

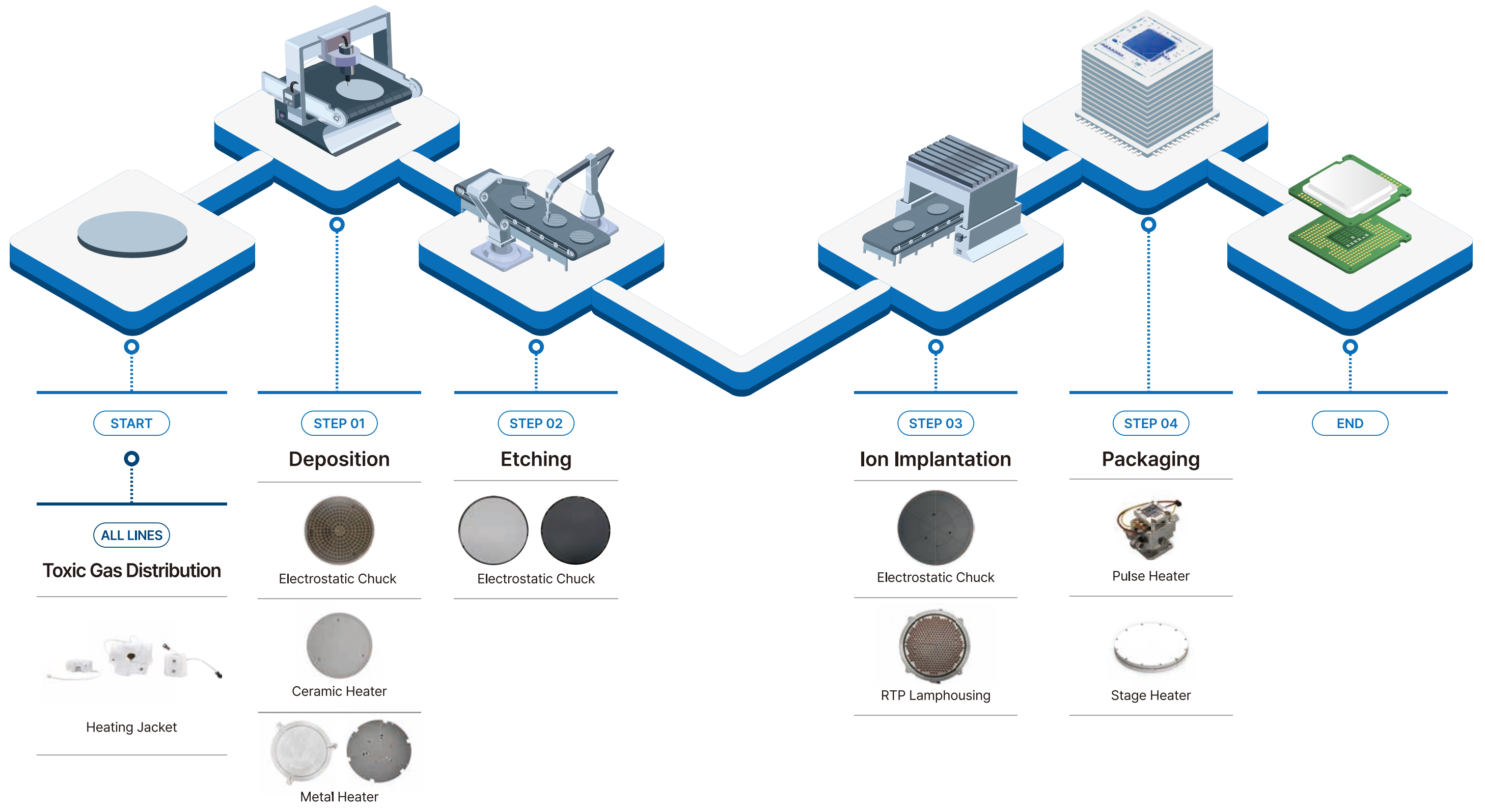


Engineers | Specialists | Problem Solvers

BOBOO HITECH promises to be a trusted partner of the global semiconductor supply chain by delivering core components with technology and quality that exceed customer expectations

Our Products In Semiconductor

Since 1994, BOBOO HITECH has been supplying core components for equipment crucial in both the Front End and Back End of the Line semiconductor manufacturing process.





Engineers Specialists Problem Solvers

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Over 30 years of contribution to the semiconductor industry

Integrated Technology

Our Business

With our team of specialists, we develop, manufacture, and distribute semiconductor equipment components such as Heaters, Electrostatic Chucks, and Heating Jackets by utilizing all materials of Metals, Ceramics, and Polymers.

What We Offer

	Parts Manufacturing	High performance solutions for both Front End and Back End semiconductor processes
	Repair & Refurbishment	Repair or modification of parts, extending their lifespan and use
	Custom Solutions	Custom manufacturing solutions for unique specifications and requirements
	Research & Development	Continuous improvement to strengthen technological excellence and meet the changing demands of the market

<p>2024</p> <ul style="list-style-type: none"> 2024. 03 Korea Semiconductor Industry Association(KSIA) Member 2023. 12 Presidential Commendation for Trade Promotion Award 2023. 12 20 Million Dollar Export Award 2022. 12 Certified Family-Friendly Business 2022. 10 ISO 45001 2022. 09 Certified Company of Talent Development 2021. 10 Certified Material-Component-Equipment Core Technology 2020. 12 10 Million Dollar Export Award 	<p>2020</p> <ul style="list-style-type: none"> 2018. 11 Industrial Bank of Korea's Small Giant In Technology Award 2017. 11 Advanced Technology Center Association Member 2017. 07 Certified Advanced Technology Center 2017. 06 SEMES Supplier Quality Partner Company 2014. 12 Korea Institute of Ceramic Technology Member 2014. 10 SK hynix Outstanding Partner Company 2011. 12 Million Dollar Export Award 2010. 12 Venture Company 	<p>2010</p> <ul style="list-style-type: none"> 2009. 05 Innobiz Association Member 2008. 11 ISO 14001 2007. 02 Certified Material-Component-Equipment Specialist Company 2004. 10 Credit Rating A, Korea Investors Service 2004. 08 Certified CLEAN Workplace 2003. 01 ISO 9001 	<p>2000</p> <ul style="list-style-type: none"> 1999. 12 SAMSUNG Semiconductor Partner Company 1995. 03 Polymer Corporation Partner Company 1994. 03 SK hynix Partner Company 1994. 03 Founded BOBOO HITECH Co., Ltd.
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We are deeply grateful for
your continued trust and support

BOBOO HITECH promises to exceed your expectations with quality and service

BOBOO HITECH inherits the spirit of the 'Boboosang' - to fulfill all customer needs and demonstrate value anywhere in the world. As one of the earliest 'professional' tradesman of Korea, it was the Boboosang's role to forward trade and introduce new technology, domestic and foreign.

Continuous research and development for productivity and quality constitutes the essence of our growth. All actions of our members at BOBOO HITECH are guided by our mission to "grow into a global top-tier component maker and contribute to innovation in the semiconductor industry."

We promise to continue to value talent and excel with sincerity and compliance with transparent management.

Thank you.

Dong Min Wang

Chief Executive Officer



To achieve 'Common Goals' based on 'Logical Thinking' enforced by 'Technological Drive'

Core Values

Our values provide a standard for all our decisions and inspire the actions of our members.



Back to the Basic 기본충실

Right Person Right Place 적재적소

Compliance with Procedures 절차준수

Win-Win Cooperation 상생협력

Global Standards 세계표준

Sustainability

We prioritize ESG(Environmental, Social, and Governance) practices for sustainable development and a better tomorrow.



Environment

We strive to reduce the environmental impact of all our operations through conservation, meticulous management of pollutants, and recycling of waste.

Social

Honoring human rights, safety, health, inclusion, and personal growth, we work to positively improve and impact our employees, community, and broader society.

Governance

We continue to support the trust of our clients, employees, and other stakeholders through transparent management and open communication.

Standards

We adhere to international standards to ensure the highest quality, safety, and efficiency.



ISO 9001 (Quality Management)

ISO 14001 (Environment)

ISO 45001 (Safety and Health)

Our Partners, Around the World

BOBOO HITECH has grown through diverse manufacturing experiences gained as a premier supplier to global semiconductor companies since 1994.

North America

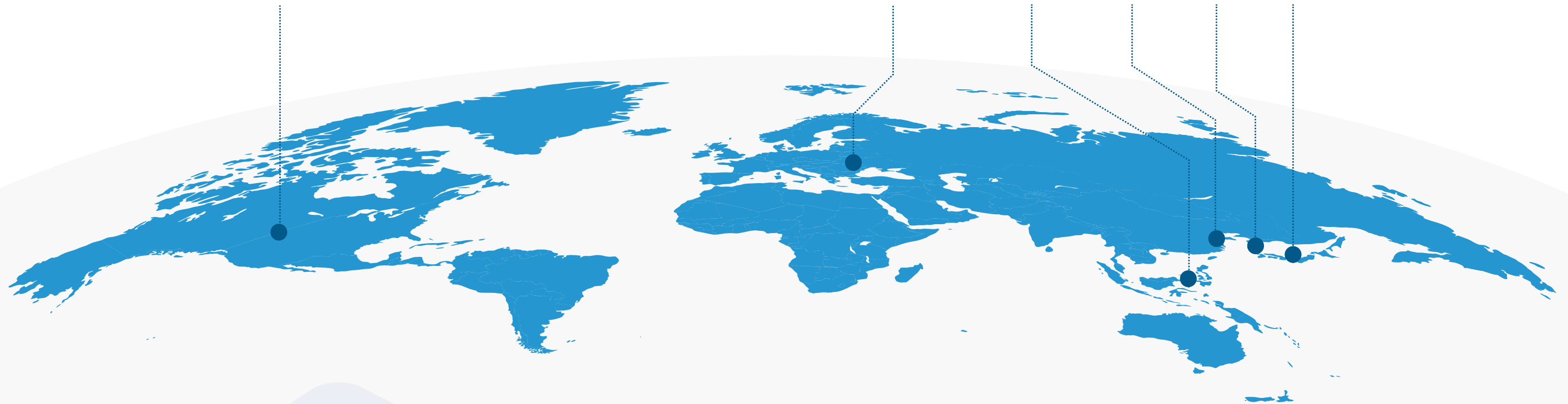
Europe

East Asia

China

Korea

Japan



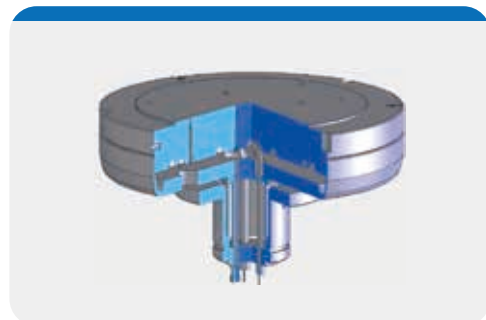
As of Year 2024

Total Solution Provider

BOBOO HITECH manages all stages of production in-house. From design and manufacturing to delivery and support, we are committed to providing customer satisfaction with quality End-to-End Service.

ENGINEERING

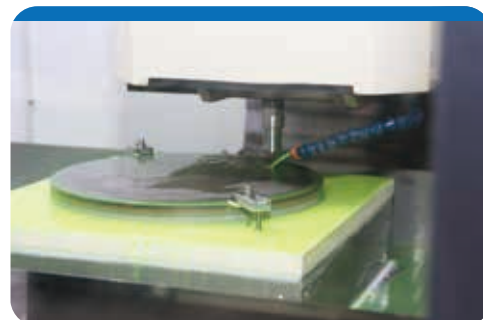
01



- Designing
- Modeling
- Simulation

MANUFACTURING

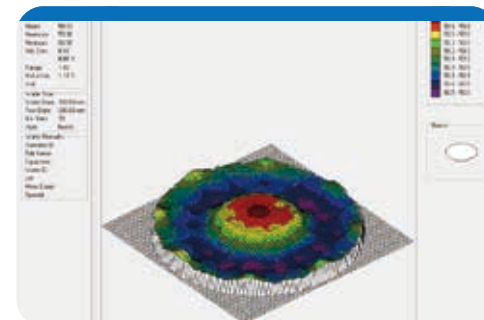
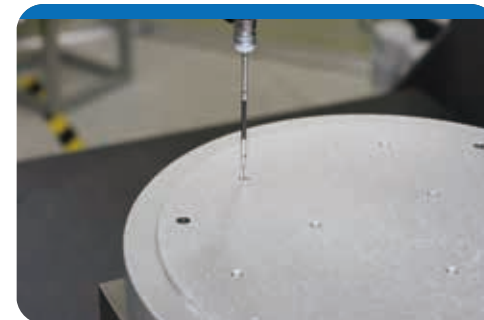
02



- Mixing
- Forming
- Sintering
- Bonding
- Machining
- Cleaning

TESTING

03



- Metrology
- Inspection
- Analysis
- Measurement

QUALITY CONTROL

04



- Clean Room
- ISO Certified
- Systematic Procedures
- Customer Service



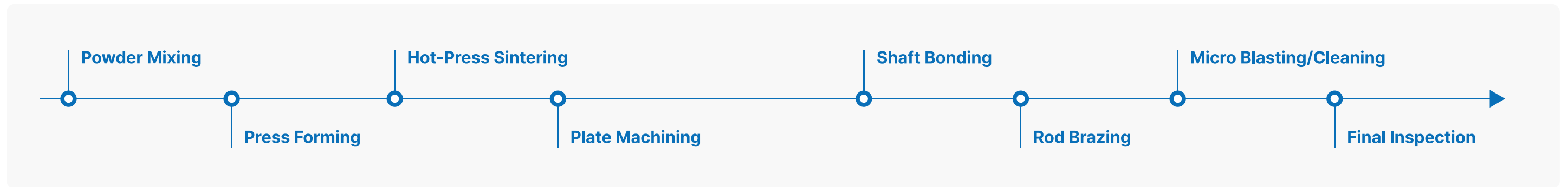
Our Products

Ceramic Heater | Electrostatic Chuck | Metal Heater | RTP Lamphousing | Pulse Heater | Stage Heater | Heating Jacket

Ceramic Heater

Due to the material characteristics of AlN, Ceramic Heaters provide excellent corrosion and plasma resistance as well as thermal conductivity, making them suitable for processes of extreme conditions and high-temperatures(0 ~ 700°C).

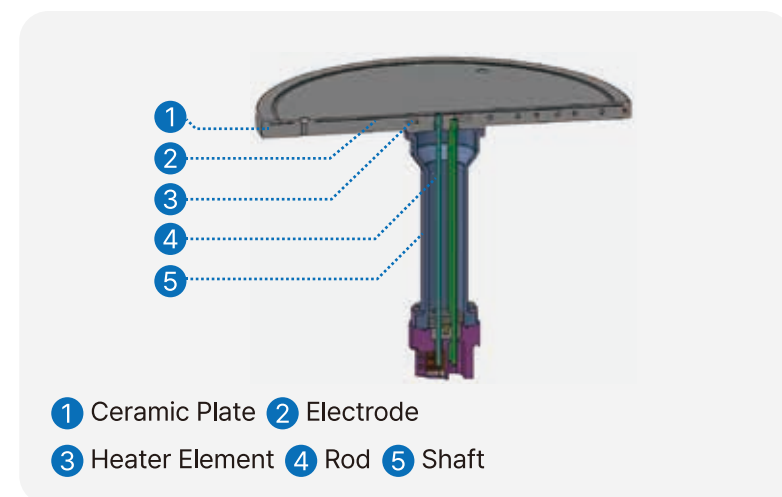
Manufacturing Process Flow



Applications	PE-CVD	LP-CVD	AP-CVD	Annealing	Diffusion
					
AIN Heater Front View					
					
AIN Heater Bottom View					

Design/Simulation 	Materials 	Sintering 
Machining 	Brazing 	Ceramic Bonding 

Manufacturing Specifications



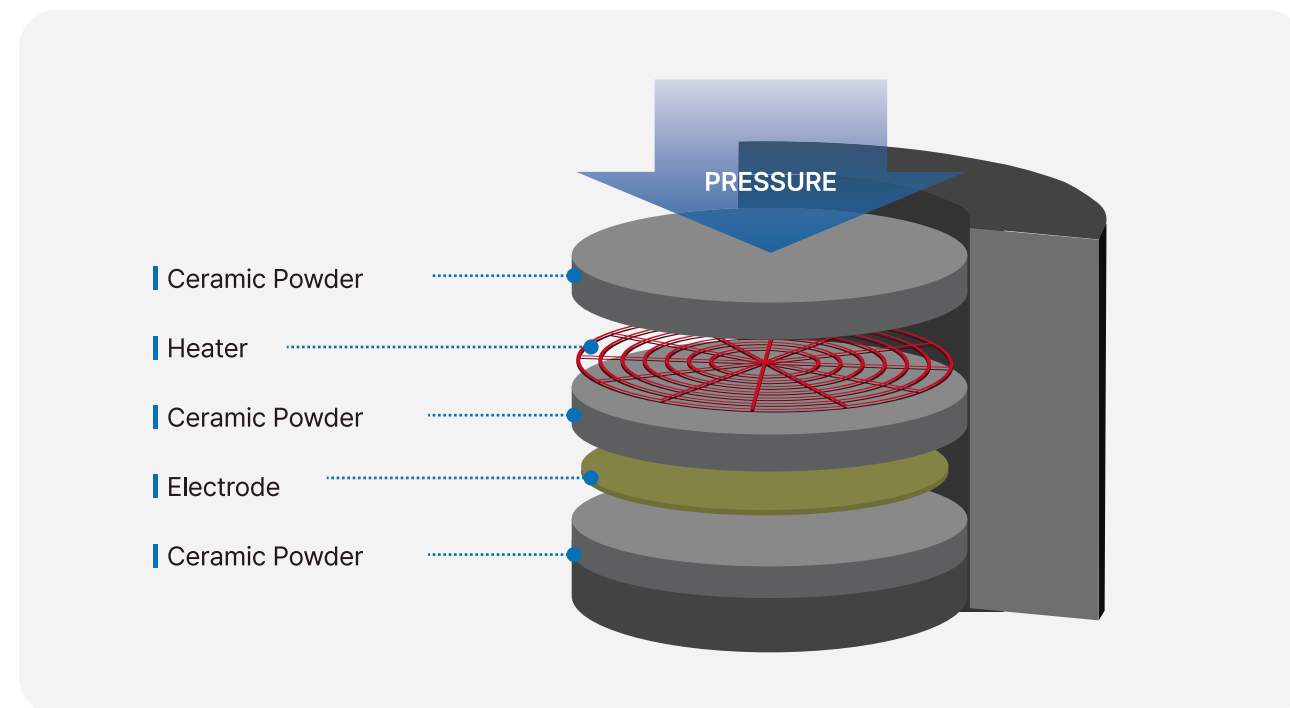
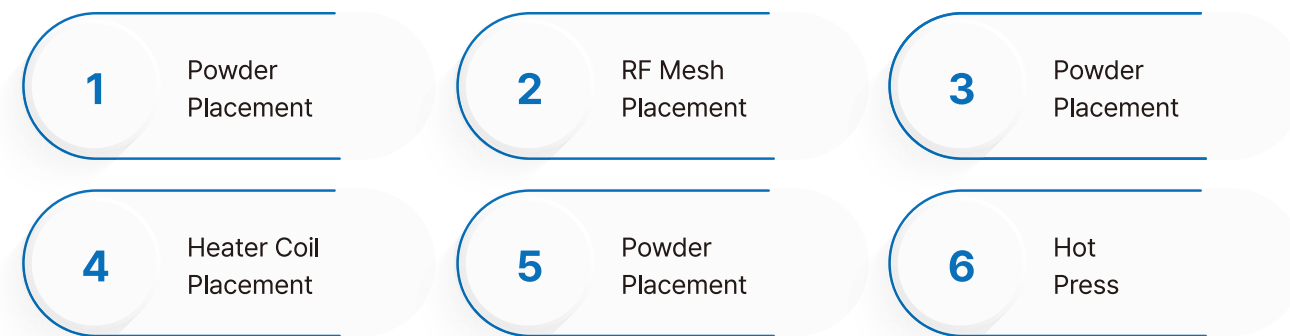
- Sizes**
200mm, 300mm
- Heater Types**
Single Zone, Dual Zone, Multi Zone
- Plate Sintering**
Hot Press
- RF Electrode**
Molybdenum Mesh
- Temperature Uniformity**
≤±1%
- Thermal Conductivity**
170W/m-K

Ceramic Sintering Technology

Through our sintering technology, we manufacture ceramic components in-house, allowing modification of powder material composition, types of heating elements, and sintering conditions to meet the individual needs of our clients.

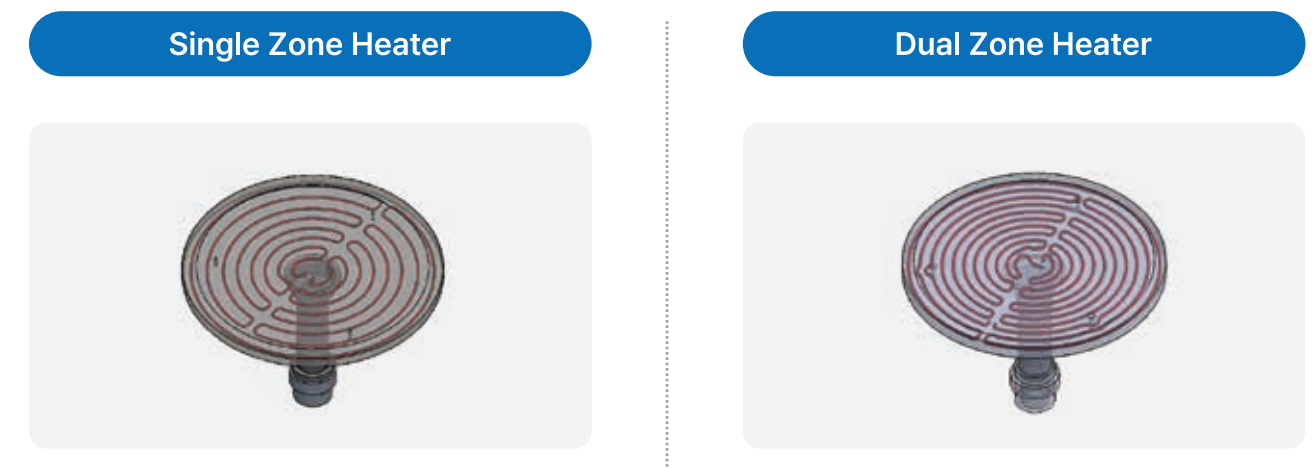
Hot Press Process

Applying heat and pressure to forge high-density ceramic plates



Heater Technology

Single Zone Heating and Dual Zone Heating technologies to increase the control range of operating temperature



RF Electrode Technology

RF Electrode design and manufacturing technologies for optimal plasma generation and chucking

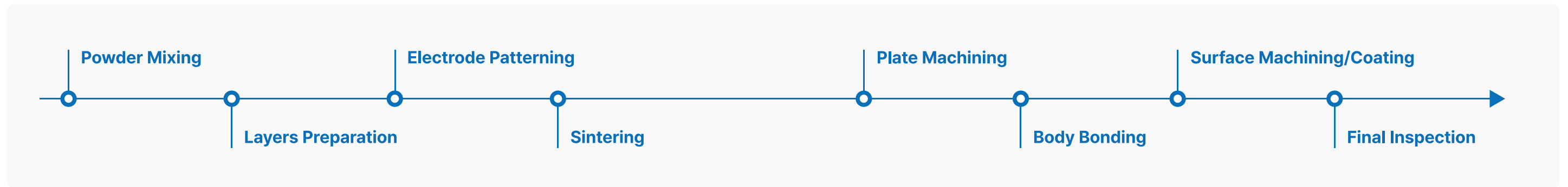
RF Electrode: Molybdenum Mesh




Monopolar	Bipolar	Multipolar
1 Electrical Pole	2 Electrical Poles	Over 3 Electrical Poles

Electrostatic Chuck

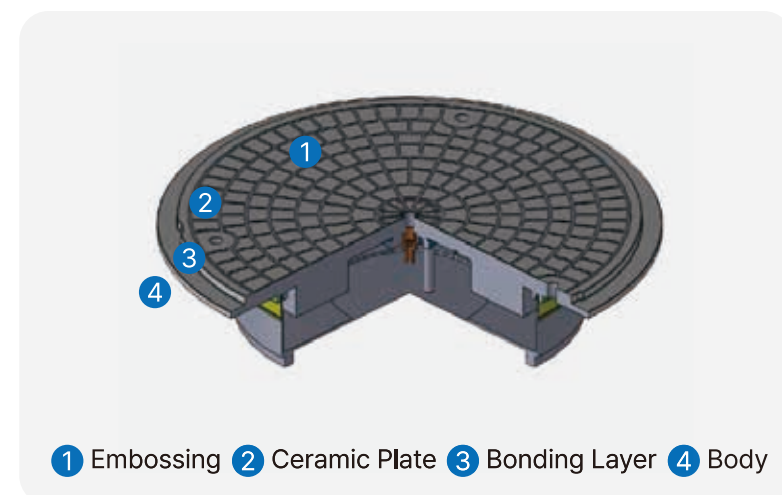
Electrostatic Chucks are key components that use electrostatic force to secure the wafer in place and built-in heat circuits to control process temperature and provide temperature uniformity. These units provide high precision in electrostatic fixation and excellent plasma resistance.

Manufacturing Process Flow



Applications	Dry Etch	Oxide Process	Poly Process	Ion Implantation	PVD
					
611					
					
VIISTA					
					
MCA					

Manufacturing Specifications



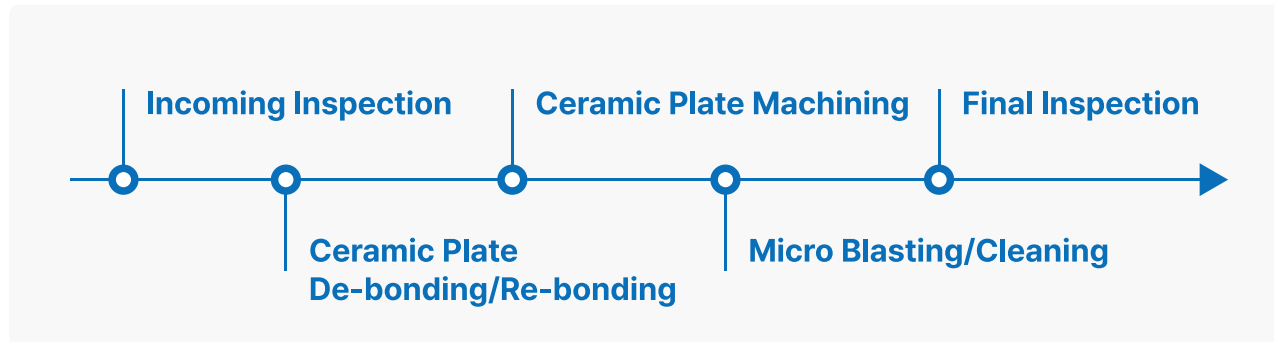
- Sizes**
200mm, 300mm
- Chucking Types**
Coulomb, Johnsen-Rahbek
- Plate Sintering**
Hot Press, Multi-Layer Ceramic
- Materials**
AlN, Al₂O₃
- Heater Types**
Normal Zone, Multi Zone

Design/Simulation 	Materials 	Sintering 
Machining 	Bonding 	Emboss Machining 

Refurbishment Services

With technology to de-bond and re-bond the electrode plate and heater, we provide cleaning, repairing, and manufacturing services to meet the needs of our clients.

Manufacturing Process Flow



Inspection Criteria



- Ultrasonic inspection of ceramic plate and heater
- Dimensional inspection of surface flatness, step height, thickness
- Roughness inspection of ceramic plate
- Electrical inspection of current leakage, chucking, withstanding voltage
- Leakage inspection of bonding layer
- Thermal inspection of temperature profile

Repair Service Outline



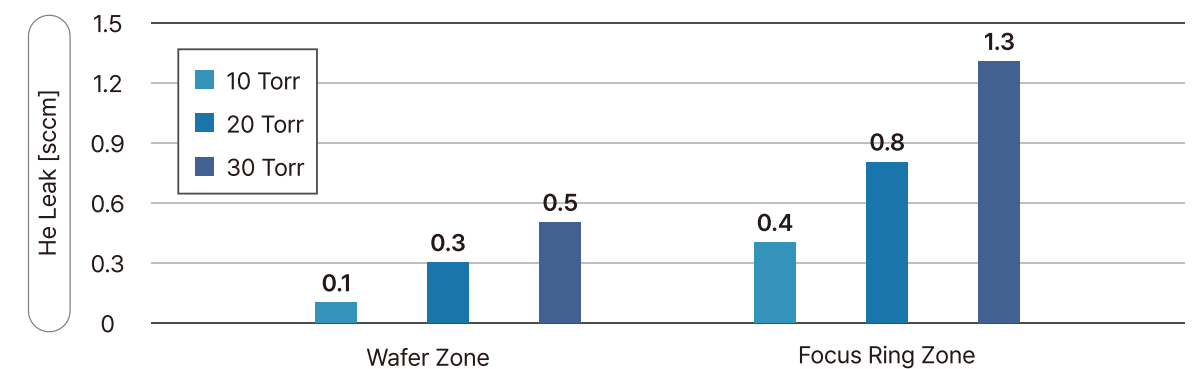
Repair Level	Description
Level 1	Surface Reconditioning
Level 2	Bonding Layer Reconditioning
Level 3	Ceramic Plate Replacement
Level 4	Heater Replacement

New Product Development

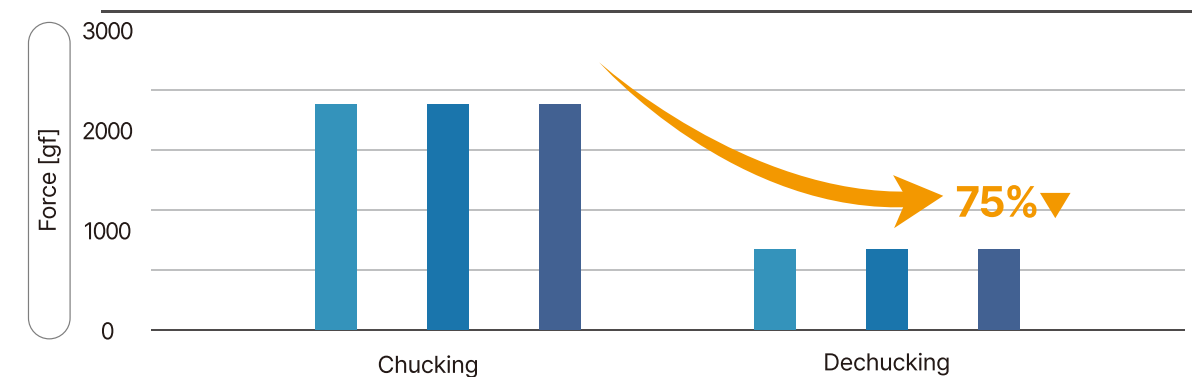
VIGUS(RK4, RK5) ESC 300mm



He Leakage by He Pressure



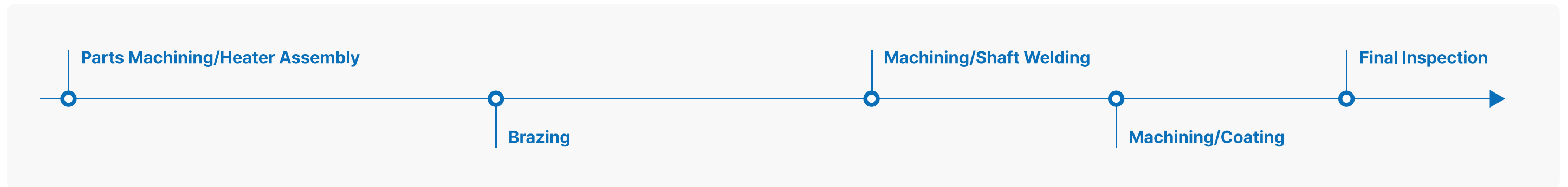
Chucking/Dechucking Force @ Vacuum Chamber



Metal Heater

High thermal conductivity allows fast, uniform heating and precise temperature control, making Metal Heaters ideal for processes at medium to low temperatures(0~450°C).

Manufacturing Process Flow



Applications	CVD	PVD	Ashing
 Altus	 Vector	 Novellus Block	

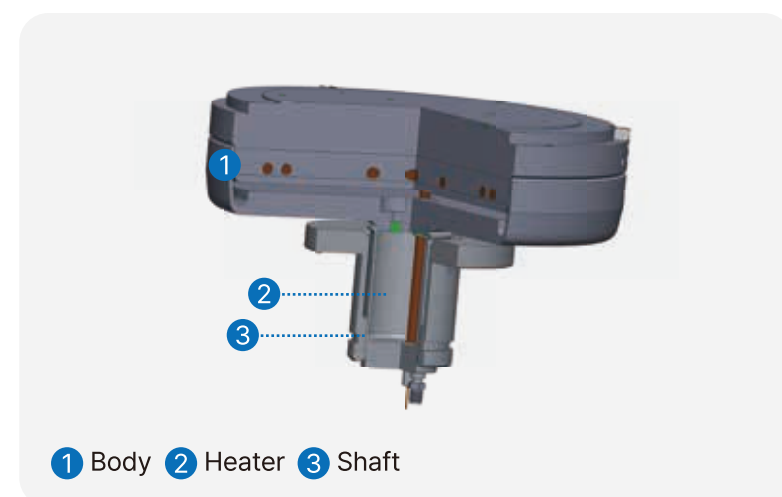
Design/Simulation

Brazing

Machining

Coating

Manufacturing Specifications



- Sizes**
150mm, 200mm, 300mm
- Coating**
AlFx
- Materials**
Aluminum
- Temperature Uniformity**
≤±1%

Metal Heater Product Line Up



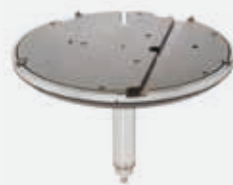
Altus

Sizes: 200mm, 300mm
Variations: Brazing, Green, CR(Hole, Edge), VCO(Hole, Edge)



Vector

Sizes: 200mm, 300mm
Variations: Ball Type, Pin Type, Thin, Extreme



Load Lock Preheater

Sizes: 300mm
Variations: O-Ring, New Type(Guide Ring), Pin Type



HP + TxZ

Sizes: 200mm



Novellus Block

Sizes: 150mm, 200mm
Variations: Notch, Non-notch, Slit Lines, Pin Holes, Strap Holes



Mattson Block

Sizes: 150mm, 200mm
Variations: A2, A3

Rapid Thermal Processing(RTP) Lamphousing

RTP is a process that heats silicon wafers to over 1,000°C in just a few seconds. Infrared rays generated by halogen(or tungsten-halogen) lamps are instantly transmitted to the wafer through a condenser lens. Rapid and concentrated heating allows for precise temperature control and increase in efficiency by shortening process time.

Applications

Annealing

Dopant Activation

Oxidation



AMAT RTP Lamphousing

Manufacturing Specifications



Sizes

200mm, 300mm

Materials

Stainless Steel, Copper Brazed, Au, Ni

Flatness

≤0.13mm

Concentricity

≤0.15mm

Pulse Heater

Through rapid heating and cooling technology, the Pulse Heater enables fast and repetitive temperature control between RT and 400°C. It plays an essential role in semiconductor packaging processes that require the bonding of semiconductor components or substrates. Due to its fast thermal cycling, energy efficiency, and minimal thermal distortion to surrounding areas, this heater provides improvement of overall process quality and yield.

Applications	Advanced Packaging	Thermo-Compression Bonding (TCB)	Flip-Chip	High Bandwidth Memory (HBM)
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Manufacturing Specifications

Inspection Items		Specifications
Dimension	Size	□16mm
	Parallelism	~ 5μm
	Flatness	~ 2μm
Power Consumption	Without Attachment	160W
	With Attachment	270W
Temperature Uniformity		Maximum 400.8°C Minimum 399.1°C
Service Temperature		400°C
Heating Rate	100°C → 400°C	1.7sec
Cooling Rate (Air Pressure 0.5Mpa)	400°C → 100°C (AIN Attachment)	1.7sec (Without Attachment) 4.8sec (With Attachment)
	Overshoot	Maximum 2°C
Resistance		7.1Ω

Stage Heater

Bonding occurs on this heater module within semiconductor packaging equipment. It provides a vacuum function to hold and a heating function to preheat the wafer.

Applications	Advanced Packaging	Thermo-Compression Bonding (TCB)	Flip-Chip	High Bandwidth Memory (HBM)
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Manufacturing Specifications



Operating Temperature
<150°C

Temperature Uniformity
≤±1%

Materials
AlN

Flatness
<2μm

Advanced Packaging | the future with BOBOO HITECH

With new technologies such as AI, 5G, IoT quickly approaching, the demand for high-performance semiconductor devices is soaring high. Advanced Packaging refers to innovative technology that goes beyond conventional packaging techniques, enhancing the performance, power efficiency, and miniaturization of semiconductor chips. As the demand for smaller, more powerful, and more efficient semiconductor chips grows, advanced packaging plays a crucial role in overcoming the limits of Moore's Law and traditional transistor scaling.

Heating Jacket

Heating Jackets are installed on the exterior of various gas pipes, chemical lines, and equipment parts in semiconductor manufacturing facilities to transfer uniform heat and maintain internal temperature. They play a crucial role in preventing the solidification or changes in the physical properties of gases and chemicals flowing through the pipes.

Applications	Fore Lines	Exhaust Lines	Valves	Equipment Parts
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Manufacturing Specifications

Capacity Tolerance ±10%

Withstanding Voltage 1,500V/min

Insulation Resistance 1,000MΩ+/DC500V

Resistance Tolerance ±10%

More Control, More Precision

Controllers to match specific needs and precision

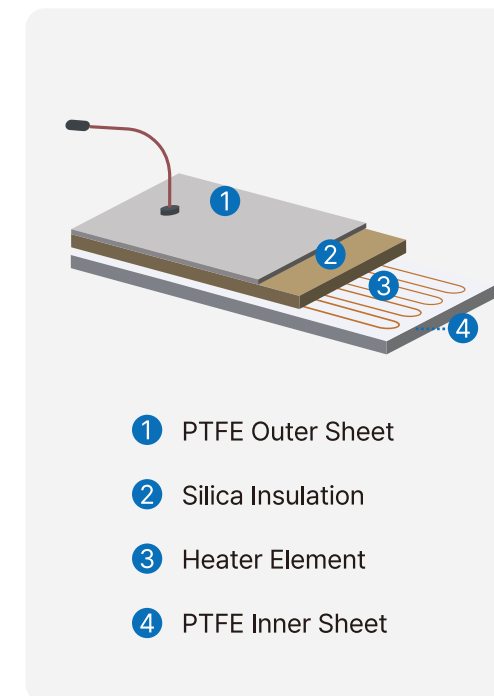
• TCU Controller

• Multi Controller

• Mini Controller

Designed to Fit All Your Needs

Custom designs for all diverse and complex line systems



Teflon (PTFE) EXCELLENT Durability

Operating Temperature

Continuous Use 200°C

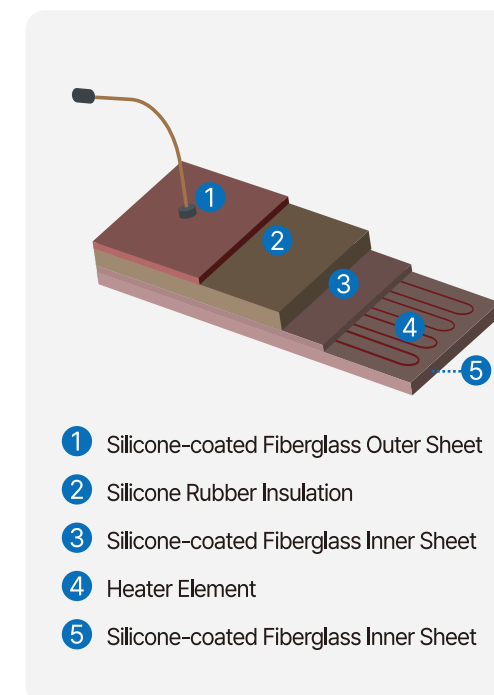
Maximum Use 260°C

Dimensions

Maximum Ø325

Minimum Ø25.4

Thickness 5t ~ 25t



Silicone Rubber EXCELLENT Flexibility

Operating Temperature

Continuous Use 180°C

Maximum Use 230°C

Dimensions

Maximum 400mm×3000mm, Ø500

Minimum 20mm×50mm, Ø6.35

Thickness 1.5t ~ 20t



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Headquarters

Yongin-si, Gyeonggi-do, South Korea | Sales, Production

Gwangju Factory Gwangju-si, Gyeonggi-do, South Korea | Production

Gangneung Factory Gangneung-si, Gangwon-do, South Korea | Production

Wonsam Factory Yongin-si, Gyeonggi-do, South Korea | Production (Completion 2026)

China Subsidiary Wuxi, China | Sales

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