Loading and Unloading Method	采用底部装出料 Unloading Materials from the Bottom		
规格 Specifications	Φ800*1600mm	Φ1000*2000mm	Φ1200*2500mm
功率 Power	400kw	500kw	600kw

Vacuum Graphitization Furnace 真空石墨化炉

感应加热超高温真空石墨化炉是我厂工程技术人员消化和吸收国外最先进的测温、控温技术、智能化、新材料技术和炉膛设计技术，推出的一种的高性能智能化加热炉。适用于在真空或气体保护状态下对材料进行高温处理（碳化、石墨化、高温脱脂、除杂等）。

Induction heating ultra-high temperature vacuum graphitization furnace is a kind of high performance intelligent heating furnace. Introduced by our engineers and technicians, it absorbs and integrates with the most advanced foreign temperature measurement technology, temperature control technology, intelligence system, new material technology and furnace design technology. This furnace is suitable for processing materials in high temperature in the condition of vacuum or atmosphere protection (carbonization, graphitization, high temperature degreasing, impurity removal, etc).

产品用途 Product Usage

应用于碳材料结构件（制品）、C/C复合材料制品、石墨烯、碳纤维制品的高温处理和石墨化，碳纤维丝的烧结石墨化及其它可在碳环境下烧结和熔炼的材料。

It is used in the high temperature treatment and graphitization process of carbon material structural parts (products), C/C composite material products, graphene and carbon fiber products, as well as the sintering graphitization of carbon fiber and other materials that can be sintered and smelted in the carbon environment.

产品特点 Product Features

高达2600℃的超高温炉体，可完全满足各种材料的烧结和石墨化。

采用数显智能控温系统，全自动、高精度的测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线。

采用内循环纯水冷却系统，数字式流量监控系统。

智能PLC安全监控，可实现远程控制，带无纸记录各项参数，自动储存，水、电、气自动控制和保护系统，内部带网口连接。

炉体设有机械式防爆阀，具有自动泄压功能，保证安全。

The 2600℃ ultra-high temperature furnace can totally meet the requirements of sintering and graphitization treatment of various materials.

Digital display intelligent temperature control system is adopted to complete the temperature measurement and control process with automatic and high precision. The system can raise the temperature according to the given heating curve and store a total of 40 heating curves of 200 different processes.

The internal circulation pure water cooling system and digital flow monitoring system are adopted.

The intelligent PLC security monitoring system can realize remote control function and can paperless record various parameters. It is also equipped with automatic storage system, water, electricity, gas automatic control system and protection system. It also has network connection internal.

The furnace body is equipped with mechanical explosion-proof valve, which can relieve pressure automatically and ensure people's safety.



主要技术参数 Main Technical Parameters

最高使用温度 Maximum Operating Temperature	常温~2600℃ Normal Temperature~2600℃	
高温区容积 High Temperature Zone Volume	1L、10L、35L、100L	200L、340L、540L、800L、1570L
炉内工作气氛 Working Atmosphere in the Furnace	真空、氢气、氮气、惰性气体等 Vacuum, Hydrogen, Nitrogen, Inert gas, etc	
温度均匀度 Temperature Uniformity	≤ ± 10℃	≤ ± 15℃
温度测量 Temperature Measurement	远红外线光学测温测温范围900-3500℃或1000-3200℃ Far Infrared Optical Temperature Measurement Temperature Measurement Range 900-3500℃ or 1000-3200℃	
测温精度 Temperature Measurement Accuracy	0.2-0.75%	
温度控制 Temperature Control	程序控制和手动控制； Program Control and Manual Control;	
控温精度 Temperature Control Accuracy	± 1℃	
极限升温速度 The Ultimate Heating Rate	60℃/分钟min	25℃/分钟min

3200 Degree Ultra-high Temperature Graphitization Furnace 3200度超高温石墨化炉

3200度超高温石墨化炉是我公司工程技术人员在国内科研院所和大专院校的大力支持下，开发的一种具有国内技术的超高温生产型设备。设备使用温度达到3000℃。

3200 degree ultra-high temperature graphitization furnace is a kind of ultra-high temperature production equipment with domestic technology developed by our engineering and technical personnel under the strong support of domestic scientific research institutes and universities. The operating temperature of the equipment reaches 3000℃.

产品用途 Product Usage

大型石墨化炉主要用于电池负极材料，碳材料结构件（制品）、C/C复合材料制品、碳纤维、炭素材料、碳纤维绳的烧结，磷片石墨和其它石墨材料的高温石墨化，其它可在碳环境下烧结和熔炼的材料。

Large graphitization furnace is mainly used for the sintering of battery anode material, carbon material structure parts (products), C/C composite material products, carbon fiber, carbon material, carbon fiber rope, high temperature graphitization of phosphorus sheet graphite and other graphite materials, and other materials that can be sintered and smelted in the carbon environment.

产品特点 Product Features

大型石墨化炉采用保温材料 and 国内的炉膛结构，使用温度达到3000℃，其采用一台电源带多台炉体来提高生产率，由于大型石墨化炉冷却时间长，利用冷却时间进行其他炉体加热。

采用数显智能化温控系统，全自动精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线。

全面的PLC水、电、气自动控制和保护系统。

可一机多炉，采用PLC智能转换。

Large graphitization furnace adopts thermal insulation material and domestic furnace structure, and the service temperature reaches 3000℃. It adopts one power supply with multiple furnace bodies to improve production. Due to the long cooling time of large graphitization furnace, the cooling time is used for heating other furnace bodies.

Using digital display intelligent temperature control system, automatic precision to complete the temperature measurement and temperature control process, the system can be heated according to the given temperature curve, and can store 20 pieces of a total of 400 different process heating curve.

Comprehensive PLC water, electricity, gas automatic control and protection system.

Can be one machine and multiple furnaces, using PLC intelligent conversion.



主要技术参数 Main Technical Parameters

工作温度 Working temperature	≥2000℃、≥2200℃、≥2500℃、≥2600℃、≥2800℃、≥3000℃
炉体形状 Furnace body shape	分立式和卧式两种炉 two types of vertical and horizontal furnaces
炉膛容积 Hearth volume	Φ500X1000 Φ600X1200 Φ700X1500 Φ800X1600 Φ900X1800 Φ1000X2000 也可根据用户需要定做各种规格尺寸的炉体 Can also be customized according to user needs of various sizes of furnace body
炉内工作气氛 Working atmosphere in furnace	真空、氢气、氮气、惰性气体等 Vacuum, hydrogen, nitrogen, inert gases, etc
温度均匀度 Temperature uniformity	≤10℃
温度测量 Temperature measurement	远红外线光学测温 Far infrared optical temperature measurement
测量范围 Temperature Range	1000~3000℃ or 0-3000℃
测量精度 Temperature measurement accuracy	0.2~0.75%

Thermal Conductive Film Graphitization Furnace 导热膜石墨化炉

导热石墨膜生产设备主要由1200-1600℃的碳化炉和2800-3000℃的超高温炉及其配套的气体净化装置，气体过滤装置，冷却循环水系统等组成。可生产各种尺寸规格的导热石墨膜。设备的前后工序所需的设备搭配合理，设备利用率高，生产效率高。

设备采用微电脑进行炉体分配控制，温度控制，温度记录和水，电，气各种数据的监控。采用编程工艺升温曲线进行升温，并对实际炉温进行记录，可保证每炉产品的品质，并可跟踪和追查产品的生产情况。全面的水、电、气数据监控，当出现故障时，将在1秒钟内报警，并对设备自动做出相应的保护。



Thermal conductive graphite film production equipment is mainly composed of 1200-1600℃ carbonization furnace and 2800-3000℃ ultra-high temperature furnace and its supporting gas purification device, gas filtration device, cooling and circulating water system. Can produce various sizes of thermal conductive graphite film. The equipment before and after the process required reasonable equipment collocation, high equipment utilization rate, high production efficiency.

The equipment adopts microcomputer for furnace body distribution control, temperature control, temperature recording and monitoring of water, electricity and gas data. Using programming process temperature rise curve for temperature rise, and the actual furnace temperature is recorded. To ensure the quality of each furnace products, and can track and trace the production of products. Comprehensive monitoring of water, electricity and gas data, when failure occurs, it will alarm within 1 second and automatically protect the equipment accordingly.

产品特点 Product Features

- 采用全密封防尘结构电源柜，防止导电碳纤维和导电尘土机柜自带水冷散热量，不与室内空气发生热交换；
- 全面的PLC水、电、气自动控制和保护系统。实现电源、炉体、冷却水、保护气体等装置的顺序控制和联锁保护、预警、报警等功能；
- 由封闭的纯水循环系统进行冷却，每一个水路的水流量都在触摸屏上显示，一次水循环系统全部使用不锈钢管道和去离子水冷却；
- 配备气体净化装置，可将氧含量降到1PPMV，露点温度小于-80度。
- 采用一拖二设计，提高生产产量，有卧式和立式两种炉型，适应于不同的产品需求。
- Fully sealed dust proof structure power cabinet, prevent conductive carbon fiber and conductive dust cabinet with water cooling heat dissipation, no heat exchange with indoor air;
- Comprehensive PLC water, electricity, gas automatic control and protection system. Realize the sequence control and interlock protection, early warning and alarm functions of power supply, furnace body, cooling water, protective gas and other devices;
- It is cooled by the closed pure water circulation system. The water flow of each waterway is displayed on the touch screen. The primary water circulation system is cooled by stainless steel pipes and deionized water.
- Equipped with gas purification device, oxygen content can be reduced to 1PPMV, dew point temperature is less than -80 degrees.
- Adopt one tow and two designs to improve production output. There are two types of furnace, horizontal and vertical, to meet different product needs

主要技术参数 Main Technical Parameters

型 号 Model	单位 Unit	GJC-KGPS -60	GJC-KGPS -120	GJC-KGPS -160	GJC-KGPS -200	GJC-KGPS -250	GJC-KGPS -300
坩埚有效容积（直径*高） Crucible Effective Volume (diameter * height)	mm	Φ100*150	Φ200*300	Φ300*500	Φ400*800	Φ500*1000	Φ600*1200
中频电源功率 Medium Frequency Power Supply Power	Kw	60	120	160	200	250	400
中频电源频率 Intermediate Power Supply Frequency	Hz	4000	2500	2500	1500	1500	1000
最高工作温度 Maximum Operating Temperature	℃	3000	3000	3000	3000	3000	3000
极限真空度 Ultimate Vacuum	Pa	1.2*10 ⁻¹	1.2*10 ⁻¹	1.2*10 ⁻¹	1.2*10 ⁻¹	1.2*10 ⁻¹	1.2*10 ⁻¹
压升率 Rate of Pressure Rise	Pz/h	2	2	2	2	2	2
恒温区温差 Temperature Difference in Constant Temperature Zone	℃	± 10	± 10	± 10	± 15	± 15	± 15

炉体最高使用温度 Highest Operating Temperature of Furnace Body	常温~3000℃ Normal Temperature ~3000℃
产品规格 Product Specifications	180*230mm、210*290mm、400*400mm、450*450mm 可按要求定做各种规格 Various Specifications Customized According to the Requirements
温度均匀度 Temperature Uniformity	≤ ± 15℃
工作气氛 Working Atmosphere	真空置换Ar、N2保护（微正压） Vacuum Displacement Ar, N2 protection (micro positive pressure)
控温精度 Temperature Control Accuracy	± 1℃
温度测量 Temperature Measurement	红外光学测温，测温范围1000-3200℃ Infrared Optical Temperature Measurement Temperature Measurement Range 1000-3200℃
测温精度 Temperature Measurement Accuracy	0.3%

Carbon Fiber Graphitization Furnace 碳纤维石墨化炉

碳纤维石墨化炉是我公司工程技术人员在国内科研院所和大专院校的大力支持下，开发的一种具有国内领先技术的高性能智能化超高温设备。设备最高使用温度高达3000℃。

Carbon fiber graphitization furnace is a kind of high performance intelligent ultra-high temperature equipment with leading domestic technology developed by our company's engineers and technicians under the strong support of domestic scientific research institutes and universities. The highest operating temperature of the equipment is up to 3000℃.

产品用途 Product Usage

用于碳纤维的高温石墨化，碳化处理，或其它可在碳环境下烧结、提纯的材料加工等。

It is used for high temperature graphitization, carbonization treatment of carbon fiber, or other materials that can be sintered and purified in carbon environment.

产品特点 Product Features

采用国外进口保温材料和先进的炉膛结构，最高使用温度高达3000℃。

用于碳纤维石墨化时，丝从一端进，另一端出，边放丝，边收丝，生产效率高。

采用纵向垂直测温，测温仪的放置不影响走线。(此测温方式填补了国内空白)。

用于磷片石墨或碳粉石墨化时，采用推舟方式，连续生产，生产效率高，节能省电。

采用数显智能控温系统，全自动高精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线。

全面的PLC水、电、气自动控制和保护系统控制柜与炉体的连接电缆可长达20m，并于设备的远程控制。

The equipment adopts imported thermal insulation materials and advanced furnace structure, and its highest operating temperature can achieve 3000℃.

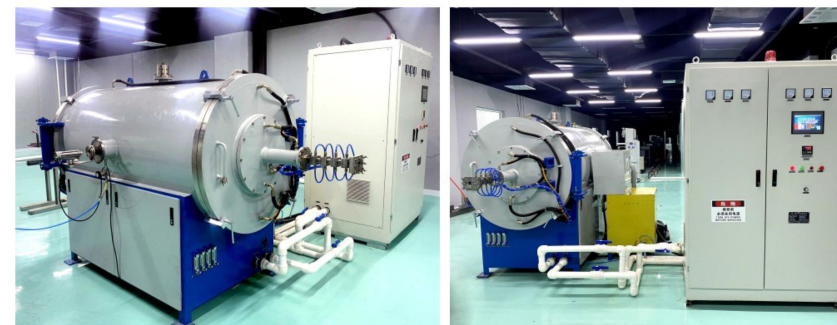
When it is used for graphitization of carbon fiber, the silk gets in at one end and goes out at the other end. While releasing the silk, it can take the silk in, which can realize the high efficiency.

Longitudinal and vertical temperature measurement is adopted, and the placement of the thermometer does not affect the wiring. (This temperature measurement method fills the Technical gap in our country).

When it is used for graphitization of the phosphor sheet or graphitization of the toner powder, it adopts pushing boat method for continuous production with high production efficiency and energy saving purpose.

Digital display intelligent temperature control system is adopted to complete the temperature measurement and control process with automatic and high precision. The system can raise the temperature according to the given heating curve and store a total of 40 heating curves of 200 different processes.

The connection cable between the comprehensive PLC water, electricity, gas automatic control & protection system control cabinet and furnace body can be up to 20m, parallel to the remote control in the equipment.



主要技术参数 Main Technical Parameters

最高使用温度 Maximum Operating Temperature	常温~3000℃ Normal Temperature ~3000℃
炉膛尺寸 Furnace Chamber's Dimensions	(Φ30-Φ300)*(500-2000mm) 或方形Or in square
温度均匀度 Temperature Uniformity	≤±10℃
温度测量 Temperature Measurement	远红外线光学测温 Far Infrared Optical Temperature Measurement
测温范围 Temperature Measurement Range	1000-3200℃ 或900-3500℃
测温精度 Temperature Measurement Accuracy	0.2-0.75%

Continuous Purification Furnace 连续提纯炉

连续提纯炉可用于石墨粉料的连续式高温石墨化提纯，并可实现高温法与化学法相结合的提纯处理。适用于新能源汽车、半导体、新材料等多种领域。

Continuous purification furnace can be used for continuous high temperature graphitizing purification of graphite powder, and the purification treatment combining high temperature method and chemical method can be realized. This method is suitable for new energy vehicles, semiconductors, new materials and other fields.

产品用途 Product Usage

适用于电池负极材料、电子陶瓷、玻璃、晶体、粉末冶金、纳米材料、金属零件、电子元器件、石墨烯、新型材料及粉体材料的真空气氛处理，材料在惰性气氛环境下进行烧结。

This equipment is suitable for vacuum atmosphere treatment of battery anode materials, electronic ceramics, glass, crystal, powder metallurgy, nanometer materials, metal parts, electronic components, graphene, new materials and powder materials. The materials are sintered under inert atmosphere.

产品特点 Product Features

可用于石墨粉料的连续式高温石墨化提纯，并可实现高温法与化学法相结合的提纯处理。

可实现高温下连续式进料和出料，减少了能源消耗，缩短生产周期；

采用感应加热，温度可达2850℃以上；

采用高温法和化学法相结合的提纯方式，可满足高纯度处理要求；

采用高效的过滤系统，能有效捕集提纯过程中产生的粉尘、腐蚀性气体等；

可实现高温下连续式进料和出料，减少了能源消耗，缩短生产周期。

It can be used for continuous high temperature graphitization purification of graphite powder, and the purification treatment combining high temperature method with chemical method can be realized.

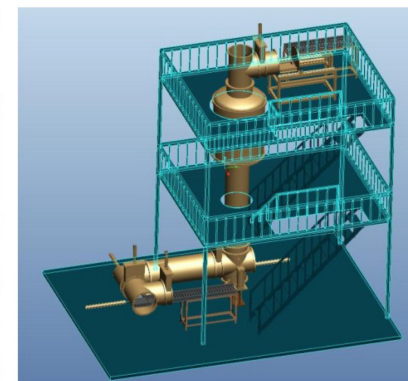
It can realize the continuous materials loading and unloading process at a high temperature, which has reduced the energy consumption and shortened the production lead time.

Adopting induction heating, the temperature can reach 2850℃ or above;

By combining the high temperature method and the chemical method, the equipment can meet the requirement of high purity treatment.

Adopting high efficient filtration system, it can effectively capture the dust and corrosive gas produced in the purification process.

It can realize the continuous materials loading and unloading process at a high temperature, which has reduced the energy consumption and shortened the production lead time.



ULTRA HIGH
TEMPERATURE
GRAPHITIZING FURNACE

主要技术参数 Main Technical Parameters

型 号 Model	GJC-DCL-4	GJC-DCL-10	GJC-DCL-15
产 量 (kg/h) Capacity	50-90	100-140	150-200
最高温度 (℃) Highest Temperature	2850	2850	2850
加热方式 Heat Method	感应加热 Induction Heating		
控制方式 Control Mode	手动或自动操作 Manual or Automatic Operation		
装料容积 (L) Loading Volume (L)	10-40	40-120	120-250
恒温区温差 (℃) Temperature Difference in Constant Temperature Area (℃)	± 3.5	± 5	± 8
炉内工作气氛 Working Atmosphere in Furnace	真空或惰性气体保护 (微正压) Vacuum or Inert Gas Protection (micro positive pressure)		

High Temperature Carbon Tube Furnace

高温碳管炉

产品用途 Product Usage

主要用于石墨粉料提纯等高温处理。它的使用温度可达2800℃，并可长时间的连续工作。生产效率好，节能省电。带有在线测温及控温系统，可实时监控炉内的温度，并进行自动的调节。

Mainly used for purification of graphite powder and other high temperature treatment. Its operating temperature can reach 2800℃, and can work continuously for a long time. Good production efficiency, energy saving. With on-line temperature measurement and temperature control system, the temperature in the furnace can be monitored in real time and adjusted automatically.

产品特点 Product Features

使用温度可达2800度，温度均匀性好，恒温区长，设备运行故障率低。
炉管使用寿命长，连续生产20-30天不停炉。
带有红外测温及控温系统，可实时显示并PID自动控制炉内的温度，生产的产品质量稳定。同时保障产品的要求。
采用三相供电方式，三相电力平衡，性能稳定。不象碳管炉采用单相供电，相电压不平衡，对电网冲击大，影响其他设备运转。
使用常用温度，温度可达3000℃，可长期工作在2600-2800℃
采用自动送料装置，时间控制进出料，自动化程度高，工人劳动强度低，产品高温处理时间一致。
采用碳毡做保温材料，没有使用碳黑，更换碳管方便，同时干净卫生。
采用推舟生产方式，可不停炉连续性生产。不象间隙式（立式炉）炉，没有每烧一炉就要停炉，并等其冷却后才能取出材料，生产效率低，能耗高。
材料处在舟皿中，材料不会出现二次污染。
每舟产品量为1.5公斤左右，可及时抽样跟踪检测产品质量，并根据检测结果对工艺进行修正，不用停炉，材料的浪费也少。
升温时间短，可达200℃/小时。
炉体密封性好，保护气体损耗小。所有法兰和炉盖都采用密封条进行密封。
炉体内胆和法兰采用不锈钢制作，不生锈，使用寿命长。
配有真空泵用于炉内气体的置换，换气时间短，用气量少。
The use of temperature up to 2800 degrees, good temperature uniformity, constant temperature area length, low failure rate of equipment operation.
Long service life of furnace tube, continuous production 20-30 days with the furnace.
With infrared temperature measurement and temperature control system, real-time display and PID automatic control of the temperature in the furnace, the product quality is stable. At the same time to ensure the requirements of the product.
Adopt three-phase power supply mode, three-phase power balance, stable performance. Unlike carbon tube furnace using single-phase power supply, phase voltage imbalance, impact on the power grid, affecting the operation of other equipment.
The use of common temperature, the temperature can reach 3000℃, can work at 2600-2800℃ for a long time.
The use of automatic feeding device, time control in and out of the material, high degree of automation, low labor intensity of workers, product high temperature treatment time is consistent.
The use of carbon felt as insulation material, no use of carbon black, convenient replacement of carbon tube, while clean.
Using the push boat production mode, can stop the furnace continuous production. Unlike the gap type (vertical furnace) furnace, there is no need to stop every furnace, and wait for its cooling to take out the material, low production efficiency, high energy consumption.
The material is in the boat, the material will not appear secondary pollution.
The product quantity of each boat is about 1.5 kg. The product quality can be sampled and tested in time, and the process can be modified according to the test results. No need to stop the furnace, less waste of materials.
Short heating time, up to 200℃/ hour.
The furnace body sealing is good, small loss of protective gas. All flanges and furnace covers are sealed with sealing strips.
The tank and flange of furnace body are made of stainless steel, without rust and with long service life.
Equipped with a vacuum pump for the replacement of gas in the furnace, short ventilation time, less gas consumption.



主要技术参数 Main Technical Parameters

额定功率 Rated power	120KW
输入电压 Input voltage	三相380V Three-Phase 380V
使用温度 Operating temperature	2800
最高温度 Maximum temperature	3000
保护气体 Shielding Gas	氩气 Argon
控温方式 Temperature control mode	PID自动控制 PID Automatic Control
测温方式 Temperature measurement Mode	红外测温 Infrared Temperature Measurement
进出料方式 Automatic feeding	PLC程序自动送料 By PLC program
工作方式 Working Mode	推舟式间断送料 Push Boat Type Intermittent Loading Materials
舟皿尺寸 Dimension of the Boat	Φ126X320mm
冷却方式 Cooling Mode	循环水冷却 Circulating Water Cooling

Graphite Pusher Furnace 石墨推舟炉

石墨推舟炉利用石墨板承载石墨料盒，配合推杆一盒接着一盒地推至加热区内部，在气氛保护状态下进行粉末还原、粉末冶金制品的烧结等热处理。适用于粉末冶金加工领域及石墨材料加工领域。

Graphite pusher furnace uses graphite plate to carry graphite material box, and then pushes the box into the heating zone one by one with push rod. Under the condition of atmosphere protection, heating treatment such as powder reduction and sintering of powder metallurgy products is carried out. This equipment is suitable for powder metallurgy and graphite material processing fields.

产品用途 Product Usage

用于石墨粉料及制品的连续式高温石墨化提纯，并可实现高温法与化学法相结合的提纯处理。它的使用温度可达2800℃，并可长时间的连续工作。生产效率好，节能省电。带有在线测温及控温系统，可实时监控炉内的温度，并进行自动的调节。

It is used for continuous high temperature graphitizing purification of graphite powder and products. It can realize the purification treatment combining high temperature method with chemical method. Its operating temperature can be up to 2800℃, and it can work continuously for a long time. So it have good production efficiency, energy saving and electricity saving features. With on-line temperature measurement and temperature control system, the temperature in the furnace can be monitored in real time and automatically adjusted.

产品特点 Product Features

- 采用新加热技术、使用温度高、寿命长；
- 炉管使用寿命长，连续生产20-30天不停炉；
- 连续式进出料、密封性能好，气体耗量少；
- 采用推舟生产方式，可不停炉连续性生产；
- 可选配全自动装舟、推舟、出料和倒舟机构，产品质量稳定，人工劳动强度低；
- 炉体长度可根据用户现场实际情况进行增减；
- 具备远程控制功能，可远程操控、故障诊断和软件升级；
- 采用三相供电方式，三相电力平衡，性能稳定。

Adopt new heating technology with high operating temperature and long service life;
Long service life for the furnace tube, and the furnace can maintain continuous production for 20-30 days without stopping;

Continuous materials loading and unloading process, good sealing performance, low gas consumption;
The pushing boat production mode can realize continuous production without stopping the furnace;
It can be equipped with automatic boat loading, pushing, unloading and tipping mechanism, which can guarantee the stable product quality and low manual labor intensity.

The length of the furnace body can be increased or reduced according to the actual situation of users.
With remote control function, the equipment can be controlled, fault diagnosed and software upgraded remotely;
It adopts three -phase power supply mode and can guarantee three -phase power balance with stable performance.



主要技术参数 Main Technical Parameters

型 号 Model	GJC-ZTL-10	GJC-ZTL-20	GJC-ZTL-30
产 量 Output (kg/d)	200	400	700
最高温度 (°C) Maximum Temperature (°C)	2800		
控温方式 Temperature Control Method	PID自动控制 PID Automatic Control		
保护气体 Shielding Gas	氩气 Argon		
额定功率 (kw) Rated Power (KW)	120	180	220
电压 (V) Voltage (V)	三相380 Three Phase 380		
测温方式 Temperature Measurement Method	远红外测量 Far Infrared Measurement		
工作方式 Working Mode	推舟式间断送料 Push Boat Type Intermittent Loading Materials		
舟皿尺寸 Dimension of the Boat	Φ120*320mm	Φ150*400mm	Φ200*420mm
冷却方式 Cooling Mode	循环水冷却 Circulating Water Cooling		

Vacuum Hot-pressure sintering Furnace 真空热压烧结炉

本设备主要供大专院校、科研单位等针对金属化合物、陶瓷、无机化合物、纳米材料等在真空或保护气氛的条件下进行加压加热烧结处理,以便获得一致的产品，例如生产高精度氮化硅陶瓷轴承及氮化硅陶瓷基板等。

This equipment is mainly used by colleges and research institutions for pressurized heating and sintering of metal compounds, ceramics, inorganic compounds and nanomaterials under vacuum or protective atmosphere to obtain consistent products, such as high-precision si3N4 ceramic bearings and si3N4 ceramic substrate.

产品用途 Product Usage

- (1)双层SUS304炉体结构，中间通以冷却水，有效降低炉体表面温度减少高温伤害，降低对环境的影响；
- (2)框架式双立柱支撑结构，采用型材焊接,整体加工，保证设备的可靠性；
- (3)采用保温材料及隔热结构，导热系数低，保温效果好，即使在很高的温度下也能有效隔绝热量，节约能耗；
- (4)温度范围广，加热元件多种可选，例如石墨、钼、钨、钽等，在合适的保护气氛中，温度可达2400℃, 可适应不同材料的热压烧结；
- (5)多样化真空系统配置，根据工艺选择不同等级的真空度；
- (6)设有充放气系统，既可以选择在真空环境中进行热压烧结，也可以选择在惰性气氛或还原性气氛中进行热压烧结；
- (7)人性化配置，既可以手动操作，也可以实现一键智能操作；
- (8)一炉多用，可作为单纯的真空或气氛烧结炉使用；
- (9)型式多样化，立式上出料、立式侧开门出料、单向加压、双向加压等等，任意选择；
- (10)本产品接受非标定制。

Double-layer SUS304 furnace structure, with cooling water in the middle, can effectively low the surface temperature of the furnace to reduce high temperature damage and reduce the impact on the environment;

With frame-type double column supporting structure, the furnace adopt profile sintering and overall processing method to ensure the reliability of the equipment;

By using the heat preservation materials and heat insulation structure, it has low thermal conductivity and good heat preservation effects, even at very high temperature, it can effectively isolate heat and save energy;

It has a wide range of temperature and various heating elements can be selected, such as graphite, molybdenum, tungsten, tantalum, etc. In a suitable protective atmosphere, the temperature can be up to 2400℃ and different materials can be used for the hot pressing sintering process;

With diversified vacuum system configuration, the equipment can select different vacuum degrees according to the processes;

Equipped with a inflating and deflating system, the hot pressing sintering process can be carried out in a vacuum environment or in an inert atmosphere or a reducing atmosphere;

Humanized configuration makes both the manual operation and one-key intelligent operation method possible;

It is a multi-purpose furnace and can be used as a simple vacuum or a atmosphere sintering furnace;

Various types can be selected at will, such as the vertical materials loading and unloading mode,the vertical side door unloading mode, unidirectional pressing, bidirectional pressing, etc.;

This product is subject to non-standard customization.



主要技术参数 Main Technical Parameters

型 号 Model	工作区尺寸 D*Hmm Working Area Size	最高温度 ℃ Highest Temperature	冷态极限真空度 Pa Cold Limit Vacuum	压升率 Pa/h Rate of Pressure Rise	额定功率 Kw Rated Power	压力 T Pressure	位移 mm Displacement	充气压力 Mpa Inflation Pressure
GJC-RYL-50	Φ150*200	2400	5*10 ⁻³	3	50	20-200	0-100	0.05
GJC-RYL-75	Φ200*300	2400	5*10 ⁻³	5	75	20-200	0-150	0.05
GJC-RYL-100	Φ300*400	2400	5*10 ⁻³	6	100	20-200	0-250	0.05
GJC-RYL-200	Φ400*500	2400	5*10 ⁻³	6	200	20-300	0-300	0.05
GJC-RYL-300	Φ500*600	2400	5*10 ⁻³	6.5	300	20-400	0-350	0.05
GJC-RYL-400	Φ600*700	2400	5*10 ⁻³	6.5	400	20-400	0-450	0.05
GJC-RYL-500	Φ700*800	2400	5*10 ⁻³	7	500	20-600	0-500	0.05
GJC-RYL-600	Φ800*1000	2400	5*10 ⁻³	7	600	20-600	0-500	0.05

Vacuum sintering Furnace 真空烧结炉

真空烧结炉是我厂工程技术人员消化和吸收国内外最先进的测温、控温技术、智能化、新材料技术和炉膛设计技术，推出的一项特别适合硬质合金行业（工艺允许也可适用于其他行业）的高性能智能化电炉。

我厂生产的中频感应烧结炉是一种间歇式气体（真空）保护炉，按照烧结工艺时间的需要可以单套电源配置多台电炉，分别对单个炉子进行通电升温 and 段电降温，实现连续工作。

Vacuum sintering furnace is a high performance intelligent electric furnace which is especially suitable for the cemented carbide industry (process permits and can be applied to other industries). Introduced by our engineers and technicians, it absorbs and integrates the most advanced temperature measurement and control technology, intelligent system, new material technology and furnace design technology domestically and overseas.

The intermediate frequency induction sintering furnace produced by our factory is a intermittent gas (vacuum) protection furnace. According to the time requirement of the sintering process, a single set of power supply can be configured with several electric furnaces, by which we can electrically heat up and cool down a single furnace respectively, so as to realize the continuous working function of the equipment.

产品用途 Product Usage

应用于硬质合金、铜钨合金、钨、钼、铝镍钴永磁、SmCo5、Sm2Co17及钕铁硼、钛合金等合金材料的真空/气氛烧结。

It is used in vacuum/atmosphere sintering process of cemented carbide, copper-tungsten alloy, tungsten, molybdenum, al-Ni-Co permanent magnet, SmCo5, Sm2Co17, NdFeb, titanium alloy and other alloy materials.

产品特点 Product Features

2400℃以内超高温炉体，可完全满足各种材料的烧结。

采用数显智能控温系统，全自动高精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线。

采用内循环纯水冷却系统，数字式流量监控系统。

采用高性能中频接触器对炉体进行自动转换。

全面的PLC水、电、气自动控制和保护系统。

The ultra-high temperature furnace body within 2400℃ can completely satisfy the sintering process of various materials.

Digital display intelligent temperature control system is adopted to complete the temperature measurement and control process with automatic and high precision. The system can raise the temperature according to the given heating curve and store a total of 40 heating curves of 200 different processes.

The internal circulation pure water cooling system and digital flow monitoring system are adopted.

A high performance intermediate frequency contactor is used to convert the furnace body automatically.

Comprehensive PLC water, electricity, gas automatic control and protection system is equipped.



主要技术参数 Main Technical Parameters

最高使用温度 Maximum Operating temperature	1600℃、2000℃、2400℃	
高温区容积 High Temperature Zone Volume	12L、45L、128L、192L、250L、375L、540L、648L	980L、1600L、2430L、3500L、10000L
炉内工作气氛 Working Atmosphere in the Furnace	真空、氢气、氮气、惰性气体等 Vacuum, Hydrogen, Nitrogen, Inert gas, etc	
温度均匀度 Temperature Uniformity	≤ ±10℃	≤ ±20℃
温度测量 Temperature Measurement	红外光学测温，测温范围800~2400℃或0~2400℃ Infrared Optical Temperature Measurement Temperature Measurement Range of 800~2400℃ or 0~2400℃	
测温控制 Temperature Control	程序控制和手动控制 Program Control and Manual Control	
测温精度 Temperature Measurement Accuracy	0.2~0.75%	
控温精度 Temperature Control Accuracy	±1℃	±3℃
极限升温速度 Ultimate Heating Speed	75℃/分钟 min	25℃/分钟 min

Carborundum sintering Furnace 碳化硅烧结炉

碳化硅烧结炉是一种间歇式电阻加热炉，主要应用范围为无压碳化硅烧结、硬质合金、粉末冶金行业生产各种粒度的碳化钨粉、碳化铬粉、碳化钛粉、碳化钒粉等金属粉末及复合金属粉末，冷压成型后，进行烧结处理。

Silicon carbide sintering furnace is an intermittent resistance heating furnace, and its main application scope includes producing various particle size of tungsten carbide powder, chromium carbide powder, titanium carbide powder, vanadium carbide powder and other metal powder and composite metal powder in non-pressure silicon carbide sintering, hard alloy powder, powder metallurgy industry. After the cold pressing molding, sintering processing will be taken.



产品特点 Product Features

采用智能数显仪表编程PID智能数显温度控制仪，全新数码显示、智能控制技术，可减少视读和人为操作误差，大大提高工作效率、双排数字显示，按键设定，超温报警。微电脑全自动控制，可编程多段升、保、降温曲线，全自动升温、保温、降温和超温保护，程序运行结束自动停止，无须值守。

升温快、环保节能、精度高、性能稳定、保温效果好。

炉膛采用高温隔热材料，经久耐用，所选用的隔热保温材料确保长期工作下炉体外的温度不超过国家标准允许值。

内部加有循环水系统，确保降温速度加快。炉体温度接近室温。

It can reduce the error of visual reading and human operation and greatly improve work efficiency by using intelligent digital display instrument programming PID, intelligent digital display temperature control instrument, new digital display, intelligent control technology.

It is also equipped with double row digital display, key setting, over-temperature alarming.

The microcomputer automatically control the system and can program multi-section lifting, protecting and cooling curve. It also has automatic heating, heat preservation, cooling and over-temperature protection functions. It can automatically stop at the end of program operation and there no need to arrange a person to watch it.

It has various good performances, such as fast heating, environmental protection and energy saving, high precision, stability, good insulation effect.

The furnace adopts durable high temperature heat insulation material. The chosen heat insulation material can ensure that the temperature outside the furnace body under long-term work does not exceed that permitted value of the national standard.

A circulating water system is added inside to ensure the cooling speed is accelerated. Furnace's temperature is close to the room temperature.

主要技术参数 Main Technical Parameters

极限温度 Limit Temperature	≤2450℃
使用温度 Operating temperature	≤2300℃
极限真空度 Ultimate Vacuum	1Pa(在冷、空、干净的炉体内)。 1Pa (in cold, empty, clean furnace)
泄露率 Leakage Rate	停泵15分钟后,冷态12小时不大于10Pa/小时。 Less than 10Pa/h for 12 hours after the pump stops for 15 minutes.
控温精度 Temperature Control Accuracy	± 1℃
电压 Voltage	380V、50Hz、3相
加热材料 Heating Material	石墨管和石墨棒 Graphite Tube and Graphite Rod
气体供给 Air Supply	配气盘上可分别控制Ar、N2 Ar and N2 can be respectively controlled on the gas supply distributor plate.
常用恒温区 Common Constant Temperature Area	300*300*500mm、400*400*800mm、500*500*1300mm、600*600*1400mm 800*800*1600mm、1000*1000*2000mm

Atmosphere Protective sintering Furnace 气氛保护烧结炉

产品用途 Product Usage

适用于锂电池材料、稀土材料、磁性材料、矿物材料、陶瓷器件、耐火材料、活性炭炭化、金属粉末等新材料在气氛保护下烧结处理和还原处理，主要有钨粉还原处理，氮化处理及碳化处理等。

It applies to the sintering and reduction treatment of lithium battery materials, rare earth materials, magnetic materials, mineral materials, ceramic devices, refractory materials, activated carbon carbonization, metal powder and other new materials under atmosphere protection, mainly including tungsten powder reduction treatment, nitridation treatment and carbonization treatment.

产品特点 Product Features

可用于石墨粉料的连续式高温石墨化提纯，并可实现高温法与化学法相结合的提纯处理。2200℃超高温炉体，可兼容满足细、中、粗颗粒料WC粉和复合料碳化加热工艺。

采用数显可编程智能控温系统，全自动高精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线。

采用纯水冷却系统，数字式流量监控系统。

采用高性能中频接触器对炉体进行自动转换；

全面的PLC水、电、气自动控制和保护系统。

It can be used for continuous high temperature graphitizing purification of graphite powder, and the purification treatment combining high temperature method with chemical method can be realized. The 1800℃ ultra-high temperature furnace body can compatibly meet the requirements of the carbonization heating process for fine, medium and coarse particle material WC powder and compound material.

Digital display intelligent temperature control system is adopted to complete the temperature measurement and control process with automatic and high precision. The system can raise the temperature according to the given heating curve and store a total of 40 heating curves of 200 different processes.

The internal circulation pure water cooling system and digital flow monitoring system are adopted.

A high performance intermediate frequency contactor is used to convert the furnace body automatically.

Comprehensive PLC water, electricity, gas automatic control and protection system is equipped.



主要技术参数 Main Technical Parameters

使用温度 Operating Temperature	1000℃~2400℃	
高温区容积 High Temperature Zone Volume	12L、45L、128L、192L、250L、375L、540L、648L	980L、1600L、2430L、3500L、10000L
炉内工作气氛 Working Atmosphere in the Furnace	真空、氢气、氮气、惰性气体等 Vacuum, Hydrogen, Nitrogen, Inert gas, etc	
温度均匀度 Temperature Uniformity	≤ ± 10℃	≤ ± 20℃
温度测量 Temperature Measurement	低温段热电偶测温，高温段远红外线光学测温测温范围800~2500℃或常温2200℃ Low Temperature Section Thermocouple Temperature Measurement High Temperature Section Far Infrared Optical Temperature Measurement Temperature Measurement Range of 800~ 2500 ℃ or Room Temperature 2200 ℃	
测温精度 Temperature Measurement Accuracy	0.2~0.75%	
温度控制 Temperature Control	程序控制和手动控制 Program Control and Manual Control	
控温精度 Temperature Control Accuracy	± 1℃	± 3℃
极限升温速度 Rate of Limit Temperature Rising	75℃/分钟（空炉）	25℃/分钟（空炉）

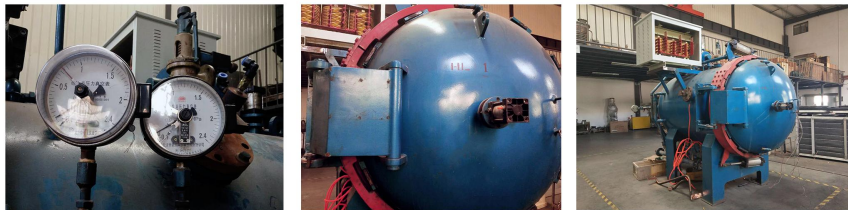
Pressure Sintering Furnace 压力烧结炉

产品用途 Product Usage

主要用于钨合金、高比重合金、铝合金和硬质合金等制品的真空烧结、加压烧结工艺。
 Mainly used for vacuum sintering and pressure sintering process of tungsten alloy, heavy alloy, molybdenum alloy and hard alloy products.

产品特点 Product Features

采用特殊的炉胆结构和加热器布置，炉温均匀性好。
 采用特殊结构脱脂箱，密封效果好，脱脂完全，对炉内元件无污染。
 具备柔性抽真空、真空烧结、压力烧结、微正压烧结、分压烧结、负压脱脂、TOWAC脱脂、微正压脱脂等功能；
 采用最先进的隔热结构和材料，炉胆隔热性能好、蓄热少，比传统设计节能20%以上。
 采用触摸屏操作，PLC集中控制，操作简单，可靠性高。
 具有超温超压等故障报警，机械式自动压力保护，动作互锁等功能，设备安全性高。
 Using special furnace structure and heater arrangement, furnace temperature uniformity is good.
 Using special structure degreasing box, sealing effect is good, degreasing completely, no pollution to the components in the furnace.
 With flexible vacuum pumping, vacuum sintering, pressure sintering, micro positive pressure sintering, partial pressure sintering, negative pressure degreasing, TOWAC degreasing, micro positive pressure degreasing and other functions;
 Adopting heat insulation structure and material, the furnace has good heat insulation performance and less heat storage, saving energy more than 20% than the traditional design.
 Touch screen operation, PLC centralized control, simple operation, strong reliability.
 With overtemperature and overpressure fault alarm, mechanical automatic pressure protection, action interlock and other functions, equipment safety is strong.
 With remote operation, remote fault diagnosis and remote software upgrade functions.



主要技术参数 Main Technical Parameters

参数/型号 Spec/Model	GJC-323212	GJC-050513	GJC-050518
工作区尺寸 Working Zone Dimension (mm)	320X320X1200	500X500X1200	500X500X1800
装载重量 Loading Weight (Kg)	250	500	800
最高温度 Maximum Temperature(℃)	1550	1550	1550
真空下温度均匀性 Temperature uniformity under vacuum(℃)	±5	±5	±5
压力下温度均匀性 Temperature Uniformity under pressure (℃)	±7.5	±10	±10
加热功率 Heating Power(Kw)	210	300	360
极限真空度 Limited Vacuum (Pa)	2	2	2
压升率 Pressure Rising Rate (Pa/h)	0.67	0.67	0.67
工作压力 Working Pressure	20/60/100	20/60/100	20/60/100
工艺气氛 Processing Atmosphere	Ar/N2/H2/CH4	Ar/N2/H2/CH4	

以上压力烧结炉各参数按硬质合金烧结计算得出，可根据工艺要求进行调整，不作为验收依据，具体以持术方案和协议为准。
 The above parameters of vacuum pressure sintering furnace are calculated according to cemented carbide sintering,which can be adjusted according to the process requirements.It is not used as the basis for acceptance,and the specific technical scheme and agreement shall prevail.

Vacuum Deposition Furnace

真空沉积炉

真空气相沉积炉是用于制备碳碳复合材料，沉积炉主要用于石墨、半导体器件、耐热冲刷材料的表面热解炭涂层制备。

Vacuum deposition furnace is used for the preparation of carbon carbon composite materials, deposition furnace is mainly used for graphite, semiconductor devices, heat resistant scour material surface pyrolytic carbon coating preparation.

产品用途 Product Usage

石墨、半导体器件、耐热冲刷材料。

Graphite, semiconductor devices, heat - resistant scouring materials.

产品特点 Product Features

设计温度：1250℃/1650℃/1800℃/2200℃

常用温度：900~1200℃

保温材质：碳毡/石墨毡/碳纤维固化毡

加热器、马弗材质：石墨/CFC

红外仪：单比色/双比色

电源：KGPS/IGBT(仅适用于中频加热)

真空度： $< 50\text{Pa}$

气氛介质：真空/CH₄/C₃H₆/H₂/N₂/Ar

控气方式：质量流量计控制，多通道工气路，流场均匀，无沉积死角，沉积效果好；

多级高效尾气处理系统，环境友好，易清理；

炉型：方形、圆形、立式或卧式结构（非标设计），全封闭沉积室，密封效果好，抗污染能力强；

炉体冷却方式：炉壳水冷，可选配外循环快冷系统，降温时间短，生产效率高；

结构形式：卧式-侧出料,立式-上出料/下出料

Design temperature: 1250°C/1650°C/1800°C/2200°C

Normal temperature: 900-1200°C

Thermal insulation material: carbon felt/graphite felt/carbon fiber cured felt

Heater, muffle material: graphite /CFC

Infrared instrument: single color/double color

Power supply: KGPS/IGBT(only for intermediate frequency heating)

Vacuum: < 50Pa

Atmosphere medium: vacuum /CH₄/C₃H₆/H₂/N₂/Ar

Gas control mode: mass flowmeter control, multi-channel gas path, uniform flow field, no dead Angle of deposition, good deposition effect;

Multi-stage efficient tail gas treatment system, environmentally friendly, easy to clean;

Furnace type: square, round, vertical or horizontal structure (non-standard design), fully enclosed deposition chamber, good sealing effect, strong anti-pollution ability;

Furnace body cooling mode: furnace shell water cooling, optional external circulation rapid cooling system, short cooling time, high production efficiency;

Structure: horizontal - side discharge



主要技术参数 Main Technical Parameters

参数/型号 Spec/Model	GJC-0305-C	GJC-0505-C	GJC-0608-C	GJC-0612-C	GJC-0812-C	GJC-1120-C	GJC-1218-C	GJC-1520-C
工作区尺寸 Working Zone Dimension	300X500	500X500	600X800	600×1200	800×1200	1100×2000	1200×1800	1500×2000
最高温度 (℃) Maximum Temperature	2300	2300	2300	2300	2300	2300	2300	2300
温度均匀性 (℃) Temperature uniformity	±5	±5	±5/±7.5	±7.5/±10	±7.5/±10	±10/±15	±10/±15	±10/±15
极限真空度 (pa) Limit Vacuum	1-100	1-100	1-100	1-100	1-100	1-100	1-100	1-100
压升率 (pa/h) Voltage Rise	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
加热方式 Heating Method	电阻/感应 Resistance/induction							

Carbide Furnace 碳化炉

碳化炉是一种间歇式感应或电阻加热炉，主要用于硬质合金、粉末冶金行业生产各种粒度的碳化钨粉、碳化钛粉、碳化钒粉等金属粉末及复合金属粉末。

Carbide furnace is an intermittent induction or resistance heating furnace, mainly used in carbide, powder metallurgy industry to produce various particle sizes of tungsten carbide powder, titanium carbide powder, vanadium carbide powder and other metal powder and composite metal powder.

产品特点 Product Features

- 1800℃超高温炉体，可兼容满足细、中、粗颗粒WC粉和复合料碳化加热工艺。
- 采用数显可编程智能控温系统，全自动精度完成测温控温过程，系统可按给定升温曲线升温，并可贮存二十条共400段不同的工艺加热曲线。
- 采用纯水冷却系统，数字式流量监控系统。
- 采用性能中频接触器对炉体进行自动转换。
- 全面的PLC水、电、气自动控制和保护系统。
- 该系统对碳化质量有明显改善，与传统碳化炉相比，具有反应完全、粒度均匀、化合含碳量高、游离含碳量低等优势，而且产量高、劳动条件好、使用寿命长。

1800℃ ultra-high temperature furnace body can compatibly meet the requirements of the carbonization heating process for fine, medium and coarse particle material W C powder and compound material.

Digital display intelligent temperature control system is adopted to complete the temperature measurement and control process with automatic and high precision. The system can raise the temperature according to the given heating curve and store a total of 40 heating curves of 200 different processes.

The internal circulation pure water cooling system and digital flow monitoring system are adopted.

A high performance intermediate frequency contactor is used to convert the furnace body automatically.

Comprehensive PLC water, electricity, gas automatic control and protection system is equipped.

Compared with traditional carbonization furnace, this system has the advantages of complete reaction, uniform particle size, high compound carbon content, low free carbon content, high yield, good working conditions and long service life.



主要技术参数 Main Technical Parameters

最高使用温度 Maximum Operating Temperature	1600℃ - 1800℃
高温区容积 High Temperature Zone Volume	35L、100L、200L、340L、540L
炉内工作气氛 Working Atmosphere Inside the Furnace	氢气、氮气、惰性气体等 Hydrogen, Nitrogen, Inert Gas, etc
温度均匀度 Temperature Uniformity	≤ ± 10℃
温度测量 Temperature Measurement	红外光学测温，测温范围800~2000℃或常温2400℃热电偶测温Z Infrared Optical Temperature Measurement, Temperature Measurement Range 800~2000℃ or Room Temperature 2400℃ Thermocouple to Measure Z
测温精度 Temperature Measurement Accuracy	0.2-0.75%
温度控制 Temperature Control	程序控制和手动控制 Program Control and Manual Control
控温精度 Temperature Control Accuracy	± 1℃
极限升温速度 Limit Heating Rate	30℃/min (空炉，视高温区容积和炉膛结构而定) 30℃/min (empty furnace, depending on high temperature area volume and furnace structure)

Vacuum Induction Melting Furnace 真空感应熔炼炉

本产品采用500-4000Hz中频电源进行感应加热、功率范围为100-6000Kw。主要用于熔炼磁性材料及特殊材料，如钕铁硼、合金钢、特种钢、不锈钢，也可用于铜、铝、铅、锌等有色金属的熔炼和升温，保温。

This product adopts 500-4000Hz medium frequency power supply for induction heating, and the power range is 100-6000kW. It is mainly used for smelting magnetic materials and special materials, such as Neodymium iron boron, alloy steel, special steel, stainless steel. It can also be used for smelting, heating and insulation of non-ferrous metals such as copper, aluminum, lead, zinc, etc.

产品用途 Product Usage

- (1)设备体积小、重量轻、效率高、耗电少。
- (2)炉子周围温度低、烟尘少、作业环境好。
- (3)操作工艺简单、熔炼运行可靠。
- (4)金属成分均匀，材料好控制。
- (5)熔化升温快、炉温容易控制、生产效率好。
- (6)炉子利用率高、更换品种方便。

Small size, light weight, high efficiency and low power consumption.

Low temperature around the furnace, less smoke and good working environment.

Simple operation process and reliable melting operation.

Uniform metal composition and easy material control.

Fast melting heating process, easy to the control furnace temperature and high production efficiency.

High utilization rate of the furnace, and convenient to change products' varieties.



主要技术参数 Main Technical Parameters

名 称 Name	单位 Unit	参数 Parameters
容 量 Volume	Kg (以钢计)	5、10、25、50、100、150、250、500
最高工作温度 Maximum Operating Temperature	0C	1700
极限真空度 Ultimate Vacuum	Pa	6.67*10 ⁻³
工作真空度 Working Vacuum	Pa	6.67*10 ⁻²
压升率 Pressure Rise Rate	Pa/h	≤6.5
额定中频功率 Rated Medium Frequency Power	Kw	50-400
额定中频频率 Rated Intermediate Frequency	Hz	500-4000
中频电压 Intermediate Frequency Voltage	V	750/375
冷却水耗量 Cooling Water Consumption	m³/h	0.3-40
冷却水压力 Cooling Water Pressure	MPa	0.3

IGBT Induction Heating Power Supply

IGBT感应加热电源

- 节能高于20%：节能型IGBT中频电源比普通中频电源节能，主要原因如下：
 - (1) 逆变电压高，电流小，线路损耗小；
 - (2) 节能型IGBT中频电源整流满开放，功率因数高，功率因数始终大于0.97，无功损耗小；
- 无高次谐波干扰：节能型IGBT中频电源的整流部分采用二极管整流方式，直流电压始终工作在最大导通角，不会产生高次谐波，不会污染电网、变压器，不会干扰工厂内其它电子设备运行。
- 电源采用串联谐振方式，采用先进的DSP全数字控制技术，确保电源不受负载的变化而工作在ZCS状态，运行安全稳定可靠。
- 整个系统由全数字控制，能够实现功率因数校正（APFC），恒功率控制，温度控制，频率跟踪，零功率启动，电压，电流闭环控制；故障检测保护电路对缺水，过热，过压，过流等故障的实时监控，报警显示。
- 加装了自动控制系统
 - (1) 稳定可靠的水温检测控制；实时采集、记录、储存过程控制的数据并具有相应的分类检索、查询、功能；
 - (2) 过程控制效果的实时检测；实时分析监控诊断设备的随动状态，对异常情况及时汉字显示提示并声光报警；
 - (3) 操作方式简单，以可编程控制器自动控制运行，不会造成误操作而损坏设备；
 - (4) 根据客户提供合理、智能的人机操作界面；
 - (5) 人性化操作界面，具备操作检视功能，防止误操作，简单培训即可上岗；
 - (6) 具备水冷检测系统，实时检测水冷系统故障，防止水冷故障损毁电气元件；
- 完善的外控接口，可以方便的实现外部温度等闭环控制。
- 串联谐振一拖二功能（适用于一台电源两台炉体同时工作），一台加热另一台保温的工作模式，功率可调。



Energy saving can be up to more than 20%: Energy saving IGBT medium frequency power supply can save more energy than common medium frequency power supply for following reasons:

It has high inverter voltage and low current which will result in small circuit loss.

Energy saving IGBT medium frequency power supply's rectifier fully opens and the power factor is high, which is always greater than 0.97 and it has small reactive loss;

No higher harmonic interference: the rectifier in energy-saving IGBT medium power supply adopts the diode rectifier mode, and the dc voltage is always working in maximum conduction Angle. It won't produce higher harmonic and is also free from polluting electric grid, transformers. It will not interfere the other electronic equipment's operation within the factory.

The power supply adopts series resonance mode and advanced DSP full digital control technology to ensure that the power supply will work in ZCS state without be affected by the loading changes, and to ensure that the operation is safe, stable and reliable.

The whole system is controlled by digital, which can realize the functions of power factor correction (APFC), constant power control, temperature control, frequency tracking, zero power start, voltage and current closed-loop control. And the fault detection and protection circuit can also real time monitor and alarm display the water shortage, overheating, over-voltage, over-current and other faults.

Stable and reliable water temperature detection and control system; Real-time collection, recording and storage of process controlled data with corresponding classification retrieval, query and function;

Real-time detection of the process control effect; Real-time analysis of the follow-up status of monitoring and diagnosis equipment, and prompt Chinese characters reminding as well as the sound and light alarm for abnormal situations;

The operation mode is simple and it can be operated automatically by programmable controller. The equipment will not be damaged by improper operation.

The system can provide reasonable and intelligent man-machine operation interface according to customer's needs; With humanized operation interface and operation view function, the system can prevent improper operation and simple training can get people on the job;

With water cooling detection system and real-time detection of water cooling system fault, the system can prevent water cooling fault from damaging the electrical components. The perfect external control interface can conveniently realize the closed loop control of external temperature.

Series resonance has the function of one supplying two (it is suitable for one power supply to work with two furnace body at the same time). It can realize the working mode that one is heating while the other one is in insulation working mode. The power can be adjusted.

主要技术参数 Main Technical Parameters

电源型号 Power Supply Model	输入电压 Input Voltage	输出功率 Output Power	冷却水量 Cooling Water Volume	外形尺寸 Overall dimensions
GJC-IGPS-50	380 ± 20	50	6	800*600*1800
GJC-IGPS-100	380 ± 20	100	10	800*600*1800
GJC-IGPS-150	380 ± 20	150	15	1000*650*2000
GJC-IGPS-200	380 ± 20	200	20	1000*650*2000
GJC-IGPS-300	380 ± 20	300	30	1200*800*2000
GJC-IGPS-400	380 ± 20	400	40	1200*800*2000
GJC-IGPS-500	380 ± 20	500	50	1400*850*2000
GJC-IGPS-600	380 ± 20	600	60	1500*850*2100
GJC-IGPS-700	380 ± 20	700	70	1600*1000*2100

IGBT Stabilizer Bar Heating Equipment

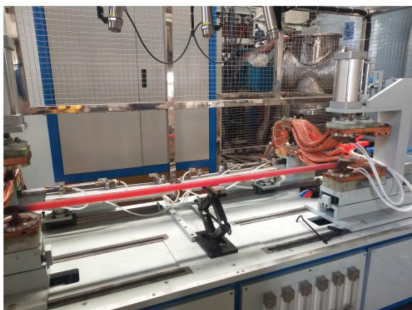
IGBT 稳定杆加热设备

稳定杆是汽车上的一个重要零件，其形状复杂，多为三维形状。稳定杆主要分为两种，一种是实心杆，另一种是空心杆。制造工艺有热成形和冷成形两种，本设备主要用于冷成型工艺中作加热用（热成型工艺中的加热设备采用我公司的中频感应加热设备），对于冷成形来说，由于杆子在加热前已经成形，而且稳定杆的形状多为三维的，十分复杂，不能采用直杆加热的方法用中频加热炉加热。本设备用电极夹持成型后的稳定杆两端，依靠稳定杆本身的电阻实现加热。加热速度快，不受稳定杆的形状影响，一机可加热多种形状的稳定杆。

Stabilizer bar is an important part of automobile and with complex shape, most of which is three-dimensional. There are two main kinds of stabilizer bar, one solid and the other hollow.

It has two types of manufacturing processes, the hot forming and cold forming method. This equipment is mainly used in the heating process in cold forming process (medium frequency induction heating equipment of our company is used as the heating equipment in hot forming process). For cold forming process, because the bar has already been formed before heating process, and the shape of the stabilizer bar is three-dimensional, very complex, we cannot adopt the straight rod heating method to heat with the medium frequency furnace.

The device uses electrodes to clamp both ends of the formed stabilizer bar, and the heating process is realized by the resistance of the stabilizer bar itself. Its heating speed is fast and will not be affected by the shape of stabilizer bar. Besides, one machine can heat stabilizer bars of various shapes.



产品用途 Product Usage

用于加热不同形状和型号的实心或空心汽车稳定杆，也可用于其它实心或空心金属棒料加热。

The equipment is used for heating solid or hollow automobile stabilizer bars of different shapes and models. It can also be used for heating other solid or hollow metal bar materials.

产品特点 Product Features

可加热各种成型的三维稳定杆，相比较于传统工频加热，IGBT它具有高频节能，功率因数高，温度均匀性高，对电网冲击小。

PLC程序控制，操作方便。

采用红外测温，自动温度控制。不会出现过烧和温度过低现象，产品质量稳定。

配有夹头自动滑动机构，稳定杆加热过程中不会变形。

The equipment can heat various types of formed three dimensional stabilizer bars. Compared with traditional power frequency heating, IGBT has many advantages, including high frequency and energy saving, high power factor, high temperature uniformity and small impact on power grid.

Infrared Temperature Measurement, Automatic Temperature Control.

There will be no over-burning and low-temperature issues, and the product quality is stable.

Equipped with chuck automatic sliding mechanism, the stabilizer bar will not get deformed during the heating process.

主要技术参数 Main Technical Parameters

型 号 Model	GJC-TR-100	GJC-TR-200	GJC-TR-300	GJC-TR-400	GJC-TR-500	GJC-TR-600
功率 (kw) Power (KW)	100	200	300	400	500	600
电压 (v) Voltage v	18	20	22	22	25	25
机床尺寸 (mm) Machine Size (m m)	3000*800 *1600	3000*800 *1600	3200*1000 *1800	3200*1000 *1800	3500*1200 *2000	3500*1200 *2000
控制方式 Control Mode	PLC自动控制和手动控制 PLC Automatic Control and Manual Control					
稳定杆长度 Stabilizer Bar Length	900mm~1800mm					
稳定杆形状 Stabilizer Bar Shapes	各种形状 Various Shapes					
加热温度 Heating Temperature	800~1000℃,根据用户自行设定 800~1000℃, set by the user					
测温方式 Temperature Measurement Method	红外探头测温 Temperature measured by an infrared probe					

Cooperation Partners

合作企业



全球销售图
Global Sales Locations



> 全球布局 Global layout

产品销售遍布全球，面向国内外客户提供48小时快速响应服务

Our company sells products all over the world, providing 48 hours quick response service for our domestic and foreign clients.

