KINTEK
Solution for researching

KINTEK SOLUTION

Cvd Machine Catalog

Contact us for more catalogs of Sample Preparation, Thermal Equipment, Lab Consumables & Materials, Bio-Chem Equipment, etc.

KINTEK SOLUTION

COMPANY PROFILE

>>> About Us

Company Profile

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

Products & Services

Kintek Solution Ltd is headquartered in Zhengzhou, the capital city of Henan Province, China, and its core business includes the manufacture, distribution and sale of all types of scientific research equipment and laboratory consumables. The wide range of products and services covers the following main areas:

- **Sample Preparation Equipment:** We provide high-performance sample preparation equipment such as tablet presses, ball mills, vibrating sieves and tablet punching machines, which are capable of meeting a wide range of sample preparation needs and ensuring high quality experimental data and research results.
- **Thermal Equipment:** Our thermal equipment includes tube furnaces, sintering furnaces, vacuum furnaces, atmosphere furnaces, graphite furnaces, dental furnaces, rotary furnaces, and high-temperature furnaces (e.g., MPCVD, CVD, PECVD, electric rotary kilns). These facilities excel in high-temperature processing and materials synthesis, meeting a wide range of needs from basic research to industrial production.
- **Biochemical equipment:** We offer a wide range of biochemical laboratory equipment, including rotary evaporators, vacuum pumps, cold trap chillers,

heating circulators, reactors, short-range distillation equipment, sterilization equipment, and homogenizers. These equipments are widely used in the fields of chemical reaction, biological processing and pharmaceutical manufacturing.

- **Laboratory Consumables:** We supply a wide range of laboratory consumables such as fine ceramic products, electrochemical consumables, PTFE material products, high purity materials, battery materials, chemical vapor deposition materials, optical materials, thin film deposition components and glass materials. These consumables provide the necessary support for laboratories to ensure the smooth running of experimental processes.

Technological Advantages

Kintek Solution Ltd has significant technological strengths in the field of scientific research equipment and technical solutions, which enable us to stand out in a competitive marketplace and support our customers with cutting-edge technology. The following are our key technological strengths:

Advanced R&D capabilities

- Technological Innovation: Our R&D team is committed to exploring and developing the latest technologies to keep our equipment at the forefront of the industry through continuous technological innovation.
- Customized solutions: Based on the specific needs of our customers, we are able to develop and provide customized equipment to meet specific research requirements and application scenarios.
- Cooperative R&D: We cooperate with leading research institutes and higher education institutions around the world to carry out R&D projects on cutting-edge technologies to ensure that our technologies are always at the forefront of the industry.

High-performance equipment

- Precision design: Our equipment adopts advanced design concepts to ensure high precision, reliability and performance to meet the stringent requirements of scientific research and industrial applications.
- Advanced materials: We use high-quality materials and components to improve the durability and stability of our equipment, extend its service life and reduce maintenance costs.

Strict quality control

- Standardized production: All equipment is manufactured in accordance with international quality standards, and each production step is strictly controlled to ensure product consistency and reliability.
- Comprehensive testing: Comprehensive performance testing and quality inspection are carried out before the equipment is delivered to ensure that it meets the customer's technical specifications and operational requirements.

Comprehensive technical support

- Technical Service: Provide comprehensive technical support and after-sales service, including equipment installation, commissioning, training and maintenance, to ensure that customers can use our products efficiently.
- Rapid Response: We have established a rapid response mechanism, which can promptly solve the problems encountered by customers in the process of use and reduce equipment downtime.

Innovative technology integration

- System Integration: We integrate advanced control systems and automation technologies into our equipment to improve operational efficiency and data accuracy, and streamline operational processes.

Through these technological advantages, Kintek Solution Ltd is able to continue to provide our customers with innovative, efficient and reliable scientific research equipment and solutions to promote the continuous progress of scientific research and industrial applications.

Market position and customers

Kintek Solution Ltd is positioned in the market as a leading global provider of high-tech research equipment and solutions, specializing in biochemical reactions, new materials research, heat treatment, vacuum manufacturing, refrigeration, as well as pharmaceuticals and oil extraction. We are committed to brand leadership in research equipment by providing innovative technology and high quality equipment to meet the needs of research organizations and industrial companies in complex research and production processes.

Core Market Positioning:

- Specialization: We focus on high technology and scientific research, providing advanced equipment and solutions for specialized research institutes, laboratories and industrial applications.
- High-end customers: Our main customers include world-renowned universities, research institutes and various industrial enterprises, which usually have high requirements for equipment performance and technology.
- Technological Innovation: We are committed to technological innovation and customized solutions to ensure that our customers receive cutting-edge technical support to meet the ever-changing needs and challenges in the market.

Market Customer Groups:

- Research Institutes and Universities: including the world's leading research institutes and institutions of higher learning, who require high-performance research equipment and technical support for basic research, applied research and technology development.
- Industrial companies: covering a wide range of industries such as pharmaceuticals, oil extraction, new materials manufacturing and electronic materials production, these companies rely on reliable equipment and solutions to ensure product quality and productivity during production.
- Laboratories and test centers: organizations that provide laboratory services and quality testing, requiring accurate laboratory equipment and instruments for sample analysis and testing.
- Technology Development Companies: Companies that specialize in the development and application of new technologies and have a high demand for innovative equipment and technical solutions to support their R&D projects and technology validation.

Through clear market positioning and customer groups, we are committed to promoting scientific and technological progress, supporting the innovation and development of our global customers, and continuing to provide high-quality products and services to the market.

Team Introduction

The team at Kintek Solution Ltd is at the heart of the company's success. In order to realize our vision and maintain our leadership position in the field of high-tech research equipment, we are committed to building an exceptional team with the following attributes:

1. Professionalism

- Technical Expertise: Our team consists of technical experts and engineers in the field with deep expertise and technical backgrounds to meet complex technical challenges and innovation needs.
- Industry experience: We bring together professionals with extensive experience in the fields of research equipment, material science and engineering technology to ensure a precise grasp of market needs and technological trends.

2. Innovative Spirit

- R&D-driven: The team encourages innovative thinking and technological exploration, supports employees to participate in R&D projects on cutting-edge technologies, and continuously pushes forward the technological advancement of products and solutions.
- Flexible Adaptation: In the face of changing market environment, we have the ability to adapt quickly and flexibly to meet the changing needs of our customers.

3. Collaboration and Communication

- Cross-sectoral collaboration: The team maintains close collaboration between various departments, including R&D, production, sales and customer service, to ensure the smooth progress of projects and timely response to customer needs.
- Efficient Communication: Emphasize internal communication and information sharing, through efficient communication mechanisms and tools to ensure that all team members are consistent with the project goals and progress.

4. Customer Orientation

- Customer Service: Team members are customer-focused and committed to providing quality service and support to ensure that our customers have the best experience in using our products and solutions.

- Customized solutions: the ability to deeply understand the specific needs of customers and provide customized solutions to meet the special requirements of different customers.

5. Professional Training and Development

- Continuous Learning: We provide continuous training and learning opportunities for our team members to ensure that they are always up-to-date with the latest technology and industry knowledge.
- Career Development: We value the career development and growth of our employees, provide clear career paths and promotion opportunities, and motivate our employees to realize their personal goals and career aspirations within the company.

6. Corporate Culture

- Integrity and Responsibility: The team upholds integrity and responsibility, treats work and customers with honesty and fairness, and builds trust and long-term cooperative relationships.
- Unity and Collaboration: Focusing on the spirit of teamwork, the team emphasizes mutual support and joint efforts to achieve the company's goals and promote the overall success of the team.

By building such a highly qualified, innovation-driven and customer-oriented team, we ensure that Kintek Solution Ltd continues to lead in the field of scientific research equipment and provide excellent products and services to our customers worldwide.

At KINTEK, technology fuels our corporate spirit. This dynamic energy awaits you upon joining our team. Expect a distinctive cultural environment where our global business focus opens doors to diverse customs and traditions worldwide. Here, challenging roles promise to propel your career to new heights.

Our exceptional corporate culture sparks innovation, fosters care, and drives continuous progress among individuals and teams. Our team embodies youthfulness, positivity, enthusiasm, and a bold attitude toward challenges. Passionate about our business, our employees ardently contribute to the company's growth.

We seek individuals brave enough to embrace challenges, harbor grand ambitions, and thirst for knowledge. If you're driven by dreams and passion, and aspire to start your

entrepreneurial journey, KINTEK is the platform to actualize your career plans. We don't just offer opportunities; we pave the way for your future.

Join us at KINTEK, where innovation meets opportunity. Let's create a future that's as promising as your aspirations.

Future Plans

Kintek Solution Ltd's future plans are aimed at further strengthening our leadership position in the research equipment sector and driving the company forward in terms of technological innovation, market expansion and customer service. The following are our key future directions:

1. Technology Innovation and R&D

- Cutting-edge technology development: Continue to invest resources in the research and development of cutting-edge technologies, such as artificial intelligence, the Internet of Things and nanotechnology, in order to promote equipment intelligence and automation.
- New Product Lines: Expand existing product lines and develop equipment to meet emerging market needs, especially in the areas of biochemistry, biomedicine and high-performance materials.
- Cooperative R&D: Strengthen cooperation with international research institutes and institutions of higher learning to carry out joint R&D projects to ensure that the technology remains at the global leading level.

2. Market Expansion

- Global Market Expansion: Further expand the global market, especially in emerging markets and developing regions, establish more sales and service networks, and enhance the brand's international influence.
- Industry application: Explore and expand the application fields in other industries, such as new energy, environmental protection technology and intelligent manufacturing, to open up new business growth points.

3. Customer Service Enhancement

- Enhancement of customer support: Establish a more complete customer support system, provide 24/7 technical support and maintenance services, and ensure

the efficient experience of customers in the use of equipment.

- Customized services: Provide more customized services and solutions according to customers' individual needs to enhance customer satisfaction and loyalty.

4. Sustainable Development

- Environmentally friendly technology: Develop and adopt environmentally friendly materials and processes to reduce the environmental impact during the production and use of equipment and promote sustainable development.
- Energy saving and consumption reduction: Optimize the energy efficiency of equipment, reduce energy consumption, improve resource utilization efficiency, and support the development of green technology.

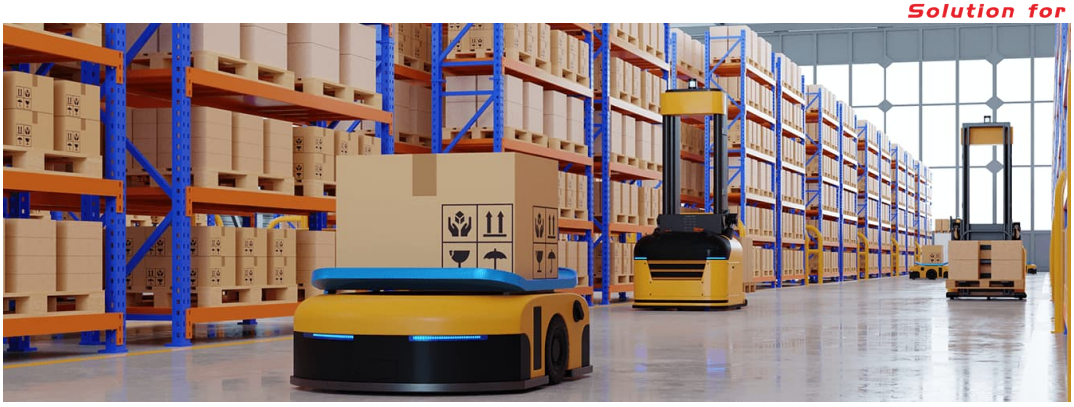
5. Internal optimization

- Intelligent management: Implement intelligent management systems and data analysis tools to improve productivity and management and reduce operating costs.
- Employee Training: Enhance employee training and skills upgrading to build a high-quality team to meet changing market demands and technological challenges.

6. Innovation ecosystem

- Establishment of innovation platform: Create innovation platforms and laboratories to support employees and partners in technological innovation and product development.
- Industry Chain Cooperation: Deepen cooperation with the upstream and downstream of the industry chain, integrate resources, and promote the development and implementation of industry technical standards and market norms.

Through these future plans, Kintek Solution Ltd will continue to lead the forefront of science and technology, provide customers with more advanced and reliable products and services, and at the same time, promote the sustainable development of the enterprise and the progress of the industry.



Split Chamber Cvd Tube Furnace With Vacuum Station Cvd Machine

Item Number: KT-CTF12

Introduction

Efficient split chamber CVD furnace with vacuum station for intuitive sample checking and quick cooling. Up to 1200℃ max temperature with accurate MFC mass flowmeter control.

Learn More

Furnace model	KT-CTF12-60
Max. temperature	1200℃
Constant work temperature	1100℃
Furnace tube material	High purity quartz
Furnace tube diameter	60mm
Heating zone length	1x450mm
Chamber material	Japan alumina fiber
Heating element	Cr2Al2Mo2 wire coil
Heating rate	0-20℃/min
Thermal couple	Build in K type
Temperature controller	Digital PID controller/Touch screen PID controller
Temperature control accuracy	±1℃
Sliding distance	600mm
Gas precise control unit	
Flow meter	MFC mass flow meter
Gas channels	4 channels
Flow rate	MFC1: 0-5SCCM O2 MFC2: 0-20SCMCH4 MFC3: 0- 100SCCM H2 MFC4: 0-500 SCCM N2
Linearity	±0.5% F.S.
Repeatability	±0.2% F.S.
Pipe line and valve	Stainless steel
Maximum Operating Pressure	0.45MPa
Flow meter controller	Digital Knob controller/Touch screen controller
Standard vacuum unit (Optional)	
Vacuum pump	Rotary vane vacuum pump

Pump flow rate	4L/S
Vacuum suction port	KF25
Vacuum gauge	Pirani/Resistance silicon vacuum gauge
Rated vacuum pressure	10Pa
High vacuum unit(Optional)	
Vacuum pump	Rotary vane pump+Molecular pump
Pump flow rate	4L/S+110L/S
Vacuum suction port	KF25
Vacuum gauge	Compound vacuum gauge
Rated vacuum pressure	6x10-5Pa
Above specifications and setups can be customized	

No.	Description	Quantity
1	Furnace	1
2	Quartz tube	1
3	Vacuum flange	2
4	Tube thermal block	2
5	Tube thermal block hook	1
6	Heat resistant glove	1
7	Precise gas control	1
8	Vacuum unit	1
9	Operation manual	1

Multi Heating Zones Cvd Tube Furnace Cvd Machine

Item Number: KT-CTF14

Introduction

KT-CTF14 Multi Heating Zones CVD Furnace - Precise Temperature Control and Gas Flow for Advanced Applications. Max temp up to 1200℃, 4 channels MFC mass flow meter, and 7" TFT touch screen controller.

Learn More

Furnace model	KT-CTF14-60
Max. temperature	1400℃
Constant work temperature	1300℃
Furnace tube material	High purity Al2O3 tube
Furnace tube diameter	60mm
Heating zone	2x450mm
Chamber material	Alumina polycrystalline fiber
Heating element	Silicon Carbide
Heating rate	0-10℃/min
Thermal couple	S type
Temperature controller	Digital PID controller/Touch screen PID controller
Temperature control accuracy	±1℃
Gas precise control unit	
Flow meter	MFC mass flow meter
Gas channels	4 channels
Flow rate	MFC1: 0-5SCCM O2 MFC2: 0-20SCMCH4 MFC3: 0- 100SCCM H2 MFC4: 0-500 SCCM N2
Linearity	±0.5% F.S.
Repeatability	±0.2% F.S.
Pipe line and valve	Stainless steel
Maximum Operating Pressure	0.45MPa
Flow meter controller	Digital Knob controller/Touch screen controller
Standard vacuum unit(Optional)	
Vacuum pump	Rotary vane vacuum pump
Pump flow rate	4L/S
Vacuum suction port	KF25

Vacuum gauge	Pirani/Resistance silicon vacuum gauge
Rated vacuum pressure	10Pa
High vacuum unit(Optional)	
Vacuum pump	Rotary vane pump+Molecular pump
Pump flow rate	4L/S+110L/S
Vacuum suction port	KF25
Vacuum gauge	Compound vacuum gauge
Rated vacuum pressure	6x10-5Pa

Above specifications and setups can be customized

No.	Description	Quantity
1	Furnace	1
2	Quartz tube	1
3	Vacuum flange	2
4	Tube thermal block	2
5	Tube thermal block hook	1
6	Heat resistant glove	1
7	Precise gas control	1
8	Vacuum unit	1
9	Operation manual	1

Customer Made Versatile Cvd Tube Furnace Cvd Machine

Item Number: KT-CTF16

Introduction

Get your exclusive CVD furnace with KT-CTF16 Customer Made Versatile Furnace. Customizable sliding, rotating, and tilting functions for precise reactions. Order now!

Learn More

Furnace model	KT-CTF16-60
Max. temperature	1600℃
Constant work temperature	1550℃
Furnace tube material	High purity Al2O3 tube
Furnace tube diameter	60mm
Heating zone	3x300mm
Chamber material	Alumina polycrystalline fiber
Heating element	Silicon Carbide
Heating rate	0-10℃/min
Thermal couple	S type
Temperature controller	Digital PID controller/Touch screen PID controller
Temperature control accuracy	±1℃
Gas precise control unit	
Flow meter	MFC mass flow meter
Gas channels	3 channels
Flow rate	MFC1: 0-5SCCM O2 MFC2: 0-20SCMCH4 MFC3: 0- 100SCCM H2 MFC4: 0-500 SCCM N2
Linearity	±0.5% F.S.
Repeatability	±0.2% F.S.
Pipe line and valve	Stainless steel
Maximum Operating Pressure	0.45MPa
Flow meter controller	Digital Knob controller/Touch screen controller
Standard vacuum unit(Optional)	
Vacuum pump	Rotary vane vacuum pump
Pump flow rate	4L/S
Vacuum suction port	KF25

Vacuum gauge	Pirani/Resistance silicon vacuum gauge
Rated vacuum pressure	10Pa
High vacuum unit(Optional)	
Vacuum pump	Rotary vane pump+Molecular pump
Pump flow rate	4L/S+110L/S
Vacuum suction port	KF25
Vacuum gauge	Compound vacuum gauge
Rated vacuum pressure	6x10-5Pa

Above specifications and setups can be customized

No.	Description	Quantity
1	Furnace	1
2	Quartz tube	1
3	Vacuum flange	2
4	Tube thermal block	2
5	Tube thermal block hook	1
6	Heat resistant glove	1
7	Precise gas control	1
8	Vacuum unit	1
9	Operation manual	1

Slide Pecvd Tube Furnace With Liquid Gasifier Pecvd Machine

Item Number: KT-PE12

Introduction

KT-PE12 Slide PECVD System: Wide power range, programmable temp control, fast heating/cooling with sliding system, MFC mass flow control & vacuum pump.

Learn More

Furnace model	KT-PE12-60
Max. temperature	1200℃
Constant work temperature	1100℃
Furnace tube material	High purity quartz
Furnace tube diameter	60mm
Heating zone length	1x450mm
Chamber material	Japan alumina fiber
Heating element	Cr2Al2Mo2 wire coil
Heating rate	0-20℃/min
Thermal couple	Build in K type
Temperature controller	Digital PID controller/Touch screen PID controller
Temperature control accuracy	±1℃
Sliding distance	600mm
RF Plasma unit	
Output Power	5 -500W adjustable with ± 1% stability
RF frequency	13.56 MHz ±0.005% stability
Reflection Power	350W max.
Matching	Automatic
Noise	<50 dB
Cooling	Air cooling.
Gas precise control unit	
Flow meter	MFC mass flow meter
Gas channels	4 channels
Flow rate	MFC1: 0-5SCCM O2 MFC2: 0-20SCMCH4 MFC3: 0- 100SCCM H2 MFC4: 0-500 SCCM N2
Linearity	±0.5% F.S.

Repeatability	±0.2% F.S.
Pipe line and valve	Stainless steel
Maximum Operating Pressure	0.45MPa
Flow meter controller	Digital Knob controller/Touch screen controller
Standard vacuum unit(Optional)	
Vacuum pump	Rotary vane vacuum pump
Pump flow rate	4L/S
Vacuum suction port	KF25
Vacuum gauge	Pirani/Resistance silicon vacuum gauge
Rated vacuum pressure	10Pa
High vacuum unit(Optional)	
Vacuum pump	Rotary vane pump+Molecular pump
Pump flow rate	4L/S+110L/S
Vacuum suction port	KF25
Vacuum gauge	Compound vacuum gauge
Rated vacuum pressure	6x10-5Pa
Above specifications and setups can be customized	

No.	Description	Quantity
1	Furnace	1
2	Quartz tube	1
3	Vacuum flange	2
4	Tube thermal block	2
5	Tube thermal block hook	1
6	Heat resistant glove	1
7	RF plasma source	1
8	Precise gas control	1
9	Vacuum unit	1
10	Operation manual	1

Inclined Rotary Plasma Enhanced Chemical Deposition (Pecvd) Tube Furnace Machine

Item Number: KT-PE16

Introduction

Introducing our inclined rotary PECVD furnace for precise thin film deposition. Enjoy automatic matching source, PID programmable temperature control, and high accuracy MFC mass flowmeter control. Built-in safety features for peace of mind.

Learn More

Furnace model	PE-1600-60
Max. temperature	1600℃
Constant work temperature	1550℃
Furnace tube material	High purity Al2O3 tube
Furnace tube diameter	60mm
Heating zone length	2x300mm
Chamber material	Japan alumina fiber
Heating element	Molybdenum Disilicide
Heating rate	0-10℃/min
Thermal couple	B type
Temperature controller	Digital PID controller/Touch screen PID controller
Temperature control accuracy	±1℃
RF Plasma unit	
Output Power	5 -500W adjustable with ± 1% stability
RF frequency	13.56 MHz ±0.005% stability
Reflection Power	350W max.
Matching	Automatic
Noise	<50 dB
Cooling	Air cooling.
Gas precise control unit	
Flow meter	MFC mass flow meter
Gas channels	4 channels
Flow rate	MFC1: 0-5SCCM O2 MFC2: 0-20SCMCH4 MFC3: 0- 100SCCM H2 MFC4: 0-500 SCCM N2
Linearity	±0.5% F.S.

Repeatability	±0.2% F.S.
Pipe line and valve	Stainless steel
Maximum Operating Pressure	0.45MPa
Flow meter controller	Digital Knob controller/Touch screen controller
Standard vacuum unit(Optional)	
Vacuum pump	Rotary vane vacuum pump
Pump flow rate	4L/S
Vacuum suction port	KF25
Vacuum gauge	Pirani/Resistance silicon vacuum gauge
Rated vacuum pressure	10Pa
High vacuum unit(Optional)	
Vacuum pump	Rotary vane pump+Molecular pump
Pump flow rate	4L/S+110L/S
Vacuum suction port	KF25
Vacuum gauge	Compound vacuum gauge
Rated vacuum pressure	6x10-5Pa
Above specifications and setups can be customized	

No.	Description	Quantity
1	Furnace	1
2	Quartz tube	1
3	Vacuum flange	2
4	Tube thermal block	2
5	Tube thermal block hook	1
6	Heat resistant glove	1
7	RF plasma source	1
8	Precise gas control	1
9	Vacuum unit	1
10	Operation manual	1

Plasma Enhanced Evaporation Deposition Pecvd Coating Machine

Item Number: KT-PED

Introduction

Upgrade your coating process with PECVD coating equipment. Ideal for LED, power semiconductors, MEMS and more. Deposits high-quality solid films at low temps.

Learn More

Sample holder	Size	1-6 inches
	Rotate speed	0-20rpm adjustable
	Heating temperature	≤800℃
	Control accuracy	±0.5℃ SHIMADEN PID Controller
Gas purge	Flow meter	MASS FLOWMETER CONTROLLER (MFC)
	Channels	4 channels
	Cooling method	Circulating water cooling
Vacuum chamber	Chamber size	Φ500mm X 550mm
	Observation port	Full view port with baffle
	Chamber material	316 Stainless steel
	Door type	Front open type door
	Cap material	304 Stainless steel
	Vacuum pump port	CF200 flange
	Gas inlet port	φ6 VCR connector
Plasma power	Source power	DC power or RF power
	Coupling mode	Inductively coupled or plate capacitive
	Output power	500W—1000W
	Bias power	500v
Vacuum pump	Pre- pump	15L/S Vane vacuum pump
	Turbo pump port	CF150/CF200 620L/S-1600L/S
	Relief port	KF25
	Pump speed	Vane pump:15L/s□Turbo pump:1200l/s□1600l/s
	Vacuum degree	≤5×10-5Pa
	Vacuum sensor	Ionization/resistance vacuum gauge/film gauge
System	Electric power supply	AC 220V /380 50Hz

Rated power	5kW
Dimensions	900mm X 820mm X870mm
Weight	200kg

Cylindrical Resonator Mpcvd Diamond Machine For Lab Diamond Growth

Item Number: KTWB315

Introduction

Learn about Cylindrical Resonator MPCVD Machine, the microwave plasma chemical vapor deposition method used for growing diamond gemstones and films in the jewelry and semi-conductor industries. Discover its cost-effective advantages over traditional HPHT methods.

Learn More

Microwave system	• Microwave frequency 2450±15MHZ, • Output power 1□10 KW continuously adjustable • Microwave output power stability: • Microwave leakage ≤2MW/cm2 • Output wave guide interface: WR340, 430 with FD-340, 430 standard flange • Cooling water flow: 6-12L/min • System standing wave coefficient: VSWR ≤ 1.5 • Microwave manual 3 pin adjuster, excitation cavity, high-power load • Input power supply: 380VAC/50Hz ± 10%, three-phase
Reaction chamber	• Vacuum leakage rate • The limit pressure is less than 0.7 Pa(Standard setup with Pirani vacuum gauge) • The pressure rise of chamber shall not exceed 50Pa after 12 hours of pressure maintaining • Working mode of reaction chamber: TM021 or TM023 mode • Cavity type: Cylindrical resonant cavity, with maximum bearing power of 10KW, made of 304 stainless steel, with water-cooled inter-layer, and high purity quartz plate sealing method. • Air intake mode: Top annular uniform air intake • Vacuum sealing: The bottom connection of the main chamber and the injection door are sealed with rubber rings, the vacuum pump and bellows are sealed with KF, the quartz plate is sealed with a metal C-ring, and the rest are sealed with CF • Observation and temperature measurement window: 8 observation port • Sample load port in front of chamber • Stable discharge within the pressure range of 0.7KPa~30KPa (the power pressure shall be matched)
Sample holder	• Diameter of sample table≥72mm, effective use area≥66 mm • Base plate platform water-cooled sandwich structure • Sample holder can be lifted and lowered evenly electrically in the cavity
Gas flow system	• All metal welding air disk • Welding or VCR joints shall be used for all internal gas circuits of the equipment. • 5 channels MFC flow meter, H2/CH4/O2/N/Ar. H2: 1000 sccm ;CH4:100 sccm; O2: 2 sccm; N2: 2 sccm; Ar: 10 sccm • Working press 0.05-0.3MPa, accuracy ±2% • Independent Pneumatic valve control for each channel flow meter
Cooling system	• 3 lines water cooling, real-time monitoring of temperature and flow. • The system cooling water flow is ≤ 50L/min • The cooling water pressure is
Temperature sensor	• The external infrared thermometer has a temperature range of 300-1400 ℃ • Temperature control accuracy

Control system	• Siemens smart 200 PLC and touch screen control are adopted. • The system has a variety of programs, which can realize the automatic balance of growth temperature, accurate control of growth air pressure, automatic temperature rise, automatic temperature drop and other functions. • The stable operation of the equipment and comprehensive protection of the equipment can be achieved through the monitoring of water flow, temperature, pressure and other parameters, and the reliability and safety of the operation can be guaranteed through functional interlocking.
Optional function	• Center monitoring system • Substrate basing power

Bell-Jar Resonator Mpcvd Diamond Machine For Lab And Diamond Growth

Item Number: KTMP315

Introduction

Get high-quality diamond films with our Bell-jar Resonator MPCVD machine designed for lab and diamond growth. Discover how Microwave Plasma Chemical Vapor Deposition works for growing diamonds using carbon gas and plasma.

Learn More

Microwave system	• Microwave frequency 2450±15MHZ, • Output power 1□10 KW continuously adjustable • Microwave output power stability: • Microwave leakage ≤2MW/cm2 • Output wave guide interface: WR340, 430 with FD-340, 430 standard flange • Cooling water flow: 6-12L/min • System standing wave coefficient: VSWR ≤ 1.5 • Microwave manual 3 pin adjuster, excitation cavity, high-power load • Input power supply: 380VAC/50Hz ± 10%, three-phase
Reaction chamber	• Vacuum leakage rate • The limit pressure is less than 0.7 Pa(Standard setup with Pirani vacuum gauge) • The pressure rise of chamber shall not exceed 50Pa after 12 hours of pressure maintaining • Working mode of reaction chamber: TM021 or TM023 mode • Cavity type: Butterfly resonant cavity, with maximum bearing power of 10KW, made of 304 stainless steel, with water-cooled inter-layer, and high purity quartz plate sealing method. • Air intake mode: Top annular uniform air intake • Vacuum sealing: The bottom connection of the main chamber and the injection door are sealed with rubber rings, the vacuum pump and bellows are sealed with KF, the quartz plate is sealed with a metal C-ring, and the rest are sealed with CF • Observation and temperature measurement window: 4 observation ports • Sample load port in front of chamber • Stable discharge within the pressure range of 0.7KPa~30KPa (the power pressure shall be matched)
Sample holder	• Diameter of sample table≥70mm, effective use area≥64 mm • Base plate platform water-cooled sandwich structure • Sample holder can be lifted and lowered evenly electrically in the cavity
Gas flow system	• All metal welding air disk • Welding or VCR joints shall be used for all internal gas circuits of the equipment. • 5 channels MFC flow meter, H2/CH4/O2/N/Ar. H2: 1000 sccm ;CH4:100 sccm; O2: 2 sccm; N2: 2 sccm; Ar: 10 sccm • Working press 0.05-0.3MPa, accuracy ±2% • Independent Pneumatic valve control for each channel flow meter
Cooling system	• 3 lines water cooling, real-time monitoring of temperature and flow. • The system cooling water flow is ≤ 50L/min • The cooling water pressure is
Temperature sensor	• The external infrared thermometer has a temperature range of 300-1400 ℃ • Temperature control accuracy

Control system	• Siemens smart 200 PLC and touch screen control are adopted. • The system has a variety of programs, which can realize the automatic balance of growth temperature, accurate control of growth air pressure, automatic temperature rise, automatic temperature drop and other functions. • The stable operation of the equipment and comprehensive protection of the equipment can be achieved through the monitoring of water flow, temperature, pressure and other parameters, and the reliability and safety of the operation can be guaranteed through functional interlocking.
Optional function	• Center monitoring system • Substrate basing power

Rf Pecvd System Radio Frequency Plasma-Enhanced Chemical Vapor Deposition

Item Number: KT-RFPE

Introduction

RF-PECVD is an acronym for "Radio Frequency Plasma-Enhanced Chemical Vapor Deposition." It deposits DLC (Diamond-like carbon film) on germanium and silicon substrates. It is utilized in the 3-12um infrared wavelength range.

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Equipment form	• Box type: the horizontal top cover opens the door, and the deposition chamber and the exhaust chamber are integrally welded; • The whole machine: the main engine and the electric control cabinet are integrated design (the vacuum chamber is on the left, and the electric control cabinet is on the right).
Vacuum chamber	• Dimensions: Φ420mm (diameter) × 400 mm (height); made of 0Cr18Ni9 high-quality SUS304 stainless steel, the inner surface is polished, fine workmanship is required without rough solder joints, and there are cooling water pipes on the chamber wall; • Air extraction port: Double-layer 304 stainless steel mesh with 20mm front and rear intervals, anti-fouling baffle on the high valve stem, and air equalization plate at the exhaust pipe mouth to prevent pollution; • Sealing and shielding method: the upper chamber door and the lower chamber are sealed by a sealing ring to seal the vacuum, and the stainless steel network tube is used outside to isolate the radio frequency source, shielding the harm caused by radio frequency signals to people; • Observation window: Two 120mm observation windows are installed on the front and side, and the anti-fouling glass is resistant to high temperature and radiation, which is convenient for observing the substrate; • Air flow mode: the left side of the chamber is pumped by the molecular pump, and the right side is the air inflated to form a convective working mode of charging and pumping to ensure that the gas flows evenly to the target surface and enters the plasma area to fully ionize and deposit the carbon film; • Chamber material: the vacuum chamber body and the exhaust port are made of 0Cr18Ni9 high-quality SUS304 stainless steel material, the top cover is made of high-purity aluminum to reduce the weight of the top.
Host skeleton	• Made of section steel (material: Q235-A) , the chamber body and the electric control cabinet are integrated design.
Water cooling system	• Pipeline: The main inlet and outlet water distribution pipes are made of stainless steel pipes; • Ball valve: All cooling components are supplied with water separately through 304 ball valves, and the water inlet and outlet pipes have color distinctions and corresponding signs, and the 304 ball valves for the water outlet pipes can be opened and closed separately; The target, RF power supply, chamber wall, etc. are equipped with water flow protection, and there is a water cut-off alarm to prevent the water pipe from being blocked. All water flow alarms are displayed on the industrial computer; • Water flow display: The lower target has water flow and temperature monitoring, and the temperature and water flow are displayed on the industrial computer ; • Cold and hot water temperature: when the film is deposited on the chamber wall, cold water is passed through 10-25 degrees to cool the water, and it is advanced when the chamber door is opened. Pass hot water 30-55 degrees warm water.
Control cabinet	• Structure: vertical cabinets are adopted, the instrument installation cabinet is a 19-inch international standard control cabinet, and the other electrical component installation cabinet is a large panel structure with a rear door; • Panel: The main electrical components in the control cabinet are all selected from manufacturers that have passed CE certification or ISO9001 certification. Install a set of power sockets on the panel; • Connection method: the control cabinet and the host are in a conjoined structure, the left side is the room body, the right side is the control cabinet, and the lower part is equipped with a dedicated wire slot, high and low voltage, and the RF signal is separated and routed to reduce interference; • Low-voltage electrical: French Schneider air switch and contactor to ensure reliable power supply of equipment; • Sockets: Spare sockets and instrumentation sockets are installed in the control cabinet.

Ultimate vacuum	• Atmosphere to 2×10-4 Pa≤24 hours, (at room temperature, and the vacuum chamber is clean).
Restore vacuum time	• Atmosphere to 3×10 -3 Pa≤15 min (at room temperature, and the vacuum chamber is clean, with baffles, umbrella stands, and no substrate).
Pressure rise rate	• ≤1.0×10 -1 Pa/h
Vacuum system configuration	• The composition of the pump set: backing pump BSV30 (Ningbo Boss) + Roots pump BSJ70 (Ningbo Boss) + molecular pump FF-160 (Beijing); • Pumping method: pumping with soft pumping device (to reduce the pollution to the substrate during pumping); • Pipe connection: the vacuum system pipe is made of 304 stainless steel, and the soft connection of the pipe is made of; • Metal bellows; each vacuum valve is a pneumatic valve; • Air suction port: In order to prevent the membrane material from polluting the molecular pump during the evaporation process and improve the pumping efficiency, a movable isolation plate that is easy to disassemble and clean is used between the air suction port of the chamber body and the working room.
Vacuum system measurement	• Vacuum display: three lows and one high (3 groups of ZJ52 regulation + 1 group of ZJ27 regulation); • High-vacuum gauge: ZJ27 ionization gauge is installed on the top of the pumping chamber of the vacuum box near the working chamber, and the measuring range is 1.0×10 -1 Pa to 5.0×10 -5 Pa; • Low-vacuum gauges: one set of ZJ52 gauges is installed on the top of the pumping chamber of the vacuum box, and the other set is installed on the rough pumping pipe. The measuring range is 1.0×10 +5 Pa to 5.0×10 -1 Pa; • Working regulation: CDG025D-1 capacitive film gauge is installed on the chamber body, and the measuring range is 1.33×10 -1 Pa to 1.33×10 +2 Pa, vacuum detection during deposition and coating, used in conjunction with constant vacuum butterfly valve use.
Vacuum system operation	There are two modes of vacuum manual and vacuum automatic selection; • Japan Omron PLC controls all the pumps, the action of the vacuum valve, and the interlocking relationship between the work of the inflation stop valve to ensure that the equipment can be automatically protected in case of misoperation; • High valve, low valve, pre-valve, high valve bypass valve, in-position signal is sent to PLC control signal to ensure more comprehensive interlock function; • The PLC program can carry out the alarm function of each fault point of the whole machine, such as air pressure, water flow, door signal, over-current protection signal, etc. and alarm, so that the problem can be found quickly and conveniently; • The 15-inch touch screen is the upper computer, and the PLC is the lower computer monitoring and control valve. Online monitoring of each component and various signals are sent back to the industrial control configuration software in time for analysis and judgment, and recorded ; • When the vacuum is abnormal or the power is cut off, the molecular pump of the vacuum valve should return to the closed state. The vacuum valve is equipped with an interlock protection function, and the air inlet of each cylinder is equipped with a cut-off valve adjustment device, and there is a position set the sensor to display the closed state of the cylinder;
Vacuum test	• According to the general technical conditions of GB11164 vacuum coating machine.

Drawing Die Nano-Diamond Coating Hfcvd Equipment

Item Number: MP-CVD-100

Introduction

The nano-diamond composite coating drawing die uses cemented carbide (WC-Co) as the substrate, and uses the chemical vapor phase method (CVD method for short) to coat the conventional diamond and nano-diamond composite coating on the surface of the inner hole of the mold.

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Comparation table between traditional and nano diamond coated drawing die

HFCVD technical composition		
Technical Parameters	Equipment composition	System Configuration
Bell Jar: Dia. 500mm, Height 550mm, SUS304 stainless steel chamber; inner stainless steel skin insulation, lifting height is 350mm;	A set of vacuum chamber (bell jar) main body (jacketed water-cooling structure)	Vacuum chamber (bell jar) main body;The cavity is made of high-quality 304 stainless steel; Vertical bell jar: the jacketed water-cooling jacket is installed on the overall periphery of the bell jar. The inner wall of the bell jar is insulated with stainless steel skin, and the bell jar is fixed on the side . Accurate and stable positioning ; Observation window: horizontally arranged in the middle of the vacuum chamber 200mm Observation window, water cooling, baffle, side and upper configuration 45 Degree bevel angle, 50° observation window (observe the same point as the horizontal observation window, and the sample supporting platform); the two observation windows maintain the existing position and size.Bell jar bottom is 20mm higher than the plane of the bench , set cooling; the holes reserved on the plane, such as large valves, air release valves, air pressure measurement, bypass valves, etc., are sealed with metal mesh and reserved for installing electrodes Interface;
Equipment table: L1550* W900*H1100mm	One set of drag sample table device (adopting double-axis drive)	Sample holder device: Stainless steel sample holder (welding water cooling) 6- position device; it can be adjusted separately, only up and down adjustment, the up and down adjustment range is 25mm, and the left and right shaking is required to be less than 3% when going up and down (that is, the left and right shaking of rising or falling by 1mm is less than 0.03mm) , and the sample stage does not rotate when rising or falling.
Ultimate vacuum degree: 2.0×10-1Pa ;	A set of vacuum system	Vacuum system: Vacuum system configuration: mechanical pump + vacuum valve + physical bleed valve + main exhaust pipe + bypass; (provided by the vacuum pump supplier), the vacuum valve uses a pneumatic valve; Vacuum system measurement: Membrane pressure.
Pressure rise rate : ≤5Pa/h;	Two channels mass flow meter gas supply system	Gas supply system: The mass flow meter is configured by Party B, two-way air intake, the flow rate is controlled by the mass flow meter, after the two-way meeting, it enters the vacuum chamber from the top , and the inside of the air intake pipe is 50mm
Sample table movement: up and down range is ± 25m; it is required to shake left and right ratio when up and down by ± 3%;	One set of electrode device (2 channels)	Electrode device: The length direction of the four electrode holes is parallel to the length direction of the support platform, and the length direction is facing the main observation window with a diameter of 200mm .
Working pressure: use membrane gauge pressure gauge, measuring range: 0 ~ 10kPa; work constant at 1kPa ~5kPa,the constant pressure value changes plus or minus 0.1kPa;	A set of cooling water system	Cooling water system: The bell jar, electrodes, and bottom plate are all equipped with circulating water cooling pipelines, and are equipped with insufficient water flow alarm device 3.7: control system. Switches, instruments, instruments and power supply for bell lifting, deflation, vacuum pump, main road, bypass, alarm, flow, air pressure, etc. are set on the side of the stand, and are controlled by a 14 -inch touch screen; the equipment has a fully automatic control program without manual intervention, and can store data and call data
Air intake position: air intake at the top of the bell jar, and the position of the exhaust port is located directly below the sample holder;	Control system	

Control System: PLC controller + 10-inch touch screen	A set of automatic pressure control system (original pressure control valve imported from Germany)	
Inflation system: 2 channels mass flow meter, flow range: 0-2000sccm and 0-200sccm; Pneumatic valve valve	Resistance Vacuum Gauge	
3.1.10 Vacuum pump: D16C vacuum pump		

Technical indicators	Traditional drawing die	Nano-diamond coated drawing die
Coating Surface Grain Size	none	20~80nm
Coating diamond content	none	≥99%
Diamond Coating Thickness	none	10 ~ 15mm
Surface roughness	Ra≤0.1mm	Class A: Ra≤0.1mm Class B: Ra≤0.05mm
Coating drawing die inner hole diameter range	Φ3 ~ Φ70mm	Φ3 ~ Φ70mm
Service life span	Life span depends on working conditions	6-10 times longer
Surface friction coefficient	0.8	0.1

915Mhz Mpcvd Diamond Machine

Item Number: MP-CVD-101

Introduction

915MHz MPCVD Diamond Machine and its multi-crystal effective growth, the maximum area can reach 8 inches, the maximum effective growth area of single crystal can reach 5 inches. This equipment is mainly used for the production of large-size polycrystalline diamond films, the growth of long single crystal diamonds, the low-temperature growth of high-quality graphene, and other materials that require energy provided by microwave plasma for growth.

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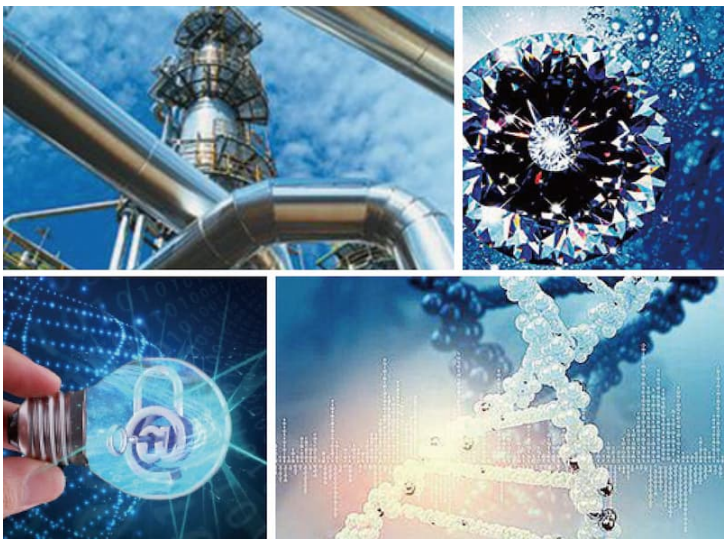
Microwave system (according to optional power supply)	• Operating frequency:915±15MHz • Output power:3-75kW continuously adjustable • Cooling water flow:120/min • System standing wave coefficient:VSWR≤1.5 • Microwave leakage:
Vacuum system and reaction chamber	• Leakage rate • The ultimate pressure is less than 0.7Pa (this machine comes with imported Pirani vacuum gauge) • The pressure rise in the cavity shall not exceed 50Pa after 12 hours of maintaining pressure. • Reaction chamber working mode: TM021 or TM023 mode • Cavity type: cooled cylindrical cavity, can carry power up to 75KW, high purity ,Stone ring seal. • Inlet method: Top sprinkler head inlet. • Observation temperature measurement window: 8 observation holes, evenly distributed horizontally. • Sampling port: bottom lifting sampling port
Sample holder system	• Sample stage diameter ≥200mm, single crystal effective use area ≥130mm,The effective use area of polycrystalline is ≥200mm. Substrate platform water-cooled sandwich structure, vertical straight up and down.
Gas system	• Full metal welded gas plate 5-7 gas lines • All internal air circuits of the equipment use welding or VCR connectors.
System cooling	• 3-way water cooling, real-time monitoring of temperature and flow. • System cooling water flow 120L/min, cooling water pressure
Temperature measurement method	• External infrared thermometer, temperature range 3001400 M

serial number	Module name	Remark

1	Microwave power supply	Standard domestic magnetron: Yingjie Electric / Distinguish power supply Domestic solid-state source: Watson (+30,000) Imported magnetron: MKS/ pastoral (+100, 000)
2	Waveguide, three pins, mode converter, upper resonator	Self made
3	Vacuum reaction chamber (upper chamber, lower chamber, connectors)	Self made
4	Infrared thermometers, optical displacement components, brackets	Infrared thermometers, optical displacement components, Fuji Gold Siemens + Schneider brackets
5	Water-cooling table motion components (cylinders, workpieces, etc.)	
6	Ceramic thin film vacuum gauge,Pirani vacuum gauge	Inficon
7	Vacuum valve components (ultra-high vacuum gate valve, precision pneumatic valve*2, electromagnetic vacuum charging differential valve)	Fujikin + Zhongke + Himat
8	Vacuum pump and connecting pipe fittings, tee, KF25 bellows*2, adapter	Pump: Flyover 16L
9	Metal microwave sealing ring*2; metal vacuum sealing ring*1; Quartz plate	Quartz: Shanghai FeilihuaSemiconductor Grade High Purity Quartz
10	Circulating water components (joints, diverter blocks, flow detectors)	Japanese SMC/CKD
11	Pneumatic part (CKD filter, airtac multi-way solenoid valve, pipe fittings and adapters)	
12	Gas connector, EP gas pipe, VCR connector, filter 0.0023μm *1, filter 10μm*2	Fujikin
13	Machine casing, stainless steel table, universal wheels, feet, bracket fastening screws, etc	custom processing
14	Gas flow meter*6 (including one pressure control)	Standard seven-star , optional Fuji Gold (+34,000) / Alicat (42,000)
15	Gas plate processing (5-way gas, filter*5, pneumatic valve*5, manual valve*6, pipeline welding)	Fuji Gold
16	PLC automatic control	Siemens + Schneider
17	Molybdenum table	



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