

HUAHAO SEALING COMPONENTS CO., LTD.

High-tech Industrial Sealing Solutions

ABOUT HUAHAO SEALING (Formerly Jiashan Pioneer Carbon)

HuaHao Sealing (formerly Jiashan Pioneer Carbon) was founded in 2017 and is located in Longtan Industrial Park, Huoqiu County, Lu'an City, Anhui Province, China. We are a high-tech enterprise integrating R&D, production and sales of carbon products. Our main products include sealing rings, shaft sleeves, thrust bearings and carbon components for pumps, valves, compressors, reactors, chemical, metallurgical, turbine and mining equipment. We are committed to providing customers with high-performance, reliable and cost-effective sealing solutions.



High-tech Enterprise
Industrial Sealing Solutions



INTEGRATED R&D & MANUFACTURING

One-stop Service
High Efficiency



HIGH-PERFORMANCE SEALING

High Precision
Reliable Sealing



WEAR-RESISTANT SOLUTIONS

Longer Service Life
Extended Durability



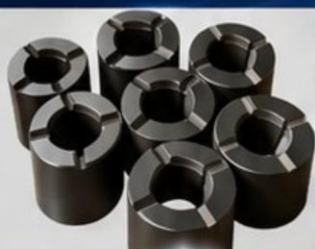
QUALITY CONTROL SYSTEM

Precision Production
Stable Quality



WIDE APPLICATION RANGE

Serving Multiple Industries
Outstanding Performance



INNOVATION DRIVES · QUALITY FIRST · CRAFTSMANSHIP · CUSTOMER FIRST



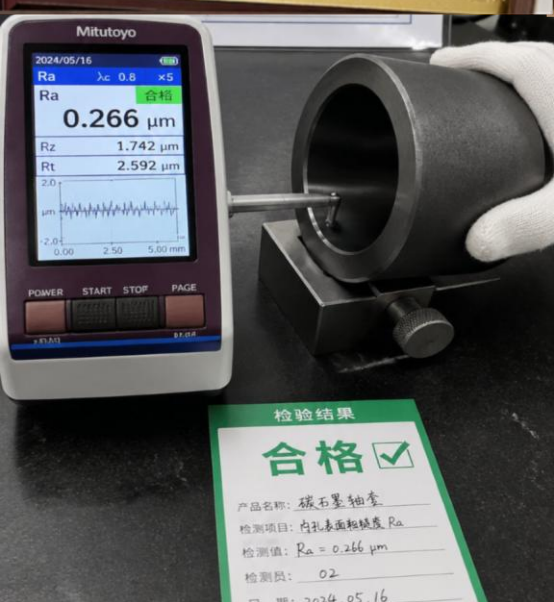
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GRAPHITE IMPREGNATION PROCESS AND BEFORE & AFTER COMPARISON

GRAPHITE IMPREGNATION PROCESS

1 RAW MATERIALS

Graphite /
Multiple shapes



2 DRYING PRE-TREATMENT



- Remove moisture
- Improve impregnation effect



3 VACUUM EXTRACTION



- Remove air and moisture
- Improve impregnation effect



4 IMPREGNATION WITH RESIN OR PITCH



- Under pressure, resin or pitch fully penetrates into the pores
- Pressure: 0.5~2 MPa
- Temperature: Room temp. ~150°C



5 CURING / BAKING



- Resin solidification or pitch carbonization
- Convert liquid to solid
- Fill pores and enhance properties



6 COOLING & POST-TREATMENT



- Natural cooling
- Remove residual surface coating (if required)
- Machining (if required)



7 FINISHED INSPECTION



- Dimensional inspection
- Hardness / Density test
- Impregnation depth test
- Visual inspection



QUALIFIED PRODUCT

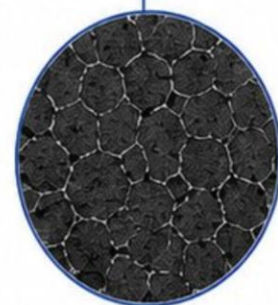
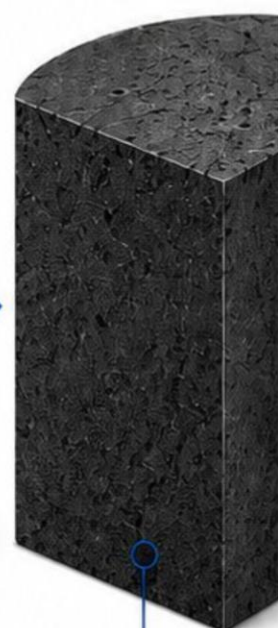
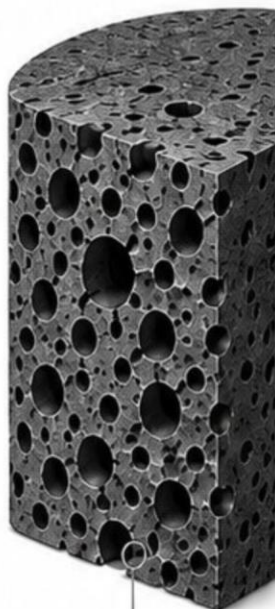


BEFORE & AFTER IMPREGNATION COMPARISON

BEFORE

VS

AFTER



- Many pores, large interconnectivity
- Low density
- Easy leakage
- Low strength
- Poor corrosion resistance

- Pores filled, structure denser
- Higher density
- Good tightness, less leakage
- Higher strength
- Better corrosion resistance



Porosity

Decreased



Density

Increased



Corrosion
Resistance

Enhanced



Graphite impregnation fills the pores of graphite body through resin or pitch impregnation, reducing porosity, increasing density and mechanical strength, enhancing anti-leakage, anti-corrosion and gas tightness, and extending service life.

We strictly comply with GB/T 35922-2018 "Technical Specification for Impregnation of Non-Permeable Graphite". The impregnant content is $\geq 12\%$ (mass fraction), ensuring product tightness and stability.

HuaHao Sealing selects and customizes suitable impregnation processes based on customers' media, temperature, pressure and operating conditions, providing high-performance, highly matched graphite sealing solutions.

QUICK SELECTION REFERENCE TABLE

Service Type	Typical Media	Speed Range (rpm)	Load Level	Temperature Range (°C)	pH Range	Recommended Impregnation Material	Features & Applications
 Light Load Low Speed	Clean water, air, gas	0 – 1500	Low	-100 ~ 200	6 – 9	General Resin Impregnation 	Self-lubricating, good wear resistance, suitable for pumps, blowers, light-duty machinery.
 Medium Load Medium Speed	Water, oil	1500 – 4000	Medium	-100 ~ 250	4 – 10	Resin Impregnation 	Tight sealing, corrosion resistance, suitable for shafts and chemical pumps.
 High Load Low Speed	Heavy oil, clean water	0 – 2000	High	-50 ~ 200	6 – 9	Antimony Impregnation 	High load capacity, wear resistance, suitable for thrust bearings, mixers.
 High Speed High Load	Lubricating oil	2000 – 6000	High	-50 ~ 300	6 – 9	Copper Impregnation 	Good thermal conductivity, high speed, high load, suitable for high speed pumps and compressors.
 High Temp. Corrosion Resistance	Hot water, acid, alkaline solutions	0 – 3000	Medium	100 ~ 350	2 – 12	Babbitt Alloy Impregnation 	High temperature corrosion resistance, suitable for chemical equipment and steam systems.

INSTRUCTIONS FOR USE



1. TEMPERATURE MATCHING
Ensure the operating temperature is within the material's resistance range. For high temperature, select Babbitt alloy or high-temperature resin.



2. pH COMPATIBILITY
Strong acid environments → Babbitt alloy impregnation; strong alkali environments → resin impregnation to prevent weakening.



3. LOAD & SPEED MATCHING
High load or high speed shafts → prefer antimony or copper impregnation.



4. LUBRICATION METHOD
Self-lubricating graphite works best in dry conditions; resin, antimony, copper and Babbitt alloy require lubrication underneath lubrication conditions.



Our Services: Solving Your Seal Procurement Pain Points

Industrial sealing solutions for small-batch, custom and high-complexity application scenarios



Small Batch Flexible Customization

Full-range graphite sealing parts / bushings, support non-standard drawing processing, low MOQ and fast response.



Short Delivery Efficient Support

Mature production with flexible manufacturing, greatly shorten delivery and reduce customer waiting costs.



Free Sample Verification

Provide standard samples, high temperature and corrosion resistance, self-lubrication performance for on-site testing to avoid selection errors



Full Condition Adaptation Solution

Based on equipment medium, temperature and pressure parameters, precisely match process and product specifications to lock the optimal solution



Professional Team Full-Process Support

Installation guidance, long-term maintenance cooperation, full-process support from selection to operation, extending equipment service life

Professional Selection Consulting Service

We provide full-process technical support from product selection, material matching, structural optimization to after-sales operation and maintenance

Service Category	Service Content	Customer Value
 Custom Working Condition Service	Special working condition customization and parameter calculation	Solve complex working condition adaptation issues such as high temperature, corrosion and no lubrication
 Fault Diagnosis Service	Leakage problem diagnosis, service life and wear prediction	Predict equipment faults in advance and reduce downtime risk
 Full-cycle Support	Installation technical guidance and long-term maintenance cooperation	Full-process escort from installation to operation to extend equipment service life

Delivery Assurance

Standardized process control from design to mass production



Multiple inspection links to ensure stable product quality

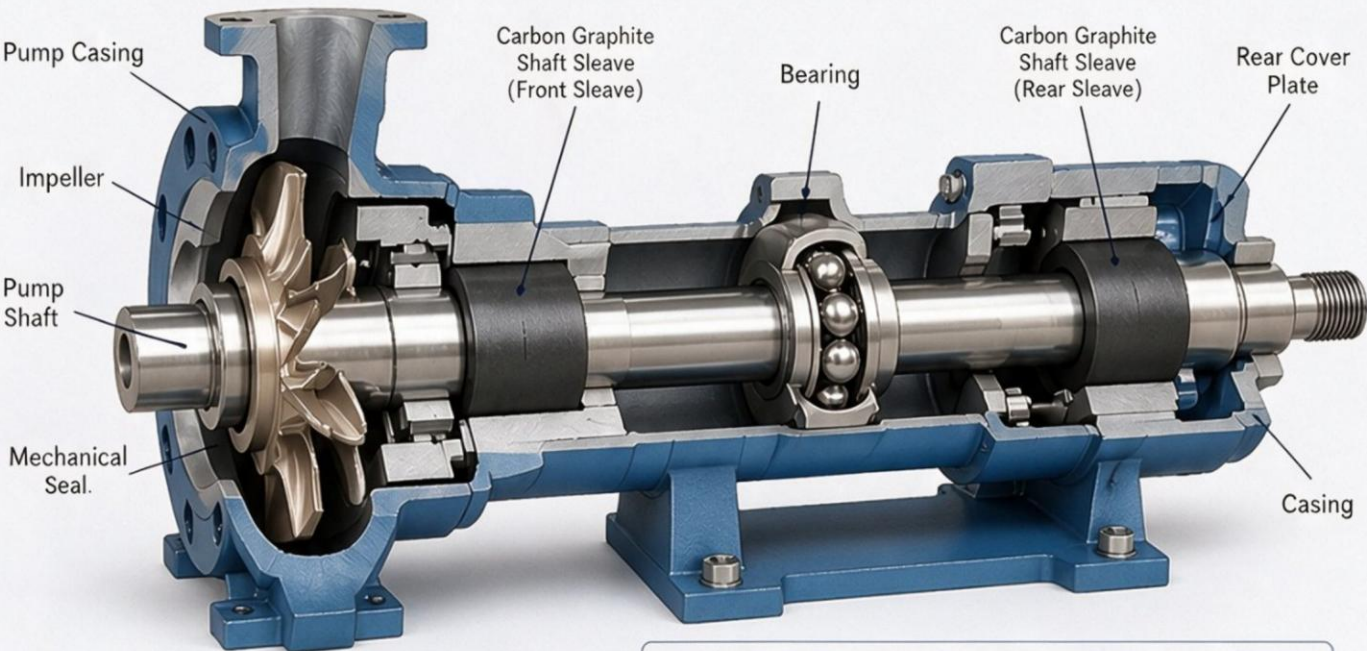


Complete documentation and technical support provided

Sealing solutions for pumps, valves, oil and gas, chemical and industrial equipment

Typical Applications of Carbon Graphite Shaft Sleeves in Pumps

Wear Resistant • Self-Lubricating • Corrosion Resistant • Stable Operation



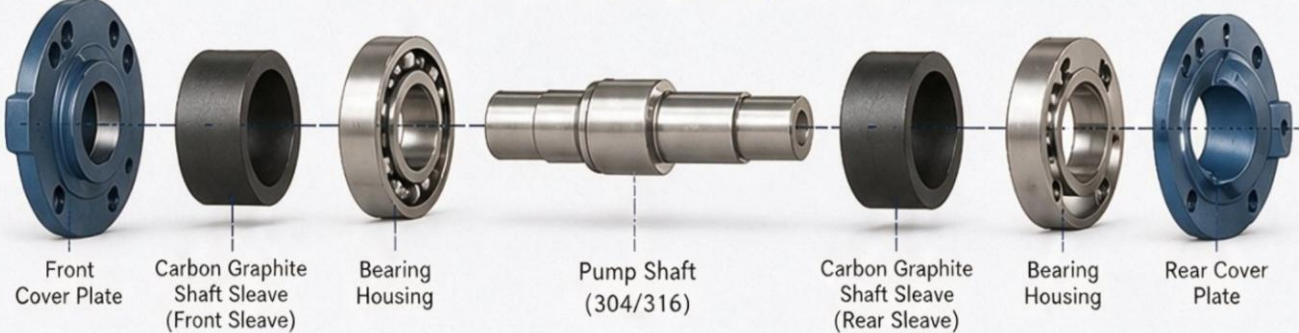
Application Features

- Low friction coefficient, stable operation
- Good self-lubricating, reduced wear
- Corrosion Resistant, suitable for various media
- Long service life, low maintenance cost

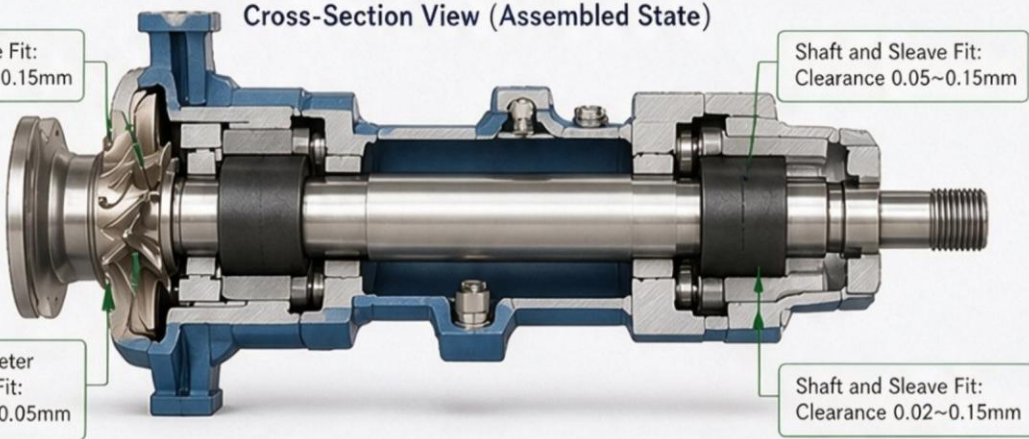
Material Properties (Carbon Graphite Shaft Sleeve)

Item	Properties
Beate	1.65~1.85 g/cm³
Retating	50~120 MPa
Gratit (Iesh)	60~80
Reaqireatej	0.10~0.16
Revrstiees	-200~450 °C
Pioreanse	Suitable for sraiveche, vrsihar helf
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Exploded View (Axial Assembly Sequence)



Cross-Section View (Assembled State)



Typical Application Scenarios

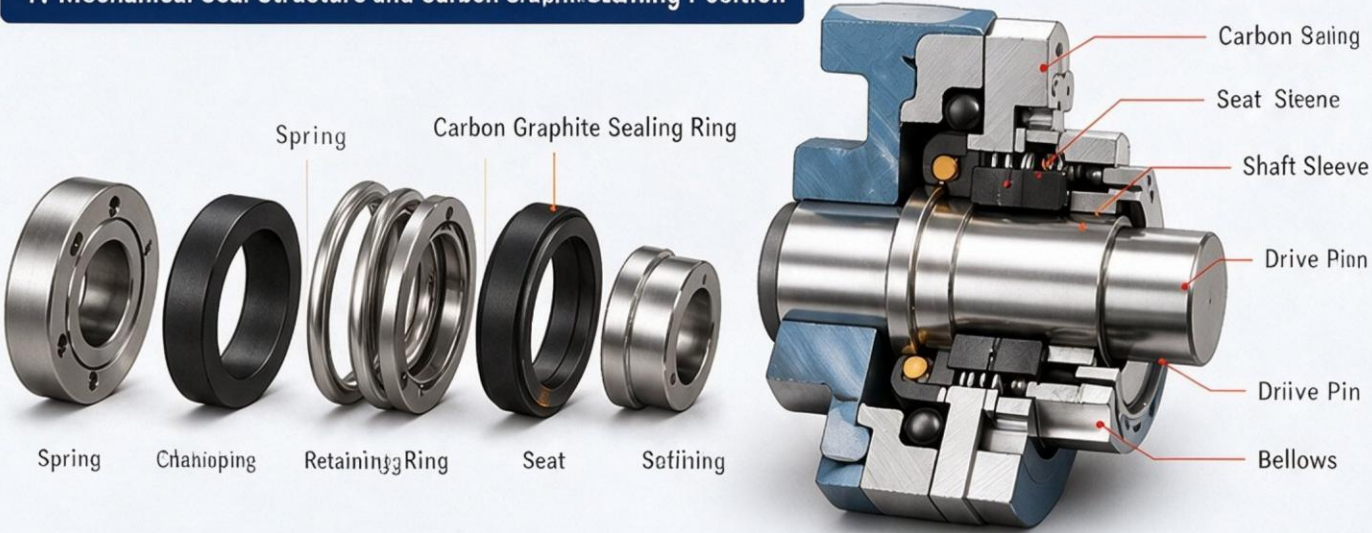


Suitable for equipment in chemical processes such as pumps, valves, oil and gas, etc.

Typical Applications of Carbon Graphite Sealing Rings in Mechanical Seals

Wear Resistant · Self-Lubricating · High Temperature Stable · Reliable Sealing

1. Mechanical Seal Structure and Carbon Graphite Sealing Ring Position



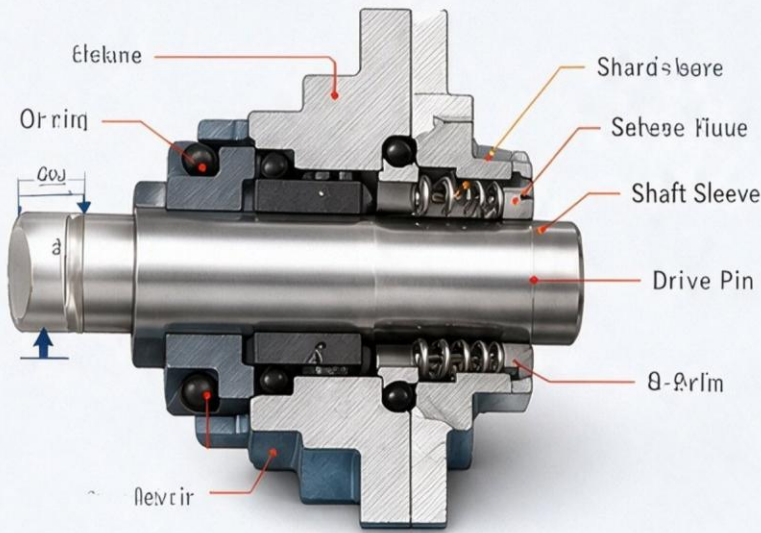
2. Role of Carbon Graphite Sealing Ring

- Reduces friction and wear between sealing faces
- Maintains stable sealing performance under high temperature and high pressure
- Compensates for axial displacement and vibration
- Improves service life of mechanical seals

3. Material Characteristics of Carbon Graphite

Hardness	45~65 Shor D
Temperature Range	-40~280°C
Pressure Resistance	1.6~6.4 MPa
Chemical Stability	Resistant to acids, alkalis, and organic media
Thermal Conductivity	Good heat dissipation
Self-Lubricating	Low friction coefficient

4. Assembly and Installation Points



- Ensure coaxiality during installation
- Control compression within recommended range
- Avoid dry friction during start-up
- Select material according to medium and temperature

5. Typical Application Scenarios



6. Selection Recommendations

- Select carbon graphite grade according to temperature, pressure and corrosion medium
- Verify sealing face flatness and assembly tolerance
- Provide technical parameters for material matching and structural optimization