



株洲宏大高分子材料有限公司

ZHUZHOU HONGDA POLYMER MATERIALS CO., LTD

为用户在高功能塑料领域提供最具价值的整体解决方案
The supplier of overall solutions in the field of high-performance plastics



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中国·湖南 ►► CHINA · HUNAN

公司简介 ▶▶▶ Company Introduction

株洲宏大高分子材料有限公司，创建于1999年，2005年通过ISO9001国际质量体系认证，为国家高新技术企业，坐落于中国南方交通枢纽株洲市—国家级高新区新马工业园，占地50000平方米。公司为中国塑料加工工业协会氟塑料加工专业委员会副理事长单位，中国塑料协会优秀企业，中石油入网供应商。公司专注于高性能塑料半成品及成品的生产，拥有多项高性能塑料成型关键专利技术。特种密封事业部主要产品有：高性能塑料密封件（PCTFE, PTFE, PFA, PEEK, UHMW-PE及特殊改性配方），泛塞封，轴封，以及异型零配件等。主要应用领域：石油&天然气，航空航天，泵阀流体，汽车，工程机械，化工，半导体等。公司在强化企业管理的基础上，不断提升产品质量和服务水平，以良好的信誉和质量赢得了客户和广阔的市场，产品畅销全国各地，并出口到亚欧美等多个国家和地区。

Founded in 1999, Zhuzhou Hongda Polymer Material Co., LTD.(ISO9001:2015 qualified enterprice), is a national high&new technology enterprise covering an area of 50000m² in the XINMA industrial park, which is located in Zhuzhou city - the transporation hub in Southern China. Hongda is a professional manufacturer of high-performance plastics in the form of semi-finished products and finished parts. Main finished Products: High-performance Plastic Seals(PCTFE, PTFE, PFA, PEEK, UHMW-PE and special modified materials), Spring Energized Seals, Shaft Seals and special plastic parts. Main Application: Oil&Gas, Aerospace, Pump&Valve, Automotive, Machinery, Chemical, Semiconductor etc. From raw material to finished products, every process has been strictly controlled to ensure that we can supply high quality products to customers, the products sell well all over the world.



高性能塑料密封件&特殊零件 ▶▶▶ High-performance Polymer Seals & Special Machined Parts

多年来，基于自身在高分子材料领域的优势，我们持续为多种工业领域设计并生产复杂的特殊零部件（高性能塑料密封件，泛塞封，轴封及特殊配件等）。现代化的加工设备，先进的检验仪器，专业的工作团队使我们能够为不同工业领域提供精密加工或定制服务。

研发

我司提供设计、开发和相关检测服务，由资深的研发工程师和材料专家进行新项目或定制项目开发。

品质控制

严格执行ISO 9001:2015质量管理体系，从原材料到成品，严格控制每一道工序；采用现代化、先进的实验室，保证成品及原料的可追溯性，确保为客户提供高质量的产品。

常用材料

PTFE, PCTFE, PFA, FEP, PVDF, PEEK, UHMW-PE, PA, ABS, POM及特殊定制配方。

Over the years, based on our own advantages in the field of polymer materials, we continue to design and manufacture of complex machined components resolving industry needs. Modernized processing equipment, advanced inspection instruments and professional team enable us to provide precision processing or customized services for different industries.

Research & Development

Offering design, development and relevant laboratory testing facilities to handle projects from design to mass production, our team of qualified R&D engineers and material specialists carry out new projects development (or customized projects).

Quality

With a quality management system certified to ISO 9001:2015, from raw material to finished products, every process has been strictly controlled to ensure that we can supply high quality products to customers. Using modern, advanced laboratory, we offer traceability on finished products, materials to ensure the reliability of products.

Main Materials

Based on PTFE, PCTFE, PFA, FEP, PVDF, PEEK, UHMW-PE, PA, ABS, POM and some special customized materials, etc.



弹簧蓄能密封圈介绍 ▶▶▶ Spring Energized Seal

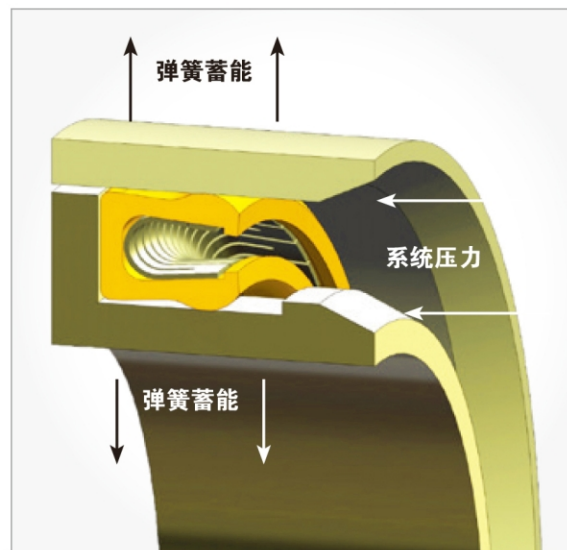
弹簧蓄能密封圈是一种带有聚四氟乙烯(或其他聚合材料)夹套的弹簧驱动压力辅助密封装置，其中特别装备了一个耐腐蚀的金属蓄能弹簧。当密封圈安装在密封沟槽内时，弹簧受压，促使夹套唇紧贴密封沟槽，由此形成密封。弹簧给密封夹套提供永久弹力，并弥补材料磨损及配合零件的偏移或偏心。系统压力也会辅助密封夹套蓄能。通过系统压力辅助下的弹簧弹力，无论在高压或低压下，都可实现有效密封。

夹套由聚四氟乙烯、填充聚四氟乙烯和其他高性能聚合物材料制成。带有聚四氟乙烯夹套的密封圈适用于从低温到280℃的温度范围。我公司有多种蓄能弹簧可供选择，能够满足不同应用要求。弹簧负荷可以达到动态应用时的极端苛刻低摩擦要求和低温密封常用高负荷要求等。

Spring-energized seal is a spring-actuated, pressure-assisted sealing device consisting of a PTFE (or other polymer) jacket, especially encapsulating a corrosion-resistant metal spring energizer.

When the seals is installed in the sealing groove, the spring is under compression, forcing the jacket lips against the groove and thereby creating a leak-tight seal. The spring provides permanent elasticity to the seal jacket and compensates for material wear and hardware misalignment or eccentricity. System pressure also assists in energizing the seal jacket. Spring loading assisted by system pressure provides effective sealing in both low and high-pressure operating environments.

The jackets are precision machined from PTFE, filled PTFE composites and other high-performance polymers with temperature range from cryogenic to 280°C. We have a variety of energy storage springs for choose, each with characteristics that meet specific requirements.

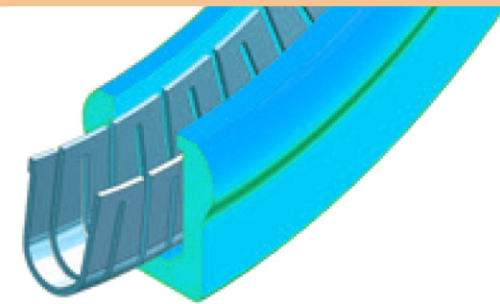


工作条件下的U型密封圈

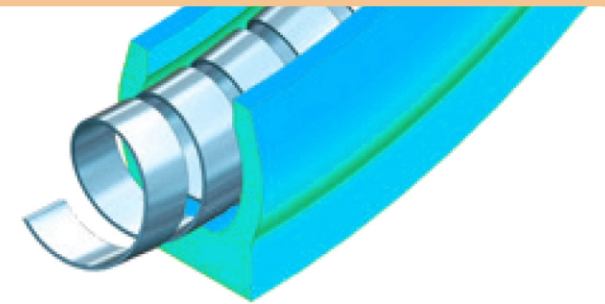


各种密封圈设计 ▶▶▶ Design Of Various Seals

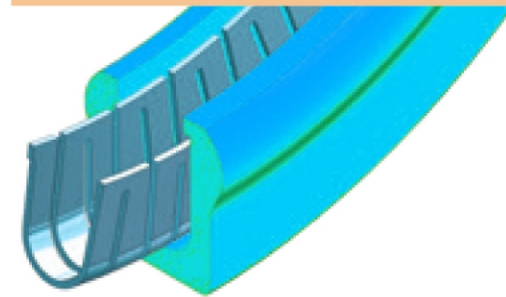
U型弹簧设计
Design of U-spring



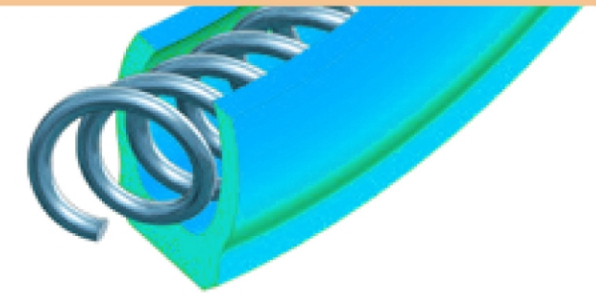
O型弹簧设计
Design of O-spring



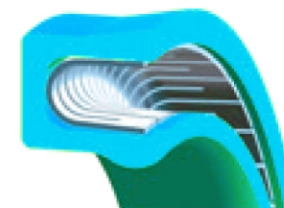
V型弹簧设计
Design of V-type Spring



C型弹簧设计
Design of C-type Spring



刮油边
Scraping edge



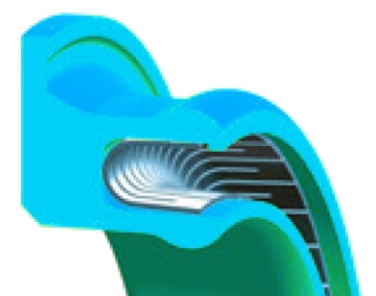
将密封圈内外径的密封唇设计成锐边，当密封具有研磨性或粘性介质时该锐边能起到刮刀或擦拭作用。It can be supplied with a sharp edge on either the I.D. or O.D. sealing lip. This edge provides a scraper or wipe action for sealing abrasive or viscous media.

延伸尾端
Extended tail



产品可设计成改善高温或高压下抗挤压性能的延伸根部。It can be designed with an extended heel section for improved resistance to extrusion at high temperatures and/or high pressures.

法兰边尾端
Flange end



法兰边夹在密封沟槽内用以防止密封圈随轴转动。法兰边根部设计推荐用于旋转/摆动轴应用。The flange is clamped in the seal housing to prevent the seal from turning with the shaft. The design of flange heel is recommended for rotary/oscillatory shaft applications.

密封圈夹套材料▶▶▶
Seals Jasket Material

密封夹套由高性能聚合物树脂制成，此类树脂经过复合加工之后可在各种密封环境中获得最佳性能。以下为我们最常推荐使用的合成物，并适用于大多数情况。多年来，我公司已经开发了多种用于各种独特密封应用的密封材料，并将根据客户需求开发新型材料。

The seal jackets are made from high-performance polymer resins that are compounded and processed for optimum performance in a wide variety of sealing environments. The materials listed below are our most commonly recommended materials,which are suitable for most of applications.

材料代码 Material Code	颜色 Colour	说明及推荐用途 Description& Recommended Use	温度范围(°C) Temperature Range	拉伸强度(Mpa) Tensile Strength	硬度(邵氏D) Hardness(ShoreD)
Higdom®100	白色 White	纯PTFE 特别适用于中等动态服务以及静态应用。有限的耐磨损和耐热性。低气体渗透率。良好的低温特性。中等到极端的真空应用。 Virgin PTFE. Suitable for static and moderate dynamic service. Limited wear and heat resistance. Low gas permeability. Goodcryogenic properties. Moderate to hard vacuum service.	-196~+200	26±2	58
Higdom®110	透明 clear	纯氟树脂 可耐受核辐射的热塑性，但耐热性和耐磨性有限。不推荐用作通用密封。 Pure Fluorine Resins. Thermoplastic with superior resistance to nuclear radiation but limited heat and wear resistance. Not recommended for general purpose sealing.	-100~+150	37±2	72
Higdom®200	白色 White	改性PTFE 特别适用于中等动态和静态应用。有限的耐磨损和耐热性。低气体渗透率。良好的低温特性和耐蠕变性能。中等到极端的真空应用。 Modified PTFE. Suitable for moderate dynamic and static service. Limited wear and heat resistance. Improved creep resistance. Low gas permeability. Good cryogenic properties.Moderate to hard vacuum service.	-200~+260	30±2	58
Higdom®500	黑色 Black	改性填充PTFE 在高温高压和高转速下具有卓越的耐磨性。特别适用于水和水基溶液。在干燥或恶劣润滑条件下表现较好。 Filled PTFE. Excellent wear resistance at high temperature, high pressure and high speed. It is especially suitable for water and water-based solutions. It behaves well under dry or bad lubrication conditions.	-196~+260	13±2	64
Higdom®800	棕褐色 Tan	改性填充PTFE 卓越的耐热性和耐磨性。无研磨性。建议用于软金属上的中速到高速动态应用。不推荐用于蒸汽应用。 Filled PTFE. Superior heat and wear resistance. Non-abrasive.Recommended for moderate to high speed dynamic service running against soft metals. Not recommended for applications with steam.	-196~+260	20±2	60
Higdom®900	金黄色 golden yellow	超高分子聚乙烯 相当坚硬，长期耐磨损，但耐热和耐化学性有限。特别适合作研磨介质。推荐用于在恶劣工况下获得长期耐磨损寿命。 UHMW-PE. Extremely tough, long wearing but limited heat and chemical resistance. Especially suitable for abrasive media.Recommended for long wear life under severe conditions.	-200~+80	30±2	61

密封圈夹套材料▶▶▶
Seals Jasket Material

材料代码 Material Code	颜色 Colour	说明及推荐用途 Description& Recommended Use	温度范围(°C) Temperature Range	拉伸强度(Mpa) Tensile Strength	硬度(邵氏D) Hardness(ShoreD)
Higdom®015	棕褐色 Tan	纯PEEK 具有优异耐高温性的高模量材料。推荐用于背压环和特种应用。 Pure PEEK. High modulus material with excellent high temperature resistance. Recommended for back-up rings and for special applications.	-200~+260	95±5	90
Higdom®120	金黄色 golden yellow	改性填充PTFE 坚硬，长久耐磨，耐热性。摩擦极小。特别适用于作用在柔软表面的干燥运动应用。特别适用于往复运动应用。 Filled PTFE. Tough, long wearing, heat resistant. Very low friction. Excellent for dry running applications against soft surfaces. Excellent materials for reciprocating applications.	-200~+260	12±2	60
Higdom®150	灰色 Grey	改性填充PTFE 与Higdom271材料类似，但用于低压条件下获得高密封性能则略软一些。对软金属具有研磨作用。 Filled PTFE. Similar to Higdom271 material but somewhat softer for improved sealing at low pressure. It's abrasive against soft metals.	-200~+260	21±2	58
Higdom®160	灰色 Grey	改性填充PTFE 耐热和耐磨性良好的通用材料。建议用于干燥和润滑较差的应用。特别适水和水蒸汽应用。 Filled PTFE. General materials with good heat resistance and wear resistance , it's recommended for applications with poor drying and lubrication. It is especially suitable for water and steam applications.	-200~+260	18±2	60
Higdom®211	黑色 Black	改性填充PTFE 类似Higdom160材料，但具有更高的硬度和耐磨性。特别适苛刻条件下蒸汽和水的密封。高温下具有良好的抗挠曲和挤出性能。特别适用于背压环。 Filled PTFE. Similar to Higdom160 material but increased hardness and wear resistance.Excellent in steam and water under severe conditions. Improved creep and extrusion resistance at higher temperature. Good for back-up rings.	-200~+260	10±2	70
Higdom®271	灰色 Grey	改性填充PTFE 坚硬，长久耐磨，耐热性。推荐用于高压液压应用。在高表面速度条件下对软金属具有研磨作用。 Filled PTFE. Tough, long wearing, heat resistant. Recommended for high pressure hydraulic service. It's abrasive running against soft metals at high surface speeds.	-200~+260	20±2	58
Higdom®411	黑色 Black	改性填充PTFE 出色的多用途高耐磨性材料。特别适合中等到高硬度表面的动态应用。 Filled PTFE. Excellent multi-purpose high wear resistant materials. Particularly suitable for dynamic applications of medium to high hardness surfaces.	-200~+260	16±2	60
Higdom®421	黑色 Black	改性填充PTFE 具有良好耐热性和耐磨性的优异通用材料。无研磨性。兼容所有液压油和大多数化学品。适用于水和无润滑性液体。 Filled PTFE. Excellent general purpose material with good heat and weaar resistance. Non-abrasive.Compatible with all hydraulic fluids and most chemicals. Good in water and non-lubricating fluids.	-200~+260	10±2	60

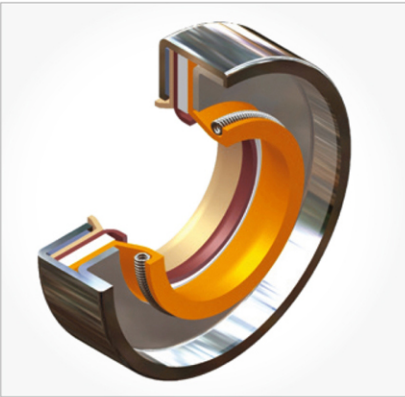
金属外壳轴封产品介绍

Introduction of Metal Shell Shaft Seals

金属外壳轴封产品均采用金属外壳，其唇边材料可选用多种PTFE复合材料。金属外壳轴封产品能够在传统橡胶轴封不能使用的场合工作，并在以下领域超越传统的橡胶轴封。

The shaft seals are all made of metal shells, its lip materials can be selected from various PTFE compounds. Metal shell shaft seal products can work in situations where traditional rubber seal can not be used, and surpass in the following areas.

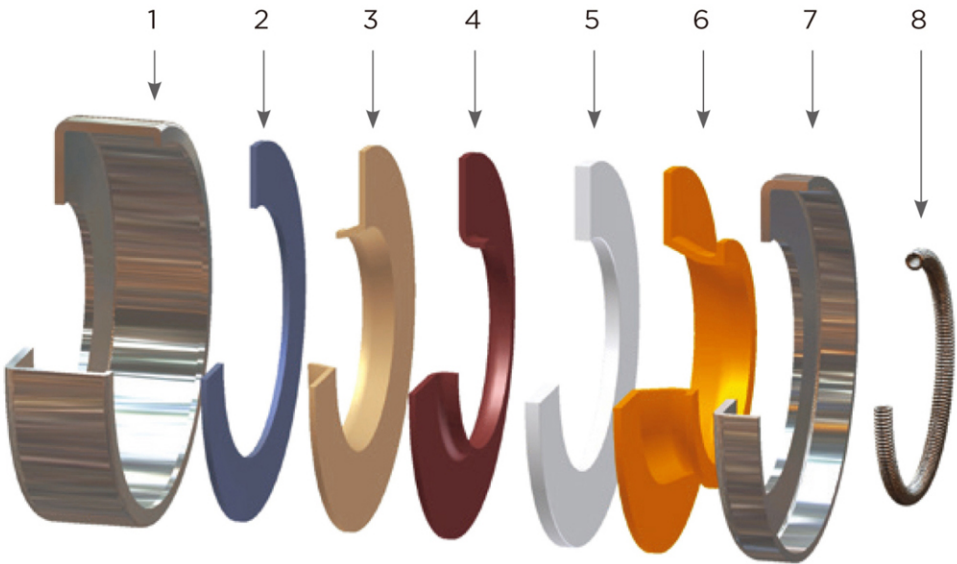
- 特点/优势
- 超强的抗化学性能 Excellent chemical resistance
 - 低摩擦（可以延长使用寿命） Low friction (prolongs service life)
 - 能够承受35m/s的表面速度 Able to withstand 35m/s speed
 - 极端工作温度（-50℃至230℃） Extreme operating temperature(from -50℃to 230℃)
 - 压差可达35公斤(3.5 Mpa) Handle pressure up to 35Kgs(3.5Mpa)
 - 在干式或研磨介质中超长的密封寿命 Long seal life in dry or abrasive media
- 特殊尺寸可以定制 Special size can be customized



金属外壳轴封产品可以用于各种动态的旋转密封应用，例如：压缩机，涡轮发动机，机器人，泵，搅拌机等...

Metal Shell Shaft Seal products can be used in various dynamic rotary sealing applications. such as compressors, turbine engines, pumps, robots, mixers.

- 1、金属外壳 Metal Outer Shell
2、垫片 Gasket
3、防尘唇 Dust Excluder
4、次密封唇 Secondary Seal Lip
5、垫圈 Washer
6、主密封唇 Main Seal Lip
7、金属内壳 Metal Inner Shell
8、延伸弹簧 Extension Spring



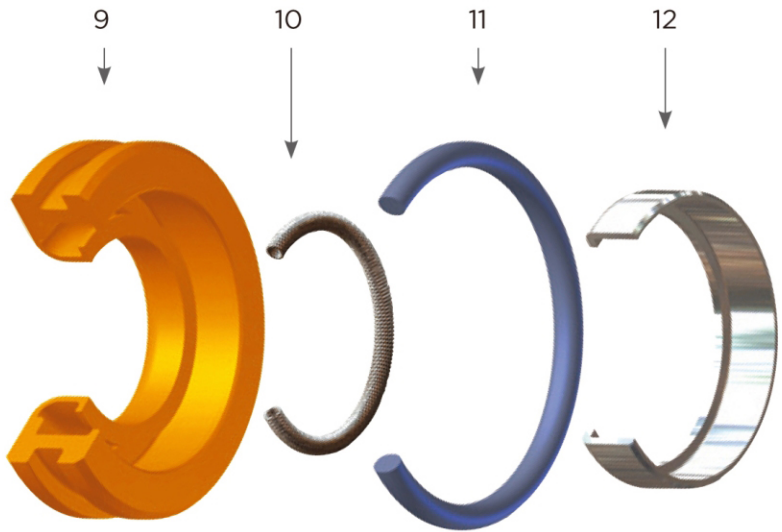
PTFE唇形轴封介绍

Introduction of Lip Shaft Seal

- 特点/优势
- 超强的抗化学性能 Excellent Chemical Resistance
 - 低摩擦（可以延长使用寿命） Low friction (prolongs service life)
 - 能够承受35m/s的表面速度 Able to withstand 35m/s speed
 - 极端工作温度（-25℃至155℃） Extreme operating temperature(from -25℃ to 155℃)
 - 压差可达8公斤(0.8 Mpa) Handle pressure up to 8Kgs(0.8Mpa)
 - 在干式或研磨介质中超长的密封寿命 Long seal life in dry or abrasive media
- 特殊尺寸可以定制 Special size can be customized



- 9、密封材料 Sealing Material
10、延伸弹簧（不锈钢302/304） Extension Spring
11、O形圈（氟橡胶） O-ring (fluororubber)
12、金属支撑垫圈 Metal Support Gasket



轴封材料介绍

Introduction of Shaft Seal Material

轴封密封材料都采用复合物填充,且广泛应用于各种密封环境中。下面给出的材料是常规推荐使用的复合物,能够应用在大多数场合。但我们不提供扭矩和磨损寿命的估算,因为这些可变参数必须要考虑在不同应用条件下才能估算。
The sealing materials for shaft seals are made of compound materials and are widely used in various sealing environments. The following materials are commonly recommended and can be used in most situations. However, we do not provide estimates of torque and wear life because these variable parameters must be considered under different application conditions.

密封唇材料: Sealing Lip Material		
材料代码 Material Code	颜色 Colour	详细应用 Detailed Applications
Higdom®0303	黑色 Black	是辅助密封唇(次密封唇)和防尘唇的标准材料.具有良好的抗热性和耐磨性的通用材料,在中硬度轴的表面上应用极佳.在有无润滑条件下均表现良好(良好的耐磨性). It is the standard material for secondary seal lip and dust-proof lip, which has good heat resistance and wear resistance. It is widely used on the surface of medium hardness shaft.and also performs well under lubrication or without lubrication(Good wear resistance).
Higdom®610	黑色 Black	耐磨性极佳,适用于潮湿,有润滑的高速运动.在油类中使用的最佳材料. Excellent wear resistance, suitable for high motion with humidity and lubrication. The best material used for oil medium.
Higdom®100	棕褐色 Tan	超强的耐磨性及抗磨损性,对运动中的轴不会产生研磨.当工作温度高于180度时,建议使用有限润滑或无润滑.不建议在蒸汽或水中使用(耐磨性一般). Super abrasion resistance . Don't produce abrasion on moving shaft. When working temperature is higher than 180°C, it is recommended to use limited lubrication or without lubrication. It is not recommended to use in steam or water (wear resistance is limited).
Higdom®360	灰色 Grey	在液压油中最佳的抗磨损材料,轴硬度在55HRC时,使用效果最佳.在硬度低或者高速铬轴上产生轴跳(良好耐磨性).The best anti-wear material in hydraulic oil, it's with best performance when the shaft hardness is 55 HRC, Shaft jump occurs on low hardness or high speed chromium shaft.
Higdom®720	白色 White	适合在硬度低的轴(如316不锈钢)上使用(耐磨性一般). Is suitable for use on shafts with low hardness (such as 316 stainless steel) . Wear resistance is limited.

金属外壳及支撑环材料: Metal Shell and Support Ring Material		
材料代码 Material Code	名称及描述 Name and description	详细应用 Detailed Applications
HM10	低碳钢 low-carbon steel	金属外壳，金属内壳及垫片的材料，成本低。耐腐蚀性一般，推荐使用铸铁或铸钢的密封座. Metal shell, metal inner shell and gasket material, low cost. Corrosion resistance is limited. It is recommended to use cast iron or cast steel seal seat.
HM20	铝合金 Aluminium alloy	金属外壳，金属内壳及垫片的材料，重量较轻，成本低。耐腐蚀性一般,推荐使用铝合金或镁合金密封座. Metal shell, metal inner shell and gasket material, light weight, low cost. Corrosion resistance is limited, It's recommended to use aluminium alloy or magnesium alloy seal seat.
HM30	304不锈钢 304 stainless steel	金属外壳，金属内壳，垫片，弹簧和金属支撑垫片的材料。耐腐蚀性强，推荐使用不锈钢密封座. Metal shell, metal inner shell, gasket, spring and metal support gasket. Good corrosion resistance. Stainless steel seal seat are recommended.
HM40	316不锈钢 316 stainless steel	金属外壳，金属内壳，垫片，弹簧和金属支撑垫片的材料。耐腐蚀性强，推荐使用不锈钢密封座. Metal shell, metal inner shell, gasket, spring and metal support gasket. Good corrosion resistance. Stainless steel seal seat are recommended.

為用戶創造價值
為員工創造機會
為社會創造財富

曾維楚