



**Chongqing Jifeng Technology Co.,LTD.**

— JIFENG TECHNOLOGY—



**Become a global research and development and manufacturer of ceramic materials**

**- -Leading the new trend of industry development**



No. 62, Sanxi Road, Qinggang Street, Bishan District, Chongqing.



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— JI FENG TECHNOLOGY —

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# 1 COMPANY PROFLIE





Jifeng Technology was established on April 19, 2023, with a registered capital of 100 million RMB.

Jifeng Technology is a high-tech enterprise focusing on the research and development and application of advanced ceramic materials.

Jifeng Technology has more than 12,000 square meters of modern plant and more than 80 employees. Jifeng company's business is mainly focused on: **alumina, zirconia, aluminum nitride, silicon nitride, silicon carbide** and other advanced ceramic materials powder preparation and application fields.

These materials are wide application prospects in aerospace, electronics, energy, chemical industry and other industries. As an emerging high-tech enterprise, we are committed to promoting the development of domestic advanced ceramic material technology, and contribute our own strength to the national rejuvenation. We believe that through continuous technological innovation and market expansion, Jifeng will become a well-known supplier of advanced ceramic materials at home and abroad to provide customers with high-quality products and services.



## 2 COMPANY CULTURE

**Mission:** Guided by scientific and technological innovation, we promote the application of ceramic materials in various fields and provide customers with high-quality products and services.

**Vision:** To become a global research and development and manufacturer of ceramic materials, leading the new trend of industry development.

**Innovation:** Continuously produce innovative products to help the aviation, automotive, electronics, medical, and shipping industries reach new heights.

**Code of conduct:** Continuous improvement, honesty and trustworthiness, first-class quality, first-class service.



## 3 QUALITY ASSURANCE

### (1) R & D Team



Jifeng Technology has an independent ceramic laboratory in Osaka, Japan, and a strong R&D team. In China, our company is led by professional doctors, leading a professional R & D team of more than 20 people to connect and transfer with the overseas laboratory. Within the next three years, we plan to establish a laboratory in Europe, with an expected addition of 20 R&D personnel. We are always committed to technological innovation and product quality improvement, aiming to provide customers with the best solutions.

In addition, Jifeng Technology has also actively established cooperative relations with a number of scientific research institutions at home and abroad to jointly explore the research and development of new ceramic materials and production processes to better adapt to changes in market demand. Through these efforts, we hope to continue to promote the development of the industry and create more value for our customers.



## (2) Production Environment



Jifeng Technology has more than 12,000 square meters of production and processing workshop, one laboratory. It is planned to build two municipal laboratories and one national industrial level laboratory within three years.

**The overall view of No.2 Precision Machining Workshop**



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### (3) Critical Equipment for Production



**High-precision CNC Machining Center**



**Processing Center Group of Imported Surface Grinding Machines**



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**Imported External Centerless Grinding Machine Set**



**High-precision CNC Internal and External Cylindrical Grinding Machines**



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**High-precision CNC Dry Pressing Molding Machine**



**High-precision CNC Injection Molding Machine**



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## Forming Equipment of Fine Crystal High Density Ceramics - Cold Isostatic Pressing



## Sintering Equipment of Fine Crystal High-density Ceramics-Hot Isostatic Pressing Furnace



- The world's most advanced high pressure thermal equipment manufacturer - Sweden Quintus
- The maximum sintering temperature reaches 2000°C and the maximum pressure is 200MPa
- It is suitable for sintering of most structural ceramics and metal materials
- Fine-grained and high-density ceramic materials can be obtained quickly



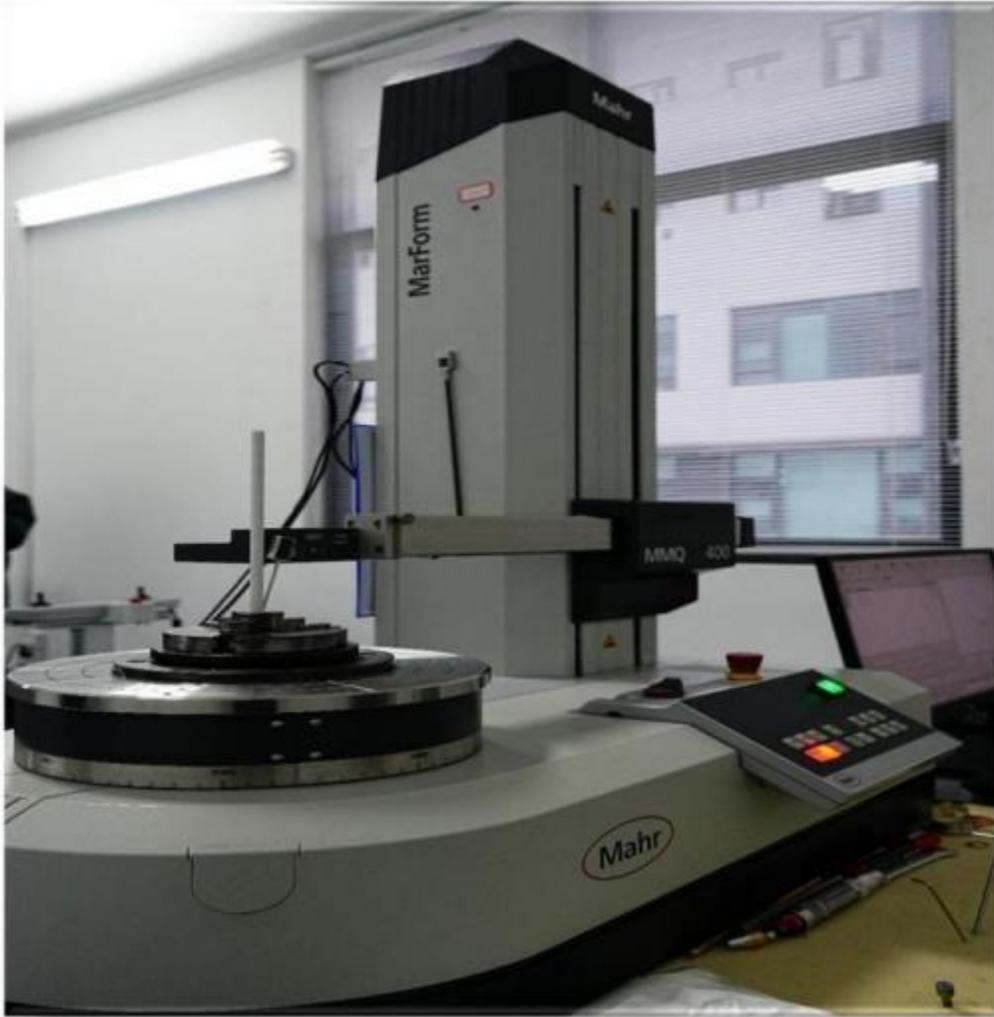
## (4) Test Equipments



## QUALITY ASSURANCE

Our company has imported advanced processing equipments and testing equipments from the United States, Germany, Sweden, Japan and other countries in batches. We have established a comprehensive quality control system. We will win recognition and trust by virtue of excellent product quality and good customer service.





**German Mahr Cylindricity Measuring Equipment**



**Sweden Leitz Three-Coordinate Measuring Equipment**





**Powder Flow Testing Equipment**



**Bending Strength Testing Equipment**



**Density Detector**





**Hardness Testing Equipment**



**Roughness Measuring Instrument**



## (5) Raw Materials

### The characteristics of ceramic powder of Jifeng Technology

There is a significant gap between domestic and foreign powders in terms of powder purity, morphology, and particle size uniformity.

The domestic high-end ceramic powder market is mainly occupied by Japanese, European and American manufacturers.

### The characteristics of ceramic powder of Jifeng Technology

- High powder purity (>99%), uniform chemical composition.
- Powder morphology is controllable (spheroidal, flaky, whisker, etc.).
- Powder particle size can be regulated at the nanometer to micron level.
- Can be customized according to customer needs, including powder particle size, element doping, etc.



## Jifeng Technology Ceramic Powder Series

- High sintered active nano alumina, zirconia, yttrium oxide, silicon carbide powder
- High purity silicon carbide single crystal powder (purity >99.99%)
- Spherical alumina and silicon carbide powder
- Silicon carbide ceramic whisker
- Multiphase ceramic powders (ZTA, ATZ, YAG, etc.)
- Transparent ceramic powder (AlON, MgAl<sub>2</sub>O<sub>4</sub>, YAG, etc.)



## (6) Processing Capability

### Precision Processing Capability

- (1) Axis: roundness 0.002mm, cylindricity 0.002mm, surface finish Ra 0.1.
- (2) Hole: minimum machining hole diameter 0.2mm, depth up to 6mm (depending on the material).
- (3) Groove (slot): The minimum can be processed 0.1mm narrow slot, as well as various shapes of the slot;
- (4) Plane: The minimum machined thickness of 0.1mm thin sheet, parallelism of 0.001mm, measurement tolerance of 0.001mm, surface finish Ra0.1.
- (5) Thread: The minimum can be processed M2 internal thread, accuracy GB-7h, external thread size is not limited, accuracy GB-6g.

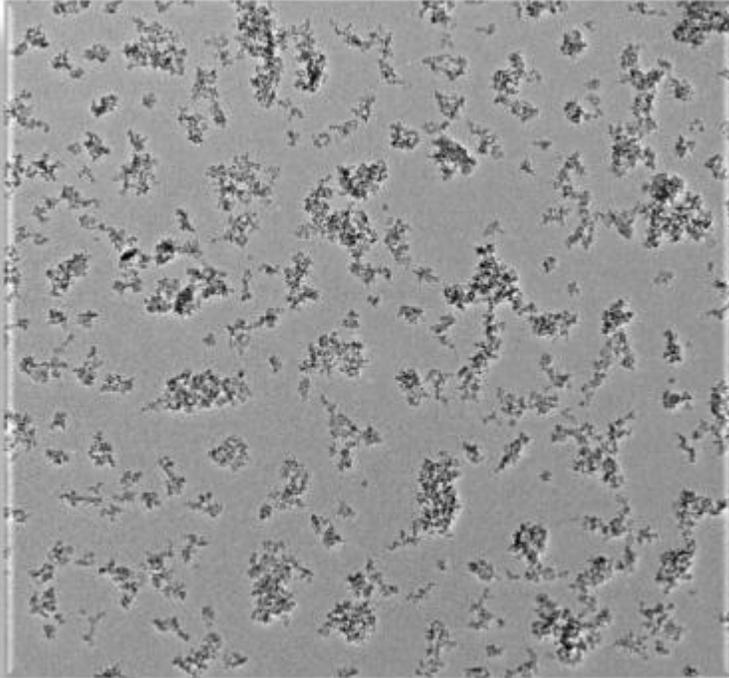


## 4 MAIN PRODUCTS

- **High purity nano-ceramic powder (oxide, carbide, nitride)**
- **Wet forming large-size alumina ceramic substrate / Ceramic structural components with complex shapes**
- **Transparent ceramic products**
- **High-hardness ceramic cutting tool (for super hard material cutting)**
- **Ceramic Vacuum Chuck for Semiconductor Wafer Polishing**
- **Ceramic Micro Filling Pump**
- **Precision structural components used for semiconductors**



## Jifeng Technology Ceramic Powder Series

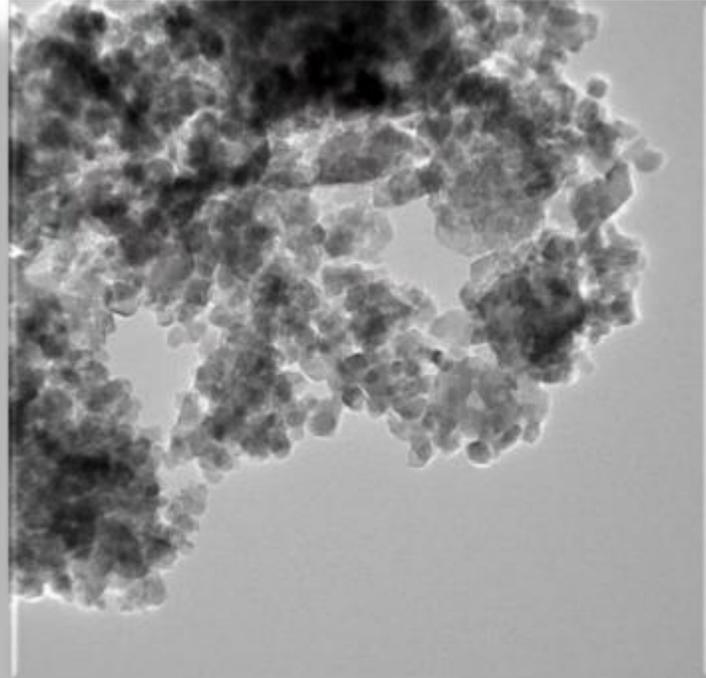


$\gamma$ -Al<sub>2</sub>O<sub>3</sub> Powder

Purity :> 99%

Particle size: 5~10 nm

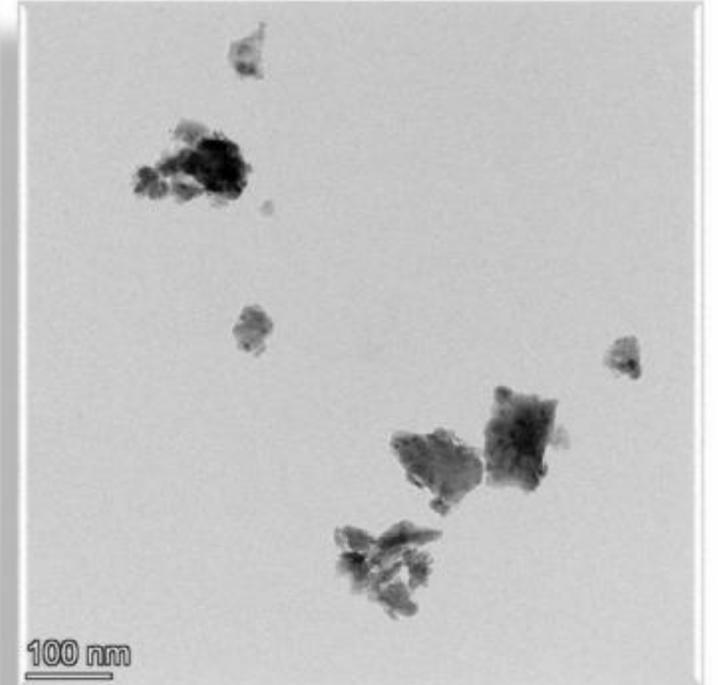
BET specific surface: 200~300 m<sup>2</sup> / g



t/c-ZrO<sub>2</sub> Powder:>99.9%

Purity :> 99.9%

Particle size: 50~100 nm



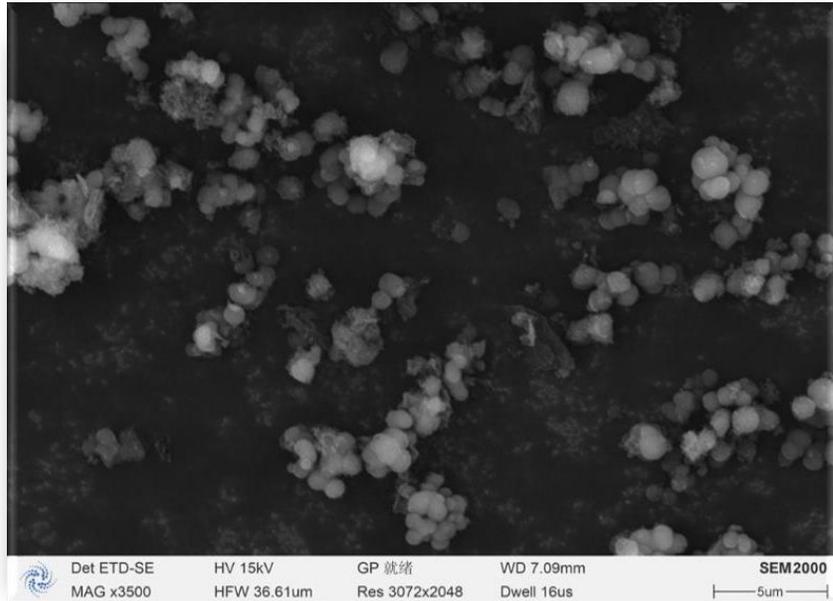
$\beta$ -SiC powder

Purity:> 99.9%

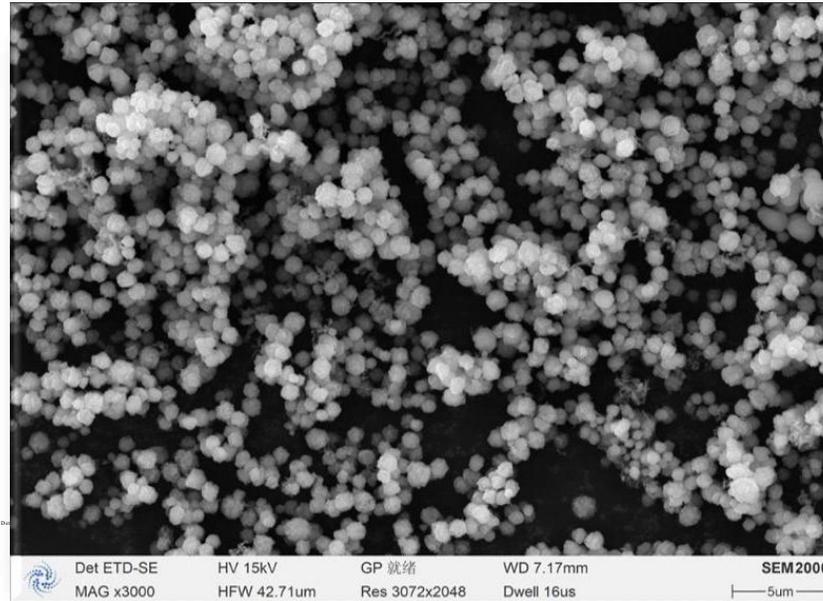
Particle size: 100 ~200 nm



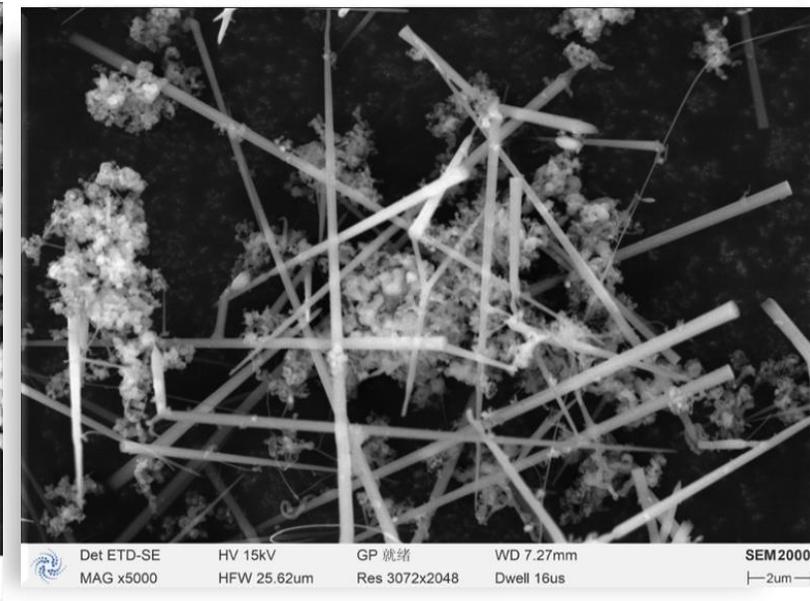
# Jifeng Technology Ceramic Powder Series



Spherical alumina powder



Spherical-like silicon carbide powder



Silicon carbide whisker



## Large-size Alumina Ceramic Substrate

Before demolding



After drying and demolding

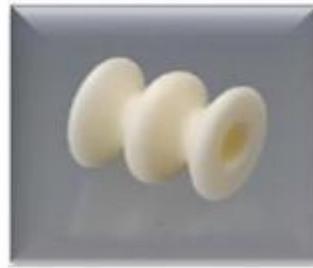
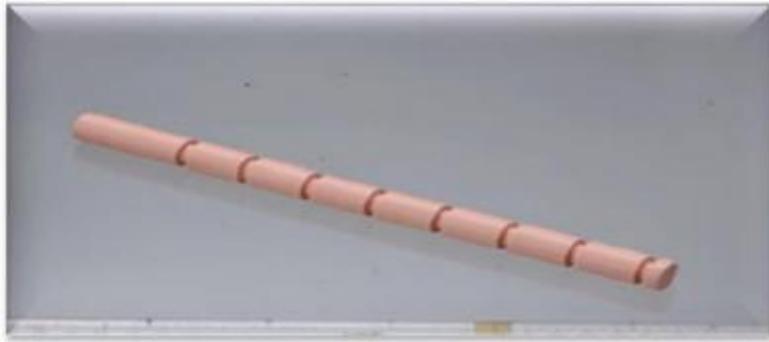


500x500mm aluminum oxide ceramic  
substrate formed by gel-casting molding



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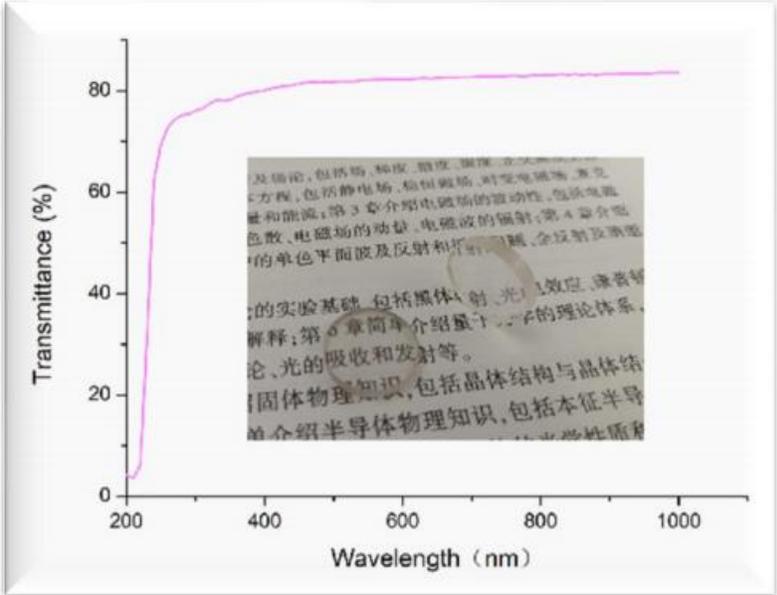
## Ceramic Structural Components with Complex Shapes



Ceramic structural components with complex shapes produced by injection molding.



# Transparent Ceramics



AlON Transparent Ceramics



MgAl<sub>2</sub>O<sub>4</sub> Fairing Blank



Y<sub>2</sub>O<sub>3</sub> Transparent Ceramics

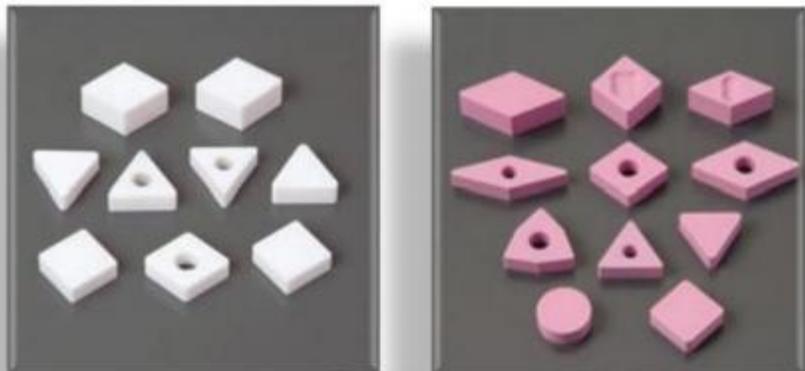


YAG Transparent Ceramics

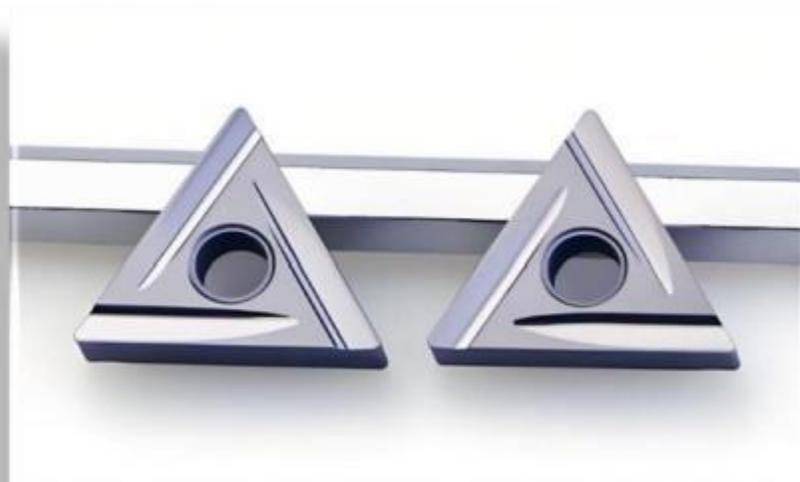


## Main Products

(High-hardness ceramic cutting inserts)



ZTA Ceramic Cutting Tool



Cermet Cutting Inserts



Al<sub>2</sub>O<sub>3</sub>-TiC Ceramic Cutting Tool

Vickers Hardness:> 17 GPa  
Bending Strength:> 800 MPa  
Fracture Toughness:> 7 MPa.m<sup>1/2</sup>



## Main product (Ceramic plunger pump)

Provide professional ceramic material solutions for liquid filling to global customers.



Design and produce high-precision ceramic plunger pump and ceramic filling products based on customer demand.



Advanced production equipment and production technology to ensure high quality.



Implement quality control throughout the entire process from raw materials to delivery. All product components and accessories are traceable throughout the whole process.



Professional test platform to simulate the actual use of the environment.



## Main product (Ceramic plunger pump)

We design and produce all types of ceramic plunger pumps, which are compatible with filling machines of various domestic and international brands



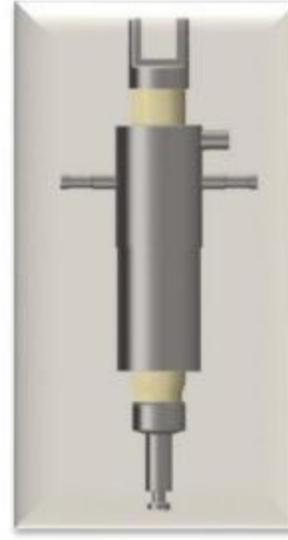
TA type plunger  
pump



TB type  
plunger pump



TC type plunger  
pump



TD type plunger  
pump



CIP - SIP type plunger  
pump



Filling volume range: 0.1ML - 500ML

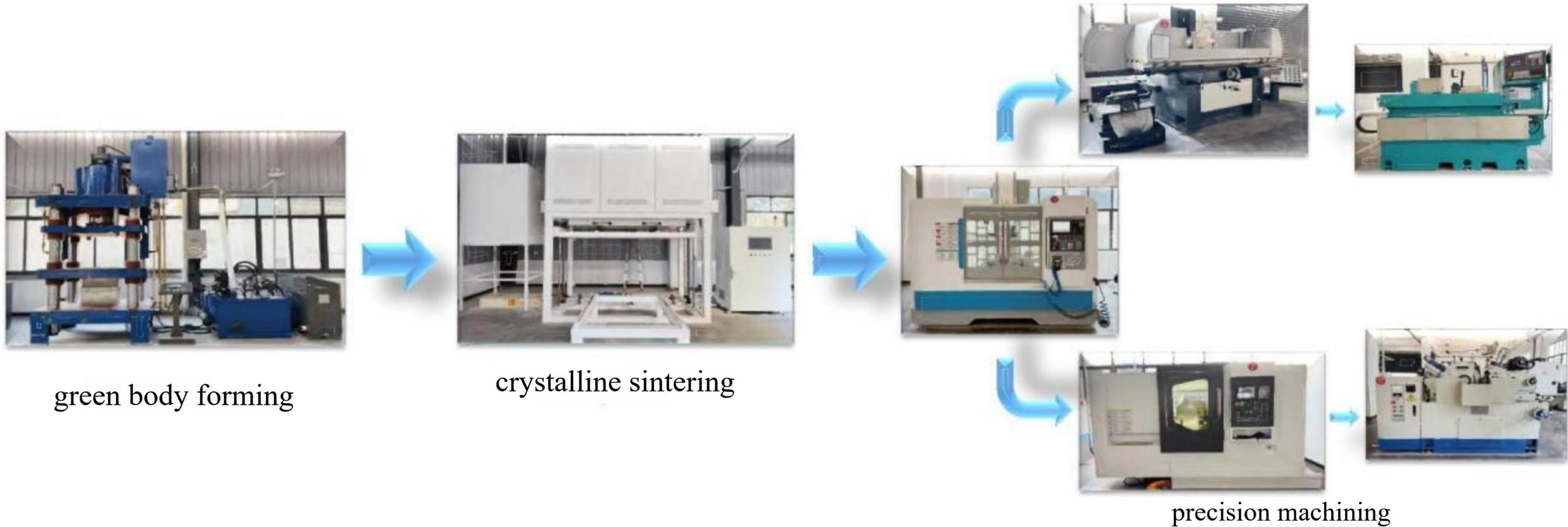
Filling accuracy:  $\pm 0.2\%$

The plunger pump of the non-CIP-SIP type supports the sterilization conditions of 121°C and 0.1MPa.



## Main Product (Ceramic plunger pump)

We have advanced production equipments and production technology to ensure high quality.



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## Main Products (Ceramic plunger pump)

We have professional test platform to simulate the actual use of the environment.



High-precision mechanical structure strictly controls the filling volume.

High - precision electronic scales provide real - time feedback on the filling volume.



## Main Products (Precision ceramics for textile machinery)



High - end textile machinery equipment from Japan's Murata accounts for 95% of the national market. The core ceramic parts of its equipment need to withstand the impact and friction of ultra - high - speed yarns without causing any damage to the yarn quality. Therefore, extremely stringent requirements are imposed on the material properties and processing techniques. Over the years, domestic advanced ceramic manufacturers have been unable to produce products with all the required properties to achieve domestic substitution.



**Jifeng Technology has broken through technical barriers by leveraging overseas R & D capabilities, achieving full - performance satisfaction in terms of both material properties and processing accuracy.**



## Main Products (Precision ceramics for textile machinery)

We mainly focus on the research and development of high - performance ceramic parts, aiming to realize the localization of ceramic parts for high - end textile equipment.



Ceramic Nozzle



Ceramic Yarn Guide



Ceramic Roller Guide



Ceramic Check Calve

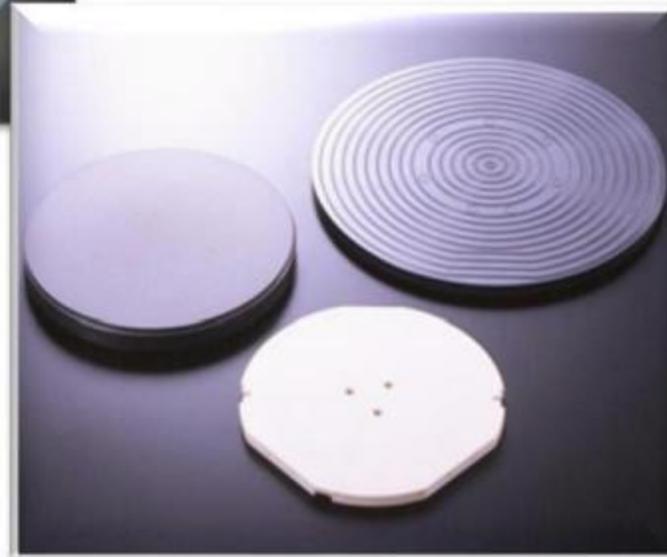
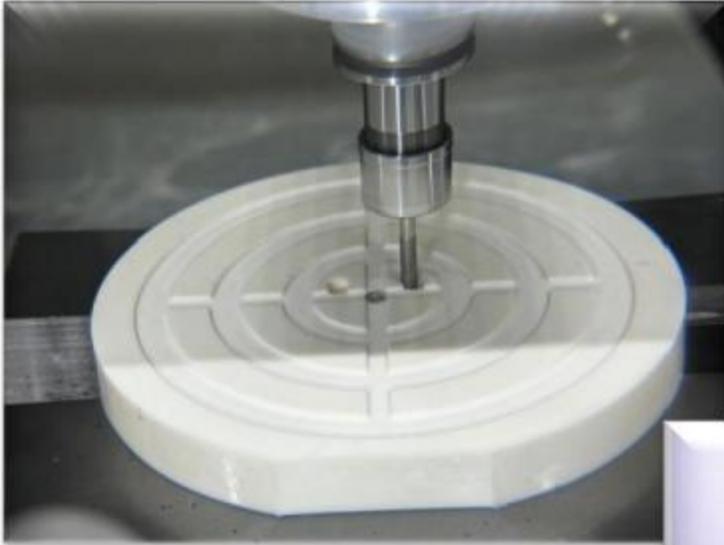


Ceramic Valve Core



# Main Products

Customized Precision Ceramic Structural Components > Precision Ceramic Parts > Semiconductor Wafer Chuck



- ◆ Ceramic Materials: Alumina, Silicon Carbide
- ◆ Aperture: 1 - 100  $\mu\text{m}$
- ◆ Porosity: 30% - 60%
- ◆ Flexural Strength: >50 MPa
- ◆ Machining Accuracy:  $\pm 0.003$  mm, Flatness 0.003 mm
- ◆ Product Characteristics: Wear - resistant, High - temperature resistant, High hardness, Corrosion - resistant
- ◆ Available Colors: Beige, Black
- ◆ Custom Processing: 6 inches, 8 inches



## Main Products

Customized Precision Ceramic Structural Components > Precision Ceramic Parts > Semiconductor Wafer Handling Arm



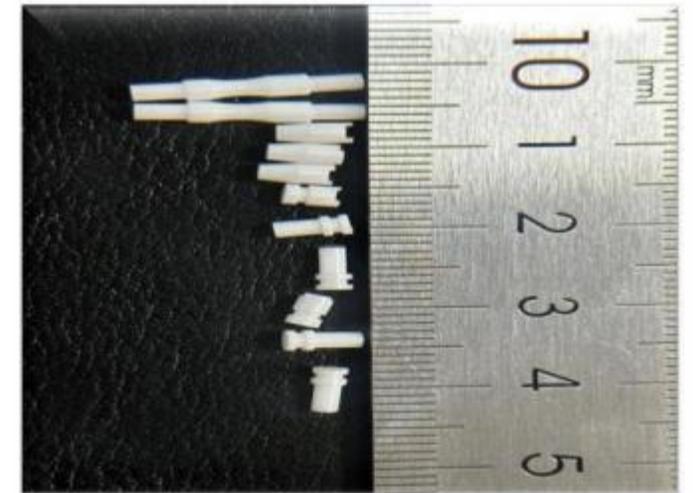
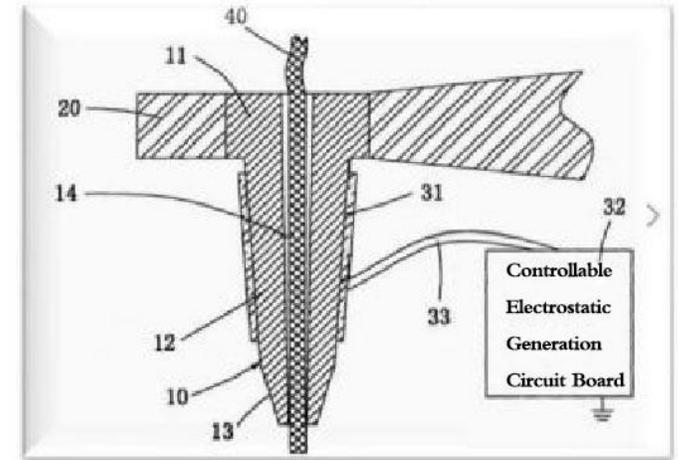
- ◆ Ceramic Material: Alumina
- ◆ Machining Accuracy:  $\pm 0.003$  mm
- ◆ Product Characteristics: Wear - resistant, High - temperature resistant, High hardness, Insulating, Corrosion - resistant
- ◆ Available Colors: White, Beige
- ◆ Custom Processing: We can provide custom processing services according to the provided drawings.



## Main Products

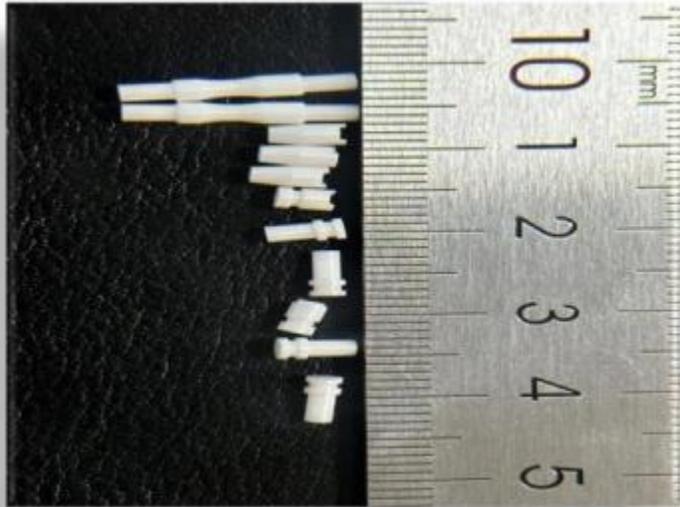
**Wire Bonding** is the dominant method (accounting for over 90%) for internal connections in packaging. Its principle involves using heat, pressure, and ultrasonic energy to tightly bond the bonding wires to the metal pads (bonding at the atomic scale), enabling signal transmission between chips and between chips and the package.

Common wire bonding methods mainly include thermocompression bonding, ultrasonic bonding, and ultrasonic thermocompression bonding, etc. During the welding process, to guide the movement of the gold wire, the **tensioner** is an important tool in the wire bonding process.

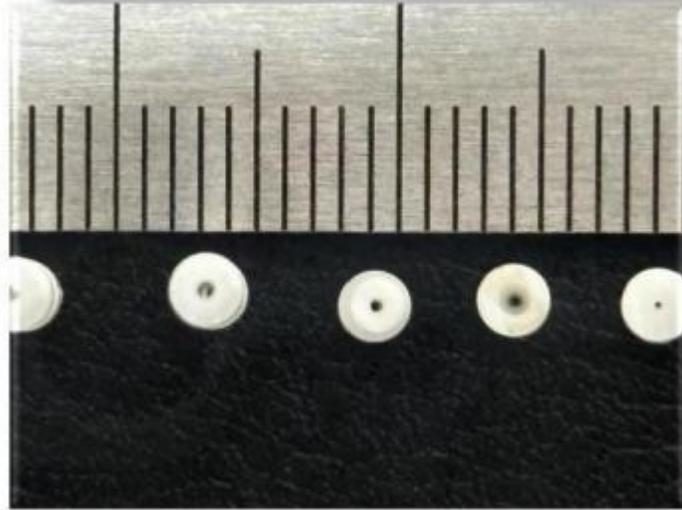


# Main Products

Customized Precision Ceramic Structural Components > Precision Ceramic Parts > Semiconductor Gold Wire Tensioner

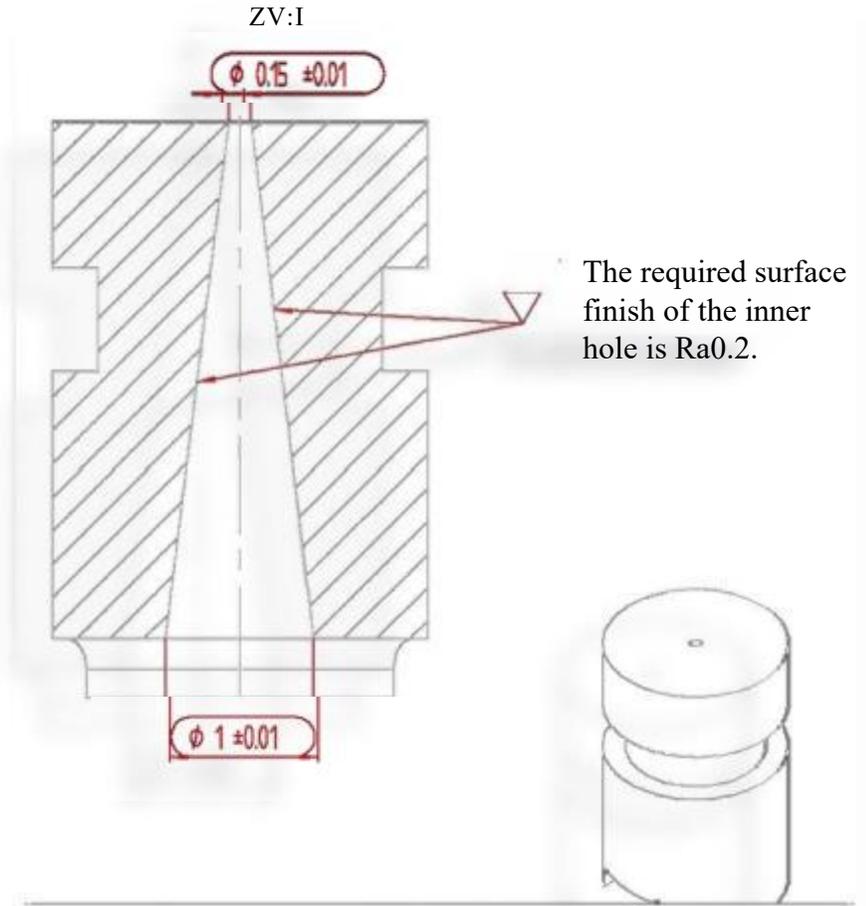


Tensioner, 2X perspective



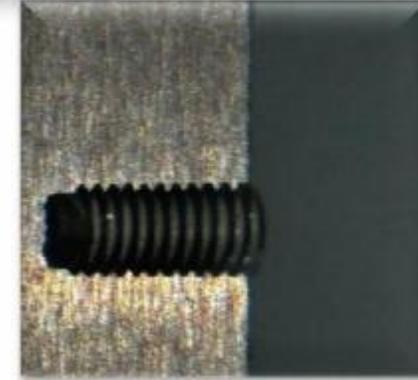
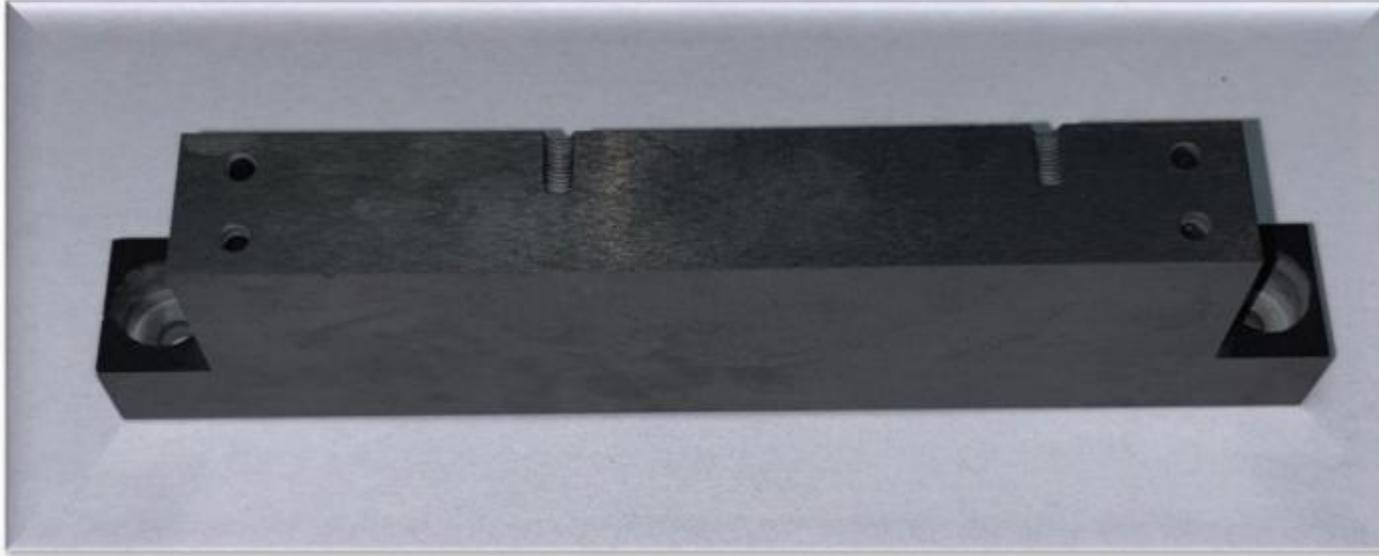
Tensioner, 5X perspective

- ◆ Ceramic Material : Zirconia
- ◆ Machining Accuracy:  $\pm 0.01$  mm
- ◆ Product Characteristics : Wear-resistant, High-temperature resistant, High hardness, Insulating, Corrosion-resistant
- ◆ Available Colors : White, Beige
- ◆ Custom Processing: We can provide custom processing services according to the provided drawings.



## Main Products

Customized Precision Ceramic Structural Components > Precision Ceramic Parts  
> Structural Components of Semiconductor Equipment



Thread Machining



Deep Hole Machining

- ◆ Ceramic Materials: Silicon Nitride, Alumina, Zirconia, Aluminum Nitride
- ◆ Machining Accuracy:  $\pm 0.01$  mm, Flatness: 0.003 mm, Parallelism: 0.005 mm
- ◆ Product Characteristics: Wear-resistant, High-temperature resistant, High hardness, Insulating, Corrosion-resistant
- ◆ Available Colors: White, Beige, Black
- ◆ Custom processing: We can provide custom processing services according to the provided drawings.



## Main Products (Semiconductor)

Customized Precision Ceramic Structural Components > Precision Ceramic Parts > Semiconductor Micro Injection Molding Parts



**Fine products**

**Unit:mm**



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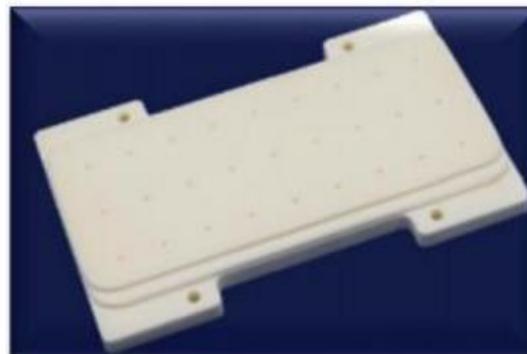
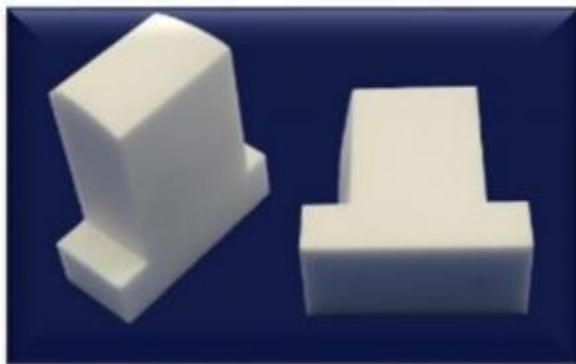
## Main Products (Non-standard products customization)

Customized Precision Ceramic Structural Components > Precision Ceramic Parts > Non-standard Structural Components



## Main Products (Non-standard products customization)

Customized Precision Ceramic Structural Components > Precision Ceramic Parts > Non-standard Structural Components

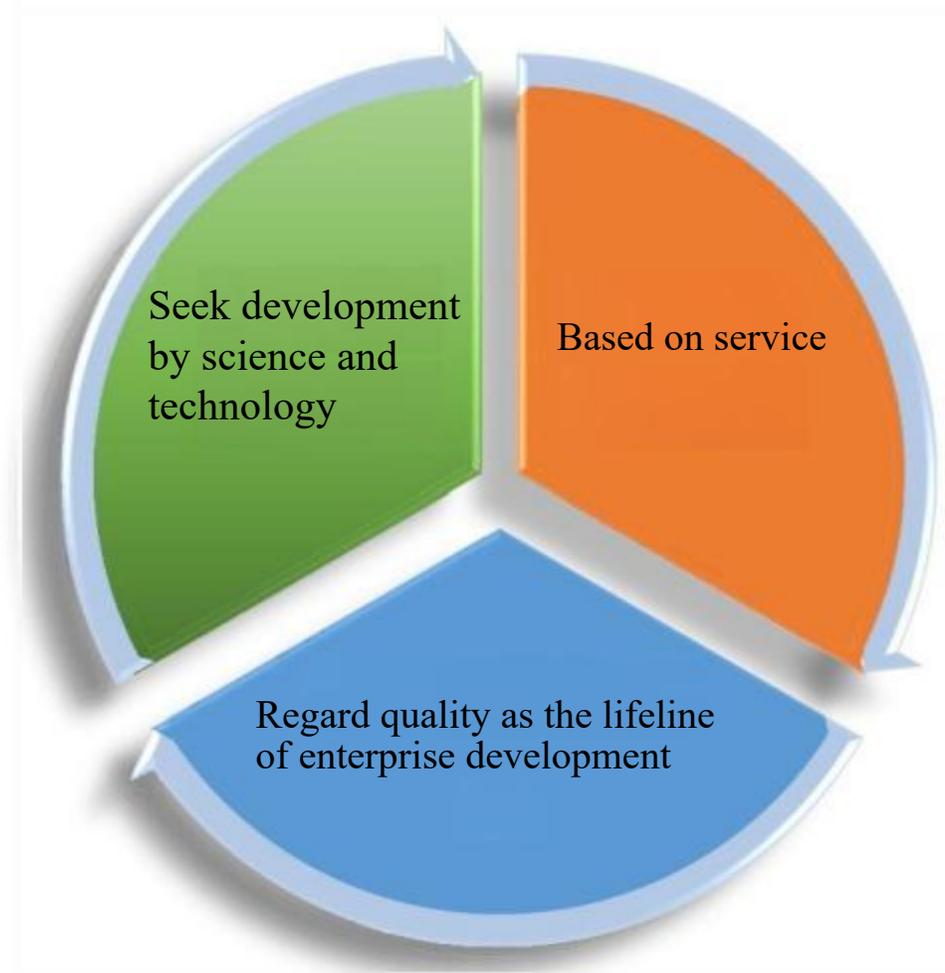


Customization according to the provided drawings to meet the personalized needs of customers.



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## 5 SERVICE PURPOSE



THANK YOU



Jifeng Technology is a manufacturer specializing in the research and development, manufacturing, precision machining, and supply of application solutions for advanced fine ceramic materials. It is one of the few advanced fine ceramic companies in China with a full industrial chain covering ceramic powder synthesis, forming, sintering, precision machining, and performance analysis.



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