



KINTEK SOLUTION

## Graphitization Furnace Catalog

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# KINTEK SOLUTION

## COMPANY PROFILE

### >>> About Us

Kintek Solution Ltd is one technology orientated organization, team members are devoted to probing the most efficient and reliable technology and innovations in the scientific researching equipment, fields like biochemical reacting, new materials researching, heat treatment, vacuum creating, refrigerating, as well as pharmaceutical and petroleum extracting equipment.

In the past 20 years, we earned rich experiences in this researching equipment field, we are capable to supply both the equipment and solution according to customer's needs and realities, we have also developed lots of customer tailored equipment according to a specific working purpose, and we have lots of successful projects in many universities and institutes from different countries, like Asia, Europe, North and South America, Australia and New Zealand, Middle East, and Africa.

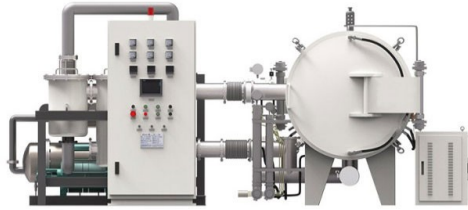
Profession, quick response, hard working, and sincerity is a remarkable label of our team members working attitude, which earn us a sound reputation among our clients.

We are here and ready to service our clients from different countries and regions, and share the most efficient and reliable technology together!



# Horizontal High Temperature Graphitization Furnace

Item Number: GF-01



## Introduction

Horizontal Graphitization Furnace: This type of furnace is designed with the heating elements placed horizontally, allowing for uniform heating of the sample. It's well-suited for graphitizing large or bulky samples that require precise temperature control and uniformity.

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| Product model specifications   | GF-01-40×40×120   | GF-01-50×50×140 | GF-01-55×55×160 |
|--------------------------------|---|-----------------|-----------------|
| Volume(L)                      | 192   | 350             | 484             |
| Rated temperature(°C)          | 2800  | 2800            | 2800            |
| Limit temperature(°C)          | 3100  | 3100            | 3100            |
| Effective heating area (mm)    | 400×400×1200  | 500×500×1400    | 550×550×1600    |
| Power(KW)                      | 200   | 350             | 450             |
| Frequency(HZ)                  | 1500  | 1000            | 1000            |
| Temperature control method     | Adopt Japanese Shima Electric thermostat  |                 |                 |
| Heating method                 | Induction heating   |                 |                 |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |                 |                 |
| Sintering atmosphere           | N <sub>2</sub> , Ar and other gases   |                 |                 |
| Rated power supply voltage (V) | 380   |                 |                 |
| Rated heating voltage (V)      | 750   |                 |                 |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |                 |                 |

# Igbt Experimental Graphitization Furnace

Item Number: GF-02



## Introduction

IGBT experimental graphitization furnace, a tailored solution for universities and research institutions, with high heating efficiency, user-friendliness, and precise temperature control.

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| Product model specifications   | GF-02- $\Phi$ 10 $\times$ 15  | GF-02- $\Phi$ 20 $\times$ 30 | GF-02- $\Phi$ 30 $\times$ 40 |
|--------------------------------|---|------------------------------|------------------------------|
| Volume(L)                      | 1.1   | 10                           | 28                           |
| Limit temperature(C)           | 3100  | 3100                         | 3100                         |
| Effective heating area (mm)    | $\Phi$ 100 $\times$ 150   | $\Phi$ 200 $\times$ 300      | $\Phi$ 300 $\times$ 400      |
| Power(KW)                      | 30  | 50                           | 80                           |
| Frequency(HZ)                  | 4000  | 2500                         | 2500                         |
| Temperature control method     | Japan Shima Electric Thermostat   |                              |                              |
| Heating method                 | Induction heating   |                              |                              |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |                              |                              |
| Sintering atmosphere           | N <sub>2</sub> , Ar   |                              |                              |
| Rated power supply voltage (V) | 380   |                              |                              |
| Rated heating voltage (V)      | According to the design determination, configure the transformer  |                              |                              |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |                              |                              |

# High Thermal Conductivity Film Graphitization Furnace

Item Number: GF-03



## Introduction

The high thermal conductivity film graphitization furnace has uniform temperature, low energy consumption and can operate continuously.

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| Product model specifications   | GF-03-Φ40×100   | GF-03-Φ50×100 | GF-03-Φ60×100 | GF-03-Φ90×160 |
|--------------------------------|---|---------------|---------------|---------------|
| Volume(L)                      | 125   | 196           | 282           | 1000          |
| Rated temperature(C)           | 2800  | 2800          | 2800          | 2800          |
| Limit temperature(C)           | 3100  | 3100          | 3100          | 3100          |
| Effective heating area (mm)    | Φ400×1000   | Φ500×1000     | Φ600×1000     | Φ900×1000     |
| Power(KW)                      | 150   | 200           | 30            | 600           |
| Frequency(HZ)                  | 1500  | 1000          | 1000          | 1000          |
| Temperature control method     | Japan Shima Electric Thermostat   |               |               |               |
| Heating method                 | Induction heating   |               |               |               |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |               |               |               |
| Sintering atmosphere           | N <sup>2</sup> Ar and other gases   |               |               |               |
| Rated power supply voltage (V) | 380   |               |               |               |
| Rated heating voltage (V)      | 750   |               |               |               |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |               |               |               |

# Negative Material Graphitization Furnace

Item Number: GF-04



## Introduction

Graphitization furnace for battery production has uniform temperature and low energy consumption. Graphitization furnace for negative electrode materials: an efficient graphitization solution for battery production and advanced functions to enhance battery performance.

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| Product model specifications   | GF-04-Φ40×100   | GF-04-Φ50×100 | GF-04-Φ60×100 | GF-04-Φ70×140 | GF-04-Φ90×160 | GF-04-100×200 |
|--------------------------------|---|---------------|---------------|---------------|---------------|---------------|
| Volume(L)                      | 125   | 196           | 282           | 550           | 1000          | 1500          |
| Rated temperature(C)           | 2800  | 2800          | 2800          | 2800          | 2800          | 2600          |
| Limit temperature(C)           | 3100  | 3100          | 3100          | 3100          | 300           | 2800          |
| Effective heating area (mm)    | Φ400×1000   | Φ500×1000     | Φ600×1000     | Φ700×1400     | Φ900×1600     | Φ1000×2000    |
| Power(KW)                      | 150   | 250           | 350           | 550           | 700           | 1000          |
| Frequency(HZ)                  | 1500  | 1000          | 1000          | 1000          | 1000          | 1000          |
| Temperature control method     | Japan Shima Electric Thermostat   |               |               |               |               |               |
| Heating method                 | Induction heating   |               |               |               |               |               |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |               |               |               |               |               |
| Sintering atmosphere           | N <sup>2</sup> Ar and other gases   |               |               |               |               |               |
| Rated power supply voltage (V) | 380   |               |               |               |               |               |
| Rated heating voltage (V)      | 750   |               |               |               |               |               |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |               |               |               |               |               |

# Vertical High Temperature Graphitization Furnace

Item Number: GF-05



## Introduction

Vertical high temperature graphitization furnace for carbonization and graphitization of carbon materials up to 3100°C. Suitable for shaped graphitization of carbon fiber filaments and other materials sintered in a carbon environment. Applications in metallurgy, electronics, and aerospace for producing high-quality graphite products like electrodes and crucibles.

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| Product model specifications   | GF-05-Φ40×100   | GF-05-Φ50×100 | GF-05-Φ60×100 | GF-05-Φ70×140 | GF-05-Φ90×160 | GF-05-Φ100×200 |
|--------------------------------|---|---------------|---------------|---------------|---------------|----------------|
| Volume(L)                      | 125   | 196           | 282           | 550           | 1000          | 1500           |
| Rated temperature(C)           | 2800  | 2800          | 2800          | 2800          | 2800          | 2600           |
| Limit temperature(C)           | 3100  | 3100          | 3100          | 3100          | 300           | 2800           |
| Effective heating area (mm)    | Φ400×1000   | Φ500×1000     | Φ600×1000     | Φ700×1400     | Φ900×1600     | Φ1000×2000     |
| Power(KW)                      | 150   | 200           | 300           | 500           | 600           | 800            |
| Frequency(HZ)                  | 1500  | 1000          | 1000          | 1000          | 1000          | 1000           |
| Temperature control method     | Japan Shima Electric Thermostat   |               |               |               |               |                |
| heating method                 | Induction heating   |               |               |               |               |                |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |               |               |               |               |                |
| sintering atmosphere           | N <sup>2</sup> Ar and other gases   |               |               |               |               |                |
| Rated power supply voltage (V) | 380   |               |               |               |               |                |
| Rated heating voltage (V)      | 750   |               |               |               |               |                |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |               |               |               |               |                |



# Bottom Discharge Graphitization Furnace For Carbon Materials

Item Number: GF-06



## Introduction

Bottom-out graphitization furnace for carbon materials, ultra-high temperature furnace up to 3100°C, suitable for graphitization and sintering of carbon rods and carbon blocks. Vertical design, bottom discharging, convenient feeding and discharging, high temperature uniformity, low energy consumption, good stability, hydraulic lifting system, convenient loading and unloading.

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| Product model specifications   | GF-06-Φ40X100   | GF-06-Φ50X100 | GF-06-Φ60X100 | GF-06-Φ70X140 | GF-06-Φ90X160 | GF-06-100X200 |
|--------------------------------|---|---------------|---------------|---------------|---------------|---------------|
| Volume(L)                      | 125   | 196           | 282           | 550           | 1000          | 1500          |
| Rated temperature(C)           | 2800  | 2800          | 2800          | 2800          | 2800          | 2600          |
| Limit temperature(C)           | 3100  | 3100          | 3100          | 3100          | 300           | 2800          |
| Effective heating area (mm)    | Φ400×1000   | Φ500×1000     | Φ600×1000     | Φ700×1400     | Φ900×1600     | Φ1000×2000    |
| Power(KW)                      | 150   | 200           | 300           | 500           | 600           | 800           |
| Frequency(HZ)                  | 1500  | 1000          | 1000          | 1000          | 1000          | 1000          |
| Temperature control method     | Japan Shima Electric Thermostat   |               |               |               |               |               |
| heating method                 | Induction heating   |               |               |               |               |               |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |               |               |               |               |               |
| sintering atmosphere           | N <sup>2</sup> Ar and other gases   |               |               |               |               |               |
| Rated power supply voltage (V) | 380   |               |               |               |               |               |
| Rated heating voltage (V)      | 750   |               |               |               |               |               |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |               |               |               |               |               |



# Continuous Graphitization Furnace

Item Number: GF-07



## Introduction

High-temperature graphitization furnace is a professional equipment for graphitization treatment of carbon materials. It is a key equipment for the production of high-quality graphite products. It has high temperature, high efficiency and uniform heating. It is suitable for various high-temperature treatments and graphitization treatments. It is widely used in metallurgy, electronics, aerospace, etc. industry.

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|                                  |  |                 |                 |
|----------------------------------|--|-----------------|-----------------|
| Product model specifications     | GF-07-10×20×50   | GF-07-10×40×100 | G7-06-10×60×200 |
| Rated temperature(C)             | 2500   | 2500            | 2500            |
| Effective heating area (mm)      | 100×200×500  | 100×400×1000    | 100×600×2000    |
| Power(KW)                        | 80   | 150             | 300             |
| Frequency(HZ)                    | 2500   | 2500            | 1000            |
| heating method                   | Induction heating  |                 |                 |
| Import and export cooling        | Cooling zones of 500-1000mm are set up at the entrance and exit respectively.                                      |                 |                 |
| Import and export gas protection | Set up 500-1000mm gas sealing areas at the inlet and outlet respectively   |                 |                 |
| Temperature measurement method   | 1000-3200C infrared optical temperature measurement  |                 |                 |
| Insulation part                  | Hard carbon felt+soft carbon felt  |                 |                 |
| gas flow                         | 2-6m/h   |                 |                 |
| Oxygen content detection         | Using Shaanxi Fein oxygen content analyzer, real-time detection of oxygen content and dew point real-time analyzer |                 |                 |

# Large Vertical Graphitization Furnace

Item Number: GF-08



## Introduction

A large vertical high-temperature graphitization furnace is a type of industrial furnace used for the graphitization of carbon materials, such as carbon fiber and carbon black. It is a high-temperature furnace that can reach temperatures of up to 3100°C.

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| Product model specifications   | GF-08-Φ80X140   | GF-08-Φ90X160 | GF-08-Φ100X200 | GF-08-Φ120X200 |
|--------------------------------|---|---------------|----------------|----------------|
| Volume(L)                      | 703   | 1000          | 1500           | 2260           |
| Rated temperature(C)           | 2800  | 2800          | 2600           | 2600           |
| Limit temperature(C)           | 3100  | 3100          | 2800           | 2800           |
| Effective heating area (mm)    | Φ800×1400   | Φ900×1600     | Φ1000×2000     | Φ1200×2000     |
| Power(KW)                      | 500   | 600           | 800            | 1200           |
| Frequency(HZ)                  | 1000  | 1000          | 1000           | 1000           |
| Discharging method             | Upper discharge/lower discharge   |               |                |                |
| Temperature control method     | Japan Shima Electric Thermostat   |               |                |                |
| heating method                 | Induction heating   |               |                |                |
| Vacuum system                  | Rotary vane vacuum pump (for high vacuum requirements, Roots vacuum pump and oil diffusion pump are required) |               |                |                |
| sintering atmosphere           | N <sup>2</sup> Ar and other gases   |               |                |                |
| Rated power supply voltage (V) | 380   |               |                |                |
| Rated heating voltage (V)      | 750   |               |                |                |
| Vacuum limit (Pa)              | 100 (vacuum cold state)   |               |                |                |

# Ultra-High Temperature Graphitization Furnace

Item Number: GF-09



## Introduction

The ultra-high temperature graphitization furnace utilizes medium frequency induction heating in a vacuum or inert gas environment. The induction coil generates an alternating magnetic field, inducing eddy currents in the graphite crucible, which heats up and radiates heat to the workpiece, bringing it to the desired temperature. This furnace is primarily used for graphitization and sintering of carbon materials, carbon fiber materials, and other composite materials.

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|                                |                                  |
|--------------------------------|----------------------------------|
| Power supply capacity          | 60KVA                            |
| Power supply                   | 4000~8000Hz (automatic tracking) |
| Temperature                    | 3000°C                           |
| Temperature control accuracy   | ±2°C                             |
| Temperature measurement method | 1100°C~3000°C                    |
| Effective working area size    | Φ200×200 mm (diameter×height)    |
| Cold ultimate vacuum degree    | 133Pa                            |
| Pressure rise                  | 3.0 Pa/h                         |
| Protective atmosphere          | Argon Nitrogen                   |
| Inflation pressure             | ≤ 0.03MPa                        |
| Material in and out method     | Top loading and discharging      |
| Heating conditions             | Atmosphere sintering (inert gas) |



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