



*product manual*

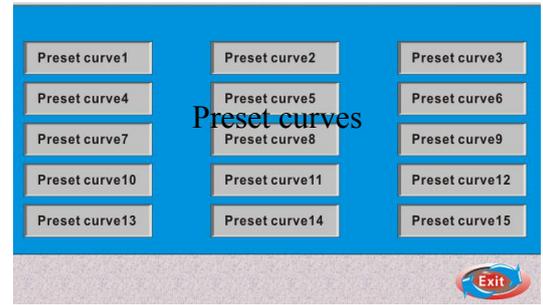
# Technical advantages

**Our advantage is flexible and powerful precise control system and design processing capacity**

**We can achieve much more than temperature control**

1. Self-developed and researched industry-leading touch-screen operating system and WiFi remote control system  
It can prestore 15 curves, 30 segments each curve, assigned to 15 different sintering materials, direct use when needed, without disturbing each other, no need to modify the temperature parameter curves repeatedly, it described as real-time dynamic graphics mode. Different sample applies a different curve. English interface, the operation is extremely simple.

2. Complex process of automatic control systems  
Design all necessary functions of conventional heat treatment experiments, achieve automatic control through Nobody independent research and development of touch-screen control system, automatic start and stop the vacuum pump, vacuum and pressure pipe automatic balancing, automatically determine and select the correct intake type according to setting conditions of the systems.



Touch screen control system



Remote control system based on Google's operating platform

3. Design process from art

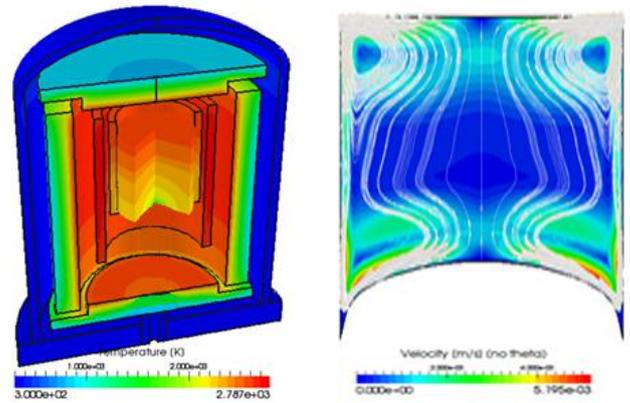
Experienced design team and fully digital processing workshops. So that design of each product is from the perspective of art and balance

and stability of the thermal field, perfect to create a simple, practical, stable product. Completely independent mass production can make the device with a stable "core". it is able to ensure handling stability and consistency; Technology color shell adopts high temperature corrosion-resistant spray process. furnace body will be always new, will not fade.



## 4. Thermal Field Modeling Analysis

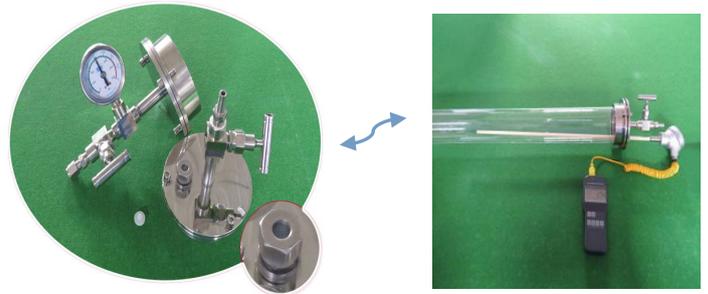
Heating chamber adopts finite element analysis method through physical, numerical simulation. accurate three-dimensional modeling of heat stress according to the furnace structure and process conditions, high-temperature equipment gets reliable verification before processing and assembly. This guarantee the reliability of products, particularly non-successful standard product. This has been fully validated in the conventional design and manufacturing process. Pass rate of one-time installation is 98%. The difference between the actual temperature field and the theory temperature is maintained at 18% -23%.



## 5. Professional starts from the details

To create a great product, some details is beyond your imagination. Testing temperature difference between inlet and outlet of cooling system repeatedly, ensure to enhance the cooling efficiency greatly and ensure heating elements and the entire circuit system remains safe and reliable working condition at continuous high temperature environments.

To facilitate users needs of high precision, we start from vacuum flange of the tube furnace. We design a versatile measuring hole. The user can measure the actual temperature of the sample in a vacuum state. Other devices can be inserted into for the function expansion, a small change brought great convenience to the customer. Electrical production is fine to each component, and mass production creates a stable "core." We pursued every detail, grow excellent quality from the details. It is the direction of our efforts to build a solid data foundation for you.



8mm hole for measuring temperature can be inserted into



## 6. Non-standard Customized

Our complete processing facility and excellent R & D engineers can undertake some difficult design, as long as you have an idea, we will give a satisfied design. and for the first time we supply to you.

## 1. Tube Furnace

<b>Mini</b>	<b>Open Multi-station Tube Furnace</b>	1200 °C-----	1-
<b>Mini</b>	<b>high temperature and high pressure tube furnace</b>	1200 °C-----	2-
<b>Mini</b>	<b>Ultrasonic atomization CVD tube furnace (aacvd)</b>	1200 °C-----	3-
<b>Smart</b>	<b>Open Tube Furnace</b>	1200 °C-----	4-
<b>Smart</b>	<b>Multi-temperature Zone Tube Furnace</b>	1200 °C-----	5-
<b>Smart</b>	<b>open multi temperature zone CVD system</b>	1200 °C-----	6-
	<b>Chamber Movable Tube Furnace</b>	1200 °C-----	7-
<b>RTP</b>	<b>Rapid Thermal Processing Furnace</b>	1200 °C-----	8-
<b>Mini</b>	<b>RT series open shimmy rotary furnace</b>	1200 °C-----	9-
<b>Middle</b>	<b>Vacuum Rotating Furnace</b>	1200 °C-----	10-
<b>Production RT</b>	<b>Vacuum Rotating Furnace</b>	1200 °C-----	11-
<b>Heavy calibre</b>	<b>Tube furnace</b>	1200 °C-----	12-
	<b>Diffusion furnace tube homogenizing furnace</b>	1200 °C-----	13-
<b>Smart</b>	<b>High Temperature Tube Furnace</b>	1500 / 1700 °C-----	14-
	<b>Multi-temperature Zone Tube Furnace</b>	1500 / 1700-----	15-
<b>Vertical</b>	<b>High Temperature Tube Furnace</b>	1200 /1500/ 1700 °C-----	16-
<b>Vertical</b>	<b>TGA</b>	1200/1500 / 1700 °C-----	17-
<b>Smart</b>	<b>Experimental hydrogen reduction furnace</b>	1200/1500 / 1700 °C-----	18-
<b>Fully Smart</b>	<b>Hydrogen Reduction furnace</b>	1200/ 1500 / 1700 °C-----	19-
<b>Smart</b>	<b>Combustible gas safety protector</b>	-----	20-

## 2. Plasma system

	<b>Plasma cleaner</b>	-----	21-
	<b>Plasma Enhanced Chemical Vapor Deposition System PECVD</b>	1200 °C-----	22-
	<b>Plasma sputtering systems</b>	-----	23-
	<b>Far-source plasma sputtering system</b>	1000 °C-----	24-

## 3. Box furnace

<b>Mini</b>	<b>1L BOX furnace</b>	1200 °C-----	25-
<b>Smart</b>	<b>4.5L BOX furnace</b>	1200 °C-----	26-
<b>Smart</b>	<b>12L, 36L BOX furnace</b>	1200 °C-----	27-
<b>Smart</b>	<b>High Temperature Box Furnace</b>	1500 / 1700 °C-----	28-
<b>Big volume</b>	<b>36L BOX furnace</b>	1500 / 1700 °C-----	29-
<b>Atmosphere</b>	<b>BOX furnace</b>	1200/ 1500 / 1700 °C-----	30-
<b>Smart</b>	<b>Horizontal vacuum atmosphere furnace</b>	1200 °C-----	31-
	<b>Vacuum Atmosphere BOX furnace</b>	1200/ 1500 / 1700 °C-----	32-
<b>Microwave</b>	<b>Rapid sintering Box furnace</b>	1600 °C-----	33-

## 4. Bottom Loading High Temperature Furnace

<i>Up-down Sintering Furnace</i>	1200 °C-----	34-
<i>Up-down high temperature Sintering Furnace</i>	1500 / 1700 °C-----	35-
<i>Large Lifting Sintering Furnace</i>	1200/ 1500 / 1700 °C-----	36-

## 5.Pit crucible furnace

<i>Vacuum crucible furnace vacuum furnace</i>	1200 °C-----	37-
<i>Custom equipment Induction furnace</i>	2000 °C-----	38-
<i>Custom equipment Salt bath furnace</i>	1200 °C-----	39-
<i>Custom equipmentIndustrial annealing furnace</i>	1200 / 1500/1700 °C-----	40-
<i>Custom equipment Industrial vertical kiln</i>	1200 / 1500/1700 °C-----	41-
<i>Pit furnace</i>	1200 °C-----	42-
<i>High temperature Pit furnace</i>	1500 / 1700 °C-----	43-

## 6.Glove box+series

<i>Glove box+Mixing, crimping, sintering, rapid annealing</i>	1200 °C-----	44-
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## 7.Special High Temperature furnace

<i>Custom equipment Thermal expansion coefficient tester</i>	1200 °C-----	45-
<i>Smelting furnace</i>	1200/ 1500 / 1700 °C-----	46-
<i>Industrial annealing sintering furnace</i>	1200/ 1500 / 1700 °C-----	47-
<i>Industrial Vertical Kiln</i>	1200/ 1500 / 1700 °C-----	48-

## 8.Lab Supplies

<i>Multi-station tube sealing system</i>	-----	49-
<i>Gas Mixing System(Float, Mass Flow)</i>	-----	50-
<i>Vibrating Ball Mill</i>	-----	51-
<i>Planetary Ball Mill Mixer Machine</i>	-----	52-
<i>Manual Pressing Machine</i>	-----	53-
<i>Electric Pressing Machine</i>	-----	54-
<i>Cooling Cycle Refrigerator</i>	-----	55-
<i>Vacuum drying oven</i>	-----	56-
<i>Air dry oven</i>	-----	57-
<i>Vacuum Supply System</i>	-----	58-
<i>Movable Workbench</i>	-----	59-
<i>Spare parts</i>	-----	60-
<i>Unique Design</i>	-----	61-

Small size, high performance, very popular, temperature controlling becomes much more accurate and stable with smaller chamber. Max 0 temperature up to 1200 °C, Easy operation, preset 15 pcs temperature controlling curve, satisfy the vacuum sintering of the vast majority of materials, the sintering of the protective atmosphere and all kinds of CVD experiments, etc.



8mm Temperature Measuring hole in the flange

**Main Features:**

- Small volume can solve the shortage of laboratory space;
- 7-inch touch screen interface, users easily get started;
- Pre-existing 15 sintering curves;
- The graph of sintering curve with temperature changes makes you clear at a glance;
- Use your mobile phone or PAD to remotely control and download data;

**Technical Data**

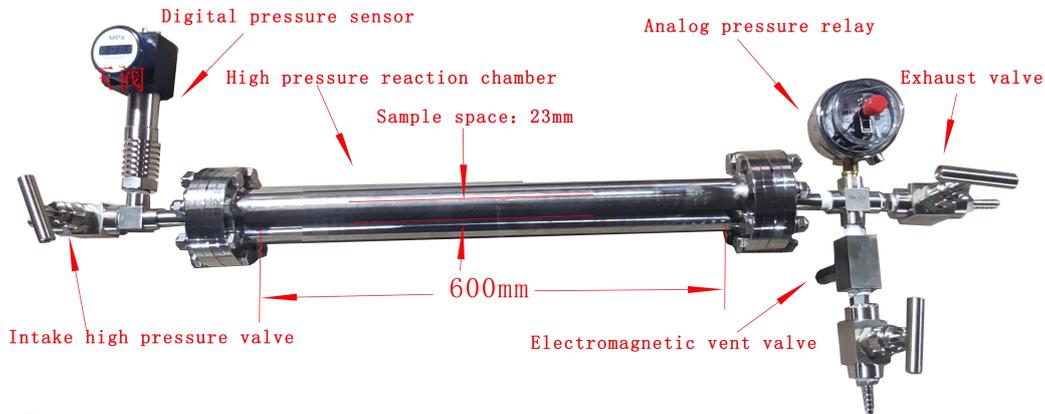
Model	Max. Temp	Size mm			Tube Diameter mm	Tube Length mm	Heating zone mm	Constant zone ±1°C mm	Power	Weight Kg (≈)
		L	H	D						
NBD-01200-25TI-80	1200 °C	380	450	350	Φ25	600	200	120	110V/220V 1.2kw	23
NBD-01200-50TI-80					Φ50					
NBD-01200-25TIY-80		380	680	350	Φ25					
NBD-01200-50TIY-80					Φ50					

\* If special standard, please contact us at once

NBD-HP1200 Mini high temperature and high pressure tubular furnace is equipped with high pressure solenoid valve, pressure sensor and analog quantity safety protection on the flange. Three more layers of security protection, so that you can rest easy. When the pressure in the cavity is higher than the set value, the electromagnetic vent valve will automatically open to exhaust, so that the air pressure in the pipe reaches the set value. This model can heat treat the sample in high pressure atmosphere, and the max temperature can reach 1150 °C. It is suitable for the research of superconducting and dielectric materials.

**Main features**

- Three layers of safety protection make you feel at ease in the process of work;
- High temperature annular heater with uniform temperature field;
- Modular structure, durable and easy maintenance;
- Stable voltage setting, safe and reliable;
- One key operation is simple and convenient, 15 working curves are saved in advance, you can do as you like;
- Real time sintering temperature and power monitoring, safe and energy saving;



**Technical Data**

Model	Max. Temp	Corresponding table of temperature and withstand voltage					Pipe material	Tube Length mm	Constant zone mm	Power KW
		≤600°C	≤800°C	≤900°C	≤1000°C	≤1100°C				
NBD-HP1200-2350TI80	1100°C	≤24MPa	≤20MPa	≤12MPa	≤6MPa	≤4MPa	310S	600	120	1.5

*\* If special standard, please contact us at once*

This equipment is an aerosol assisted vapor deposition equipment - aacvd (using liquid / gas aerosol precursor grown on the substrate), for fuel cells, ZnO transparent conductive film.

The instrument consists of three main modules: small flow liquid high-precision transmission system, ultrasonic atomization system and 1200 °C tubular furnace.

This technology is suitable for the use of non-volatile precursors, and can be widely used in the preparation of nano materials, coating and composite of electrode materials.



High precision peristaltic pump and atomizer

**Main features**

- Liquid flow control system: intermediate high-precision transmission, small flow liquid high-precision transmission, flow range: 0.04 ~ 36ml / min;
- Atomization device: equipped with a 2.4MHz ultrasonic atomizer, which can atomize liquid into liquid particles and lead them into tubular furnace;
- Heating system (tube furnace can be customized): the maximum temperature can reach 1200 °C;
- Speed range of high precision peristaltic pump: 0.1 • 100RPM, reversible forward and reverse, with full speed key, which can realize fast emptying and adding;
- The 2.4MHz ultrasonic atomizer can control the gas flow meter to realize the atomization outflow speed and continuous operation atomization.

**Technical Data**

Model	Max. Temp	Common Temp	Heating zone mm	Max speed of temp rising	Resolution of peristaltic pump	Power	Weight Kg(≈)
NBD-AACVD1200-50TI	1200°C	1150°C	200mm	≤ 20°C /min	0.1rpm	AC220V 1.2kw	30

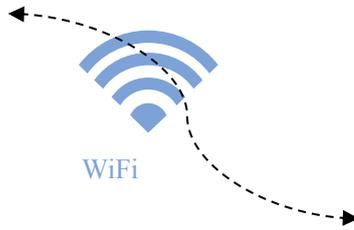
\* If special standard, please contact us at once

We devote ourselves to developing better laboratory heat treatment equipment, especially tube furnace. We start from the details, after repeated design, to create this exquisite and convenient tube furnace.



**Main Features**

- 7 Inch Touch Screen English image interface, easy operation even to novice
- Pre-existing 15 sintering curves;
- The graph of sintering curve with temperature changes makes you clear at a glance;
- With a gas flow meter, atmosphere sintering more convenient;
- Just add modules to control and download data remotely; (optional)



Remote operation



with one channel gas flowmeter



hand-held Thermometer



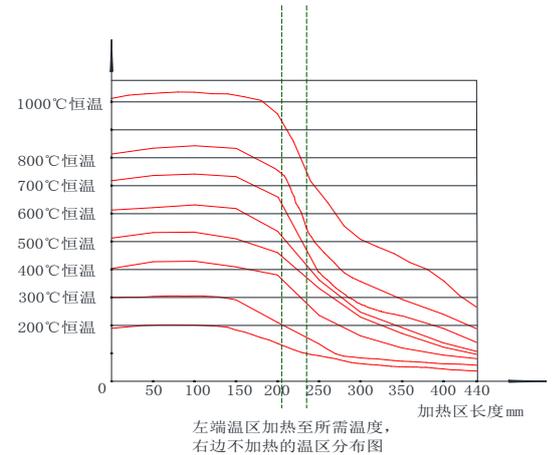
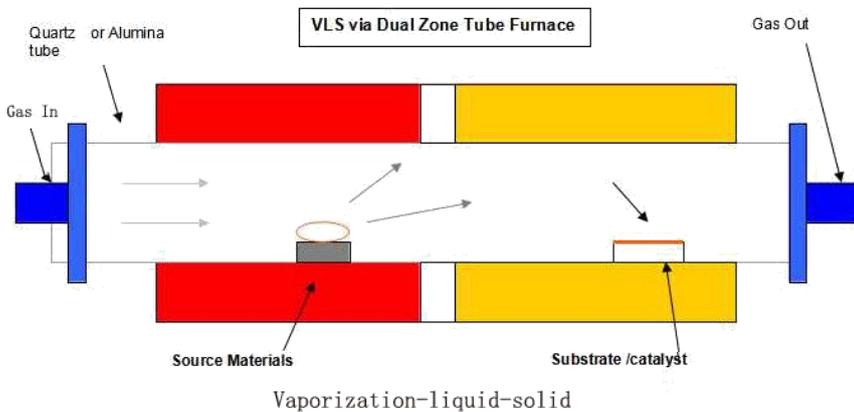
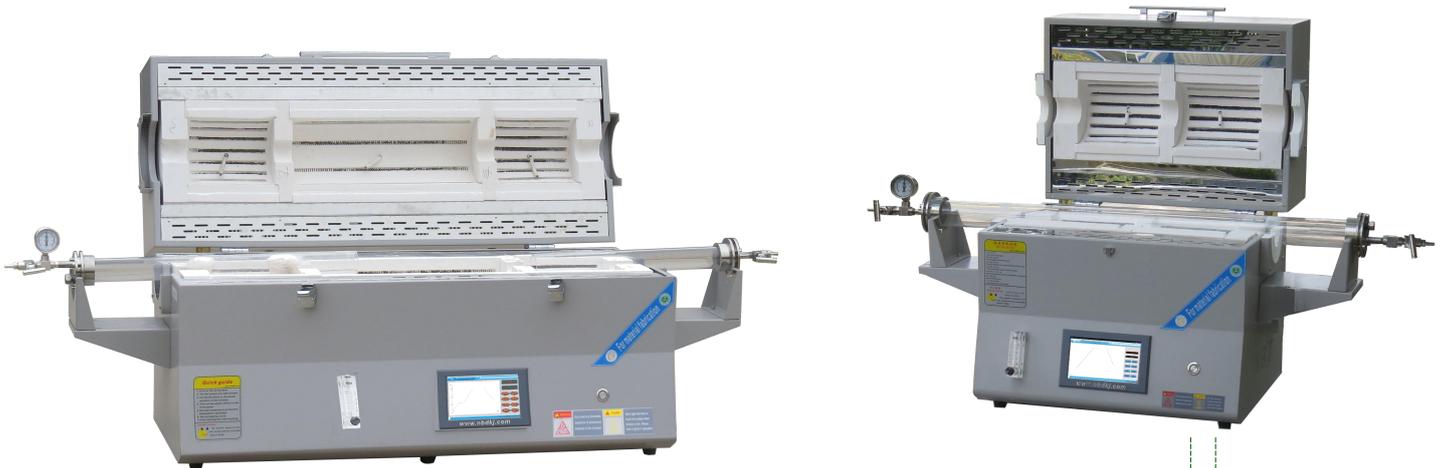
8mm temperature measuring hole in the flange

**Technical Data**

Model	Max. Temp	Size mm			Tube Diameter mm	Tube Length mm	Heating zone mm	Constant zone ± 1°C mm	Power	Weight Kg ((≈))
		L	H	D						
NBD-01200-60TIF	1200°C	600	610	470	Φ60	1000	440	260	4kw	60
NBD-01200-80TIF					Φ80					
NBD-01200-100TIF					Φ100					

*\* If special standard, please contact us at once*

In order to meet the requirements of various types of CVD processes, these smart multi-temperature tube furnaces do not need to adjust each instrument separately. Control instrument of multiple temperature zones are all integrated into the intelligent control system inside. All parameters will be setted through the touch screen. Multiple temperature zones set to the same temperature point, Users can use as a single extended temperature zone. It continues the single-temperature tube furnace classic design, aesthetic and practical !



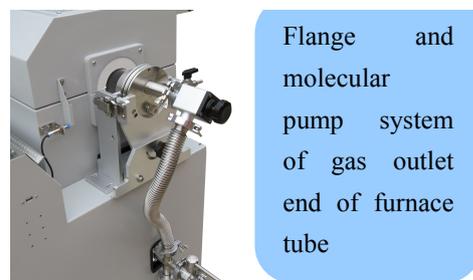
左端温区加热至所需温度，  
右边不加热的温区分布图

**Technical Data**

Model	Max. Temp	Size mm			Tube Diameter mm	Tube Length mm	Heating zone mm	Temperature Zone	Power	weight Kg (≈)
		L	H	D						
NBD-01200-□ T2G2-150F	1200°C	600	610	470	Φ 60	1000	200*2	2temp zone	AC220V 2.5kw	45
NBD-01200-□ T3G3-150F		1060	610	470	Φ 10	1400	200+400+200	3temp zone	AC220V 8kw	90

*\* If special standard, please contact us at once*

In order to meet the requirements of all kinds of CVD process, the intelligent multi temperature zone tubular furnace integrates the control of multiple temperature zones into the intelligent control system. You only need to click the touch screen to complete all the parameter settings. While satisfying the gradient control of different temperature zones, multiple temperature zones can also be set as the same temperature point, which can be used as an extended single temperature zone. It continues the classic design of single temperature zone tubular furnace, beautiful and practical with!



Flange and molecular pump system of gas outlet end of furnace tube



Mass flow mixing system



Hand held thermometer

**Main Features**

- 7 inch PLC touch screen control system, molecular pump system and gas system integration;
- 15 sintering curves can be stored in advance, which saves the tedious of repeated modification;
- The machine is equipped with six channel gas mass flowmeter, which is more convenient for sintering under atmosphere protection;
- The additional data download module can directly import the experimental data into the U disk;
- Molecular pump high vacuum system, system vacuum up to 10<sup>-3</sup>pa.

**Technical Data**

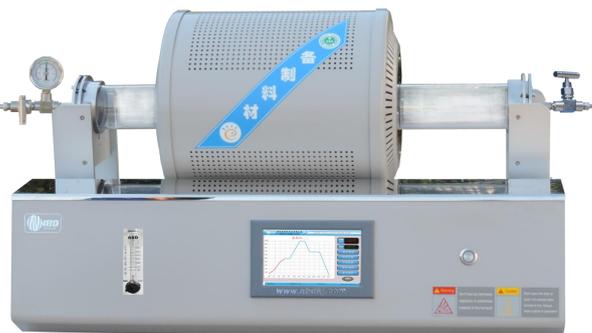
Model	Max. Temp	Size mm			Tube Diameter mm	Tube Length mm	Heating zone mm	Number of temperature zones	Power
		L	H	D					
NBD-01200-□T5G5-150F (Electric flap)	1200 °C	2000	1240	920	Φ100	1600	200*5	5	Three phase AC380V 10kw

\* If special standard, please contact us at once

This equipment mainly applies in the field of rapid temperature rising and rapid temperature decreasing. The chamber can be moved according to preset requirements. Moving speed is adjustable. The temperature of the chamber rises to preset temperature on one side. Then move to sample heating zone, the rapid heating will be realized. The fastest speed is up to 140 °C/min. Move away the chamber from the sample heating zone, the temperature will be cooling rapidly. The cooling speed can reach to 200~50 °C/min from 300 °C to 1200 °C. When the chamber is moving from one side to another side, the rapid temperature rising and decreasing test of materials will be finished.



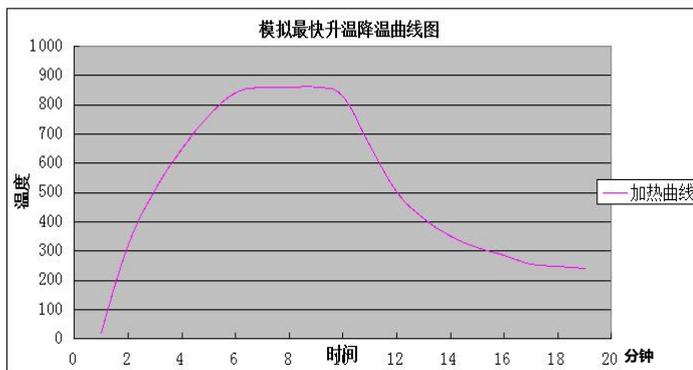
Production VAT



Experimental



Remote operation



This chart is measured at the fastest temperature rise and drop. It can be adjusted according to the furnace moving speed in actual use. The cooling rate is measured when the gas in the tube is static after the furnace is removed. The atmosphere can achieve faster cooling.

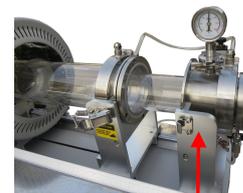
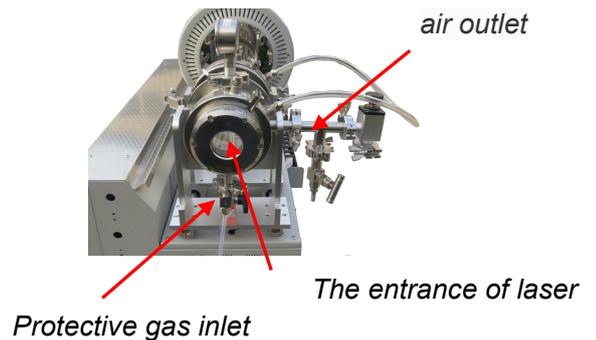
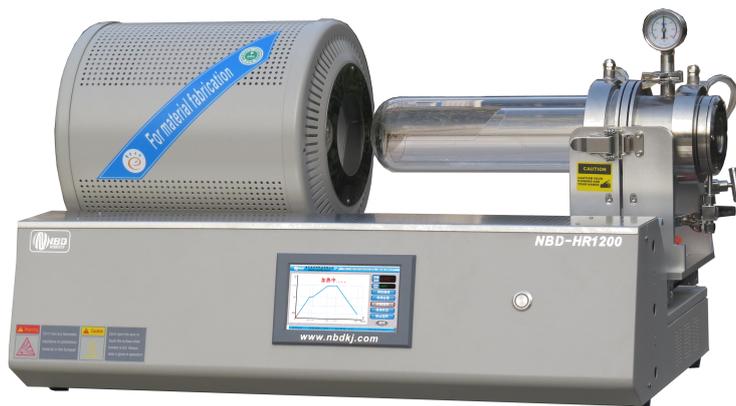
## Technical Data

Model	Max. Temp	Size mm			Tube Diameter mm	Tube Length mm	Heating zone mm	Constant zone $\pm 1^\circ\text{C}$ mm	Power	Weight Kg ( $\approx$ )
		L	H	D						
NBD-CMT1200-□TI	1200°C	1120	640	520	Φ60	1000	200	100	AC220V 2.5kw	40
NBD-CMT1200-□T22F (lengthen)		1400	640	520	Φ80	1400	400	260	AC220V 4kw	50

\* If special standard, please contact us at once

RTP (Rapid Thermal Processing Furnace) , patent product, rising speed rate up to 100 °C/S. And at the end of the sintering process, the sample is taken out at high temperature directly, to achieve the fastest cooling in the physical state. The chamber adopts a unique intake structure, The inner tube is gas inlet, the outer tube is gas outlet. This kind structure make reaction atmosphere exposed in the processing sample fully and Constantly. It is perfect helper for growing large-size two-dimensional graphene by CVD method.

Temperature measurement devices contact with the sample directly. it ensure the accuracy of the sample temperatur.



double layer structure is convenient for loading sample

**Application**

- RTA,
- Graphene and other vapor deposition, epitaxial growth of carbon nanotubes, etc
- RTO,RTN;
- Silicidation;
- Diffusion;
- Implant Annealing;
- Contact Alloying;
- Crystallization and Densification;

**Main Features**

- Max speed of temperature rising is 100 °C/S, Max speed of temperature decreasing is 100 °C/S;
- Double layer tube structure, the sample exposes in the atmosphere much more Constantl ;
- Rich expansion interface, to meet the needs of various types of tests ;

**Technical Data**

Model	Max. Temp	Max speed of temp rising °C/S	Tube Diameter mm	wafer processed in	Heating zone mm	Constant zone ±2°C mm	Size mm			Power	Weight Kg (≈)
							L	H	D		
NBD-HR1200-110TI-170	1050°C	100	103	4"	200	120	800	540	750	AC380V 15kw	40

*\* If special standard, please contact us at once*

Rotary furnace can be used for lithium-ion battery anode and cathode materials (aluminum iron phosphate, lithium manganese oxide, lithium cobalt oxide, ternary, graphite anode, etc.), rare earth materials, chemical catalytic materials, magnetic materials, powder metallurgy materials, kaolin non-metallic mineral materials powder or granule material laboratory calcination and drying, high temperature reaction, heat treatment, carbonation and so on.

Compact body and high cost-effective is favored by the users , small furnace makes the temperature control more accurate and excellent stability.



Desktop atmosphere Shimmy  
Rotary Tube furnace



**Main Features**

- Uniform material firing, the material in the furnace dynamic flip, heat evenly, to ensure the full reflection of the material;
- High heating efficiency, material movement increased heating surface ;
- Perfect automation control ensures the operability of the system ;
- Excellent dynamic sealing system ;
- Automatic control, touch screen, digital display.

**Technical Data**

Model	Max. Temp	Size mm			Tube Diameter mm	Tiltin g angle	Heating zone mm	Constant zone ±1°C mm	Rotating speed (rpm)	Weight Kg (≈)
		L	H	D						
NBD-RT1200-50TIF	1200°C	740	480	480	Φ25/50	20°	200	120	adjustabl e	45
NBD-RT1200-50TIZ		740	1180	520						68

*\* If special standard, please contact us at once*

High temp rotary furnace is used for laboratory calcination and drying, high-temperature reaction, heat treatment, carbonization for positive and negative materials of Lithium-ion batteries, rare earth materials, chemical catalytic materials, magnetic materials, powder metallurgy materials, non-ferrous metal materials and powder materials, non-metallic mineral kaolin or granule-like material and so on. The users can get on protective atmosphere according to material sintering process.



Tilting atmosphere rotary furnace



Continuous feed and discharge tilting atmosphere rotary furnace

### Main Features

- Firing material evenly, the material moving in the chamber, heat evenly, ensure fully reflect of the material;
- High heating efficiency, material movement increased heating surface;
- Complete automatic control ensures the operability of the system;
- Excellent dynamic sealing system;
- Products adopts automatic control mode, touch screen, digital display.

### Technical Data

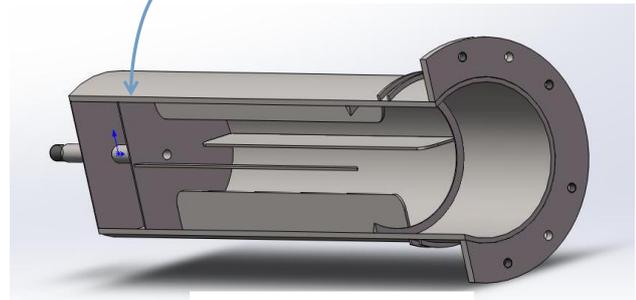
Model	Tilting angle	Rotating speed (Min)	Tube Diameter mm	Tube material	Heating zone mm	Max. Temp	Size mm			Power	Weight Kg (≈)
							L	H	D		
NBD-RT1200-100TIFD	-5 ~ +35	2~8	Φ 100	quartz,	400	1100°C	1300	1500	700	AC220V 4kw	180
NBD-RT1200-100T22FD			Φ 100	310S, nickel	200*2	1100°C					

\* If special standard, please contact us at once

Designers developed the atmosphere rotary furnace from the market demand and customers' sintering process, the device is widely used in catalysts, molecular sieve roasting, paper additives roasting, roasting feed additives, magnetic materials, various metal oxides calcination, powder metallurgy calcination, lead powder, zinc powder, tungsten powder calcination, new energy battery powder calcination. Research institutes and high-tech nano-materials roasting and other industries.



Modular heating element



Lifting board

**Main Features**

- Automatic control, touch screen, digital display.
- Can vacuum ventilation atmosphere, to meet a variety of sintering process ;
- High quality inorganic light alumina fiber furnace material, better insulation effect
- Reliable performance, low energy consumption ;
- Furnace can do -2 ~ 14 degrees of tilt, can discharge in the process of rotation and tilt ;
- Large-capacity stainless steel chamber, make the materials heat more uniform, to achieve the best effect ;

**Technical Data**



Model	Tilting angle	Rotating speed (Min)	Tube Diameter mm	Tube material	Heating zone mm	Max. Temp	Size mm			Power	Weight Kg (≈)
							L	H	D		
NBD-RT1200-200T22FD	-5 ~ +35	2 ~ 8	Φ 200	310S	600	1100°C	1300	1500	700	AC380V 12kw	180
NBD-RT1200-200T33FD					900	1100°C	1600	1500	700	AC220V 18kw	260

*\* If special standard, please contact us at once*

This device is designed for large parts or large quantities of heat treatment, mainly used for LED phosphor, substrate material, battery materials production and other industries. High purity quartz tube, Temperature controlling accuracy is  $\pm 1^\circ\text{C}$ . Such a large diameter and temperature zone length makes the continuous production efficiency greatly improved. In order to meet the production process of more materials. This device also includes a two-way gas control system, the inner tube constant pressure, fully automatic.



2-way pressure balance control and flow control systems



## Main Features

- Big diameter, big temperature zone
- Air-cooled structure, no need cooling device, easy to operate
- vacuum degree can reach to  $4 \times 10^{-3}\text{pa}$ , Leak rate  $< 1 \times 10^{-8}\text{mbarL}$
- Inner tube constant pressure system, includes control and protection, it can adjust the size of the gas flow, it can automatically adjust the gas pressure in the tube;
- There are three temperature controlling points in the temperature zone, more Constant temperature zone
- Quick opening flange, easy loading

## Technical Data

Model	Max. Temp ( $^\circ\text{C}$ )	Tube Diameter mm	Tube Length mm	Heating zone mm	Constant zone $\pm 1^\circ\text{C}$ mm	Size mm			Power	Weight Kg ( $\approx$ )
						L	H	D		
NBD-T1200-152T22D2 F2Y	1100	152	1200	600	300	1100	1400	600	10KW AC380V2-phase	85
NBD-T1200-152T33D2 F2Y			1650	1100	800	1650	1400	600	15KW AC380V3-phase	105
NBD-T1200-215T33D2 F2Y		215	1660	1100	700	1700	1760	850	24KW AC380V3phase	215

\* If special standard, please contact us at once

This equipment is mainly used for oxidation / diffusion, annealing gettering and alloy process in MEMS and semiconductor device manufacturing. It is also suitable for special temperature treatment of other materials. Thermal oxidation is a method to form silicon dioxide film on the surface of silicon wafer at high temperature (900 °C - 1100 °C). The purpose of thermal oxidation is to produce silicon dioxide film with certain quality requirements on silicon wafer, which can protect, passivate, insulate and buffer the silicon wafer or device.



### Main Features

- The high reliability industrial computer + PLC mode is adopted to fully control the furnace temperature, gas flow and valve to realize the automation of all process;
- The key parts are imported to ensure the high reliability of the equipment;
- Various process pipelines are available for users to choose conveniently;
- It has multiple alarm functions and safety protection functions;
- Automatic adjustment of constant temperature zone and cascade control can accurately control the actual process temperature of reaction tube.



Two way pressure balance control and flow control system

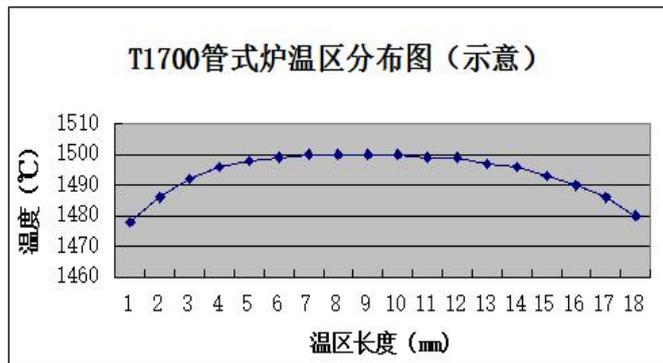
### Technical Data

Model	Max. Temp (°C)	Tube Diameter mm	Tube Length mm	Heating zone mm	Constant zone mm	Size mm			Power	Weight Kg(约)
						L	H	D		
NBD-T1200-215T33D3 ZY	1100	215	1660	1100	600	1700	1760	850	25KW AC380V	215
NBD-T1200-240T33D3 ZY		240				3600	1900	940		

\* If special standard, please contact us at once

This high-temperature tube furnace with good shape and technology has precise temperature control.

The middle and high temperature furnace use corundum tube as the carrier for heating and sealing, the heat transfer by radiation at this stage. The corundum tube is opaque material, it's important to ensure consistency of temperature collection point and the tube. After more than 200 adjustments of the position, the temperature at the measuring point is equal to the actual temperature in the tube. This delicate layout is determined by the unremitting efforts of engineers and the culture of a company.



Distribution of Temperature zone for 1700 Degree Celsius Tube Furnace

Accuracy temperature control/prestore 15 curves/ with one channel flow meter/ Graphic Interface/ temperature measuring hole in the flange



Remote operation

**Technical Data**

Model	Max. Temp	Tube Diameter (mm)	Tube Length (mm)	Heating zone (mm)	Constant zone (mm)	Size mm			Power (AC220V)	Weight Kg (≈)
						L	H	D		
NBD-T1500-50TIF-80	1500°C	Φ 50	700	180	130	850	680	420	1.5kw	30
NBD-T1500-60TIF-110	1500°C	Φ 60	1000	310	220	1000	720	520	3kw	80
NBD-T1500-80TIF-110	1500°C	Φ 80	1000	310	220	1000	720	520	3kw	80
NBD-T1700-50TIF-80	1700°C	Φ 50	700	180	130	850	680	420	1.8kw	45
NBD-T1700-60TIF-110	1700°C	Φ 60	1000	310	220	1000	720	520	4.5kw	100
NBD-T1700-80TIF-110	1700°C	Φ 80	1000	310	220	1000	720	520	4.5kw	100

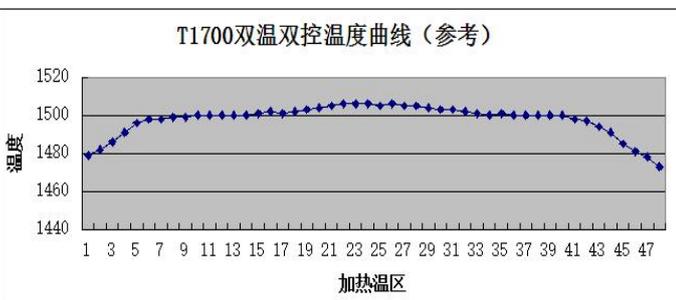
\* If special standard, please contact us at once

Multi-temperature zone tube furnace make temperature zone longer, temperature changes much richer. This equipment mainly applies in sintering of high-performance phosphor and substrate materials / Battery Materials, and high-temperature CVD lab preparation of laboratory products.

The tube length of multi-temperature zone tube furnace is bigger than 1200mm. Because of the characteristics of alumina tube itself, it is difficult to release the thermal stress in the long term high temperature production job status. So it is critical to ensure the life of the alumina tube. We start with the production process of alumina tube, add nano-modified materials, select raw materials in the best conditions, combines scientific and reasonable structure design, allowing users to get rid of the problems of frequently broken pipe.

### Main Features

- Stable performance, can be both used in laboratories and enterprises;
- Parameter setting and display are integrated into one touch screen, English image interface ;
- Prestored 15 Sintering Curves
- The sintering curve changes with temperature make you clear a glance
- With a floater flowmeter, which is more convenient for sintering.



WiFi



### Technical Data

Model	Abbreviation	Max. Temp	Tube size mm	Heating zone (mm)	Size			Power	Weight KG (≈)
					L	H	D		
NBD-T1500-□T22F-110	single zone, double controlling	1500°C	Ø50, Ø60 Ø8*1200	460	800	750	540	5kw	
NBD-T1500-□T2G2F-110	double zone, double controlling			230+230					
NBD-T1500/1700-□T2G2F-110	double zone, double controlling	230+230							
NBD-T1700-□T22F-110	single zone, double controlling	1700°C		460				7kw	
NBD-T1700-□T2G2F-110	double zone, double controlling			230+230					

\* If special standard, please contact us at once

Applications: Elemental analysis and determination of general small steel quenching, annealing, tempering and other heat treatment



**Main Features**

- Simple construction; the heating elements' distribution is reasonable
- Electromagnetic spatter makes quench easier
- Rapid quenching in a closed environment ;
- PID automatic control, temperature control smooth ;

**Technical Data**

Model	Effective space mm	Max. Temp	control accuracy	Power	Size (mm)
NBD-LT1500-50TI	Φ 50*120	1200°C	±1°C	1.2KW	430*1100*500
NBD-LT1500-60TI	Φ 60*150	1500°C		1.5KW	400*1300*540
NBD-LT1700-60TI		1700°C		1.8KW	

*\* If special standard, please contact us at once*

The vertical tubular furnace with weighing instrument in vacuum atmosphere is developed to determine the weight loss of combustion and thermogravimetric analysis (TGA) in vacuum or atmosphere. It can be used to study the thermal stability and composition of materials by observing the mass change of samples with temperature, time, vacuum and atmosphere during heating, constant temperature or cooling. It is widely used in the research and development, process optimization and quality control of plastics rubber, coatings, pharmaceuticals, catalysts, inorganic materials, metal materials and composites.

## Main Features

- The upper load cell made of precious metal is resistant to high temperature, oxidation and corrosion;
- Reasonable layout to reduce the influence of heat and vibration on micro thermal sensor;
- Electric lifting structure, easy to operate;
- The water bath thermostatic device is used to isolate the thermal effect of the heating furnace body on the chassis and the microbalance;



## Technical Parameter

- Temperature range: room temperature ~ 1150 °C / 1500 °C / 1650 °C;
- Temperature resolution:  $\leq 0.1$  °C. Temperature fluctuation:  $\pm 1$  °C. Heating rate: 1 ~ 30 °C / min;
- Sensor sensitivity: 0.01g (300g);
- Atmosphere device: built in gas flowmeter, including two-way gas switching and flow control;
- Software: intelligent software can automatically record TG curve for data processing and printing experiment excel report data interface: standard USB interface;

\* If special standard, please contact us at once

The intelligent experimental hydrogen reduction furnace is a fully functional, safe and reliable experimental equipment. It is widely used in metal heat treatment under reducing atmosphere, rare earth preparation, electronic lighting, crystal annealing, special alloy, magnetic materials, precision casting and other industries for vacuum sintering, atmosphere protection sintering and reduction sintering, CVD experiment, material composition measurement, etc. There are perfect protection measures for toxic, harmful and flammable gases!



**Main Features**

- Automatically switch the type and flow of air intake;
- The pressure in the pipe can be adjusted automatically under the protective atmosphere;
- Automatic adjustment of vacuum degree under vacuum sintering;
- Automatic pipeline cleaning function;
- Exhaust gas automatic ignition, two-way protection;
- Overpressure automatic protection and alarm function;

**Technical Data**

Model	Max. Temp	Heating zone (mm)	Uniform temperature size (mm)	Control system	Edit process menu	vacuum system	Vacuum measurement
NBD-CMT1200-100TI150D2Z	1200°C	200mm	Φ80*120	NBD-101	Touch screen	4C	Digital display vacuum machine
Air supply system	ignition system	Implementation function		Process control mode		Power (KW)	
Mass flow controller	Automatic ignition	Manual / automatic switching		PID control		4	

*\* If special standard, please contact us at once*

Nobody fully smart hydrogen reduction furnace is a a versatile, full-featured tube furnace. This equipment is mainly used in metal heat treatment and reduction, rare earth preparation, electronic lighting, crystal annealing, special alloys, magnetic materials, precision casting and other industries vacuum sintering, the sintering atmosphere to protect and restore, CVD experiments, material composition measurements and other occasions. It owns comprehensive protection measures specially for toxic, hazardous, flammable gases.



### Main Features

- Switching intake class and flow automatic
- Tube pressure automatic adjustment under protective atmosphere
- Vacuum degree automatic adjustment under vacuum sintering
- Manual mode
- Automatic cleaning pipes function
- Exhaust automatic ignition function
- Over-pressure automatic protection and alarm functions
- Complete security allows your experiment and production safety



### Technical Data

Model	Max. Temp	Tube Diameter mm	Tube Length mm	Heating zone mm	Constant zone mm	Size mm			Power (AC380V)	Weight kg (≈)
						L	H	D		
NBD-T1200-80T3G3-D3Z	1200°C	Ø80, 100	1600	800	600	2000	2700	900	8kw	320
NBD-T1500-80T3G3-D3Z	1500°C	Ø60, 80	1400	610	400				10kw	360
NBD-T1700-80T3G3-D3Z	1700°C								12kw	430

\* If special standard, please contact us at once

In the laboratory, in the process of high-temperature synthesis or sintering of materials, some combustible gases are often used for reduction and other reactions, which will cause the blockage of the exhaust end, resulting in the high pressure of the furnace tube, and the emission pollution of the exhaust gas, which will bring great security risks to the laboratory. The combustible gas safety protection instrument provides a series of gas cut-off, temperature and pressure reduction safety protection through the detection of the pressure of the furnace tube. In the discharge end, the combustion is ignited automatically and then discharged (one way work, one way protection, automatic switching), which greatly ensures the safety of the experimental environment.



Combustible gas protector + tube furnace



Two way protection ignition

Combustible gas protector

### Safeguard

- The pipeline self extinguishing anti backfire device strictly controls the back suction of combustible gas;
- Two way combustible gas igniter, automatic switch when flameout, no worry in the whole process;
- Real time monitoring of high and low pressure in the furnace can avoid tube explosion caused by excessive pressure in the furnace;



Electric / gas isolation is safe and reliable

RFC series plasma cleaner is non-destructive surface treatment equipment, It has a very good effect to make ultra clean to organic pollution on the surface of metal, glass, silicon, ceramic, plastic, polymer and so on. It can also alter the surface activity of these materials and strengthen the adhesion, Compatibility and dip capacitive of these materials. Also it is able to remove the oxide layer of the metal material surface. Cleaned materials can be sterilized

## Main Features

- Stable performance, simple operation cost-effective, low cost, easy maintenance
- Handle samples in different geometric shapes and roughness
- Processing timing, fast processing, high cleaning efficiency
- Green, no Chemical reagents, no pollution to samples and environment ;
- ultra-clean under room temperature, non-destructive process to samples



Cleaning State



## Technical Data

Mode	RF power:	RF Frequency:	RF Offset:	Vacuum degree	Gas Flow Rate	Micron Control Unit	Chamber Size (mm)	Dimensions (m m)
RFC-2L	10~200W	40KHz	<0. 2KHz	10Pa—1000Pa	60—600ml/min	Auto and manual	Ø100x270	440x200x390
RFC-5L							Φ 150x270	500X240X500

\* If special standard, please contact us at once

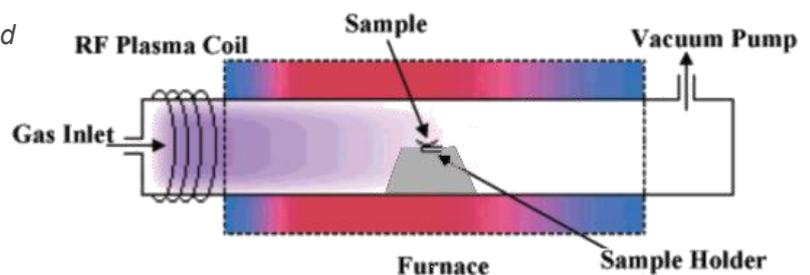
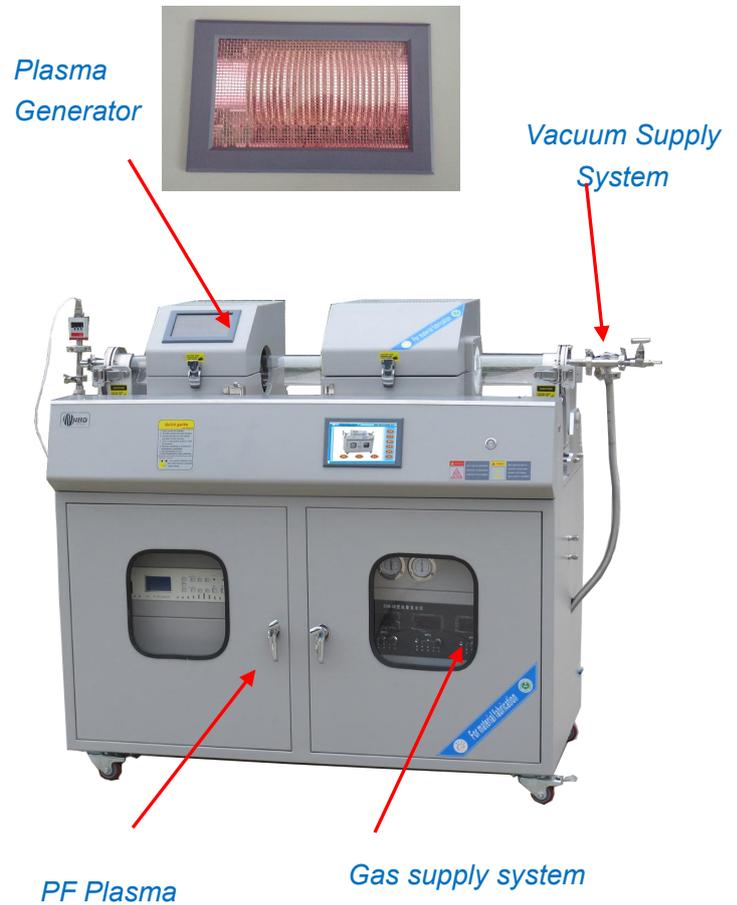
The product has a solid-state plasma sources, the divided reaction gas intake system, dynamic substrate temperature control, full control of the vacuum system, with centralized control technology nobody control software, and user-friendly interface to operate. Applicable for SiO<sub>2</sub>, SiN<sub>x</sub>, SiON<sub>x</sub> a-Si thin film deposition at room temperature to 1200 °C condition , at the same time the products can achieve TEOS source deposition, SiC film deposition, and other deposition liquid or gaseous source materials, especially for high efficiency protective layer film deposition of organic materials and no damage passivation film deposition under a specific temperature.

**Applications**

- Plasma induced surface modification ;
- Plasma cleaning;
- plasma polymerization;
- A variety of films deposited on the surface of SiO<sub>x</sub>;SiN<sub>x</sub>, amorphous silicon, microcrystalline silicon, nano-silicon, SiC, DLC, etc;
- Selective growth of the carbon nano tubes (CNT).

**Main Feature**

- Cleaning coating one go, to prevent secondary pollution ;
- Open structure, easy observation ;
- Touch-screen interactive, safe and reliable;
- Products adopts automatic control mode, touch screen, digital display;
- Vacuum systems, working pressure, power systems and automatic matching, gas flow, heating systems, motion systems, system monitoring and data acquisition.



**Technical Data**

Model	Flow control	Cleaning and coating RFPower	Tube diameter mm	Max. Sample size(in)	Heating zone mm	Max. Temp	Size mm			Power	Weight Kg(≈)
							L	H	D		
NBD-PECVD1200-8 0TID2Z	two channel float flowmeter	20~200W adjustable	Φ60 Φ80	2~3"	200	1200°C	1300	1260	820	AC220V4 kw	360

*\* If special standard, please contact us at once*

NBD-LJ10 is specially designed for scanning electron microscopy to make samples. It has the characteristics of simple structure and convenient use. It does not require a high degree of vacuum to ionize the SEM sample, so it can be used as a basic equipment for the sample coating of SEM.



## Technical Data

- Glass chamber:  $\Phi 105 \times 130 \text{mm}$ ;
- Sample Stage:  $\Phi 40 \text{mm}$ , can put 6 samples at the same time;
- Gold target size:  $\Phi 58 \times 0.12 \text{mm}$ .
- Vacuum detection: Pirani gauge;
- Vacuum protect: 20Pa, equipped with a micro-filled valve to adjust the working vacuum;
- Medium gas: air or argon, equipped with argon gas inlet and micro-aeration adjustment;
- Sputter material: iron, cobalt, erbium ;

## Main Features

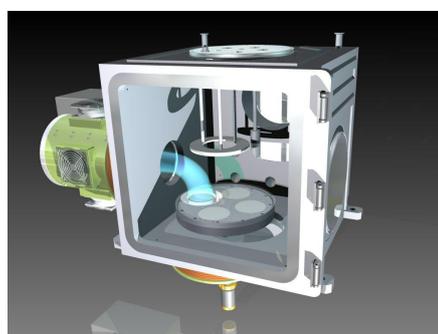
- 2C mute vacuum pump, comprehensive noise reduction ;
- Equip vacuum gauge and sputter current meter, real-time display and monitoring of instrument status ;
- The specially designed rubber seal ensures it will not have the phenomenon of "blinking" of the glass bell jar after long-term use .
- Configuration of sputter current controller and miniature vacuum valve. Combined with automatic control circuit, it can easily control vacuum chamber pressure and ionization current, can choose any desired ionized gas to achieve the best coating effect ;
- Equip  $\Phi 58 \text{mm} \times 0.12 \text{mm}$  large-size pure gold target, larger sputtering range ;



# Far-source plasma sputtering system

1000 °C

The far-source plasma sputtering system is different from the RF magnetron sputtering system in that sputtering is performed by generating a high-density plasma far from the target. Compared with conventional magnetron sputtering, the phenomenon of target poisoning is reduced, and the deposition rate of non-metal films is increased. At the same time can be applied to the target DC bias for sputtering insulating targets.



Sputtering

PLS exit

Substrate



Target

## Main Feature

- Adopt imported magnetron power supply to improve control accuracy;
- High-rate deposition can also be achieved without heating the substrate; ;
- Plasma energy and density can be individually controlled;
- Touch screen centralized control, sputtering process control is clear at a glance ;
- Built-in 100 graphite heater makes the temperature more uniform, resulting in better sputtering effect; ;
- Use high-density plasma to clean the substrate;

## Technical Data

Model	Target	Chamber size (mm)	size (mm)			Power (AC380V)	Weight Kg (≈)
			L	H	D		
NBD-PEJ-1200-50ITG3Z	6	500*500*500	2200	1900	1300	50kw	400

\* If special standard, please contact us at once

Beautiful design, small body, scientific and reasonable structure, high performance, low price, a wide range of laboratory applications. Heating wire is Mo-Fe-Cr alloy, pouring with the furnace together. Three sides heating, Surface temperature points increased to 1200 °C. Oxidation resistance is significantly improved, so that The life of the heating wire prolongs several times. Small size chamber, easier temperature controlling, Heat distribution more constant



Excellent heat insulation, energy saving and consumption reduction

**Main Features**

- small and light ;
- Small power, power saving ;
- embedded heating wire to prevent the volatilization and splash pollution;
- Small furnace can meet all the sintering process

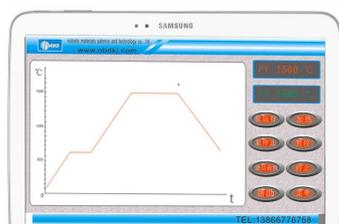
**Technical Data**

Model	Max. Temp °C	Chamber size mm			Volume (L)	Size mm			Power (AC220V)	Weight Kg(≈)
		L	H	D		L	H	D		
NBD-ML1200-10CI	1200°C	100	100	100	1	250	380	280	1kw	10

*\* If special standard, please contact us at once*

This device is special design for our customers, ultra-high cost performance of 4.5L volumetric sintering furnace. We use our classical simplified design process, multilayer alumina fiber furnace chamber, touch screen controler, accessible man-machine interaction, make operation easier!

The latest technology of molybdenum-doped iron-chromium-aluminum alloy heating wire With the exhaust device, not only can be used for routine use, but also for wax and ashing experiments.



touch screen operation, simpler and detailed

**Main Features**

- moderate size of furnace volume;
- modular structure, durable and easy to maintain;
- an exhaust chimney in the top of the furnace;
- full fiber structure, energy saving and high efficient
- inorganic refractory materials, safe and environmental;
- Touch-screen operation, bilingual, perfect user experience;

**Technical Data**

Model	Max. Temp °C	Chamber size mm			Volume L	Size mm			Power (AC220V)	Weight Kg(≈)
		L	H	D		L	H	D		
NBD-M1200-15TI	1200°C	150	150	180	4.0	390	600	430	3.0kw	40

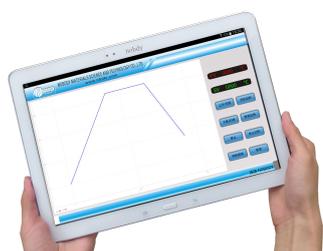
*\* If special standard, please contact us at once*

Engineers' ingenious flat design not only greatly enhance the proportion of space, but also fit most people's operating habits. Separate heating system and control unit can not interfere with each other, this can ensure that the electric components and the entire circuit system to maintain a safe and reliable working condition in a sustained high temperature environment. At the same of strict control product quality, Nobody pay more attention to customers' experience to make the operation easier.



**Main Features:**

- Unique design, reasonable structure design
- Big volume chamber, ideal both for Laboratory and production companies
- accurate temperature control
- full fiber structure, three sides heating, energy saving and high efficient
- inorganic refractory materials, safe and environmental;
- Touch-screen operation, bilingual, perfect user experience.



*touch screen operation, simpler and detailed*



**Technical Data**

Model	Max. Temp	Chamber size (mm)			Volum e L	Size (mm)			Power	Weight Kg(≈)
		l	h	d		l	h	d		
NBD-M1200-20TI	1200°C	200	200	300	12	650	520	600	AC220V 4.0kw	40
NBD-M1200-30TI	1200°C	300	300	400	36	640	1540	900	AC380V 9kw	120

*\* If special standard, please contact us at once*

The shape design gives a comfortable and smooth feeling; the sintering curve changes with temperature allows you clear at a glance, Preset 15 sintering curve , Classic design and touch screen graphic interface, easy operation.

**Main Features:**

- superior quality special heating element between the charge and the heating element has the best anti-chemical properties;
- Furnace cavity material is high-quality aluminum oxide fiber materials which insulation properties is excellent
- double furnace shell and the additional air-cooling devices ensure the safety of the shell temperature;
- Furnace roof has an exhaust;
- The furnace is able to achieve accurate temperature control even for the lower temperature range in driving process.



**Technical Data**

Model	Max. Temp	Chamber size mm			Volume (L)	Size mm			Power (AC220V)	Weight Kg (≈)
		L	H	D		L	H	D		
NBD-M1500-12TI	1500°C	120	120	120	1.7	390	630	430	1.5kw	55
NBD-M1500-16TI		160	160	160	4.1	460	730	530	3kw	70
NBD-M1500-22TI		220	220	260	12.5	560	830	650	3.5kw	85
NBD-M1700-12TI	1700°C	120	120	120	1.7	390	630	430	1.8kw	80
NBD-M1700-16TI		160	160	160	4.1	460	730	530	4kw	120
NBD-M1700-22TI		220	220	260	12.5	560	830	650	5kw	180

**\* If special standard, please contact us at once**

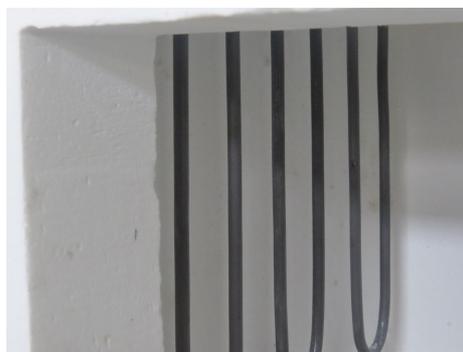
Big volume box furnace adopts durable compact vertical structure, without auxiliary table, convenient operation.

The tilting angel of operating panel is 43o , , excellent user experiences. Such big space ensure constantity and stability of temperature.



### Main features

- Max. Temperature: 1500 °C~1700 °C;
- Volume:36L;
- Vertical structure is more compact,smaller space
- Furnace roof has an exhaust.



fiber chamber, high purity heating

### Technical Data

Model	Max. Temp	Chamber size mm			Volume (L)	Size mm			Power (AC220V)	Weight Kg (≈)
		L	H	D		L	H	D		
NBD-M1500-12TI	1500°C	120	120	120	1.7	390	630	430	1.5kw	55
NBD-M1500-16TI		160	160	160	4.1	460	730	530	3kw	70
NBD-M1500-22TI		220	220	260	12.5	560	830	650	3.5kw	85
NBD-M1700-12TI	1700°C	120	120	120	1.7	390	630	430	1.8kw	80
NBD-M1700-16TI		160	160	160	4.1	460	730	530	4kw	120
NBD-M1700-22TI		220	220	260	12.5	560	830	650	5kw	180

\* If special standard, please contact us at once

# Atmosphere *M series Box furnace* 1200/1500 /1700°C

The equipment has a large capacity, applicable to the laboratory's sintering research and industrial production. It's mainly used for electronic components (resistors, capacitors), art ceramics, structural ceramics, textile ceramics, electronic ceramic filters, thick film circuits, magnetic materials, powder metallurgy, electronic powder, rare earth chemicals,



2 channel atmosphere control system



## Main Features

- High-purity heating element, three-sided heating mode;
- Adopt stable "S" type thermocouples;
- High-quality inorganic poly-aluminum oxide fiber material, better insulation effect;
- Configure 2-way gas flow control system, and install 4 air inlets in the furnace to make the atmosphere more uniform;
- Beautiful and novel design, practicable;



thermal field uniform

## Technical Data

Model	Chamber size mm	Max. Temp	Accuracy	Power	Size (mm)
NBD-M1500-50TI2F	500*500*800	1500°C	±1°C	25KW	1120*640*520
NBD-M1700-50TI2F	500*500*800	1700°C	±1°C	35KW	1120*640*520
NBD-M1500-80TI2F	80*1000*1000	1500°C	±1°C	50KW	1380*2180*1380
NBD-M1700-80TI2F	80*1000*1000	1700°C	±1°C	80KW	1380*2180*1380

*\* If special standard, please contact us at once*

Vacuum furnace is suitable for sample preparation of various materials in clean environment. The product is uniformly heated outside the vacuum chamber of high purity quartz by annular heating wire, with high thermal efficiency, fast heating speed and good temperature uniformity. The internal circulation of protective atmosphere is uniform, forward and out. High temperature resistant sealing ring and water-cooled stainless steel sealing system are adopted for sealing parts, which are safe and reliable.



Man machine interface, true color touch screen operation, more simple, delicate, real-time curve tracking



The large-diameter quartz vacuum chamber can process large-size thin-walled samples with uniform heating and good sintering effect.

### Main Features

- Unique style, more humanized structure design;
- The volume of furnace is large, which can be used by laboratory and production enterprise;
- All fiber structure, annular heating, energy saving and high efficiency;
- Inorganic refractory, vacuum adsorption molding. Safety and environmental protection;
- NBD-101E The embedded operating system has Chinese and English interchangeable graphical interface, 7-inch true color touch screen input, intelligent man-machine dialogue mode, non-linear temperature correction;

### Technical Data

Model	Max. Temp	Quartz chamber size (mm)	Volume L	Size (mm)			Power	Weight Kg (≈)
				L	H	D		
NBD-VAH1200-20TIF	1200°C	Φ200*200	6	780	580	600	AC220V 3.5kw	60

\* If special standard, please contact us at once

Vacuum atmosphere furnace is widely used in heat treatment at a low vacuum, reducing, protective atmosphere for cemented carbide, ceramics, powder metallurgy materials ; It also can be used for heat treatment under vacuum such as annealing and welding of high-speed steel, alloy tool, soft magnetic alloys and other materials. The required amount of intake air and vacuum are able to control through Nobody touch screen control system, convenient. Furnace size can also be customized.

### Main Features

- It contains two automatic intake control system, chamber is constant pressure control system;
- high purity heating elements, imported high-temperature reflective coating material ;
- Advanced touch screen control enables users' additional function ;
- Furnace materials use high-quality high-purity alumina fiber, 60% energy-saving compared to conventional product ;



### Technical Data

Model	Max. Temp	Chamber size (mm)			Volume L	Size (mm)			Power (AC380V )	vacuum	Weight KG (≈)
		L	H	D		L	H	D			
NBD-VA1200-20TID2F	1200°C	200	200	300	14	1120	2100	1160	4KW	100Pa	400
NBD-VA1500-20TID2F	1500°C	220	220	300	14.5				6kw		600
NBD-VA1700-20TID2F	1700°C								7kw		680

\* If special standard, please contact us at once

Used for rapid calcination, roasting, sintering, synthesis, ashing, melting and heat treatment of various types of solid materials under air atmosphere

## Main Features



- achieve ultra-fast heating, and significantly shorten the holding time, improve the efficiency of the experiment ;
- Industrial-grade microwave sources ensure the continuous and stable operation . The output power can be continuously adjusted to achieve accurate control ;
- Embedded touch screen control system provides manual, automatic, constant temperature three modes of operation and can be freely switched ;
- It can process various materials with different microwave characteristics, with corrosion-resistant exhaust passages, and can quickly discharge the gases generated during the heating process ;
- reliable shielding design with multiple leak protection ;

## Technical Data

### NBD-WBM1600-14T I

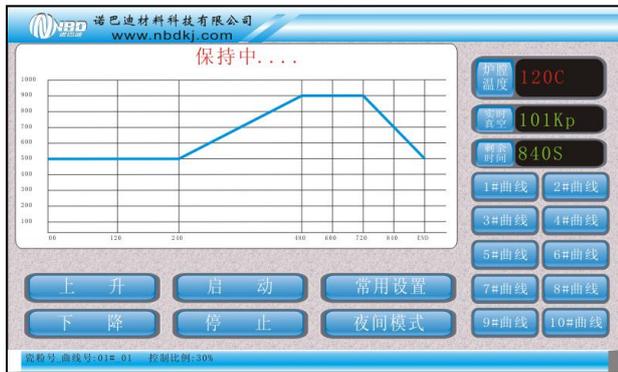
- Power: AC220V 50HZ ;
- Microwave output power: 0.2~1.4kW adjustable ;
- Rated Input Power: <3kW ;
- Max Temperature: 1600°C
- Microwave output frequency: 2.45 GHz±25MHz ;
- Microwave leak intensity: <2mW/cm<sup>2</sup> ;
- Cooling water and pressure : ≥0.6m<sup>3</sup>/h, 0.06~0.12 Mpa ;
- Effective sintering space : 138\*60\*138mm
- Size : 786\*605\*824824mm
- Weight(≈) : 150 kg



B series high temperature furnaces adopts international advanced manufacturing technology. Furnace cavity is high purity lightweight alumina fiber material. The control interface is large touch screen, easy to operate. Control mathematical model uses advanced PID self-learning fuzzy control, so that control accuracy is maintained at  $\pm 1\text{ }^{\circ}\text{C}$ . Its standardization production process ensures the quality and consistency of your sintering sample.

### Main feature:

- Heating elements surrounded, more constant temperature field;
- Electric lift table design, safe loading;
- Vertical structure is more compact, smaller space;
- Touch screen control system, more simple operation.



One-button operation, night mode



Single



### Technical Data

Model	Max. Temp	effective space (mm)	Volume (L)	Size (mm)			Power(AC220V)	Weight Kg(≈)
				L	H	D		
NBD-B1200-10TID	1200°C	Φ90X70	1.35	410	480	410	1.4kw	30

\* If special standard, please contact us at once

Electric lifts design greatly simplify the loading step, much safer. Compact and practical, and beautiful design won the praise of customers, such as heating elements distributed all around - its more constant temperature field, Round heating chamber can place three layers of crucible , automatic bottom loading and lifting structure. latex hole carefully designed is the perfect solution to the waste gas during material sintering

Nobody self-developed touch-screen control system makes operation more simple, intuitive and fast. In addition, 15 curves can be stored varies with temperature sintering curve. Nobody WiFi control module allows you observe and control the work state of sintering furnace via phone at a long distance, so - it is more intelligent.



## Technical Data

Model	Max. Temp	effective space (mm)	Volume (L)	Size (mm)			Power (AC220V)	Weight Kg(≈)
				L	H	D		
NBD-B1500-12TI	1500°C	Φ90X150	1.35	400	870	540	1.5kw	55
NBD-B1700-12TI	1700°C						1.8kw	75

*\* If special standard, please contact us at once*

International advanced manufacturing technology, human security design. The furnace is made by high-purity alumina lightweight fiber material with very low thermal conductivity and bulk density. Compared with the traditional heavy materials, the uniform temperature of the device reflects the essential differences.

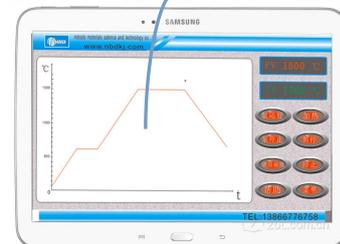
Imported alloy heating wire, control interface with large-size touch screen, easy to operate. The control mathematical model adopts the advanced PID self-learning fuzzy control to maintain the temperature control accuracy at  $\pm 1\text{ }^\circ\text{C}$ . The lifting system adopts the linear guide design with stepless speed regulation.



Batch sintering

**Main Features**

- Material firing uniform, can be installed quartz sleeve to prevent corrosion;
- Complete self-defense control system;
- Silent bilateral lifting system to ensure the stability of the lifting system
- Fully automatic control, touch screen, digital display.
- Uplift system, power system, heating system, sports system, process, system monitoring and data acquisition;



Man-machine interface, touch screen operation, more simple, delicate

**Technical Data**

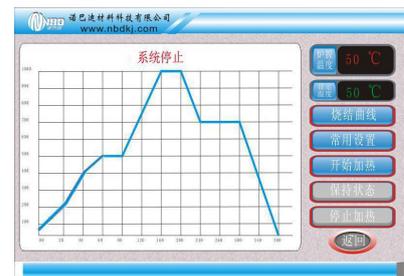
Model	Max. Temp	Size mm			effective space (mm)	accuracy	Heating element	Rotating speed (rpm)	Power
		L	H	D					
NBD-B1200-38TI	1200°C	738	1960	710	Φ 380*220	±1°C	Resistance wire	adjustable	4KW
NBD-B1500-38TI	1500°C	738	2160	710	Φ 250*220		SiC rod		6KW
NBD-B1700-38TI	1500°C	738	2160	710	Φ 250*220		MoSi2 rod		9KW

\* If special standard, please contact us at once

Integrated shape , minimalist control mode, so that the device has a very high cost performance. The device using molybdenum alloy heating wire, silicon carbide rods, silicon molybdenum rods as heating element,it has a wide temperature range and wide range of applications.It can be used for metal, non-metallic, alloys, ceramics and other materials' high temperature sintering, melting, heat treatment, it also can be used for small craft ceramic firing.

## Main Features

- non-contact silicon module, improve control accuracy ;
- high quality inorganic light aluminum oxide fiber material furnace, thermal insulation effect is more superior ;
- upstairs structure, pick and place materials convenient ;
- LCD centralized control, temperature control is clear at a glance ;
- Built-in alloy resistance wire ring distribution, the temperature is more uniform to obtain better effect ;



Man-machine interface, touch screen operation, more simple, delicate

## Technical Data

Model	Chamber size (mm)	Max. Temp	Accuracy	Power	Size (mm)
NBD-G1200-15TI	Φ 150*200	1200°C	±1°C	2.5KW	400*450*590
NBD-G1200-25TI	Φ 250*240	1200°C		4 KW	500*750*550

\* If special standard, please contact us at once



The upper open hearth furnace is suitable for high or heavy samples, the heating elements are evenly arranged around the furnace cavity make the thermal field uniformity. It's suitable for scientific research institutes, university laboratories, enterprises for high-temperature sintering, melting, heat treatment of metals, non-metals, alloys, ceramics and other materials



thermal field uniformity

## Main Features

- Max temperature 1700 °C ;
- Furnace is high-quality inorganic poly-aluminum oxide fiber material, which has superior insulation effect ; ;
- upturn door structure, convenient handling of large items ;
- Concentrated control of LCD screen, the control of heating process is clear at a glance ;



## Technical Data

Model	Chamber size (mm)	Max. Temp	Accuracy	Power	Size (mm)
NBD-G1700-12TI	Φ 120*160	1700°C	±1°C	2.8KW	500*750*550
NBD-G1700-30TI	Φ 300*400	1700°C		9KW	800*1150*800

\* If special standard, please contact us at once

# Vacuum crucible furnace G Series vacuum furnace 1200°C

It is suitable for colleges and universities, scientific research institutes, industrial and mining enterprises to set the heat treatment process of protective or reactive gas environment, annealing or diffusion of semiconductor wafers, and can also be used for baking or sintering ceramic materials.



## Main Features

- External temperature control, internal temperature measurement, direct monitoring of material temperature;
- The furnace is made of high-quality inorganic light alumina fiber material, and the annular heating insulation effect is superior;
- Separate inlet and outlet are adopted in true cavity, with lower inlet and upper outlet, so that the atmosphere can fully protect materials or participate in reaction in the cavity;
- Circular distribution of built-in high-temperature heating elements makes the temperature in the furnace more uniform, so as to obtain better sintering effect;
- Sealing water cooling is safe and reliable;

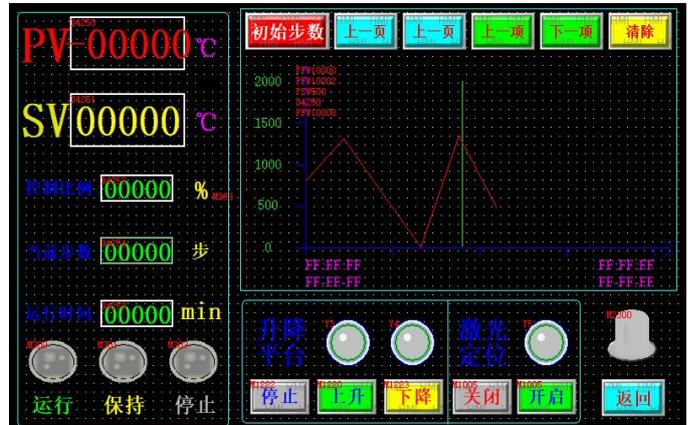


## Technical Data

Model	Chamber size (mm)	Max. Temp	Accuracy	Power	Size (mm)
NBD-G1200-20TID	Φ 190*200	1200°C	± 1°C	4KW	400*450*620
NBD-G1200-25TID	Φ 230*300	1200°C		6KW	500*750*680

*\* If special standard, please contact us at once*

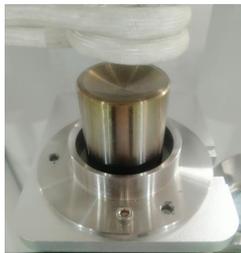
Induction furnace is suitable for the heat treatment of metal or nonmetal (indirect heating) in air, vacuum or protective atmosphere. It can be applied to: 1. Welding and smelting (brazing, silver welding, copper welding); 2. Heating (hot forging, hot matching, melting): 3. Heat treatment (surface quenching): 4. Annealing (tempering, tempering).



The operation is simple

**Main Features**

- Infrared undisturbed temperature measurement, PID whole process control;
- Materials can be treated in protective atmosphere or vacuum;
- The true cavity adopts separate air inlet and outlet, with lower inlet and upper outlet;
- Centralized control of LCD, random setting of heating process, pre storage of 15 sets of processing technology, process control at a glance, precise control;
- MOSFET, IGBT power devices and unique frequency conversion technology are adopted in the system to provide higher reliability and durability, stable operation, high efficiency, energy saving and higher output power.



**Technical Data**

Model	frequency range	Temp Range	control accuracy	Power selection (KW)	Implementation function
NBD-VAIPintermediate frequency	1~20KHz	200~2000 °C	±1°C	15,25, 35,45	Heating, annealing, quenching, etc., heating depth 3 ~ 10 mm
NBD-VAIPSuper audio	10~30kHz			35, 45	Heating, annealing, quenching, etc., heating depth 2 ~ 3 mm
NBD-VAIPhigh frequency	40~200KHz			15,25, 40	Heating, annealing, quenching, etc., heating depth 1 ~ 2 mm
NBD-VAIPUHF	200~500KHz			6, 10,20,30	Quenching, welding, heating depth 0.1 ~ 1 mm

\* If special standard, please contact us at once

The equipment is mainly used for preparing refractory metal by molten salt electrolysis, and can also be used for extracting zirconium based on in-situ preparation of fusible anode. It can be carried out at higher temperature. At the same time of electroplating, it is also a process of solid-state diffusion between deposited metal and base metal. The formation of mutual diffusion layer makes the bonding between deposited layer and base metal more firm;

**Main Features**

- External temperature control, internal temperature measurement, direct detection of the reaction temperature in the furnace chamber;
- Four electrode inlets are inserted into the furnace;
- The true cavity adopts separate inlet and outlet, with bottom inlet and top outlet, so that the atmosphere can fully protect the materials or participate in the reaction in the cavity;
- Sealed water cooling is safe and reliable. The reactor is made of austenitic chromium nickel stainless steel 310S with multi creep strength and continuous operation at high temperature, which has good oxidation resistance and corrosion resistance;



**Experimental conditions are required**

- Anode material selection (on demand);
- Cathode material selection (such as graphite, etc.);
- Molten salt (such as CaCl<sub>2</sub> etc.);
- DC power supply / electrochemical workstation;
- Electrode material selection;



**Technical Data**

Model	Max. Temp	Effective space size of reactor (mm)	Size (mm)			Power (AC220V)	Weight Kg (≈)
			L	H	D		
NBD-G1200-15TIRYF	1200°C	Φ 100*200mm	700	600	700	2kw	80

*\* If special standard, please contact us at once*

# Custom equipment Industrial annealing furnace 1200 / 1500/1700 °C

The equipment is used for sintering and annealing of various materials. It is the ideal equipment for industrial and mining enterprises, laboratories and research institutes. Fiber material is used for thermal insulation, which is more energy-saving. The power supply adopts IGBT imported power device, which is more integrated and miniaturized. The effective output power reaches more than 90%!



Interval hanger



## Main Features

- Unique style, double four door structure design, more convenient loading;
- Large furnace volume and uniform temperature field;
- Full fiber structure, energy saving and high efficiency, fast heating and easy temperature control;
- Inorganic refractories, safety and environmental protection;

## Technical Data

Model	Max. Temp	Furnace size(mm)	Size (mm)			Power (AC380V)	Weight Kg (≈)
			L	H	D		
NBD-M1200-60TI	1200°C	600*700*1000*2	1200	2300	1500	34*2kw	800

*\* If special standard, please contact us at once*

# Custom equipment Industrial vertical kiln 1200 / 1500/1700 °C

Double vertical holding furnace is made of two sets of control systems and two independent furnaces. It is a special equipment developed for industrial and mining enterprises to anneal metal, nonmetal and other compound materials. The control model adopts advanced PID self-learning fuzzy control to keep the temperature control accuracy at  $\pm 1\text{ }^{\circ}\text{C}$ .

## Main Features

- Large furnace volume and uniform temperature field;
- It has high heat preservation efficiency and good power saving effect;
- Full fiber structure, energy saving and high efficiency, fast heating and easy temperature control;
- Inorganic refractories, safety and environmental protection;
- Good working environment, simple operation process, low temperature around the furnace, safe and reliable;



Safe and reliable control system



## Technical Data

Model	Max. Temp	Tube size (mm)	Number of temp zones	Size (mm)			Power (AC380V)	Weight Kg (≈)
				L	H	D		
NBD-LT1200-270IC-550	1200°C	Φ270*3000	6	2200	4100	1500	50kw	4300
NBD-LT1500-270IC-550	1500°C						60KW	5200
NBD-LT1700-270IC-550	1700°C						80KW	6600

*\* If special standard, please contact us at once*

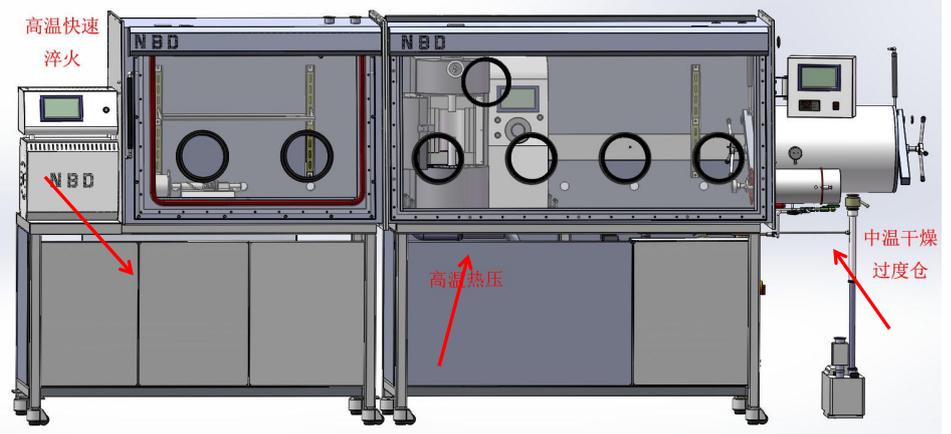
## Special glove box + product for lithium battery and super capacitor development and production

During the production experiment, the “mixing, crimping, sintering, and rapid annealing” of the sample is prepared in the same anhydrous, oxygen-free, dust-free ultrapure environment to ensure the consistency of the product.



Glove box+High temperature sintering equipment

Glove Box +quencher +hot pressing +dry

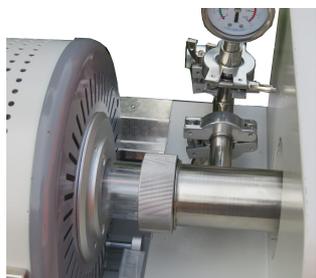


### Main Features

- 1. Glove box+Drying oven(Material drying in the glove box);
- 2. Glove box+mixer(Mixed grinding of materials in glove box);
- 2. Glove box+hot press(Molding of materials in the glove box);
- 3. Glove box+high temperature furnace((Sintering of the material in the glove box);
- 4. Glove box+quenching furnace(Quick cooling of materials in the glove box);
- 5. Touch screen centralized control, Work process control is clear at a glance;
- 6. The glove box and the material preparation methods are mixed together to make effective use of the space;

# Custom equipment TDA series thermal expansion coefficient tester 1200°C

NBD-TDA1200-45IT thermal expansion tester, put the sample under the control of preset temperature program (rise / fall / constant temperature and its combination), and measure the change process of the length of the sample in the test direction with temperature or time when the load force is negligible. It is used to accurately measure the expansion or contraction of materials in the process of heat treatment. It is suitable for testing ceramics, building materials, glass, refractories, metals or alloys.



Measuring mechanism (vacuum degree:  $\leq 5\text{pa}$ , mechanical pump)

## Main Features

- Automatic calculation of expansion coefficient, volume expansion coefficient, linear expansion and rapid thermal expansion;
- Automatic calculation of compensation coefficient and automatic compensation, or manual correction (online);
- Automatically record, store and generate test report, and print temperature expansion coefficient curve through USB interface;
- All operations of the machine are completed automatically, and report data can be exported freely without additional computer, with strong integration;

## Structure diagram

- The instrument can be filled with purge gas during the test, and the purge direction is from the right side, and the purge gas will flow out from the middle after cycling on the pattern;
- The common inert purge atmospheres are N<sub>2</sub>, AR and he, which are mainly used to prevent the oxidation of samples. They can also be used to take out gaseous products during the heating process, and to prevent the pollution of furnace cavity, support and push rod by the polluting gases generated by the decomposition of some samples;
- In terms of gas control accessories, it can be equipped with traditional rotameter or mass flowmeter (MFC);
- The gas outlet is located at the middle exhaust end of the furnace body, which can discharge the carrier gas and gaseous products to the medium and large-sized boiler, or use the heated transmission pipeline to further connect to the gas analysis instrument for component detection.

## Technical Data

Model	Max. Temp	Displacement resolution	measurement error	measuring range	Air tightness	Sample holder	Sample state size	Power	Weight Kg (≈)
NBD-TDA1200-45IT	1200°C	1 μm	±0.1~0.5%	RT—1100°C	0.231KPa/min	High purity quartz	Dia: Φ6~8mm±0.5mm length: 25~50mm±1mm	AC220V 1.2kw	20

*\* If special standard, please contact us at once*

The equipment is mainly used smelting and raising temperature for precious metals such as gold, platinum, silver, copper, iron, stainless steel, aluminum, aluminum and other metals. It is ideal for laboratory, research institutes, jewelry processing and casting process. heat preservation uses fiber materials, more energy efficient. Power supply uses imported IGBT power devices, more integrated and miniaturized, the effective output power is more than 90%!



**Main Features**

- Unique design, reasonable structure design
- Big volume chamber, ideal both for Laboratory and production companies
- High melting efficiency, good energy-saving effect, even metal components
- full fiber structure, energy saving, high efficient, fast temperature rising, easy to control temperature
- inorganic refractory materials, safe and environmental;
- Touch-screen operation, bilingual, perfect user experience;
- Good working environment, simple operation process, the temperature around the furnace is low, safe and reliable

**Technical Data**

Model	Max. Temp	Tilt method	Volume (L)	Size (mm)			Power (AC220V)	Weight Kg (≈)
				L	H	D		
NBD-P1200-1LIT-120	1200°C	manual	0.3L	380	420	380	1.8kw	15
NBD-P1500-2.5LIT-170	1500°C	electric	2.5	1230	1250	660	4KW	75
NBD-P1700-2.5LIT-170	1700°C		2.5				5kw	110

*\* If special standard, please contact us at once*

This device is used for sintering and annealing of various materials. It is ideal device for enterprises, laboratories and research institutes. Insulation using energy-efficient fiber materials. The power supply adopts IGBT imported devices, more integrated and miniaturized, and the effective output power reaches more than 90%!



Hanger

## Main Features

- Unique style, double layer four-door structure design makes loading more convenient;
- Large furnace volume, uniform thermal field;
- high heat preservation efficiency and good energy-saving effect;
- Full fiber structure, energy-saving, easy control;
- Inorganic refractories, safety and environmental protection;
- Touch screen operation is simple, safe and reliable;



## Technical Data

Model	Max. Temp	Chamber size (mm)	Size (mm)			Power (AC380V)	Weight Kg (≈)
			L	H	D		
NBD-M1200-60IT	1200°C	600*700*1000*2	1200	2300	1500	34*2kw	1200

\* If special standard, please contact us at once

This double vertical furnace adopts two sets control system and two independent furnace, special equipment for annealing of metal and non-metallic and other material in the industrial and mining enterprises. Control model uses advanced PID self-learning fuzzy control, so control accuracy is maintained at  $\pm 1$  °C.

## Main features

- Unique design, reasonable structure design
- Big volume chamber, even temperature zone
- high thermal insulation efficiency, good energy-saving effect, even metal components
- full fiber structure, energy saving, high efficient, fast temperature rising, easy to control temperature
- inorganic refractory materials, safe and environmental;
- Good working environment, simple operation process, the temperature around the furnace is low, safe and reliable



Safe and reliable controlling system

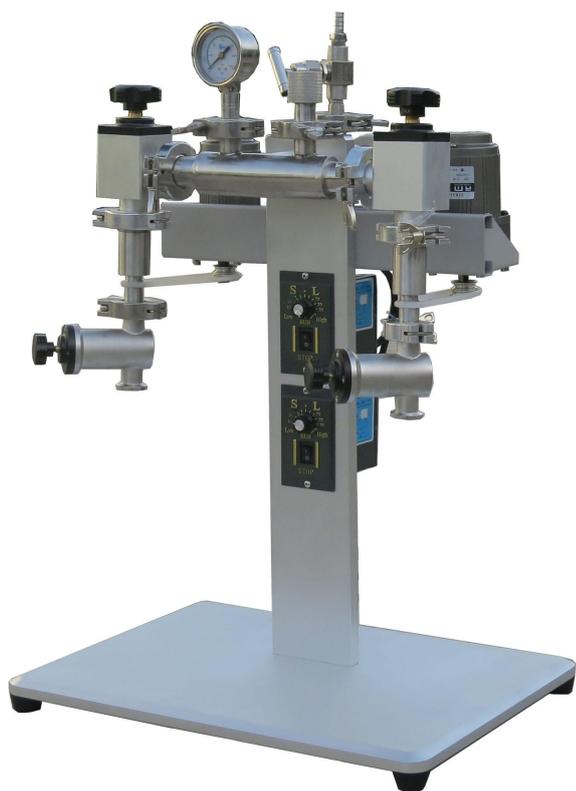


## Technical Data

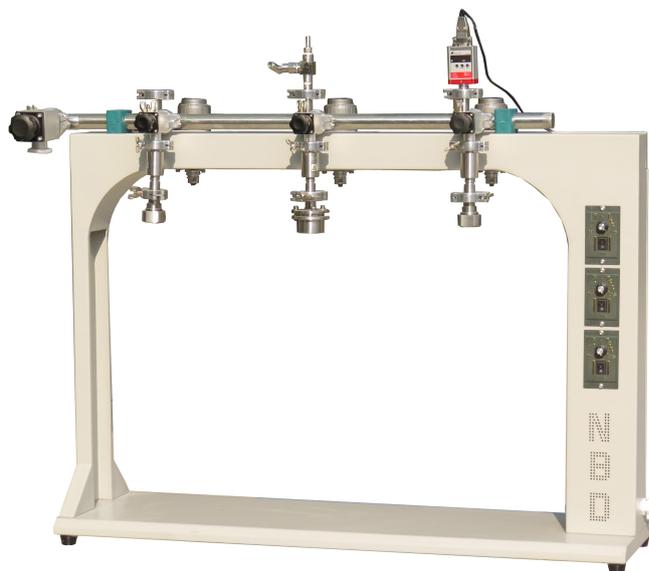
Model	Max. Temp	Tube size (mm)	Temperature Zone	Size (mm)			Power (AC380V)	Weight Kg (≈)
				L	H	D		
NBD-LT1200-270IC-550	1200°C	Φ 270*3000	6	2200	4100	1500	50kw	4300
NBD-LT1500-270IC-550	1500°C						60KW	5200
NBD-LT1700-270IC-550	17000°C						80KW	6600

\* If special standard, please contact us at once

The NBD multi-station glass test tube rotary vacuum sealing system consists of a rotatable vacuum sealing device, a glass test tube holding device, a vacuum pump, a vacuum measuring device, an oxygen machine, and vacuum pipeline. It is mainly used for the encapsulation of glass tubes. After the tubes are pre-evacuated, the tubes are melted at high temperature by oxyhydrogen flame during the rotation, and they are pressure-bonded together with the quartz column under the action of external atmospheric pressure to form a vacuum seal. It can seal borate glass test tube and quartz glass test tube. The system can change different fixtures to hold different size test tubes. The rotation speed in the sealing process can be adjusted to match different diameters and welding torches.



2-station sealing system



3-station sealing system

## Main Features

- Sealing fast, safe and convenient ;
- Quick and convenient replacement of fixtures, adapt to different size test tubes ;
- Dynamic seal, prevent leakage ;
- Ultra-high vacuum design standards ;
- Special intake valve and deflation device ;

## Technical Data

Model	Thickness of test tube	Fixture	Size (mm)			Weight Kg(≈)
			L	H	D	
DXZ-02 2工位	≤2mm	13, 15, 20, 42mm	500	700	400	30
DXZ-03 3工位			700	700	500	40
DXZ-04 4工位			900	800	500	50

\* If special standard, please contact us at once

This gas mixing system applies to the low pressure low flow, multi-gas single / mixed continuous gas supply system. It is especially convenient to switch and use a variety of gases, without causing air into gas equipment. The gas pressure and flow data is in the same plane, visually, readable, beautiful appearance, practical, easy to operate and displaying flow accurately, and can effectively control the gas consumption. All instruments and connecting valves are of international standard 1/4 inch Tube connections for easy maintenance dis-assembly.



Gas Float Flow meter

### Main Features

- easy to operate;
- can be used alone or as an equipment workbench;
- all uses clean polished stainless steel pipe, or anti-corrosion aging PTFE tube;
- accurate and reliable flow measurement;
- reliable gas mixing device, both the role of the regulator, but also the role of the gas mixture, the gas mixture more Constant;
- All joints are made of stainless steel with double fittings, safe and reliable.



Gas Mass Flowmeter

### Technical Data

Model	Type	Flowmeter Size ml/min (SCCM)	Size (mm)			Weight Kg (≈)
			L	H	D	
NBD-□F	Gas Float Flowmeter	16~160m, 25~250, 60~600	700	700	600	30
NBD-□Z	Gas Mass Flowmeter	20, 50, 100, 200, 500, 1000				35

*\* If special standard, please contact us at once*

High-speed vibrating ball mill is high performance small instruments for laboratory sample (small, micro) Preparation. The instrument has rotating swing and vibrating three-dimensional motion during grinding. Collision energy is higher than other types of ball mill. The equipment is small, light weight, high efficiency and low price. It can be used for grinding of materials, mixing and mechanical alloying. High-speed vibrating ball mill is able to grind by dry method and wet method or mix different size, different types of solid materials, suspensions and pastes.



In the vibration frequency of 1000 to 3000 times per min, amplitude of 2 to under 2mm of external force, Cracks of the original material surface expands and generates new crack. When the crack expands through the material particles, the material will be crushed.

Dry grinding: 1 ~ 2mm of material → 85 ~ 5um

Wet grinding: 1 ~ 2mm of material → 5 ~ 0.1um

## Main Features

- small, light weight, high efficiency
- high performance small instruments for laboratory sample (small, micro) Preparation;
- applied to material grinding and mixing
- easy operation, reliable working, easy cleaning
- no pollution to environment, two methods grinding: dry g and wet.

## Technical Data

Model	Optional Jar specifications	Grinding ball size (mm)	Feeding Granularity size of	Discharging Granularity	Oscillation Frequency	Timing Range (min)	Power (AC220V)	Dimensions (mm)	Weight (kg)
NBD-HLJ-I	50ml, 80ml	Φ10, Φ20	<1mm	Min. 0.1μm	1200r/m	0~999	180W	405*260*365	40

# Planetary Ball Mill Mixer Machine

HLJ series

HLJ series planetary ball mill mixer machine is necessary for mixing, finely milling, sample preparation, new product development and small mixed, finely ground, sample preparation, new product development and small batch production of high-tech. Our planetary ball mill is small, full-featured, high efficiency, low noise, . It is ideal equipment for scientific research institutes, universities, corporate research laboratories to obtain and research samples (each experiment can acquire four samples). it can grind samples in a vacuum state equipped with vacuum ball milling tank.



## Main Features

- 3D arc design, elegant;
- With a silent gear, noise is reduced by 10 to 28 dB. Transmission speed is stable;
- All adopts clean polished stainless steel tube, or corrosion-resistant and reliable;

- User-friendly design, simple and comfortable operation;
- Security, preparation away from worry;
- Hydraulic pushing rod, ease;
- The smallest of particle size is up to 0.1um.

## Technical Data

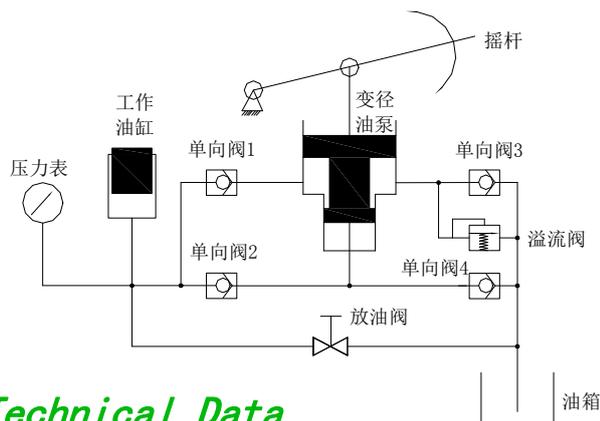
Model	available ball mill tank size	mesh size of feed	mesh size of discharging	Rotation rate	Timer Range (H)	Power (AC220V)	Weight kg((≈))
NBD-QMJL-10 4 (mute)	100ml	≤3mm	Mix 0.1 μ m	800 R/Min	0~72	220W	40
NBD-QMJW-504 (mute)	500ml					550W	80

\* If special standard, please contact us at once

SYPJ series pressing machine is designed specially for laboratory sample preparation. With different molds, this machine can make different type powder material into a certain strength and shape samples. Machine design is compact, flexible and convenient, versatile, ideal for Sample Preparation and materials forming in fine ceramics, new materials, new energy, superconductivity, building materials and other fields. It can prepare powder tablet for infrared spectrophotometer, X fluorescence analysis, calcium and iron analyzers and so on. It can also be used for other pressure test.

## Main feature

- Pressure stability: special oil circuit design;
- Easy to use: table pressure value is piston pressure value, intuitive, no need of conversion;
- Simple operation, the installation of the intake and exhaust systems may not have to loosen the inlet screw of oil. simplify operation and easy to use;
- Low noise, precision machining parts and components;
- Integrated combination, compact, light weight.



## Technical Data

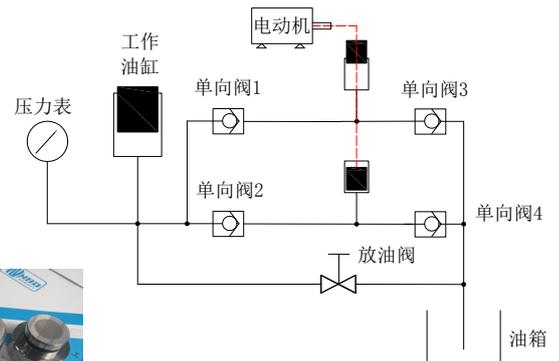
Model	Pressure range	Cylinder Diameter (mm)	Cylinder Travel Distance (mm)	Working space	Stability	Weight kg	Size (mm)
SYPJ-8T	0~8T (40Mpa)	Ø70	20	100*100*100	≤0.5Mpa/ min	19	190*400*210
SYPJ-15T	0~15T (40Mpa)	Ø87	20	140*150*140		32	210*460*210
SYPJ-24T	0~24T (60Mpa)	Ø100	20	150*180*150		36	220*460*210
SYPJ-30T	0~30T (60Mpa)	Ø110	30	156*200*160		48	240*490*210
SYPJ-40T	0~40T (60Mpa)	Ø120	50	180*230*140		60	270*580*220
SYPJ-60T	0~60T (60Mpa)	Ø156	50	220*280*150		80	330*638*240

\* If special standard, please contact us at once

DYPJ series press machine is smaller, lighter, more work space, more reliable pressure stability. Unique reciprocating cylinder can output a certain pressure liquid. This feature allows pressing to shake up and down, so that pressing is more efficient effort, work efficiency improves. The cylinder of tech instrument body and the mechanical pressure adopts independent structure. So the cleaning and debugging of the equipment is more convenient. It is more convenient for customer to do instrument maintenance. It mainly used for sample pressing of experimental research in the field of fine ceramic powder, superconductivity, building materials, new materials, green energy and so on. It is Particularly suitable to cooperate with calcium and iron analysis, infrared spectroscopy, X fluorescence and other test equipment.

## Main Features

- Pressure stability: special oil circuit design;
- Easy to use: table pressure value is piston pressure value, intuitive, no need of conversion;
- Simple operation, the installation of the intake and exhaust systems may not have to loosen the inlet screw of oil. simplify operation and easy to use;
- Low noise, precision machining parts and components;
- Integrated combination, compact, light weight
- Electric operation saves time and effort.



## Technical Data

Model	Pressure range	Cylinder Diameter (mm)	Max travel distance of cylinder (mm)	Working space (mm)	Pressure stability	Weight (kg)	Size (mm)	Power (AC220V)
DYPJ-20T	0~20T (60Mpa)	Ø100	20	105*105*105	≤0.1Mpa /min	40	370*450*350	180W
DYPJ-30T	0~30T (60Mpa)	Ø110	20	155*180*100		50	290*450*350	180W
DYPJ-40T	0~40T (60Mpa)	Ø120	20	155*180*100		55	370*450*350	180W
DYPJ-60T	0~60T (60Mpa)	Ø156	50	225*300*120		105	370*500*350	AC380V、270W

\* If special standard, please contact us at once

ZLJ series cooling cycle refrigerator with cycle pump supplies coolant for high temperature equipment to achieve cooling effect. It is multi-function cooling equipment which also can get on cold bath test to flasks and test tubes in liquid-cooled trap. It applies compressor cooling. Temperature control uses PID control. Temperature display uses high brightness LED. It sets circulatory function and cooling function as one.

The cooling system is filled with refrigerant which meet national standards and relevant international conventions.

It needs to choose different cold medium according to desired temperature. It requires non-toxic, non-corrosive, non-viscous at low temperatures.

1. When temperature is above 10 °C, it is recommended distilled or deionized water as cold medium.

2. When temperature -20 ~ 10 °C, it is recommended glycol solution.

### Main feature:

- With digital display of temperature, high temperature controlling accuracy;
- Water meter flow is adjustable;
- Traffic alarm protection;
- Large-capacity open bath combines with the outer loop, not only for frozen groove, but also provide cooling fluid to outside;
- Refrigeration compressors and other key parts adopt international brands, high reliability, high efficiency;
- Circulation system uses ANSI304,316 and polymer anti-corrosion materials



### Technical Data

Model	Volume (L)	Temperature range (°C)	output cooling quantity (W)	coolant	flow of cycle pump	Protection	Groove Material	Size (mm)
NBD-ZLJIII-10	5	-20~20	1150	R22	12	Delay, leakage, over-current, over-heating	1Cr18Ni9Ti	464*727*324
NBD-ZLJIII-20	10		750					505*797*365

\* If special standard, please contact us at once

Widely used in biochemical, chemical and pharmaceutical, medical and health, agricultural research, environmental protection and other fields, used for powder drying, baking and all kinds of glass containers disinfection and sterilization. It is particularly suitable for the rapid and efficient drying of dry heat-sensitive, easily decomposable, easily oxidizable substances and complex ingredients. It can maintain a certain degree of vacuum in the working chamber, and can be filled with inert gas. Especially, some items with complex components can also be quickly dried. The intelligent digital temperature controller is used to set, display and control the temperature...



## Main Features

- Digital display , high precision temperature control ;
- Multi-stage temperature control, temperature fluctuation  $\pm 1^{\circ} \text{C}$ , uniformity  $\pm 3^{\circ} \text{C} / 3^{\circ} \text{C}$  ;
- Inner cavity made of 304 stainless steel ;
- Efficient and energy-saving heaters, rational vacuum system, air release system, inflation system and perfect control system make the temperature of the studio more uniform ;

## Technical Data

Model	Type	Chamber size (mm)	Volume (L)	Layer	Voltage	Power (KW)	Temperature	Accuracy	Vacuum	Size (mm)
NBD-6020-DZK	Low temp	300*300*280	24	2	220V	1.2	RT+10~300	$\pm 1^{\circ} \text{C}$	< 133Pa	650*500*460
NBD-6050-DZK		410* 370*350	53			1.5				760*580*530
NBD-6090-DZK		450*450*450	90			1.8				800*560*630
NBD-6210-DZK		560*600*640	215			2				900*800*960
NBD-6020-GZK	High temp	300*300*280	25			2	RT+10~400			650*500*460
NBD-6040-GZK		350*350*350	40			2.2				680*530*490
NBD-6050-GZK		410* 370*350	53			2.5				760*580*530
NBD-6070-GZK		450*350*450	70			3				780*618*630

\* If special standard, please contact us at once

The hot air is blown through the circulation fan to ensure the temperature balance inside the box. It is a commonly equipment, which is mainly used to dry the sample, and can also provide the temperature environment required for the experiment. Drying box is used in various industries such as chemical industry, medicine, casting, automobile, food, machinery, etc. It is used for drying, roasting, melting wax and sterilization of styles :



## Main Features

- Digital display , high precision temperature control ;
- Multi-stage temperature control, temperature fluctuation  $\pm 1^{\circ} \text{C}$ , uniformity  $\pm 3^{\circ} \text{C}^3 \text{C}$ ;
- Inner cavity made of 304 stainless steel ;
- Efficient and energy-saving heaters, rational vacuum system, air release system, inflation system and perfect control system make the temperature of the studio more uniform ;

## Technical Data

Model	Type	Chamber size(mm)	Volume (L)	Layer	Voltage (V)	Power (KW)	Temperature	Accuracy	Size (mm)
NBD-9013AW	Horizontal	250*250*350	15	2	220	0.5	50°C -300°C	$\pm 1^{\circ} \text{C}$	530*406*390
NBD-9023AW		300*300*270	25			0.7			580*456*451
NBD-9053AW		415*370*345	53			0.9			695*526*485
NBD-9123AW		555*370*525	108			1.5			835*526*665
NBD-9040AL	Vertical	340*320*320	42	2	220	1.2	50°C -300°C	$\pm 1^{\circ} \text{C}$	620*530*490
NBD-9070AL		450*400*450	70			1.7			740*618*630
NBD-9140AL		550*450*550	136			2.5			840*670*7300
NBD-9240AL		600*500*750	220L			3			880*720*930

\* If special standard, please contact us at once

# Vacuum Supply System



NBD-101(A) Mechanical pump system

Vacuum degree  $\leq 100\text{pa}$



NBD-101(B) Mechanical Pump System

Vacuum degree  $\leq 3\text{pa}$



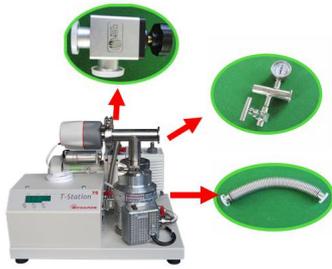
NBD-103(A) Molecular 110 Pump System

Vacuum degree  $\leq 4.2 \times 10^{-5}$  toor



NBD-103(B) Molecular 620 Pump System

Vacuum degree  $\leq 46 \times 10^{-6}$  toor



NBD-103(C) Molecular 110 Pump System

Vacuum degree  $\leq 4.2 \times 10^{-4}$  toor



NBD-1C-40 No Oil Pump System

Vacuum degree  $\leq -92\text{kPa}$

## Movable Workbench

The platform is designed for laboratory instrument displaying. three layers disassemble flexible. all components are machine processed, good consistency. The surface is through phosphate processing electrostatic insulation spraying insulation. corrosion-resistant plastic powder material, bottom mounting 360 degree polyurethane casters, silent operation and elegant appearance



Safe and durable roof



double flanging structure, more strong and durable



Double-thick polyurethane casters, silent and flexible



## Technical Data

Model	Material	Surface treatment	Caster Type	Loading (KG)	Size (mm)		
					L	H	D
NBD-PT-I	cold plate	Phosphating, Powder coating, Anti-corrosive	polyurethane	150	600	700	600
NBD-PT-II				180	900	700	600
NBD-PT-III				200	1200	700	600

# Spare Parts



*PTFE*



*Stainless Steel  
Flange*



*Seal Ring*



*Heating Element*



*Tube Insulation*



*Insulation Mat*



*Al<sub>2</sub>O<sub>3</sub> Blocks*



*Quartz Blocks*

*Alumina Tube*

*Quartz Tube*



*Alumina Crucible*



*Quartz Crucible*



*Gas Supply Tube  
Elements*



*Vacuum Tube  
Elements*



*Gas Supply Valve*



*Flowmeter*

# Unique Design



**6-tube dual zone  
CVD system**

Comparative  
sintering in  
multi-component  
atmosphere



**Constant temperature  
and pressure furnace**

Constant pressure,  
constant temperature  
for pattern sintering



**High Magnetic  
Annealing  
Sintering Furnace**

Used for preparing  
sample at high  
magnetic state



**Elastic Modulus Test  
Heating Equipment**

used for providing  
temperature field after  
elastic modulus  
measuring



**Five Hole Tube  
Furnace**

Suitable for heating  
and sintering  
several samples at  
the same time



**Battery Testing  
Equipment**

12-station battery  
testing equipment not  
only can be individually  
controlled, but also  
centralized controlled



## 激光烧蚀化学气相沉积系统 (LA-CVD)

