

深圳爱尔创新材料有限公司 SHENZHEN UPCERA INNOVATIVE MATERIALS CO., LTD.

NATIONAL HIGH-TECH ENTERPRISE
FDA/CE/SFDA/ISO 9001 CERTIFIED



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SHENZHEN UPCERA INNOVATIVE MATERIALS CO., LTD.

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Reliable Materials Expert



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CORPORATE INTRODUCTION

CORPORATE PROFILE

Founded in 2003 with a registered capital of RMB 60 million, Shenzhen UPCERA has established large-scale, high-quality, modern R&D and manufacturing bases in both Shenzhen and Benxi, Liaoning Province. The company is committed to becoming a trusted materials expert. Over the years, it has been deeply engaged in the R&D, production, and sales of precision ceramic components, dental ceramics, and other advanced materials. UPCERA was also the first company in China to propose a digital dentistry solution.

Relying on the State Key Laboratory of New Ceramics and Fine Processing of Tsinghua University, the company integrates interdisciplinary technologies from optical communication, medical, aerospace, mechanical manufacturing, and chemical industries to develop new products. It has also cooperated with experts from the United States, Switzerland, Japan, and Taiwan, achieving significant breakthroughs in ceramic material preparation, forming, sintering, and precision machining. Its products have reached a leading level in China and an advanced level internationally.

In 2018, UPCERA became a wholly-owned subsidiary of Sinocera Materials (Stock Code: 300285). This enabled the company to extend its value chain from powder preparation, forming, and precision machining to global sales, further enhancing its core competitiveness across various product fields and laying a solid foundation for long-term, sustainable, and high-speed development.



SKILL EVALUATION



SKILL TRAINING



R&D CENTER



CORPORATE STYLE

UPCERA was the first enterprise in China to independently develop zirconia ceramic sleeves for optical communication. Since its establishment, the company has adhered to strict quality control to ensure outstanding product performance. With advanced technology and reliable quality, UPCERA has grown into a globally recognized manufacturer of zirconia ceramic sleeves and ferrules, widely applied in optical communication connectors, optical modules, computing centers, and data centers.

Since 2017, UPCERA has expanded into multiple fields, actively developing structural components made from zirconia, alumina, sapphire (single-crystal alumina), silicon nitride, and silicon carbide. Leveraging its lean manufacturing expertise accumulated from large-scale production of sleeves and ferrules, the company provides customers with integrated customized solutions covering product design, material selection, and manufacturing. Its products are widely used in semiconductors, aerospace, medical devices, new energy, mechanical engineering, chemical industry, consumer electronics, and smart wearables.

In 2021, Shenzhen Upcera Innovative Materials Co., Ltd. began independent operations, continuing to focus on precision structural ceramics. Today, its products are exported to more than 100 countries and regions worldwide, supporting the development of high-end manufacturing industries across the globe.

CORPORATE CULTURE



Corporate Position
Reliable Materials Expert



Corporate Values
Customer-centered, best team wins.
Innovation drives the future,
improvement never ends.



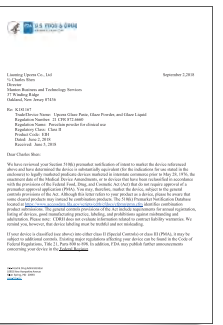
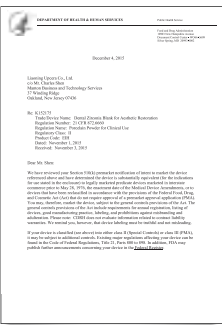
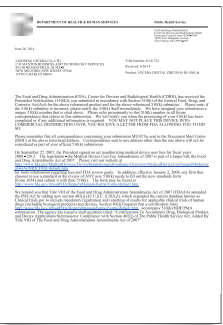
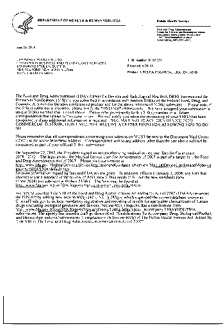
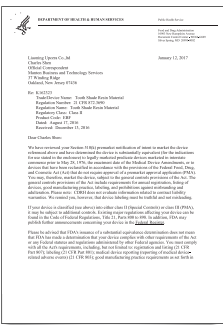
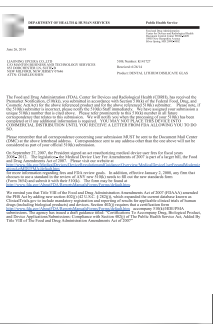
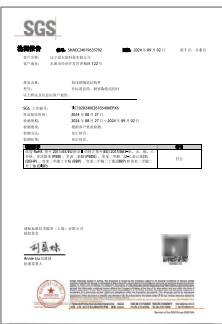
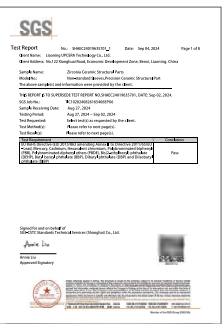
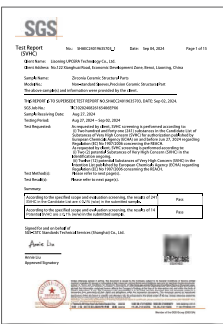
Corporate Mission
Good Materials and Good Life



Enterprise Vision
To be the leader in exceptional
materials, realizing the value of
our employees.



CORPORATE CERTIFICATIONS



ZIRCONIA CERAMIC SLEEVE

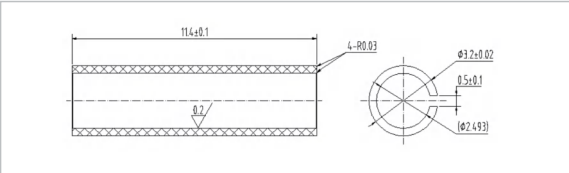


ZIRCONIA CERAMIC SLEEVE



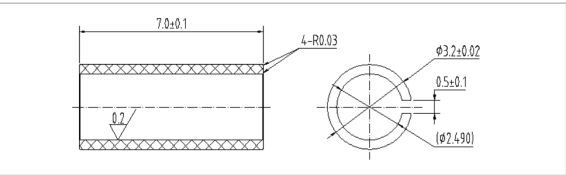
SC Standard Split Sleeve

OD	$\Phi 3.2 \pm 0.02\text{mm}$	Insertion Loss	$\leq 0.2\text{dB}$
ID	$\Phi 2.493 \pm 0.001\text{mm}$	Pull Force	2-6N
Length	$11.4 \pm 0.1\text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$



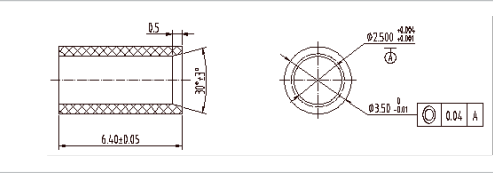
3.2 Series Split Sleeve

OD	$\Phi 3.2 \pm 0.02\text{mm}$	Insertion Loss	$\leq 0.2\text{dB}$
ID	$\Phi 2.49 \pm 0.001\text{mm}$	Pull Force	2-6N
Length	$(5.1-12) \pm 0.1\text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$



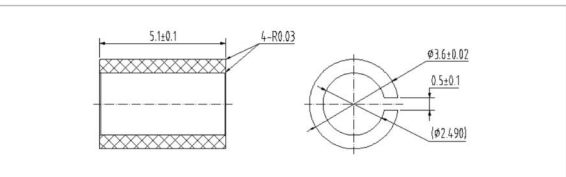
3.2/3.5*6.4 Precision Sleeve

OD	$\Phi 3.2/3.5 \pm 0.02\text{mm}$	ID	$\Phi 2.5 \pm 0.001\text{mm}$
Length	$6.4 \pm 0.1\text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$



3.6*5.1/6.7/7.0/8.0/10.1 Series Split Sleeve

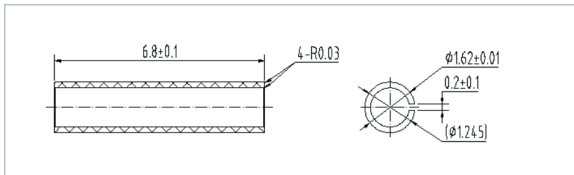
OD	$\Phi 3.6 \pm 0.02\text{mm}$	Insertion Loss	$\leq 0.2\text{dB}$
ID	$\Phi 2.49 \pm 0.001\text{mm}$	Pull Force	2-6N
Length	$5.1 \pm 0.1\text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$





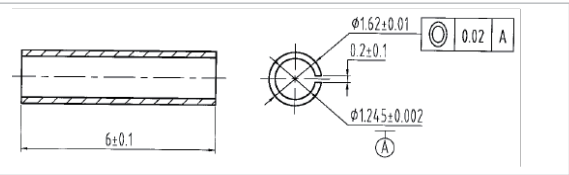
LC Standard Split Sleeve

OD	$\Phi 1.62 \pm 0.01 \text{mm}$	Insertion Loss	$\leq 0.2 \text{dB}$
ID	$\Phi 1.245 \pm 0.001 \text{mm}$	Pull Force	1-3N
Length	$6.8 \pm 0.1 \text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$



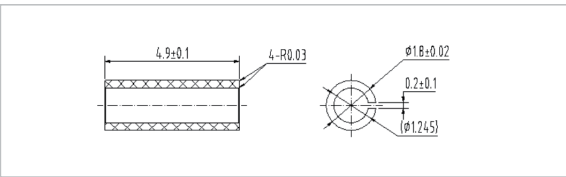
1.62 Series Split Sleeve

OD	$\Phi 1.62 \pm 0.01 \text{mm}$	Insertion Loss	$\leq 0.2 \text{dB}$
ID	$\Phi 1.245 \pm 0.001 \text{mm}$	Pull Force	1-3N
Length	$(2.6 \sim 8.0) \pm 0.1 \text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$



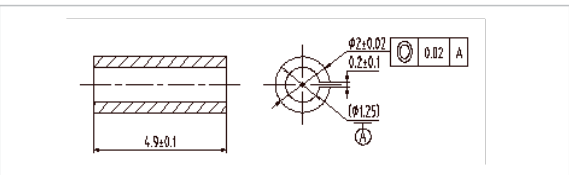
1.8 Series Split Sleeve

OD	$\Phi 1.8 \pm 0.02 \text{mm}$	Insertion Loss	$\leq 0.2 \text{dB}$
ID	$\Phi 1.245 \pm 0.001 \text{mm}$	Pull Force	1-3N
Length	$(3.5 \sim 6.8) \pm 0.1 \text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

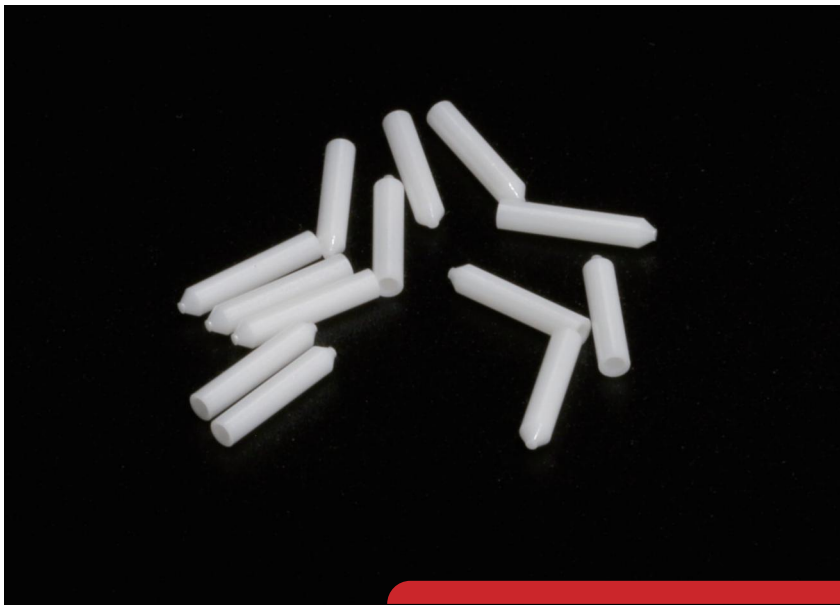


2.0*4.9 Split Sleeve

OD	$\Phi 2.0 \pm 0.02 \text{mm}$	Insertion Loss	$\leq 0.2 \text{dB}$
ID	$\Phi 1.245 \pm 0.001 \text{mm}$	Pull Force	1-3N
Length	$4.9 \pm 0.1 \text{mm}$	Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

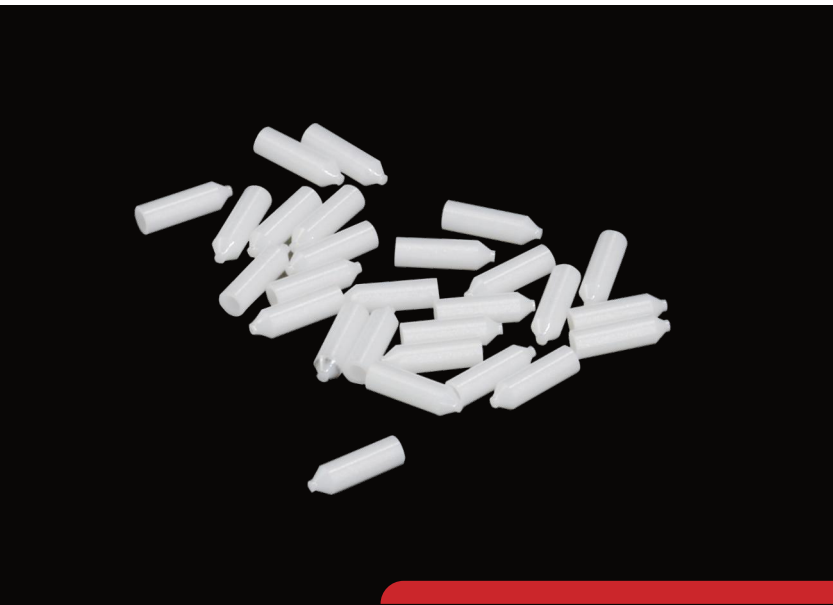
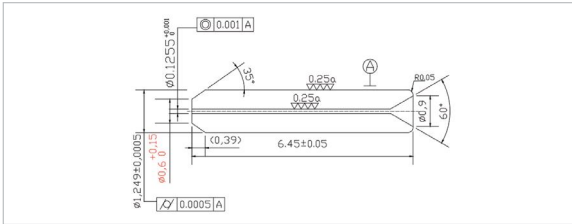


ZIRCONIA CERAMIC FERRULE



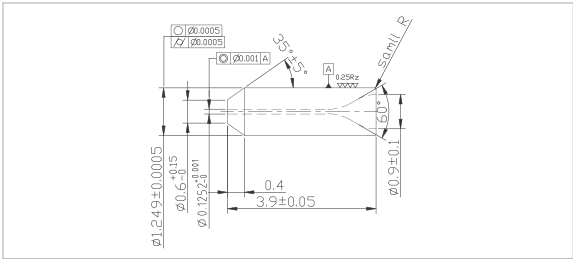
LC Standard Ferrule

OD	$\Phi 1.249 \pm 0.0005 \text{mm}$
ID	$\Phi 0.1255 \pm 0.001 \text{mm}$
Length	$6.45 \pm 0.05 \text{mm}$
Operating Temperature	$-40^{\circ}\text{C} \pm 85^{\circ}\text{C}$



Custom Ceramic Ferrule

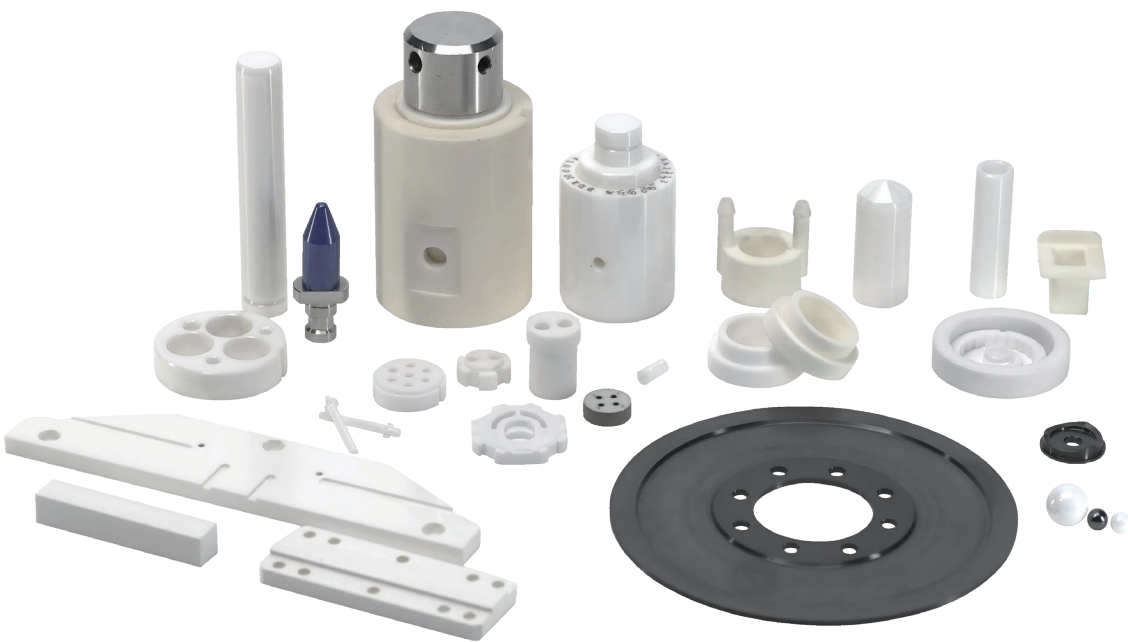
OD	$\Phi 0.5 - 3.5 \text{mm}$
ID	$\Phi 0.1 - 1.0 \text{mm}$
Length	$3.0 - 15 \text{mm}$
Operating Temperature	$-40^{\circ}\text{C} \pm 85^{\circ}\text{C}$



PRECISION CERAMIC STRUCTURAL PRODUCTS



PRECISION CERAMIC STRUCTURAL PRODUCTS



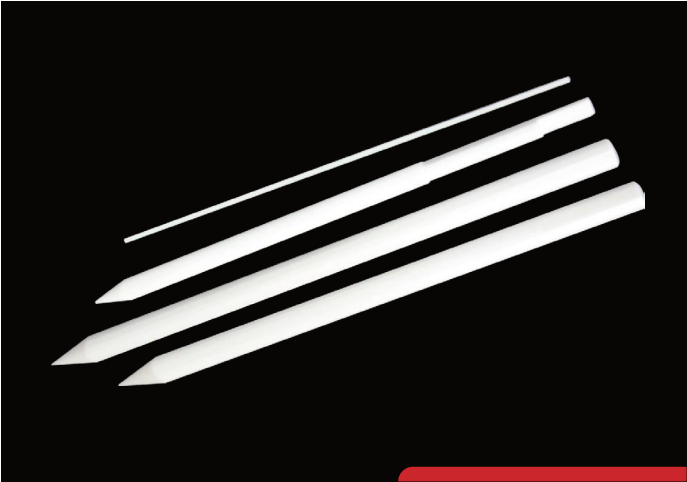
Ceramic Structural Part

Processing Capability (Depending on Product Structure)

OD	±0.002mm	Concentricity	0.002mm
ID	±0.001mm	Straightness	0.004mm
Length/Thickness	±0.005mm	Perpendicularity	0.005mm
Surface roughness	Ra0.02	Flatness	0.003mm

Key Advantages

Precision ceramic components are made of advanced nano-ceramic materials and manufactured through precision engineering. They have ultra-high hardness, excellent fracture toughness, extreme wear and corrosion resistance, and excellent high-temperature stability. They are designed to replace metal and plastic components and provide long-term and reliable solutions in high-wear, strong corrosion, high-temperature and insulation harsh environments.



Ceramic Rod

Features

Drop-resistant, wear-resistant, high-temperature resistant, corrosion-resistant, anti-oxidation, insulation, smooth surface, etc

Specifications

Ø1-20*600mm, customizable, full range of specifications

Applications

Heat dissipation control process positioning device



Locating Pin

Bulk Density	6.0g/cm ³	Vickers Hardness	1400kg/mm ²
Rockwell Hardness	90HRA	Elastic Modulus	220GPa
Flexural Strength	1200Mpa	Fracture Toughness	14Mpa.m ^{1/2}
Compressive Strength	2500Mpa	Coefficient of Thermal Expansion	9.8*10 ⁻⁶ /°C
Thermal Conductivity(λ)	25°C 1.5-2.0W/(m.K)	Melting Point	2850°C
Electrical Resistivity	10 ⁹ Ωcm	Maximum Operating Temperature	1000°C
Thermal shock resistance	400°C Water cooling 800°C Air cooling		

Features

Insulation, high temperature resistance, high strength, corrosion resistance, impact resistance, high wear resistance, accurate size, long life, non-sticky solder joints, and no shunting advantages

Application Field

Mainly used in precision machinery and equipment, aerospace, machinery manufacturing and automotive industries, using projection welding machines for precise positioning and welding of nuts and positioning holes

Specifications

Manufactured according to drawings



Ceramic Bushing

Features

High limiting speed, higher precision, high temperature resistance, self-lubricating without oil, service life about 5 times that of steel bearings



Ceramic Hammer Head

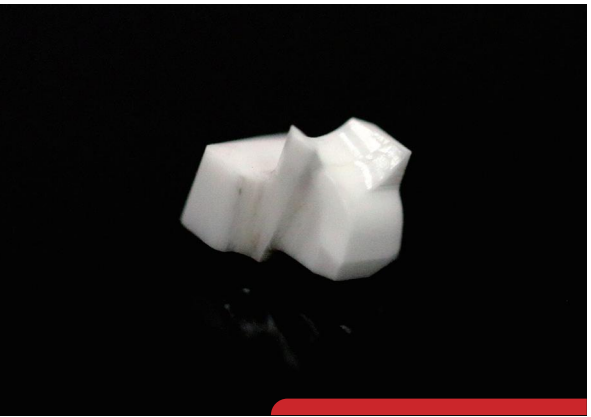
Support customization, full range of specifications



Ceramic Nozzle

Features

1. Good insulation
2. Very high abrasion resistance
3. High mechanical strength, sufficient compression and flexural strength
4. Good thermal stability and chemical properties
5. High temperature resistance
6. Fine smoothness



Special-shaped Structural Part

Support customization, full range of specifications



Ceramic Roller

Features

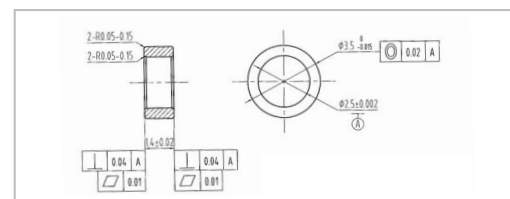
Ceramic rollers are used for grinding various materials such as medicinal herbs, gold, lubricating grease, chocolate, welding materials, and pastes containing strong acids or alkalis. They are particularly suitable for products with high viscosity and fine particle size requirements

1. Wear-resistant and chemically corrosion-resistant
2. High strength, high density, high hardness, and high temperature resistance
3. High surface finish, with no penetration or physical adhesion on the roller surface
4. Ceramic rollers do not generate heat during operation, making them the most effective roller material for grinding and dispersing high-viscosity materials

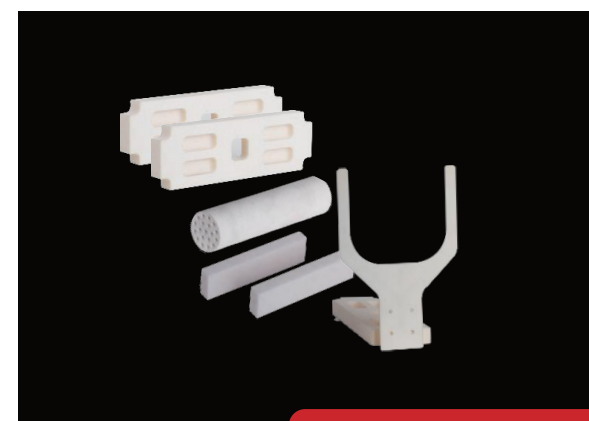
OTHER PRECISION CERAMIC PRODUCTS

 Ceramic Sheet

OD	1.0-10mm	ID	0.5-9.5mm
Length	0.5-6mm	Operating Temperature	-40°C±85°C


Black Zirconia

Support customization, full range of specifications

 Precision Ceramic Part

Support customization, full range of specifications

 Precision Ceramic Part

Support customization, full range of specifications



 Ceramic Substrate

Length	(2-180) ±0.05mm
Width	(2-180) ±0.05mm
Thickness	(0.20-1.0) ±0.005mm



 Ceramic Ring

Support customization, full range of specifications



 Ceramic Insulator

OD	(20-100) ±0.01mm
Thickness	(1-100) ±0.03mm
ID	0.5-170mm
Hole Depth	1-100mm

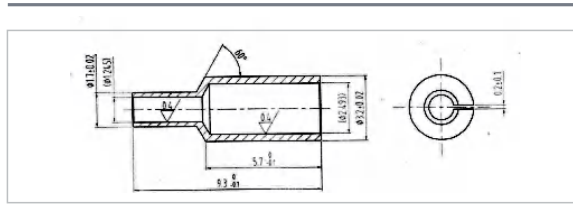


 Alumina Ceramic Shaft and Bushing Assembly

Length	(1-100) ±0.05mm
OD	(1-30) ±0.001mm, > 30 ±0.003mm
ID	(1-30) ±0.001mm, (30-60) ±0.003mm
Fit Clearance	0.002mm



 Adapter Sleeve



 Zirconia Ceramic Shaft and Bushing Assembly

Length	(1-100) ±0.05mm
OD	(1-30) ±0.001mm, > 30 ±0.003mm
ID	(1-30) ±0.001mm, (30-60) ±0.003mm
Fit Clearance	0.002mm

GEMSTONE SERIES



Special Component

Application Fields

Mainly used in special functional parts of medical equipment, aerospace, machining, various precision instruments and meters

Support customization, full range of specifications

1. Surface roughness of flat surfaces can reach Grade 14, with functional surfaces up to Rz0.05~Rz0.2.
2. Spherical machining accuracy (SR) can reach 0.2 mm.
3. Cone angle (α) ranges from 40° to 140°.
4. Flatness accuracy can reach 0.002 mm.

Large Bore Component

Application Fields

Large bore gemstone components find wide application in supporting parts for precision measuring instruments, recording devices, and precision tools, as well as in valve seats and valve cores for medical instruments

Product Types

- Flat straight (arc) bore gemstone components
- Single (double) oil-grooved flat straight (arc) bore gemstone components
- Domed gemstone components, etc.

Processing Capability

Surface roughness up to Grade 14
Functional surface roughness: Rz0.05~Rz0.2

OD	Φ0.50~150mm	Bore Diameter	Φ0.04~130mm
Thickness	Φ0.15~180mm	Oil Groove / Domed Surface	>0.5
Dimensional Tolerance Limits			
OD and ID tolerance controllable within 0.004 mm Thickness tolerance controllable within ±0.005 mm			



Inkjet Coding Component

Application Fields

Inkjet gemstone components actually belong to the micro-bore gemstone series. Due to their extremely high requirements for inner diameter roundness and surface finish, they are listed separately. They are widely used in inkjet coding equipment and serve as critical working components. Our gemstones include both ruby and sapphire.

OD	Φ1.00~Φ20mm	Bore Diameter	Φ0.04~Φ6mm
Thickness	0.4~15mm		

Orifice size tolerance can be controlled up to 0.002 mm



Micro-bore Component

Application Fields

Micro-hole gemstone components are widely used in high-pressure water jet cutting, nozzles, medical instruments, and precision machinery. Typical applications include inkjet coding components, blood cell micro-aperture component

OD	Φ1.00~Φ20mm	MIN ID	Φ0.04mm
Thickness	0.4~15mm		
Bore diameter tolerance controllable within ±0.001 mm Overall thickness can be reduced to as low as 0.15 mm			

MEDICAL APPLICATIONS



Ceramic Plunger

Bulk Density	6.0g/cm ³	Vickers Hardness	1200kg/mm ²
Rockwell Hardness	88HRA	Elastic Modulus	220GPa
Flexural Strength	1200Mpa	Fracture Toughness	10Mpa.m ^{1/2}
Compressive Strength	2500Mpa	Coefficient of Thermal Expansion	9.8*10 ⁻⁶ /°C
Thermal Conductivity(λ)	25°C 1.5-2.0W/(m.K)	Melting Point	2850°C
Electrical Resistivity	10 ⁹ Ωcm	Maximum Operating Temperature	1000°C

Properties

Insulation, wear resistance, high temperature resistance, high strength, high hardness, impact resistance, non-magnetic, corrosion resistance, high pressure resistance, oxidation resistance, environmentally

Specifications

Customized according to drawings



Ceramic Piercing Needle

Key Advantages

Exceptional Rigidity, Biocompatibility, Non-destructive Imaging

Customization Available



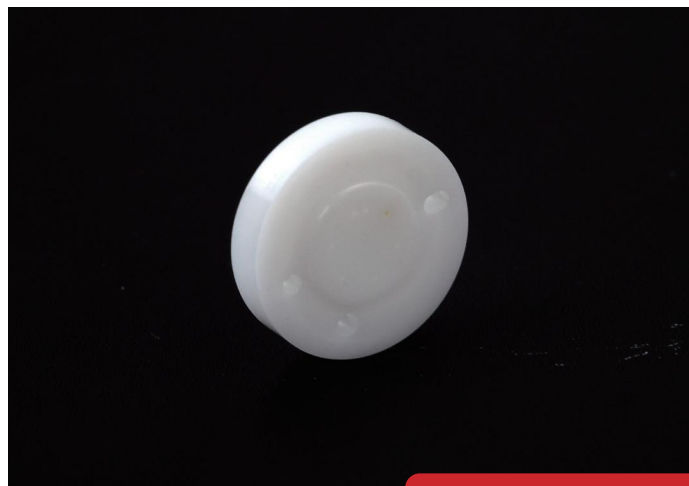
Ceramic Insulating Sleeve

Key Advantages

Outstanding biocompatibility ensures human safety, ultra-high rigidity resists mechanical stress, and excellent corrosion resistance withstands complex liquid environments. Supports precise dimensional/structural customization, providing reliable lifelong electrical isolation barriers for implantable medical devices

Customization Available



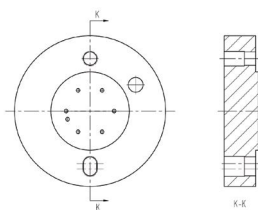


+ Chromatography Valve Plate

Key Advantages

Made of high-performance ceramic materials, featuring exceptional chemical inertness and outstanding wear resistance, ensuring a pure and contamination-free mobile phase, and providing reliable assurance for the accurate and stable separation of complex samples

Customization Available

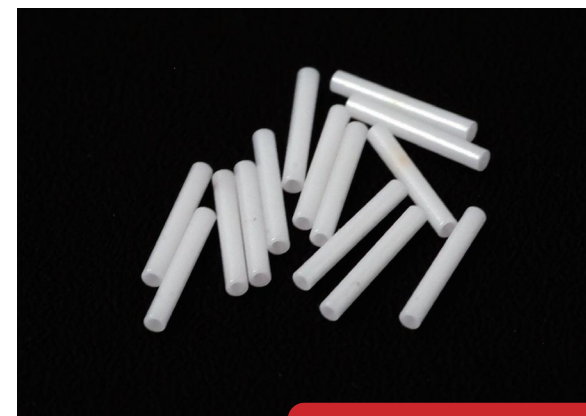
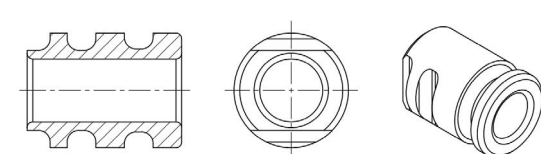


+ Rotating Component

Key Advantages

Utilizing advanced ceramic technology, featuring ultra-low friction, exceptional wear resistance, and biocompatible inertness, it provides lasting stability and pure, safe core power support for precision medical equipment

Customization Available

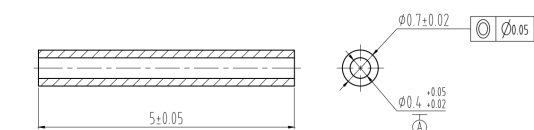


+ Micro Sleeve

Key Advantages

With excellent high-temperature resistance, ultra-high rigidity, and reliable electrical insulation, it provides a strong and safe protective barrier for micro-devices operating in high-temperature, high-pressure, and high-voltage environments

Customization Available

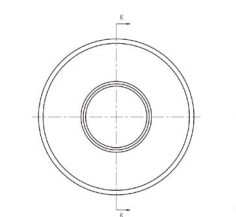


+ Ceramic Casing

Key Advantages

The zirconia medical casing is made of biocompatible zirconia and is precisely designed for medical devices. It features excellent chemical resistance, mechanical strength, and long-term reliability in demanding clinical environments

Customization Available

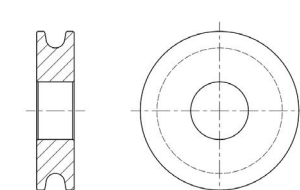


+ Ceramic Guide Wheel

Key Advantages

A revolutionary alternative to metal guide wheels, it combines diamond-level hardness with insulating properties to address issues such as wear and static adhesion, providing a lifetime, maintenance-free guiding solution for precision manufacturing equipment

Customization Available



PROCESSING CAPABILITY TABLE

Item	Shape Specification	Materials													
		Alumina				Zirconia					Gemstone		Silicon Nitride	Aluminum Nitride	Silicon Carbide
		96%	99%	99.9%	99.95%	Zirconia	ATZ	ZTA	Blue Zirconia	Black Zirconia	Ruby	Sapphire			
Length Range	Tube	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤100mm	≤300mm	≤200mm	≤200mm	≤200mm
	Rod	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤1000mm	≤100mm	≤300mm	≤200mm	≤200mm	≤200mm
	Plate	≤400mm × 400mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤100mm × 100mm	≤200mm × 200mm	≤200mm × 200mm	≤200mm × 200mm	≤200mm × 200mm
	Customization	≤300mm	≤300mm	≤300mm	≤300mm	≤300mm	≤300mm	≤300mm	≤300mm	≤300mm	≤40mm	≤100mm	≤100mm	≤100mm	≤100mm
Outer Diameter	Tube	≤150mm	≤150mm	≤150mm	≤150mm	≤250mm	≤50mm	≤50mm	≤150mm	≤150mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm
	Rod	≤150mm	≤150mm	≤150mm	≤150mm	≤150mm	≤50mm	≤50mm	≤150mm	≤150mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm
	Plate Width	≤400mm × 400mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤300mm × 300mm	≤100mm × 100mm	≤200mm × 200mm	≤200mm × 200mm	≤200mm × 200mm	≤200mm × 200mm
	Customization	≤150mm	≤150mm	≤150mm	≤150mm	≤150mm	≤50mm	≤50mm	≤150mm	≤150mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm
Inner Diameter	Through Hole	≤200mm	≤200mm	≤200mm	≤200mm	≤200mm	≤200mm	≤200mm	≤200mm	≤200mm	Hole Diameter: Up to 48 mm Hole Depth: Up to 100 mm	Hole Diameter: Up to 48 mm Hole Depth: Up to 300 mm	≤48mm	≤48mm	≤48mm
	Blind Hole	≤30mm	≤30mm	≤30mm	≤30mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm	≤10mm	≤10mm	≤50mm	≤50mm	≤50mm
	Stepped Hole	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm	≤50mm	≤10mm	≤10mm	≤50mm	≤50mm	≤50mm
Ball Diameter	Ball	≤70mm	≤70mm	≤70mm	≤70mm	≤100mm			≤100mm	≤100mm	Customization	Customization	≤20mm		≤20mm
Ball Precision		±0.002mm	±0.002mm	±0.002mm	±0.002mm	±0.002mm			±0.002mm	±0.002			±0.002mm		±0.002mm
Minimum Wall Thickness		0.2mm	0.2mm	0.2mm	0.2mm	0.1mm			0.1mm	0.1mm			0.2mm		0.2mm
Drilling	Min. Hole Diameter	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm	≥φ0.4mm
Thread Diameter		≥M3	≥M3	≥M3	≥M3	M2以上	≥M2	≥M3	≥M2	≥M2			≥M3	≥M3	≥M3
Minimum Fillet Radius		R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm	R0.1mm
Outer Diameter Precision		1-25mm: ±0.002mm 50-100mm: ±0.050mm 20-50mm: ±0.003mm 100-250mm: ±0.100mm									1-25mm: ±0.002mm 20-50mm: ±0.003mm				
Inner Diameter Precision		0.5-3mm: ±0.001mm 10-30mm: ±0.005mm 100-150mm: ±0.050mm 3-10mm: ±0.003mm 30-100mm: ±0.030mm 150-200mm: ±0.100mm									0.5-3mm: ±0.001mm		0.5-3mm → ±0.001mm 3-10mm → ±0.005mm 10-30mm → ±0.010mm 30-50mm → ±0.050mm		
Length/Thickness Precision		±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm	±0.005mm
Surface Roughness		Ra0.2	Ra0.2	Ra0.1	Ra0.1	Ra0.03	Ra0.03	Ra0.03	Ra0.03	Ra0.03	Ra0.02	Ra0.02	Ra0.03	Ra0.03	Ra0.03
Roundness		Precision up to 0.002mm, depending on product structure and specifications													
Concentricity		Precision up to 0.002mm, depending on product structure and specifications													
Straightness		Precision up to 0.004mm, depending on product structure and specifications													
Perpendicularity		Precision up to 0.005mm, depending on product structure and specifications													
Parallelism		Precision up to 0.003mm, depending on product structure and specifications													
Flatness		Precision up to 0.003mm, depending on product structure and specifications													
Precision for Custom Shapes		Specific precision is evaluated based on the product drawing structure and dimensions													

Note: Due to the broad scope of the specifications and the correlations between different data, the above information is for reference only. Please feel free to provide your specific drawings and requirements, and we will promptly assess the cost and delivery time for you!