MASCOT
敏硕科技
SINCE 2005

四氟/PEEK 密封产品
PTFE/PEEK PRODUCTS

弹簧蓄能密封圈（泛塞封）

SPRING ENERGIZED SEAL （VARISEAL）

规格多样 支持定制

400-008-3858

Various specifications Support customization

公司简介
Conpany Profile

敏硕科技是一家集研发、生产、销售于一体的**中外合资精密五金专业制造商**，主营精密弹簧、密封产品、制冷配件、单向阀等系列五金制品。

公司在**江苏、上海、浙江、美国、泰国**设有五大生产基地，并在天津设立分公司，拥有标准厂房两万余平方米。企业核心团队由创始人及资深技术骨干组成，具备欧美同行业先进管理经验与领先技术。

公司现有员工 398 人，其中专业技术与管理人员 168 人，各类生产及检测设备 1000 余台，构建了**研发 — 生产 — 销售 — 售后**一体化的现代化企业管理体系。企业已通过**IATF16949:2016**等权威质量体系认证，并拥有多项国家实用新型及发明专利。

MascotTechnology is a Sino foreign joint venture precision hardware professional manufacturer that integrates research and development, production, and sales. Its main products include precision springs, sealing products, refrigeration accessories, one-way valves, and other series of hardware products.

The company has five major production bases in Jiangsu, Shanghai, Zhejiang, the United States, and Thailand, and has established a branch in Tianjin with a standard factory area of over 20000 square meters. The core team of the enterprise is composed of founders and senior technical backbone, possessing advanced management experience and leading technology in the same industry in Europe and America.

The company currently has 398 employees, including 168 professional technical and management personnel, and over 1000 production and testing equipment. It has established a modern enterprise management system that integrates research and development, production, sales, and after-sales service. The company has obtained authoritative quality system certifications such as IATF16949:2016 and holds multiple national utility model and invention patents.

The company always adheres to the business philosophy of customer first and quality first, providing one-stop solutions for spring, sealing, and refrigeration hardware products to global customers, and supporting various customized needs. Adhering to the service principles of professionalism, quality, peace of mind, speed, and efficiency, and relying on honest management and excellent quality, we have won wide recognition from customers at home and abroad, and our business network covers the world.

弹簧事业部
Spring division

公司配备压拉扭弹簧机 160 台、CNC 弹簧机 60 台、精密检测设备 20 套，可高精度定制各类标准与非标准精密弹簧及五金件：

常规弹簧：压簧、拉簧、扭簧、螺旋弹簧、模具弹簧、卡簧、蛇形弹簧、异型弹簧、弹簧垫圈、孔用 / 轴用弹性挡圈、止动环等

特种弹簧：高温弹簧（耐温 600°C）、低温弹簧（耐温 - 260°C）、恒力弹簧、发条、涡卷弹簧、悬架弹簧、密封弹簧

碟形 / 波形弹簧：

碟形弹簧 外径 Φ3–900mm，厚度 0.08–60mm

波形弹簧 外径 Φ1–500mm，厚度 0.1–10mm

大线径弹簧：

冷卷弹簧 线径 Φ0.2–20mm

热卷弹簧 线径 Φ16–100mm

配套精密五金：

螺旋叶片弹簧、阻尼器、气杆、缓冲器等

产品经严格疲劳测试，最高耐疲劳可达 1 亿次以上，性能稳定可靠。

常用材料：各类碳素钢、合金钢材料、琴钢线、Hastelov哈氏合金、Elgilov、SAE6150、SAE9254、50CrV4、60Si2CrA、62Si2MnA,SK4,SK5、CK55、CK67、CK70、CK75、65Mn、SUS301、SUS304、SUS316、SUS631、17-7、InconelX-718、InconelX-750、GH145等。

表面处理：发蓝、发黑、磷化、电镀、电泳和喷塑、喷漆、达克罗、焦美特等。

Special springs: High temperature springs (temperature resistance of 600 ℃), low-temperature springs (temperature resistance of -260 ℃), constant force springs, mainsprings, spiral springs, suspension springs, sealing springs

Disc shaped/wave shaped spring:

Disc shaped spring with an outer diameter of Φ 3-900mm and a thickness of 0.08-60mm

Outer diameter of waveform spring: Φ 1-500mm, thickness: 0.1-10mm

Large diameter spring:

Cold coil spring wire diameter Φ 0.2-20mm

Hot coil spring wire diameter Φ 16-100mm

Supporting precision hardware: spiral blade springs, dampers, air rods, buffers, etc

The product has undergone rigorous fatigue testing, with a maximum fatigue resistance of over 100 million cycles and stable and reliable performance.

Common materials: various types of carbon steel, alloy steel materials, piano wire, Hastellov alloy Elgilov、SAE6150、SAE9254、50CrV4、60Si2CrA、62Si2MnA,SK4,SK5、CK55、CK67、CK70、CK75、65Mn、SUS301、SUS304、SUS316、SUS631、17-7、InconelX-718、InconelX-750、GH145 Wait.

Surface treatment: bluing, blackening, phosphating, electroplating, electrophoresis and spray painting, spray painting, Dacromet, Jiaomeite, etc.

密封事业部
SEAL DIVISION

为满足客户多元化需求，依托公司成熟先进的弹簧制造经验，公司于2016 年 6 月成立密封事业部，成功攻克多家世界 500 强企业长期未能实现国产化的泛塞封项目，有效帮助客户大幅降低成本。

经过多年深耕，事业部可精密加工各类定制化密封产品：

弹簧储能圈、孔用 / 轴用 / 端面内向 / 旋转泛塞封、PTFE 翻唇骨架油封、翻唇式油封、格莱圈、斯特封、尘封、AQ 封、高压旋转油封、挡圈、导向环及各类非标密封件。

公司氟塑密封件均采用优质 PTFE 树脂制成，具备优异性能：

- 极低摩擦阻力、无爬行、自润滑性好，无油工况下仍可稳定运行
- 化学与物理性能稳定，耐腐蚀、不粘、耐磨、使用寿命长
- 工作温度范围：-60°C～+250°C
- 兼具优良静密封与动密封性能，在高压、高温、高速、强腐蚀环境下依然保持可靠密封效果。

In order to meet the diversified needs of customers and rely on the company's mature and advanced spring manufacturing experience, the company established a sealing division in June 2016, successfully overcoming the long-standing failure of many Fortune 500 companies to achieve localization in the pan plug sealing project, effectively helping customers significantly reduce costs.

After years of deep cultivation, the business unit can precision process various customized sealing products:
spring energy storage rings, hole/shaft/end face inward/rotating plug seals, PTFE flip lip skeleton oil seals, flip lip oil seals, Glay rings, St seals, dust seals, AQ seals, high-pressure rotating oil seals, retaining rings, guide rings, and various non-standard seals.

The company's fluoroplastic seals are made of high-quality PTFE resin, which has excellent performance:

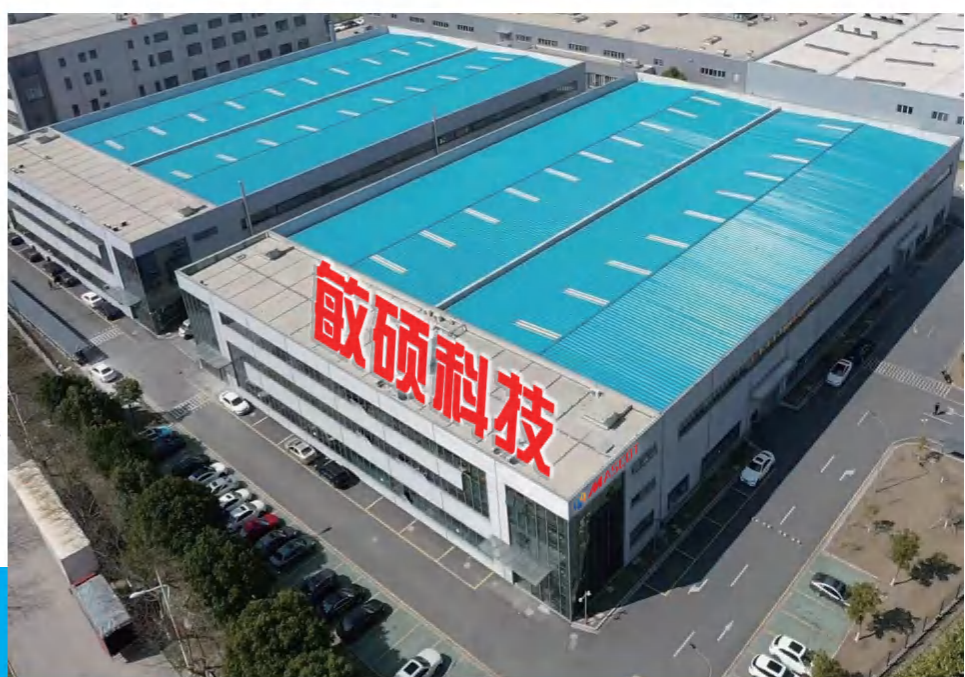
- Extremely low friction resistance, no crawling, good self-lubricating performance, and stable operation even under oil-free conditions
- Chemical and physical properties are stable, corrosion-resistant, non stick, wear-resistant, and have a long service life
- Working temperature range: -60 ℃ to+250 ℃
- Combining excellent static and dynamic sealing performance, it maintains reliable sealing effect even in high-pressure, high-temperature, high-speed, and highly corrosive environments.

五金制冷事业部
HARDWARE REFRIGERATION DIVISION

公司配备各类先进精密五金与制冷加工设备，主营产品涵盖：

干燥过滤器、吸气过滤器、单向阀、空调阀，以及黄铜、紫铜等制冷配件与精密五金系列。

The company is equipped with various advanced precision hardware and refrigeration processing equipment. Its main products include drying filters, suction filters, one-way valves, air conditioning valves, as well as brass, copper and other refrigeration accessories and precision hardware series.



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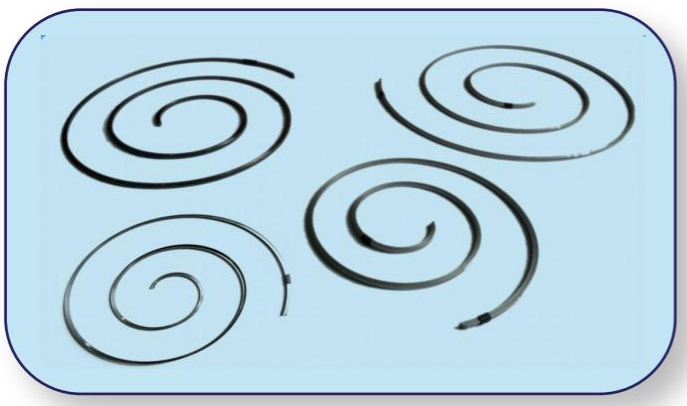
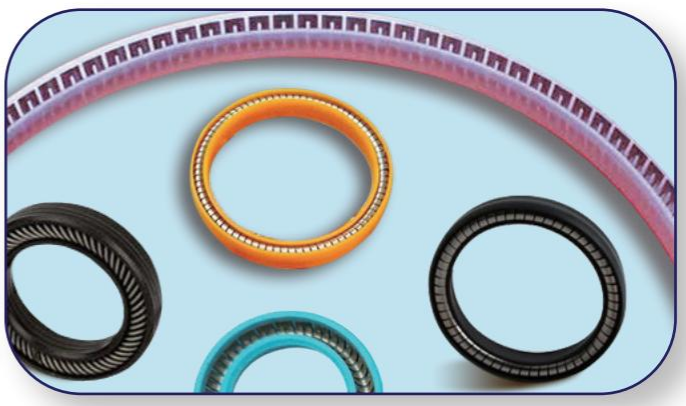
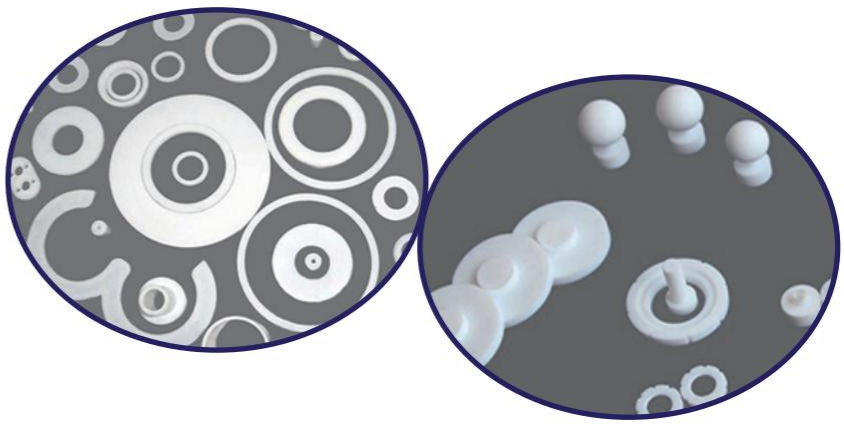






聚四氟乙烯

聚四氟乙烯是一种耐高温的氟塑料。这种材料最显著的特性之一就是它的不粘性，在压力的作用下 PTFE 填充的塑料会在配合面的表面形成一层薄薄的 PTFE 滑动膜。添加 PTFE 能减少材料的磨损量和摩擦系数提高耐热性。

PTFE

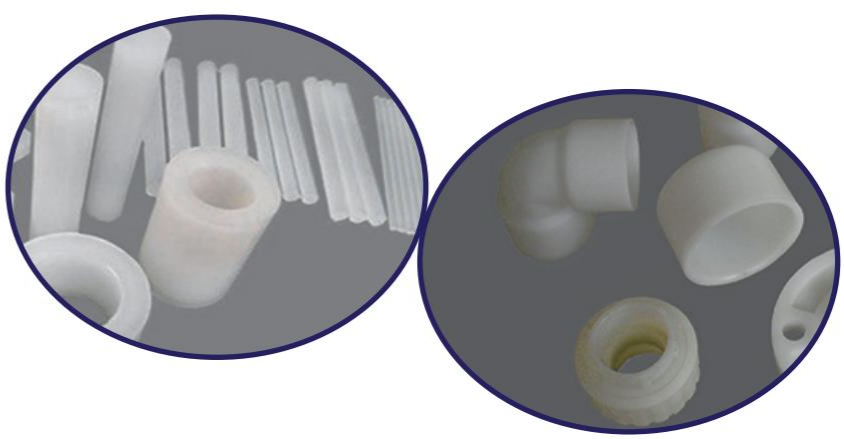
PTFE is a kind of high temperature resistant fluoroplastics. One of the most remarkable characteristics of this material is that it is not sticky. Under the action of pressure, the PTFE filled plastic will form a thin PTFE sliding film on the surface of the mating surface. The addition of PTFE can reduce the wear and friction coefficient and improve the heat resistance.

可溶性聚四氟乙烯

长期使用温度 -80—+260℃，有卓越的耐化学腐蚀性，对所有化学品都耐腐蚀，摩擦系数低，电性能佳，电绝缘性不受温度影响。适于制作耐腐蚀件，减磨耐磨件、密封件、绝缘件、医疗器械零件、高温电线、电缆绝缘层，防腐设备、密封材料、泵阀衬套和化学容器。

PFA

The long-term use temperature is -80 - +260 °C, which has excellent chemical corrosion resistance, corrosion resistance for all chemicals, low friction coefficient, good electrical performance, and no influence of temperature on electrical insulation. It is suitable for making corrosion-resistant parts, wear-resistant parts, seals, insulation parts, medical equipment parts, high temperature wires, cable insulation, anti-corrosion equipment, sealing materials, pump valve bushing and chemical containers.



聚偏氟乙烯

非常优异的耐化学性能，良好的电气、耐高温、韧性和机械性能；可像热塑性材料进行熔融加工，无毒，阻燃。

PVDF

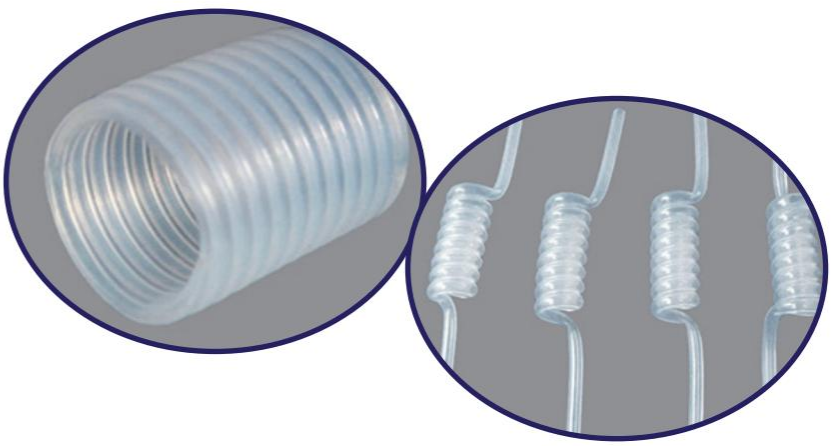
Excellent chemical resistance, good electrical, high temperature resistance, toughness and mechanical properties; It can be melt processed like thermoplastic material, non-toxic and flame retardant.

聚三氟氯乙烯

耐低温性突出，在液氮、液氧和液化天然气中不发生脆裂、不蠕变。室温下对大多活泼的化学品呈惰性，具有优异的阻隔气体的能力，几乎不透湿，透气性能低，吸水性能小，透明度好，力学性能随结晶度增加而增大，有优良的绝缘性和耐候性，可在 -196~125°C长期使用。

PCTFE

Excellent low temperature resistance, no brittle crack and creep in liquid nitrogen, liquid oxygen and liquefied natural gas. It is inert to most active chemicals at room temperature, has excellent gas barrier ability, almost impermeable, low permeability, low water absorption, good transparency, mechanical properties increase with the increase of crystallinity, excellent insulation and weather resistance, and can be used at - 196 ~ 125 °C for a long time.

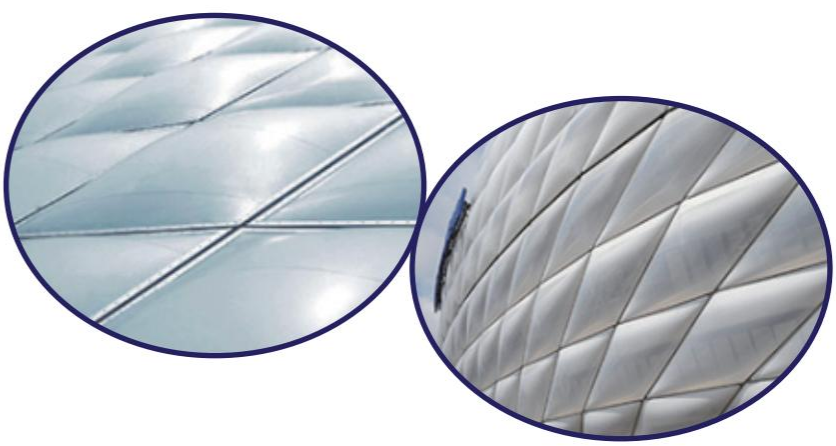


聚全氟乙烯丙烯

聚全氟乙烯丙烯是一种软性塑料，其拉伸强度、耐磨性、抗蠕变性低于许多工程塑料。具有化学惰性、较低的介电常数，不引燃、可阻止火焰的扩散。具有优良的耐候性，摩擦系数较低，从低温到 392°F均可使用。其主要的用途是用于制作管和化学设备的内衬、滚筒的面层及各种电线和电缆，如飞机挂钩线、增压电缆、报警电缆、扁形电缆和油井测井电缆。

FEP

FEP is a kind of soft plastic. Its tensile strength, wear resistance and creep resistance are lower than those of many engineering plastics. It has chemical inertness, low dielectric constant, non ignition, and can prevent flame diffusion. It has excellent weather resistance and low friction coefficient. It can be used from low temperature to 392 °C. It is mainly used for making lining of pipe and chemical equipment, surface layer of roller and various wires and cables, such as aircraft hook line, booster cable, alarm cable, flat cable and oil well logging cable.



乙烯 / 四氟乙烯共聚物

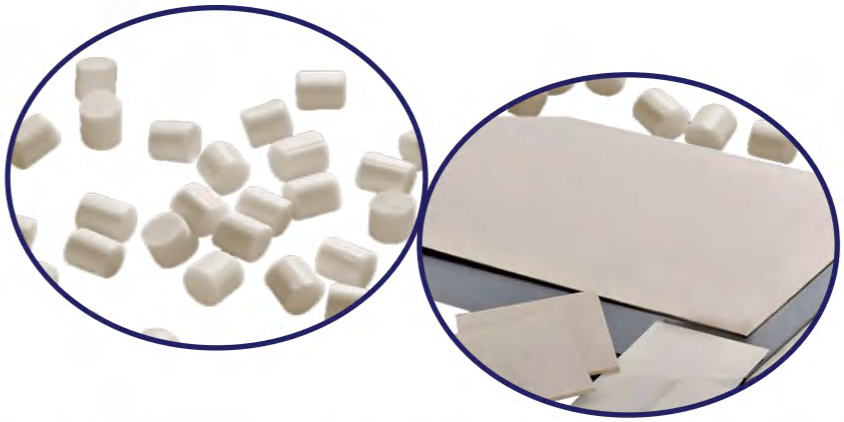
良好的动摩擦性能，非常优异的耐化学性能和机械性能、阻燃，满足食品加工的要求。

ETFE

Good dynamic friction performance, excellent chemical resistance and mechanical properties, flame retardant, meet the requirements of food processing.

聚醚醚酮

聚醚醚酮是高性能特种工程塑料的代表，核心优势在于兼具耐高温、强耐腐蚀性、优异力学性能与医疗级生物相容性，既能耐受航空航天、汽车工业的极端工况，也能用于骨科植入物、牙科修复体等精密医疗场景，是跨高端制造与生物医疗领域的关键材料。

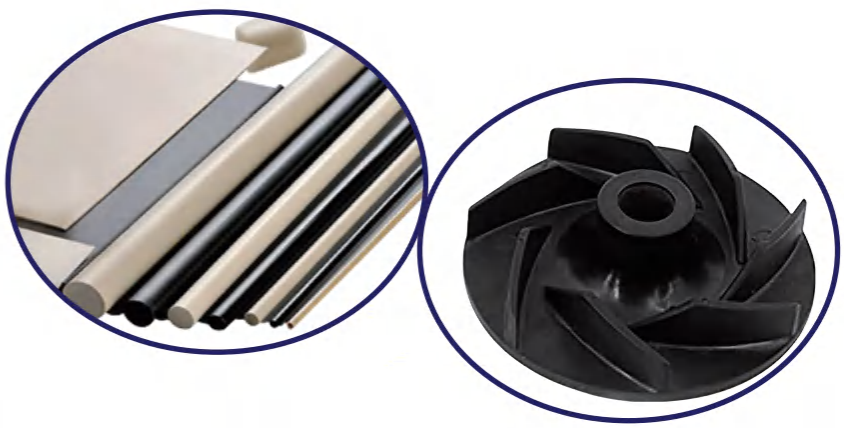


PEEK

PEEK is a representative of high-performance special engineering plastics. Its core advantages lie in the combination of high temperature resistance, strong corrosion resistance, excellent mechanical properties and medical-grade biocompatibility. It can not only withstand the extreme working conditions of the aerospace and automotive industries, but also be used in precision medical scenarios such as orthopedic implants and dental restorations, making it a key material across high-end manufacturing and biomedical fields.

PEEK材料的优势

敏硕PEEK作为高性能热塑性工程塑料，以耐高温、超轻量、低摩擦、强耐磨的特性脱颖而出，可在 260°C环境长期工作，密度仅为铝合金的二分之一。其优异的耐腐蚀性与电磁兼容性，无惧极端环境与复杂电磁干扰。凭借这些优势，PEEK成为工业机器人关节、无人机机身、特种机器人部件等小型化、智能化高端设备的核心材料，助力设备实现轻量化与高精度运行。

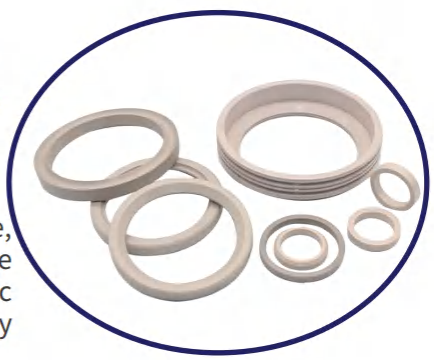


Advantages of PEEK Material

MASCOT PEEK, as a high-performance thermoplastic engineering plastic, stands out with its properties of high temperature resistance, ultra-light weight, low friction and high wear resistance. It can work continuously in an environment of 260°C, and its density is only half that of aluminum alloy. Its excellent corrosion resistance and electromagnetic compatibility enable it to withstand extreme environments and complex electromagnetic interference. Relying on these advantages, PEEK has become a core material for miniaturized and intelligent high-end equipment such as industrial robot joints, UAV fuselages and special robot components, helping the equipment achieve lightweight and high-precision operation.

PEEK应用行业

PEEK 材料凭借耐高温、耐腐、高力学性能及生物相容性，广泛应用于医疗器械、航空航天、汽车、电子电气、化工机械五大高端行业，是各领域关键场景的核心材料。

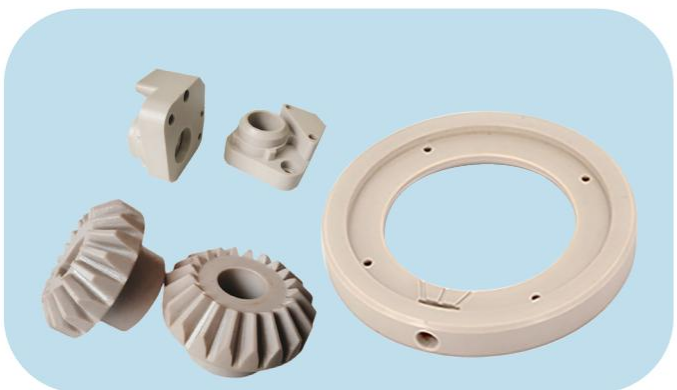


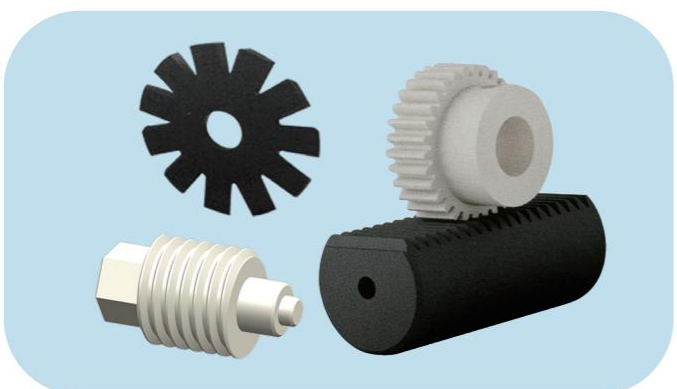
Advantages of PEEK Material

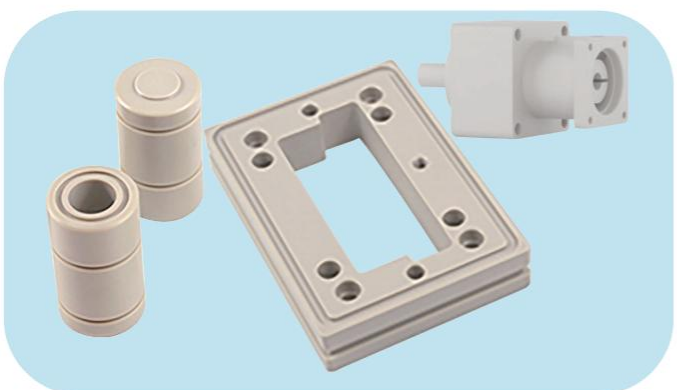
PEEK material, with high temperature resistance, corrosion resistance, excellent mechanical properties and biocompatibility, is widely used in five high-end industries (medical devices, aerospace, automotive, electronic and electrical, chemical machinery) and acts as a core material in key scenarios of various fields.

PEEK制品
PEEK Product

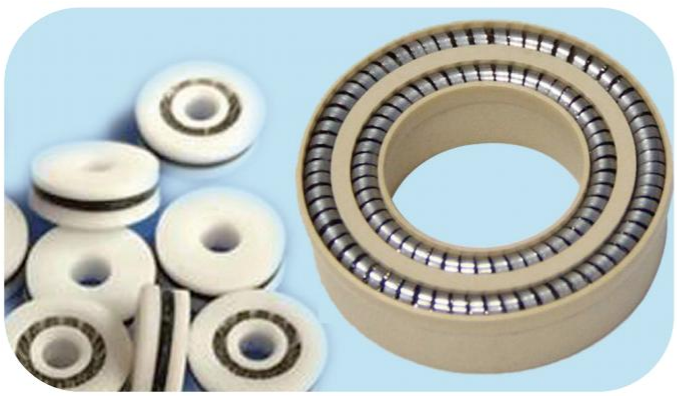


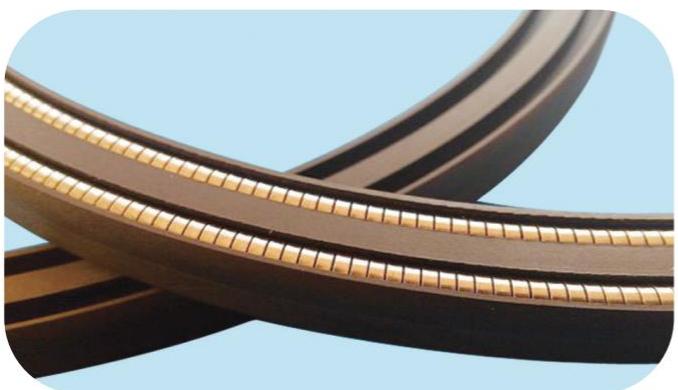
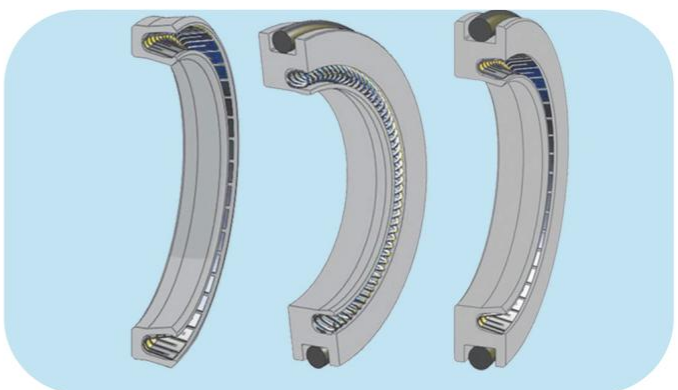
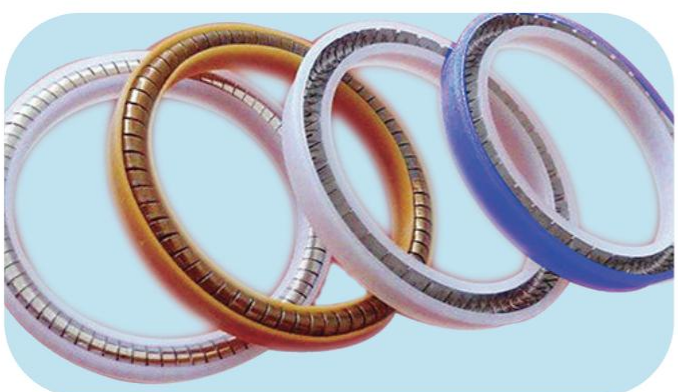


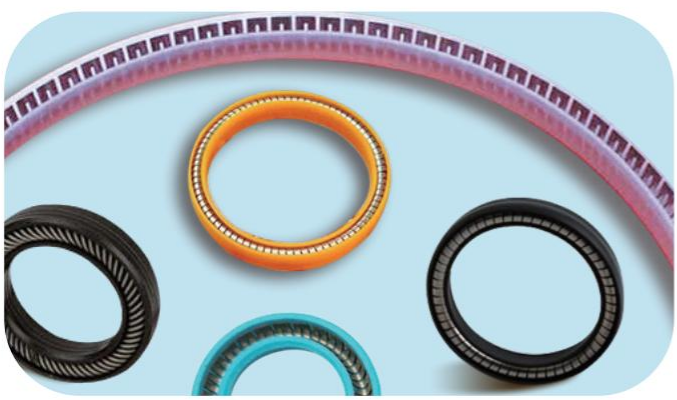
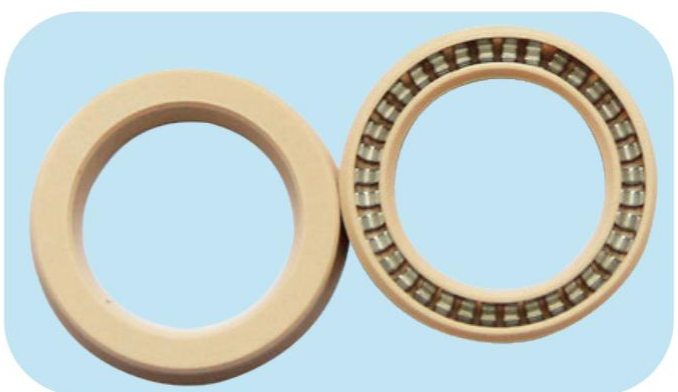





弹簧蓄能圈（泛塞封）
Spring Energized Seal(Variseal)



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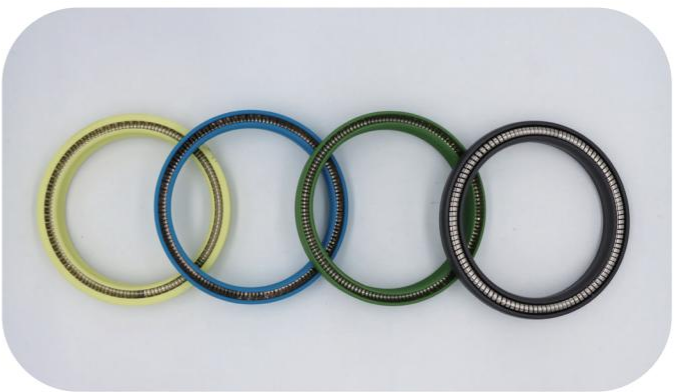
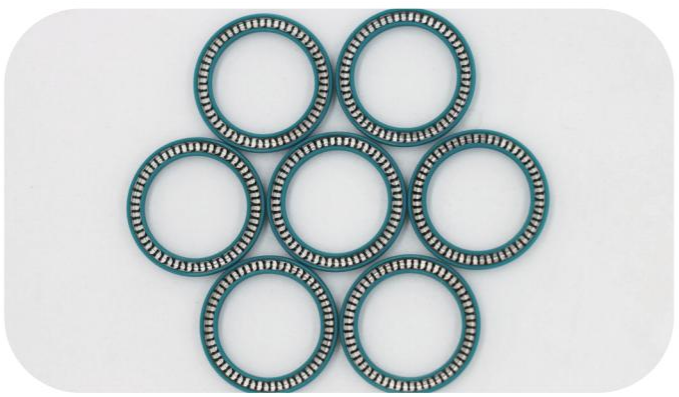
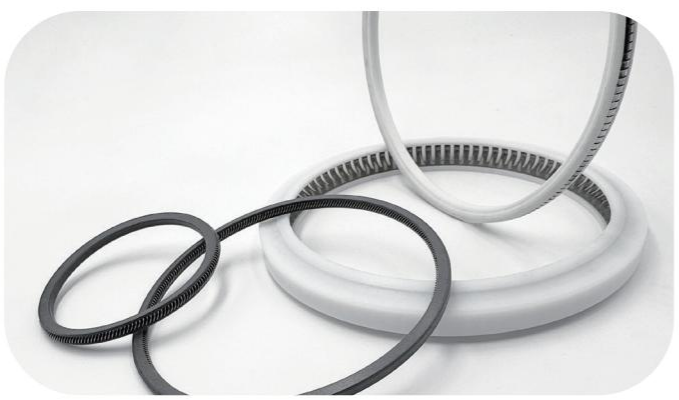
Spring Energized Seal(Variseal)




弹簧蓄能圈应用
Spring Energized Application

石油天然气市场
开 / 关阀逸出排放
Oil and gas market
On / off valve escape

石油天然气市场
船用液化天然气装载臂回转
Oil and gas market
Marine LNG loading arm slewing

石油天然气市场
高压转塔回转
Oil and gas market
High pressure turret slewing

生命科学市场
高压灭菌泵
Life science market
High pressure sterilization pump

生命科学市场
H P L C 仪器
Life science market
HPLC instrument

航空航天市场
变速箱主轴
Aerospace Market
Transmission spindle

航空航天市场
飞行抗冰密封
Aerospace Market
Flight anti ice seal

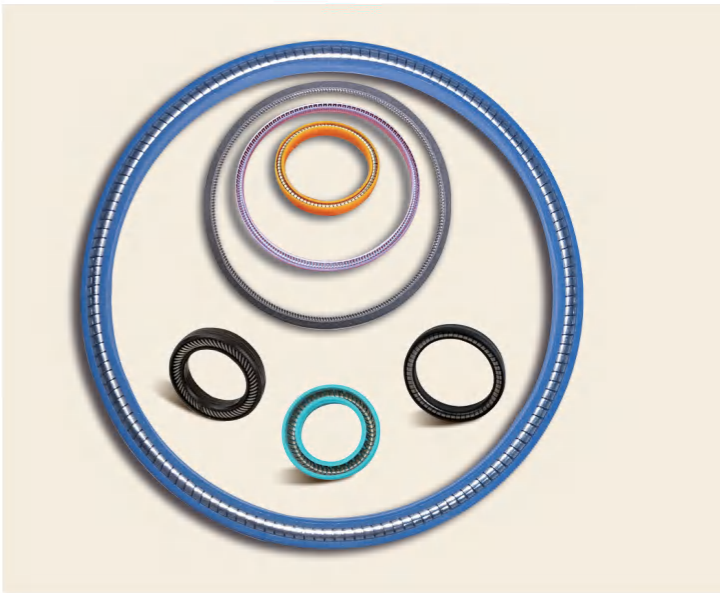
航空航天市场
飞机辅助动力装置的二次密封
Aerospace Market
Secondary sealing of aircraft auxiliary power unit

弹簧蓄能圈工作原理
Spring Energized Seal Working Principle

敏硕弹簧蓄能密封圈是一种带有聚四氟乙烯（PTFE）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。当敏硕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。

敏硕夹套由聚四氟乙烯、填充聚四氟乙烯和其他高功能聚合物材料精密车削制成。带有聚四氟乙烯夹套的敏硕密封圈适用于从低温到 572° F（300° C）的温度范围，除了可溶性碱金属、高温氟气和三氟化氯（ClF3），几乎不和任何化学试剂发生反应。

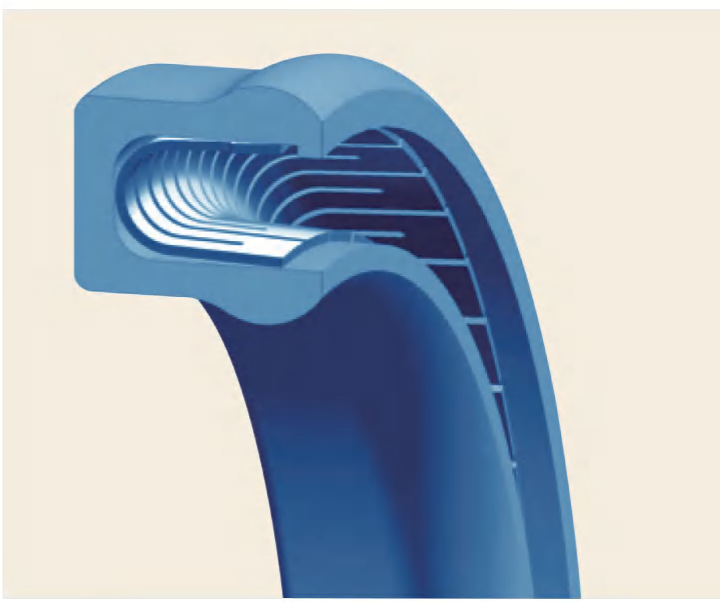
敏硕产品有多种蓄能弹簧可供选择，每种弹簧各有能够满足特别要求的不同特性。弹簧负荷可以达到动态应用时的极端苛刻低摩擦要求和低温密封通常需要的高负荷要求等。弹簧由耐腐蚀金属制成，如 300 系列和 17-7 PH 不锈钢等。采用金属弹簧的敏硕产品具有无限保存期，不存在橡胶密封圈通常存在的老化问题。敏硕密封圈安装在密封沟槽上的几何形状还可避免 O 形圈常见的扭转或螺旋故障问题。

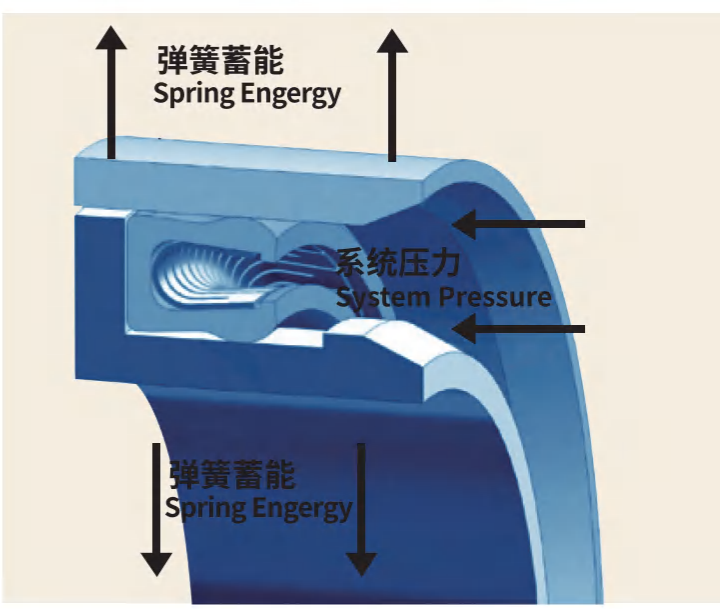


MASCOT spring energy storage seal ring is a spring driven pressure auxiliary sealing device with PTFE jacket, in which a corrosion-resistant metal energy storage spring is specially equipped. When the MASCOT seal ring is installed in the seal groove, the spring is pressed to make the jacket lip close to the seal groove, thus forming a seal. The spring provides permanent elastic force for the sealing jacket, and makes up for material wear and offset or eccentricity of matching parts. The system pressure also assists in the seal jacket energy storage. Through the spring force assisted by the system pressure, the effective sealing can be realized no matter in high or low pressure.

MASCOT jacket is made of polytetrafluoroethylene, filled polytetrafluoro-ethylene and other high-function polymer materials by precision turning. MASCOT sealing ring with PTFE jacket is suitable from low temperature to 572 ° F（300 ° C) In addition to soluble alkali metals, high temperature fluorine gas and chlorine trifluoride (clf3), it hardly reacts with any chemical reagent.

MASCOT products have a variety of energy storage springs to choose from, each spring has different characteristics to meet the special requirements. The spring load can meet the extremely harsh low friction requirements in dynamic applications and the high load requirements usually required for cryogenic seals. Springs are made of corrosion resistant metals such as 300 series and 17-7 pH stainless steel. MASCOT products with metal spring have unlimited storage life, and there is no aging problem of rubber sealing ring. The geometry of MASCOT seal ring installed on the seal groove can also avoid the common torsion or screw failure of O-ring.





弹簧蓄能圈材料
Spring Energized Seal Material

聚四氟乙烯（PTFE）是一种耐化学性比全氟橡胶优异，耐热性良好的密封材料，可应用于绝大多数的化学流体、溶剂、以及液压油、润滑油，其膨润性很小故可长期发挥密封性能，敏硕利用各种特殊弹簧来克服聚四氟乙烯（PTFE）或其他高性能橡胶塑料的弹性问题,开发出可替换绝大数应用于静态或动态（往复或旋转运动）的密封件,使用温度范围可由冷媒至 300°C，压力由真空至超高压力 700kg 移动速度高达 20m/s，而弹簧可根据不同的使用环境，选用不锈钢、Elgiloy、Hastelloy 等，故可应用于各种高温腐蚀流体的场合。

PTFE is a kind of sealing material with better chemical resistance and good heat resistance than perfluoroethylene. It can be used in most chemical fluids, solvents, hydraulic oil and lubricating oil. Its swelling property is very small, so it can give full play to the sealing performance for a long time, Using various special springs, minsuo overcomes the elastic problems of polytetrafluoroethylene (PTFE) or other high-performance rubber plastics. It develops a large number of seals which can be used in static or dynamic (reciprocating or rotating motion). The temperature range can be from refrigerant to 300 °C, pressure can move from vacuum to ultra high pressure of 700kg, and spring ca n move up to 20 m / s according to different use environment, Stainless steel, Elgiloy Hastelloy, etc. are selected, so it can be used in various high temperature corrosion fluids.

敏硕弹簧蓄能密封圈材料主要有 13 类 There are 13 types of MASCOT Spring Energized Seal materials

1 原生 PTFE Native PTFE

特别适合用于轻型到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。符合 FDA 标准要求。

especially suitable for light to medium dynamic services and static applications. Limited wear and heat resistance. Low gas permeability. Good low temperature characteristics. Medium to extreme vacuum applications. Comply with FDA standards.

温度范围 temperature range	-210 ~ +260°C -346~+500°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	7500
拉伸强度（psi/MPa) tensile strength	4000/27.6
延伸率（%) Extension	300
硬度（邵氏 D) hardness	58

2 改性 PTFE Modified PTFE

特别适合用于轻型到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。中等到极端的真空应用。符合 FDA 标准要求较高的抗蠕变和抗咬合性能。

particularly suitable for light to medium dynamic and static applications. Limited wear and heat resistance. Low gas permeability. Good low temperature characteristics. Medium to extreme vacuum applications. It meets the requirements of FDA standard and has high creep resistance and anti bite performance.

温度范围 temperature range	-210 ~ +260°C -346~+500°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	6000
拉伸强度（psi/MPa) tensile strength	4800/33.1
延伸率（%) Extension	450
硬度（邵氏 D) hardness	58

3 聚合物填充 PTFE Polymer filled PTFE

在高温高压和高转速下具有卓越的耐磨性。特别适合用于水和水基溶液。在干燥或恶劣润滑条件下表现较好。对软金属有研磨作用。

Polymer filled PTFE has excellent wear resistance at high temperature, high pressure and high speed. It is especially suitable for water and water-based solutions. It performs better under dry or bad lubrication conditions. It can grind soft metal.

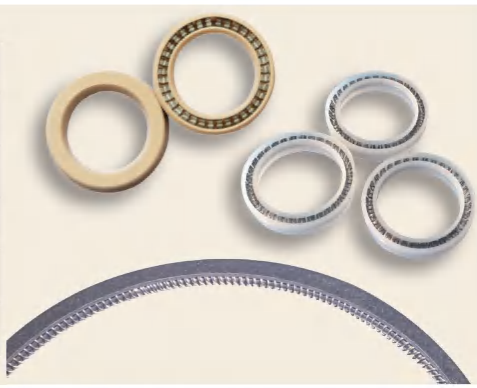
温度范围 temperature range	-210 ~ +260°C -346~+500°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	1
拉伸强度（psi/MPa) tensile strength	2000/13.8
延伸率（%) Extension	170
硬度（邵氏 D) hardness	64

4 聚合物填充 PTFE Polymer filled 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。

Excellent heat resistance and wear resistance. No abrasiveness. Recommended for medium to high speed dynamic applications on soft metals. Not recommended for steam applications.

温度范围 temperature range	-210 ~ +260°C -346~+500°F
摩擦系数 riction coefficient	0.15
耐磨系数 wearing coefficient	2
拉伸强度（psi/MPa) tensile strength	3000/20.7
延伸率（%) Extension	230
硬度（邵氏 D) hardness	60



Deflection(mm)

5 原生 PTFE Primary PTFE

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。

Primary PTFE can resist the thermoplasticity of nuclear radiation, but its heat resistance and wear resistance are limited. It is not recommended as a universal seal.

温度范围 temperature range	-101 ~ +149°C -150~+300°F
摩擦系数 riction coefficient	0.50
耐磨系数 wearing coefficient	150
拉伸强度（psi/MPa) tensile strength	5600/38.6
延伸率（%) Extension	300
硬度（邵氏 D) hardness	72

6 聚合物填充 PTFE Polymer filled PTFE

坚硬，长久耐磨，耐热性。摩擦极小。特别适合用于作用在柔软表面的干燥运动应用。特别适合用于往复运动应用。

Polymer filled PTFE - hard, durable, heat resistant. The friction is very small. It is especially suitable for dry motion applications on soft surfaces. Especially suitable for reciprocating applications.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	9
拉伸强度（psi/MPa) tensile strength	2000/13.8
延伸率（%) Extension	180
硬度（邵氏 D) hardness	60

7 自润滑玻璃纤维填充 PTFE Self lubricating glass filled PTFE

自润滑玻璃填充 PTFE- 与 10 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。

Self lubricating glass filled PTFE is similar to the material of m10but slightly softer for high sealing performance under low pressure. It can grind soft metal.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	5
拉伸强度（psi/MPa) tensile strength	3400/23.4
延伸率（%) Extension	230
硬度（邵氏 D) hardness	58

8 自润滑有机填充 PTFE Self lubricating organic filled 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。特别适合水和蒸汽应用。

General materials with good heat resistance and wear resistance. It is recommended to be used for applications with poor drying and lubrication. It is especially suitable for water and steam applications.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	12
拉伸强度（psi/MPa) tensile strength	3000/20.7
延伸率（%) Extension	200
硬度（邵氏 D) hardness	60

9 自润滑有机填充 PTFE Native PTFE

类似 8 号材料，但具有更高的硬度和耐磨性。特别适合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。特别适合用于背压环。

similar to 8, but with higher hardness and wear resistance. Especially suitable for sealing steam and water under harsh conditions. It has good flexural and extrusion properties at high temperature. Especially suitable for back pressure ring.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.10
耐磨系数 wearing coefficient	6
拉伸强度（psi/MPa) tensile strength	1800/12.4
延伸率（%) Extension	65
硬度（邵氏 D) hardness	65

10 自润滑玻璃纤维填充 PTFE Self lubricating glass filled 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。

Hard, durable, heat resistant. Recommended for high pressure hydraulic applications. It can grind soft metal at high surface velocity.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	9
拉伸强度（psi/MPa) tensile strength	3300/22.8
延伸率（%) Extension	280
硬度（邵氏 D) hardness	58

11 改性填充 PTFE Modified filled 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。

an excellent multi-purpose high wear resistance material. It is especially suitable for dynamic application of medium to high hardness surface.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	30
拉伸强度（psi/MPa) tensile strength	2600/17.9
延伸率（%) Extension	135
硬度（邵氏 D) hardness	60

12 自润滑合成 PTFE Self lubricating synthetic 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。适合用于水和无润滑性液体。

E excellent general material with good heat resistance and wear resistance. No abrasiveness. Compatible with all hydraulic oils and most chemicals. Suitable for water and unlubricated liquids.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.09
耐磨系数 wearing coefficient	30
拉伸强度（psi/MPa) tensile strength	1800/12.4
延伸率（%) Extension	90
硬度（邵氏 D) hardness	60

13 填充 PTFE Filled PTFE

填充 PTFE- 潮湿或润滑条件下具有极佳耐磨性。可接触食品。符合 FDA 标准要求。

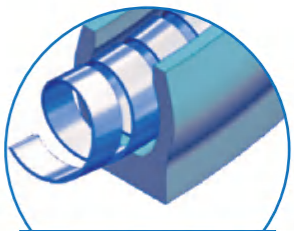
Filled PTFE - excellent wear resistance under wet or lubricated conditions. Food is accessible. Comply with FDA standards.

温度范围 temperature range	-210 ~ +300°C -346~+572°F
摩擦系数 riction coefficient	0.11
耐磨系数 wearing coefficient	9
拉伸强度（psi/MPa) tensile strength	1200/8.3
延伸率（%) Extension	90
硬度（邵氏 D) hardness	63

适用蓄能圈弹簧材料介绍
Spring energized seal spring material introduction

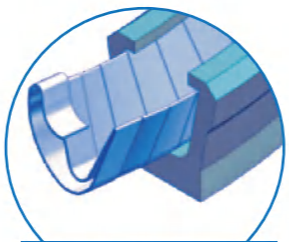
适用敏硕密封圈的泛塞封弹簧主要有 O 型弹簧、S 型弹簧、N 型弹簧、U 型弹簧、V 型弹簧和全面接触弹簧。主要材料为 301 不锈钢、302 不锈钢、304 不锈钢、316 不锈钢、17-7PH 不锈钢、InconelX-718、Elgiloy 合金等高性能材料。

There are O-type spring, S-type spring, N-type spring, V-type spring and Full contact spring for MASCOT sealing ring. The main materials are 301 stainless steel, 302 stainless steel, 304 stainless steel, 316 stainless steel, 17-7ph stainless steel, inconelx-718, Elgiloy alloy and other high-performance materials.

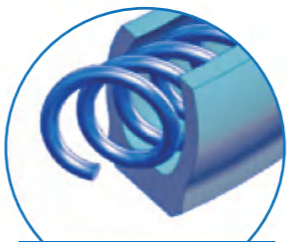


O 型弹簧蓄能圈
O-Spring Seal

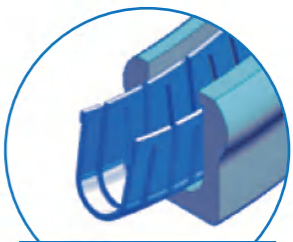
全面接触弹簧密封圈
Full Contact Spring Seal



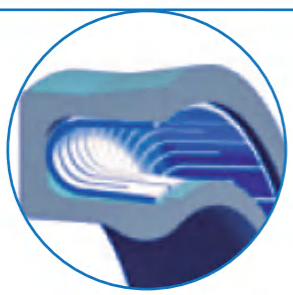
V 型弹簧蓄能圈
V-Spring Seal



N 型弹簧蓄能圈
N-Spring Seal

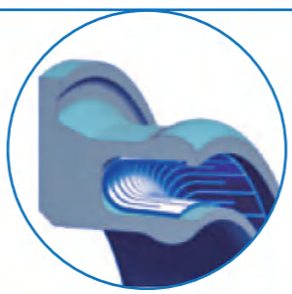


U 型弹簧蓄能圈
U-Spring Seal



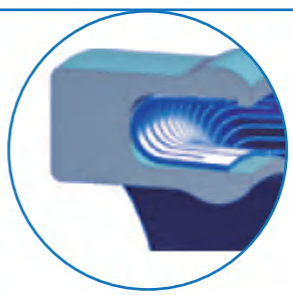
刮油边
Skived Lip

所有敏硕的蓄能圈都可以将内径或外径的密封唇设计成锐边。该锐边可以在密封具有研磨性或粘性的介质时起到刮刀或擦拭作用。同时也可以作为防尘器使用。
All MASCOT sealing rings can be designed with sharp edges on the inner or outer sealing lips. The sharp edge can play the role of scraper or wiping when sealing abrasive or viscous media. It can also be used as a dustproof device.



法兰边尾端
Flanged Heel

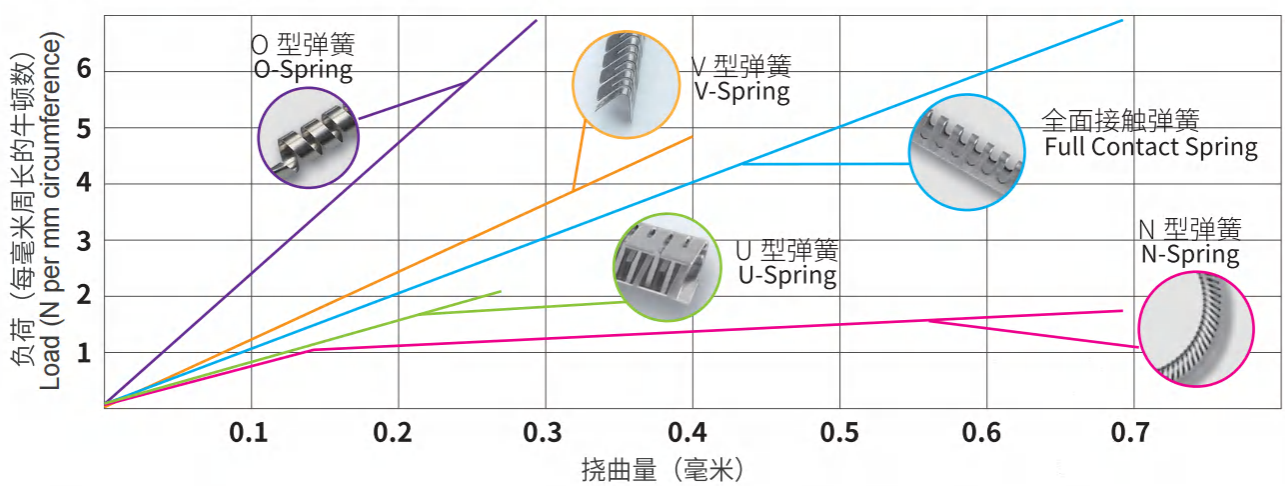
法兰边根部设计推荐用于旋转 / 摆动轴应用。法兰边夹在密封沟槽内用以防止密封圈随轴转动。
Flange edge root design is recommended for rotary / oscillating shaft applications. The flange edge is clamped in the sealing groove to prevent the sealing ring from rotating with the shaft.



延申尾端
Extended Heel

敏硕产品还可配有改善高温或高压下抗挤压性能的延伸根部。
MASCOT products can also be equipped with extended roots to improve the extrusion resistance under high temperature or high pressure.

蓄能圈弹簧负荷与挠曲量
Spring energized seal spring Load&Deflection



径向密封
radial Sealing

径向密封包含在径向压缩密封的密封沟槽。凸型沟槽在轴上车削加工而成，凹型沟槽在孔内车削加工而成。径向密封通常为动密封，但也有例外。敏硕还可为此类应用提供活塞杆密封圈和活塞密封圈。

The radial seal comprises a sealing groove in the radial compression seal. The convex groove is turned on the shaft and the concave groove is turned in the hole. Radial seals are usually dynamic seals, but there are exceptions. MASCOT also offer rod and piston seals for these applications.

端面密封
Face Sealing

端面密封包含平行于密封圈轴线压缩密封圈的沟槽。配合零件的端面上加工有密封沟槽。端面密封通常为静密封，但也有例外。敏硕可为此类应用中提供内外端面密封。

The face seal comprises a groove parallel to the axis of the sealing ring to compress the sealing ring. The end face of the matching part is machined with Seal the groove. Face seal is usually static seal, but there are exceptions. MASCOT can provide inner and outer face seals for such applications.

静态应用
Applications

对于静密封，在密封圈和配合零件之间基本上没有相对运动。例如，用螺栓紧固的法兰就是最常见的例子。敏硕密封圈可为此类应用中提供端面密封产品。

For the static seal, there is basically no relative movement between the seal ring and the matching parts. For example, bolted flanges are the most common example. MASCOT seal ring can provide face seal products for such applications

动态应用
Applications

对于动密封，两个密封表面有相对的运动。典型实例包括液压缸内活塞杆和活塞的密封。动密封包括两种运动形式：往复运动（直线运动）和旋转运动（包括摆动）。敏硕可为此类应用提供径向密封圈（活塞杆密封和活塞密封）。

For dynamic seal, the two sealing surfaces have relative movement. Typical examples include the sealing of piston rod and piston in hydraulic cylinder. Dynamic seal includes two forms of motion: reciprocating motion (linear motion) and rotary motion (including swing). MASCOT can provide radial seals (piston rod seal and piston seal) for such applications.

<table>
<tr><th>应用类型
Applications</th><th colspan="3">径向密封
radial Sealing</th><th>端面密封
Face Sealing</th></tr>
<tr><td>静态应用
Applications</td><td colspan="3">O 型弹簧
O-Spring</td><td>O 型弹簧
O-Spring
全面接触弹簧
Full Contact Spring</td></tr>
<tr><td rowspan="3">动态应用
Applications</td><td>往复
Reciprocating</td><td colspan="2">O 型弹簧 O-Spring
U 型弹簧 U-Spring
V 型弹簧 V-Spring
N 型弹簧 N-Spring</td><td rowspan="3">O 型弹簧 / 全面接触弹簧
O-Spring/Full Contact Spring
U 型弹簧 /N 型弹簧
U-Spring/N-Spring</td></tr>
<tr><td rowspan="2">旋转
Rotary</td><td>中等速度
Morderate Speed</td><td>U 型弹簧 U-Spring
N 型弹簧 N-Spring
S 型弹簧 S-Spring</td></tr>
<tr><td>慢速度
Slow Speed</td><td>O 型弹簧 O-Spring
V 型弹簧 V-Spring</td></tr>
</table>

蓄能圈应用类型特点
Spring Energized Seal application

孔用泛塞封 Variseal for hole

孔用泛塞封由一个 U 形的 PTFE 密封圈内装特殊不锈钢弹簧的孔用单向往复密封件。

The hole is sealed with a universal plug. The hole with special stainless steel spring is sealed by a U-shaped PTFE sealing ring with one-way reciprocating seal.

轴用泛塞封 Variseal for shaft

轴用泛塞封由一个 U 形的 PTFE 密封圈内装特殊不锈钢弹簧的轴用单向往复密封件。

The universal plug seal for shaft consists of a U-shaped PTFE seal ring with a special stainless steel spring.

旋转泛塞封 Variseal for rotate

旋转泛塞封由一个 U 形带凸缘的 PTFE 密封圈内装特殊不锈钢弹簧的轴用单向旋转密封件。

The rotary universal plug seal consists of a U-shaped PTFE seal ring with flange and a unidirectional rotary seal for shaft with special stainless steel spring.

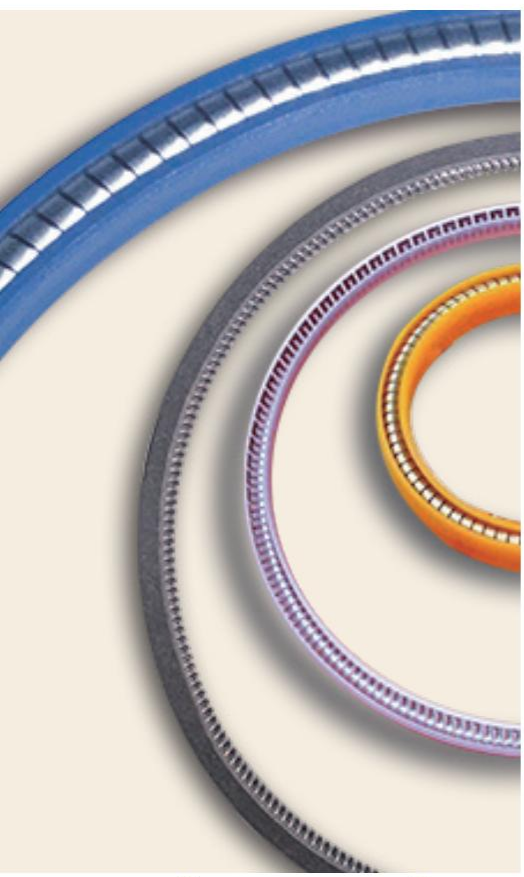
端面泛塞封 End face variseal

端面外向泛塞封由一个 U 形的 PTFE 密封圈内装特殊不锈钢弹簧的端面外向静密封件。

A U-shaped PTFE seal ring with a special V-shaped stainless steel spring end outward static seal is used for the end outward pan plug seal.

端面内向泛塞封由一个 U 形的 PTFE 密封圈内装特殊不锈钢弹簧的端面内向静密封件。

A U-shaped PTFE seal ring with a special stainless steel spring end inward static seal is used for the end inward pan plug seal.



产品特点
Product features

1. 可用于往复及旋转运动
It can be used for reciprocating and rotary motion

2. 摩擦系数小，耐磨损，尺寸稳定
Small friction coefficient, wear resistance and stable size

3. 防腐能力强和尺寸稳定性好
Strong corrosion resistance and good dimensional stability

4. 不会污染食品、药品和药剂液体
It will not pollute food, medicine and pharmaceutical liquid

5. 能适应绝大部分流体和化学制品
It can adapt to most fluids and chemicals

6. 精确控制时也不会爬行
It will not crawl even if it is controlled precisely

7. 能承受急剧的温度变化
It can withstand sharp temperature changes

8. 可以进行消毒
It can be disinfected

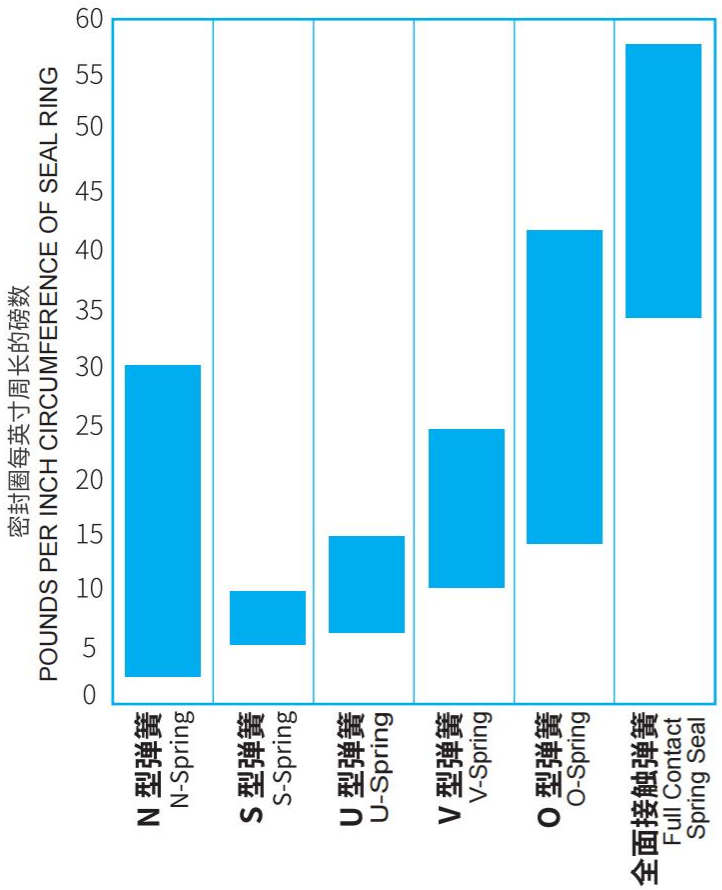
9. 储存器无限
Unlimited storage

弹簧蓄能圈摩擦
Spring Energized Seal Friction

摩擦是密封圈和配合零件表面相对滑动阻力的衡量标准，其与密封材料的摩擦系数和正常负荷直接相关。影响摩擦的因素有润滑、温度和配合零件表面粗糙度。非润滑条件下大致的摩擦值，可参照本页图表和公式进行计算。

Friction is a measure of the relative sliding resistance of the sealing ring and mating parts, which is directly related to the friction coefficient and normal load of the sealing material. The factors affecting friction are lubrication, temperature and surface roughness of mating parts. The approximate friction value under non lubrication condition can be calculated by referring to the chart and formula on this page.

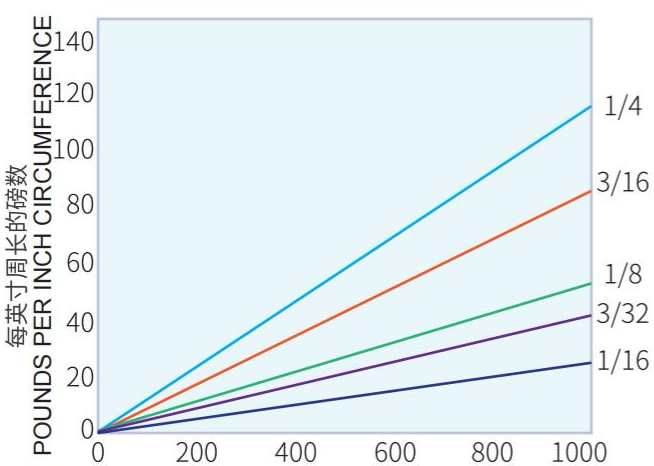
蓄能圈弹簧负荷范围
Spring energized seal spring Load Range



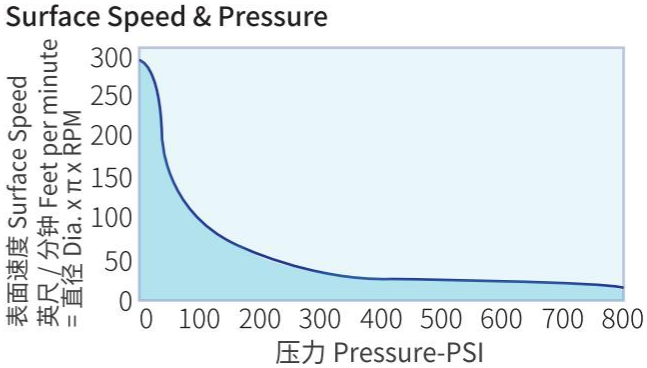
F = 总单位负荷 - 每英寸周长的磅数
（压力负荷 + 弹簧负荷）
D = 动态表面的直径
R = D / 2（半径）
μ = 材料摩擦系数（磅）=F x D x π x μ
摩擦力矩（英寸 - 磅）= F × D ×π× μ × R

F =Total unit load-Pounds per inch of circumference
(pressure load +spriing load)
D = Diamet er of dynamic survace
R = D / 2（Radius）
μ = Material coefficient of friction
Linear Friction(Pounds)=F x D x π x μ
Frictional Torque(Inch-Pounds)= F × D ×π× μ × R

压力负荷
Pressure Load



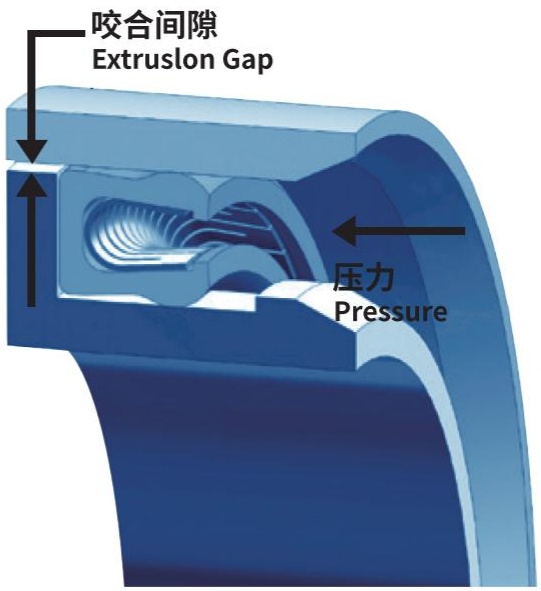
表面速度和压力
Surface Speed & Pressure



弹簧蓄能圈咬合间隙
Spring Energized Seal Extruslon Gap

高压 或高温条件下密封的咬合间隙非常重要。咬合间隙是配合零件之间的间隙。没有轴承或定心装置的零件必须将直径上的间隙作为最大咬合间隙。高压或高温情况下，过大的间隙可能会导致密封夹套被挤压进入咬合间隙，从而造成密封过早失效。咬合间隙应当控制在最小，并且不应超出表中所列出的值。增加密封圈后端厚度可改善咬合。也可使用独立背压环装置缩小咬合间隙。

The occlusal clearance of seal is very important under high pressure or high temperature. Occlusal clearance is the clearance between mating parts. For parts without bearings or centering devices, the clearance on the diameter must be taken as the maximum engagement clearance. Under the condition of high pressure or high temperature, excessive clearance may cause the seal jacket to be squeezed into the occlusal clearance, resulting in premature seal failure.The occlusal gap should be kept to a minimum and should not exceed the values listed in the table. Increasing the thickness of the back end of the sealing ring can improve the occlusion.An independent back pressure ring device can also be used to reduce the occlusal gap.



O 型弹簧（示例） O-Spring (For Example)	G 宽度 Width		G_1 宽度 Width		G_2 宽度 Width		G_2 宽度 Width	
	未填充 Unfilled	填充 Filled	未填充 Unfilled	填充 Filled	未填充 Unfilled	填充 Filled	未填充 Unfilled	填充 Filled
	mm	mm	mm	mm	mm	mm	mm	mm
咬合间隙 Gap 1	0.10	0.15	0.15	0.20	0.20	0.25	0.25	0.35
咬合间隙 Gap 2	0.07	0.10	0.10	0.15	0.15	0.20	0.20	0.25
咬合间隙 Gap 3	0.05	0.07	0.07	0.10	0.10	0.15	0.15	0.15
咬合间隙 Gap 4	–	–	–	0.07	0.07	0.10	0.10	0.15

G 宽度：不使用背压环时的标准密封圈沟槽宽度

G_1 宽度：不使用背压环时的延伸尾端和法兰边尾端密封圈的沟槽宽度

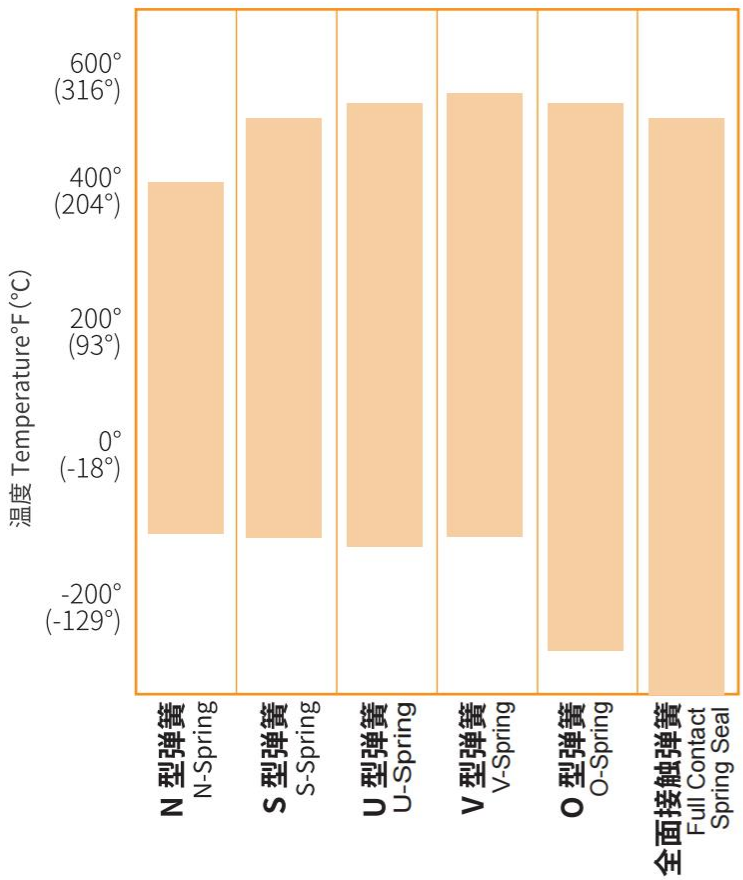
G_2 宽度：使用背压环时的标准密封沟槽宽度

Gwidth: Standard seal ring groove width without back pressure ring

G_1width: groove width of extended end and flange end sealing ring when back pressure ring is not used

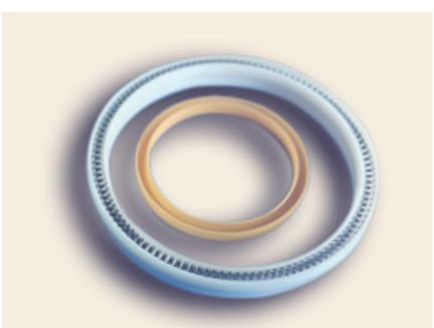
G_2width: Standard seal groove width when using back pressure ring

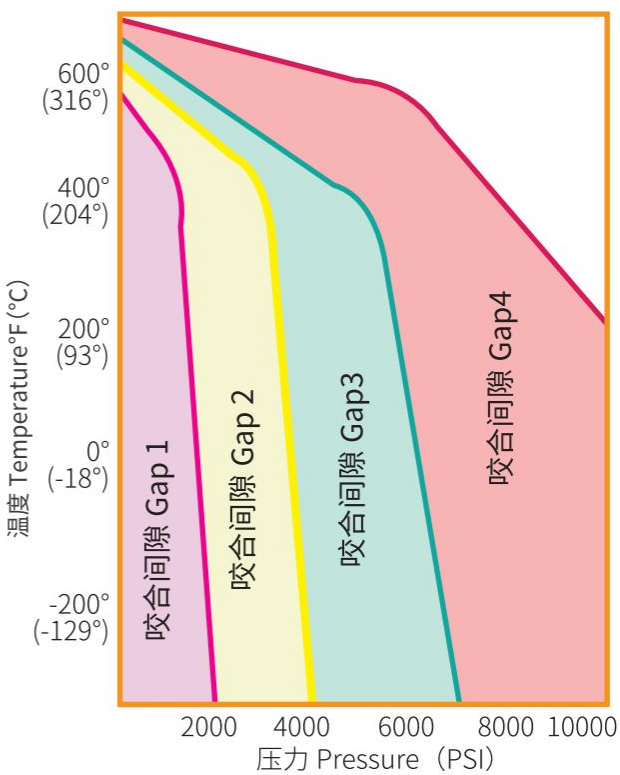
密封设计与温度 / 压力 / 蓄能圈弹簧关系图表
Spring energized seal spring and Temperature/Pressure/Seal ring Relationship Chart



- 40 ° F（- 40 ° C）以下的 低温会导致 P T FE 和其他聚合物材料发生收缩和变硬，并会影响敏硕弹簧蓄能密封弹簧负荷和摩擦特性。

-The low temperature below 40 ° f (- 40 ° C) will lead to the shrinkage and hardening of PTFE and other polymer materials, and affect the spring load and friction characteristics of MASCOT spring energy storage seal.





动态配合零件表面粗糙度
Dynamic Hardware Surface Finish

与敏硕弹簧密封圈接触材料的表面光洁度将会影响夹套材料的磨损和使用寿命。接触面太过粗糙 会产生泄漏通道并导致密封圈磨损。一般来说，相 对平滑的表面光洁度（较低 Ra 值）的磨损较小，密封寿命较长且整体密封性能较好。由夹套转移来并覆盖在配合动态表面的 P T FE 薄膜会延长密封圈的寿命。相对粗糙的动态表面会很快磨损密封夹套材料，极 度光滑的表面会因转移不充分导致薄膜无法形成。

The surface finish of the material contacting with the MASCOT spring seal ring will affect the wear and service life of the jacket material. If the contact surface is too rough, the leakage channel will be created and the sealing ring will be worn. Generally speaking, relatively smooth surface finish (lower Ra value) has less wear, longer sealing life and better overall sealing performance. The PTFE film transferred from the jacket and covered on the mating dynamic surface will extend the life of the seal ring. The relatively rough dynamic surface will quickly wear the sealing jacket material, and the extremely smooth surface will not form the film due to insufficient transfer.

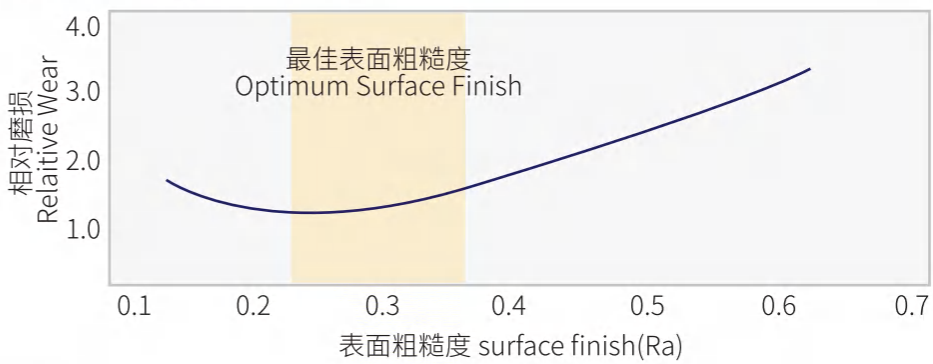
Media Sealed 介质密封 / 表面粗糙度 Surface Finish	低温 / 氦气 / 氢气 / 氟利昂 Cryogenic /helium/ hydrogen /freon	空气 / 氮气 / 氩气 / 天然气燃料（飞机、汽车） Air / nitrogen / argon/ Natural gas fuel (aircraft, automobile)	水 / 液压油 / 原油 / 密封剂 Water / hydraulic oil / crude oil / sealant
动态表面 Dynamic Surface	4 - 8 µin (0.1 - 0.2 µm) Ra	6 - 12 µin (0.15 - 0.3 µm) Ra	8 - 16 µin (0.2 - 0.4 µm) Ra
静态表面 Static Surface	8 µin (0.2 µm) Ra max	16 µin (0.4 µm) Ra max	32 µin (0.8 µm) Ra max

静态配合零件表面粗糙度
Static Hardware Surface Finish

在大多数静态密封应用中，良 好的整体密封性能可以通过光滑的密封表面实现 。在大多数静 态密封应用中，最 佳表面光洁度为 32µi n（0. 8 µm）Ra 或更高。静 态端面密封表面层应为同心。抛光或机械加工表面应为圆形。

In most static sealing applications, good overall sealing performance can be achieved by smooth sealing surfaces. In most static seal applications, the optimum surface finish is 32 µ i n（0. 8 µ m) RA or higher. Static face seal surface layer should be concentric. Polished or machined surfaces shall be circular.

动态表面的密封磨损
Seal wear in Dynamic Surface

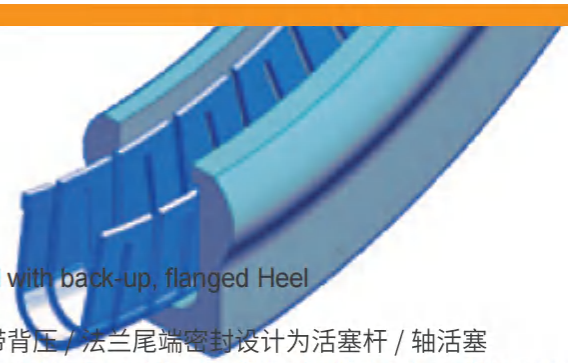


表面硬度
Surface Hardness

对于慢速到中等速度的往复运动，推荐使用 40 洛氏 C 硬度或更高的硬度。中等至高速直线或旋转运动的理想硬度为洛氏硬度 58 至 62 。阳极化处 理后的坚硬表面须作抛光处理。

For slow to moderate reciprocating motion, a hardness of 40 Rockwell C or higher is recommended. The ideal hardness for medium to high speed linear or rotary motion is Rockwell hardness 58 to 62. The hard surface after anodization must be polished.

U 型弹簧蓄能圈系列
U-spring Energized Seal



设计剖面： U 型弹簧标准尾端、延伸尾端、标准尾端 带背压、法兰尾端
Design section: U-spring standard Heel, extended Heel, standard Heel with back-up, flanged Heel

密封设计： 标准 / 延伸尾端密封设计为活塞杆 / 轴活塞端面；标准尾端 带背压 / 法兰尾端密封设计为活塞杆 / 轴活塞
Seal design: Standard / extended Heel seal is designed as rod / shaft piston face; Standard Heel with back-up / flanged Heel seal designed as rod / shaft piston

温度范围： -65°C — +316°C(-85°F — +600°F)；法兰尾端 -196°C — +316°C(-85°F — +600°F)
Temperature range: - 65 ℃ - + 316 ℃ (- 85°F- + 600°F)； Flange Heel - 196 ℃ - + 316 ℃ (- 85 °F - + 600°F)

压力性能（PSI）最大： 标准尾端 3000；延伸尾端 6000；标准尾端 带背压 10000（特殊情况 50000)；法兰尾端 3000
Maximum pressure performance (PSI): standard Heel 3000; Extended Heel 6000; Standard Heel with back-up of 10000(50000 in special cases); Flange Heel 3000

弹簧应用评级： 静态“良好”；往复“优秀”；旋转“良好”（带背压一般，法兰尾端优秀)。
Spring application rating: static “good” ; Reciprocating “excellent ” ; Rotary “Good” (Standard Heel with back-up “general ” ; flanged Heel “excellent”).

弹簧材料 Spring material： 304SS/301SS/316SS/Elgiloy/Hastelloy/C276

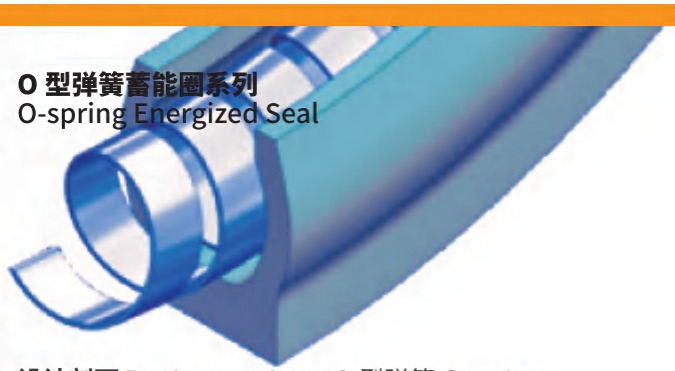
直径范围（inch)： 活塞杆密封 0.185-60+；活塞密封 0.297-60+
Diameter range (inch): piston rod seal 0.185-60 +; Piston seal 0.297-60+

横截面（inch)： 1/16 — 1/4(可提供最大 1 英寸的特殊横截面密封圈)
Cross section (inch): 1 / 16-1 / 4 (special cross section seal up to 1 inch available)

推荐应用： 标准尾端适用于大多数应用的通用设计。当压力低于 3000P S I 时，最适合动态活塞杆和活塞密 封圈。刮板式设计适合用于防尘密封或在研磨性介质内使用。硅材料填充弹簧腔可用于食品加工和现场洁净应用。延伸尾端适用于当压力低于 6 0 0 0 P S I 时， 或者当配合零件咬合间隙结合高温条件时，非常适合动态活塞杆和活塞密封。通过类似背压环一样在咬合间隙内填充材料有助于避免密封失效。标准尾端 带背压适用于当压力超过 6, 0 0 0P S I 以及存在温度过高配合零件咬合间隙过大时，非常适合动态活塞杆和活塞密封圈。法兰尾端适用于专为小于 5 00S FPM 的旋转轴应用而设计。当锁定到配合零件内时，法兰起到防滑装置作用。也可在液氧和液氮中的快速断开联轴器等应用中作为低温密封使。法兰可避免收缩。
application: The standard Heel is suitable for general design in most applications. When the pressure is lower than 3000psi, it is most suitable for dynamic piston rod and piston sealing ring. Scraper type equipment The meter is suitable for dust sealing or use in abrasive media. Silicon filled spring chambers can be used for food processing and field cleaning applications. The extended tail end is applied when the pressure is low It is very suitable for dynamic piston rod and piston seal when 600 psi or when the occlusal clearance of mating parts is combined with high temperature conditions. By biting like a back pressure ring The filling material in the closing gap helps to avoid seal failure. The standard rear end belt back pressure is suitable for the engagement of mating parts when the pressure exceeds 6, 000 psi and the temperature is too high. When the clearance is too large, it is very suitable for dynamic piston rod and piston sealing ring. The flanged Heel is designed for rotary shaft applications less than 500s FPM. When locked to zero,The flange plays the role of anti-skid device when the part is inside. It can also be used as a low temperature seal for quick coupling disconnection in liquid oxygen and liquid nitrogen. The flange can avoid shrinkage.

弹簧蓄能圈选型
Spring Energized seal Selection

O 型弹簧蓄能圈系列
O-spring Energized Seal



设计剖面 Design section： O 型弹簧 O-spring

密封设计 Seal design：
活塞杆 / 轴活塞端面法兰边 **Rod / sh-aft piston face flanged**

温度范围 Temperature range：
-196°C — +301°C (-320°F — +575°F)

压力性能（PSI）最大： 标准 =3000；延伸 =6000；标准尾端带背压 =10000（特殊情况 50000）；法兰 =3000
Maximum pressure performance (PSI): standard Heel 3000; Extended Heel 6000; Standard Heel with back-up of 10000(50000 in special cases); Flange Heel 3000

弹簧应用评级： 静态 “优秀”；往复 “一般”；旋转 “不良”
Spring application rating:
static “excellent” ; Reciprocating “fair ” ; Rotary “poor”

弹簧材料 Spring material： 17-7 PH SS/3 0 4 SS/316 SS/Elgiloy/Hastelloy/C276

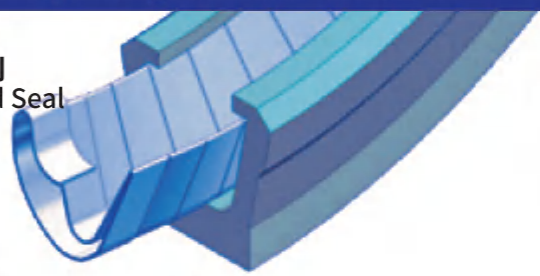
直径范围（inch）：
活塞杆密封 0.076 - 60+；活塞密封 0.190 - 60+
Diameter range (inch):
piston rod seal 0.076 - 60+; Piston seal 0.190 - 60+

横截面（inch）：
1/16 — 1/2(可提供最大 1 英寸的特殊横截面密封圈)
Cross section (inch):
1 / 16-1 / 2 (special cross section seal up to 1 inch available)

推荐应用： 通常用于正压密封极为关键的静态应用。非常适合用于密封轻质气体和真空。用于摩擦无关紧要的缓慢动态应用。也可在液氧和液氮中的快速断开联轴器等应用中作为低温密封使用。

application: It is usually used in static applications where positive pressure sealing is critical. Ideal for sealing light gases and vacuum. For slow dynamic applications where friction does not matter. It can also be used as a low temperature seal in the application of quick disconnect coupling in liquid oxygen and liquid nitrogen.

V 型弹簧蓄能圈系列
V-spring Energized Seal



设计剖面 Design section： V 型弹簧 V-spring

密封设计 Seal design：
活塞杆 / 轴活塞法兰边 **Rod / sh-aft piston face flanged**

温度范围 Temperature range：
-54°C — +316°C (-65°F — +600°F)

压力性能（PSI）最大： 标准 =3000；延伸 =6000；标准尾端 带背压 =10000；法兰 =3000
Maximum pressure performance (PSI): standard Heel 3000; Extended Heel 6000; Standard Heel with back-up of 10000; Flange Heel 3000

弹簧应用评级： 静态 “良好”；往复 “不良”；旋转 “一般”
Spring application rating:
static “good” ; Reciprocating “poor ” ; Rotary “fair”

弹簧材料 Spring material： 301 SS/3 0 2 SS/304 SS/316SS

直径范围（inch）：
活塞杆密封 0.250 - 60+；活塞密封 0.427- 60+
Diameter range (inch):
piston rod seal 0.250 - 60+; Piston seal 0.427 - 60+

横截面（inch）：
3/32— 1/4(可提供最大 1 英寸的特殊横截面密封圈)
Cross section (inch):
3/ 32—1 / 4 (special cross section seal up to 1 inch available)

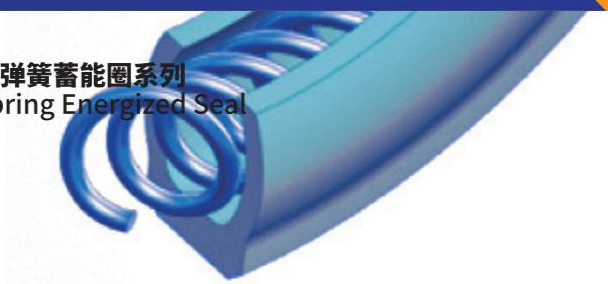
推荐应用： 设计用于存 在过大配合零件 公差的静态缓慢动态应用的柔性重叠弹簧。弹 簧设计可实现最大限度的弹簧挠度。建议用于诸如注塑和液体灌注设备等 粘性应用。

application: Flexible overlap springs designed for static, slow and dynamic applications with excessive fit part tolerances. The spring design allows maximum spring deflection. It is recommended for viscous applications such as injection molding and liquid filling equipment.

弹簧蓄能圈选型
Spring Energized seal Selection

MASCOT 敏硕科技

N 型弹簧蓄能圈系列
N-spring Energized Seal



设计剖面 Design section： N 型弹簧 N-spring

密封设计 Seal design：
活塞杆 / 轴活塞端面法兰边 **Rod / sh-aft piston face flanged**

温度范围 Temperature range：
-54°C — +246°C (-65°F — +475°F)

压力性能（PSI）最大： 标准 =3000；延伸 =6000；标准尾端带背压 =10000（特殊情况 50000）；法兰 =3000
Maximum pressure performance (PSI): standard Heel 3000; Extended Heel 6000; Standard Heel with back-up of 10000(50000 in special cases); Flange Heel 3000

弹簧应用评级： 静态“一般”；往复“优秀”；旋转“优秀”
Spring application rating:
static “Fair” ; Reciprocating “Excellent” ; Rotary “Excellent”

弹簧材料 Spring material： 302 SS/316 SS/Hastelloy/ C276

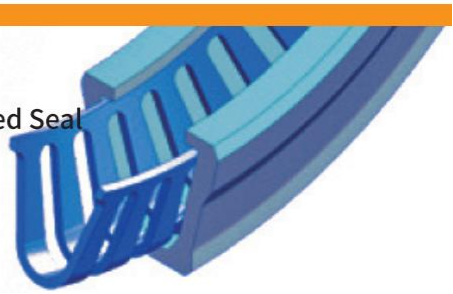
直径范围（inch）：
活塞杆密封 0.032- 16；活塞密封 0.094 - 16
Diameter range (inch):
piston rod seal 0.032 - 16; Piston seal 0.094- 16

横截面（inch）： 1/16 — 1/4(1/32available)
Cross section (inch): 1 / 16-1 / 4 (1/32available)

推荐应用： 近乎恒定的弹簧弹力先进节距弹簧设计非常适合应用于摩擦力均匀的应用。最佳适用温度低于 475° F（24 6° C）的旋转和往复式活塞杆和活塞的小直径应用。可选弹簧负荷。

application: Nearly constant spring force advanced pitch spring design is very suitable for applications with uniform friction. Optimum for small diameter applications of rotary and reciprocating piston rods and pistons at temperatures below 475 ° f (246 ° C). Optional spring load.

全面接触弹簧蓄能圈系列
Full contact spring Energized Seal



设计剖面 Design section： 全面接触弹簧 Full contact spring

密封设计 Seal design： 端面 face

温度范围 Temperature range：
-254°C — +288°C (-425°F — +550°F)

压力性能（PSI）最大： 标准 =3000；延伸 =6000；标准尾端 带背压 =10000
Maximum pressure performance (PSI): standard Heel 3000; Extended Heel 6000; Standard Heel with back-up of 10000

弹簧应用评级： 静态“优秀”；往复“不良”；旋转“一般”
Spring application rating:
static “Excellent” ; Reciprocating “poor ” ; Rotary “fair”

弹簧材料 Spring material： 301 SS/Inconel 718

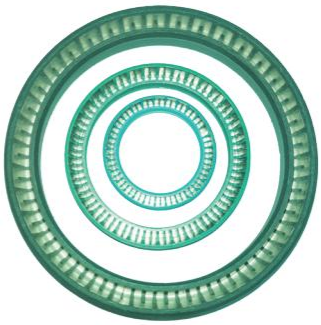
直径范围 Diameter range（inch）： 0.750-60+

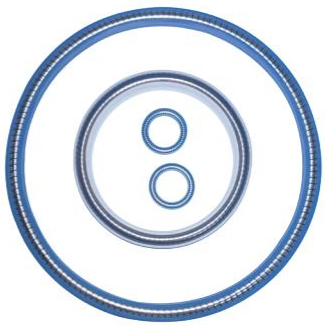
横截面（inch）：
3/32— 1/4(可提供最大 1 英寸的特殊横截面密封圈）
Cross section (inch):
3/ 32—1 / 4 (special cross section seal up to 1 inch available)

推荐应用： 设计用于静态内外压力端面密封应用的高负荷弹簧。在轻质气体、真空和低温工艺中具有出色的密封性能。也可用于诸如旋转接头和船用装载臂等缓慢动态端面密封应用。

application: High load spring designed for static internal and external pressure face seal applications. Excellent sealing performance in light gas, vacuum and low temperature process. It can also be used in slow dynamic face seal applications such as rotary joints and marine loading arms.

轴用泛塞封
Variseal for shaft





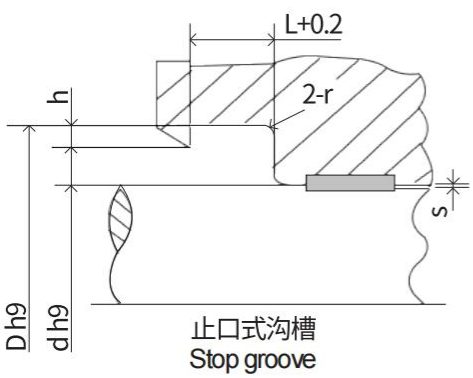
轴用泛塞密封是一种用于内周密封的往复运动用密封。这种密封可适用于恶劣工况，也可以适应某些特殊介质的要求。敏硕密封是所有要求无爬行，耐化学制品和耐大多数介质用途所推荐使用的密封件，例如：阀、泵、分离器、制动器、配料装置等。

Variseal for shaft is a kind of reciprocating seal for inner seal. This kind of seal can be used in bad working conditions, and can also meet the requirements of some special media. MASCOT seal is recommended for all applications requiring no creeping, chemical resistance and resistance to most media, such as valves, pumps, separators, brakes, batching devices, etc.

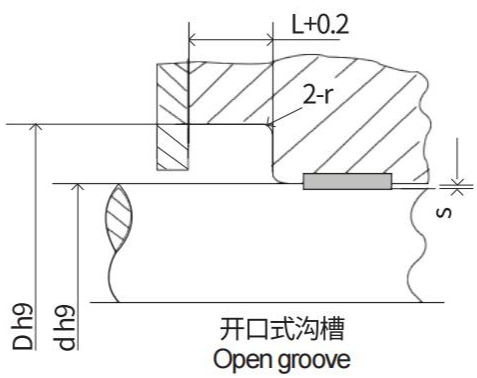
工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
15m/s	0~45MPa	-55°C ~ +260°C	所有液体、化学制品和气体 All liquids, chemicals and gases	2mm-1500mm

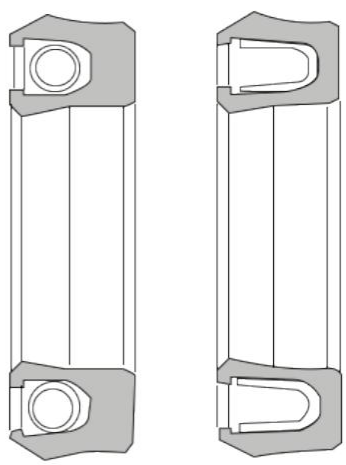
轴用泛塞封沟槽尺寸
Dimension of groove for shaft Variseal



止口式沟槽
Stop groove



开口式沟槽
Open groove



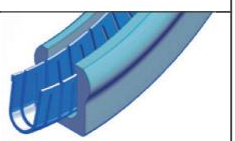
轴径 Shaft diameter d h9	沟槽直径 Groove diameter D H9	沟槽宽度 Groove Width L+0.2	半径 radius r1	止口高度 Seam Height h	最大径向间隙 S Maximum radial clearance s			
					2MPa	10MPa	20MPa	40MPa
mm	mm	mm	mm	mm	mm	mm	mm	mm
3.0 - 9.9	d+2.9	2.4	0.4	0.4	0.20	0.10	0.08	0.05
10.0-19.9	d+4.5	3.6	0.4	0.6	0.25	0.15	0.10	0.07
20.0- 39.9	d+6.2	4.8	0.6	0.7	0.35	0.20	0.15	0.08
40.0-119.9	d+9.4	7.1	0.8	0.8	0.50	0.25	0.20	0.10
120.0-699.0	d+l2.2	9.5	0.8	0.8	0.60	0.30	0.25	0.12
1000.0- 2600.0	d+19. 0	15.0	0.8	0.9	0.90	0.50	0.40	0.20

轴用泛塞封规格表
Specification of Variseal for shaft

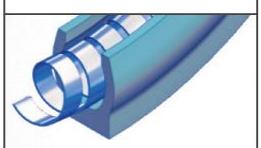
产品编号 Part No.	轴径 Shaft diameter d h9	沟槽直径 Groove diameter D H9	沟槽宽度 Groove Width L+0.2
	mm	mm	mm
MSZ3	3	5.9	2.4
MSZ4	4	6.9	2.4
MSZ5	5	7.9	2.4
MSZ6	6	8.9	2.4
MSZ8	8	10.9	2.4
MSZ10	10	14.5	3.6
MSZ12	12	16.5	3.6
MSZ14	14	18.5	3.6
MSZ15	15	19.5	3.6
MSZ16	16	20.5	3.6
MSZ18	18	22.5	3.6
MSZ20	20	26.2	4.8
MSZ22	22	28.2	4.8
MSZ25	25	31.2	4.8
MSZ28	28	34.2	4.8
MSZ30	30	36.2	4.8
MSZ32	32	38.2	4.8
MSZ35	35	41.2	4.8
MSZ36	36	42.2	4.8
MSZ40	40	49.4	7.1
MSZ42	42	51.4	7.1
MSZ45	45	54.4	7.1
MSZ48	48	57.4	7.1
MSZ50	50	59.4	7.1
MSZ52	52	61.4	7.1
MSZ55	55	64.4	7.1
MSZ56	56	65.4	7.1
MSZ60	60	69.4	7.1
MSZ63	63	72.4	7.1
MSZ65	65	74.4	7.1
MSZ70	70	79.4	7.1
MSZ75	75	84.4	7.1
MSZ80	80	89.4	7.1
MSZ85	85	94.4	7.1

产品编号 Part No.	轴径 Shaft diameter d h9	沟槽直径 Groove diameter D H9	沟槽宽度 Groove Width L+0.2
	mm	mm	mm
MSZ90	90	99.4	7.1
MSZ95	95	104.4	7.1
MSZ100	100	109.4	7.1
MSZ105	105	114. 4	7.1
MSZ110	110	119. 4	7.1
MSZ115	115	124.4	7.1
MSZ120	120	132.2	9.5
MSZ125	125	137.2	9.5
MSZ130	130	142. 2	9.5
MSZ135	135	147.2	9.5
MSZ140	140	152.2	9.5
MSZ150	150	162.2	9.5
MSZ160	160	172. 2	9.5
MSZ170	170	182.2	9.5
MSZ180	180	192.2	9.5
MSZ190	190	202.2	9.5
MSZ200	200	212.2	9.5
MSZ210	210	222.2	9.5
MSZ220	220	232.2	9.5
MSZ230	230	242.2	9.5
MSZ240	240	252.2	9.5
MSZ250	250	262.2	9.5
MSZ280	280	292.2	9.5
MSZ300	300	312.2	9.5
MSZ320	320	332.2	9.5
MSZ350	350	362.2	9.5
MSZ360	360	372.2	9.5
MSZ400	400	412.2	9.5
MSZ500	500	512.2	9.5
MSZ600	600	612.2	9.5
MSZ700	700	712.2	9.5
MSZ800	800	812.2	9.5
MSZ900	900	912. 2	9.5

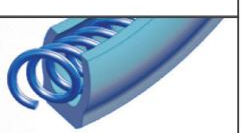
弹簧类型
Spring Type



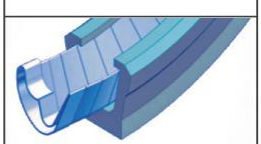
U型弹簧
U-Spring



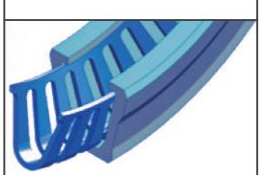
O型弹簧
O-Spring



N型弹簧
N-Spring

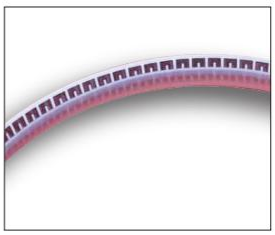


V型弹簧
V-Spring



全面接触型弹簧
Full Contact Spring

孔用泛塞封
Variseal for Hole



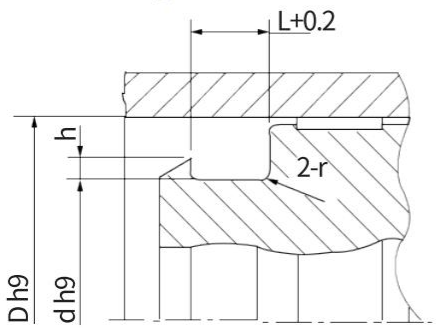
孔用泛塞密封是一种用于内周密封的往复运动用密封。这种密封可适用于恶劣工况，也可以适应某些特殊介质的要求。敏硕密封是所有要求无爬行，耐化学制品和耐大多数介质用途所推荐使用的密封件，例如：阀、泵、分离器、制动器、配料装置等。

Variseal for Hole is a kind of reciprocating seal for inner seal. This kind of seal can be used in bad working conditions, and can also meet the requirements of some special media. MASCOT seal is recommended for all applications requiring no creeping, chemical resistance and resistance to most media, such as valves, pumps, separators, brakes, batching devices, etc.

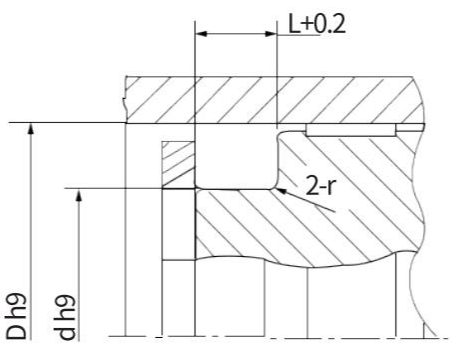
工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
15m/s	0~45MPa	-55°C ~ +260°C	所有液体、化学制品和气体 All liquids, chemicals and gases	2mm-1500mm

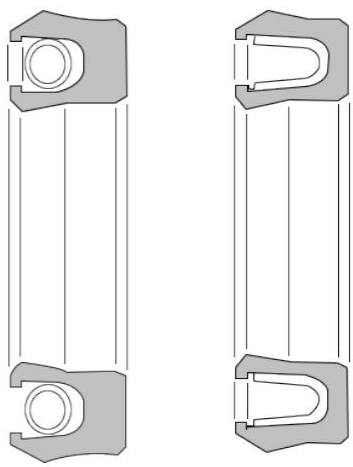
孔用泛塞封沟槽尺寸
Dimension of groove for Hole Variseal



止口式沟槽
Stop groove



开口式沟槽
Open groove



孔径 Hole diameter d h9	沟槽直径 Groove diameter D H9	沟槽宽度 Groove Width L+0.2	半径 radius r1	止口高度 Seam Height h	最大径向间隙 S Maximum radial clearance s			
					2MPa	10MPa	20MPa	40MPa
mm	mm	mm	mm	mm	mm	mm	mm	mm
6-13.9	d+2.9	2.4	0.4	0.4	0.20	0.10	0.08	0.05
14-24.9	d+4.5	3.6	0.4	0.6	0.25	0.15	0.10	0.07
25-45.9	d+6.2	4.8	0.6	0.7	0.35	0.20	0.15	0.08
46-121.9	d+9.4	7.1	0.8	0.8	0.50	0.25	0.20	0.10
125- 999.9	d+l2.2	9.5	0.8	0.8	0.60	0.30	0.25	0.12
1000-2500	d+19. 0	15.0	0.8	0.9	0.90	0.50	0.40	0.20

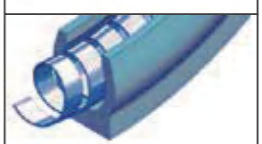
孔用泛塞封规格表
Specification of Variseal for Hole

产品编号 Part No.	孔径 Hole diameter d h9	沟槽直径 Groove diameter D H9	沟槽宽度 Groove Width L+0.2
	mm	mm	mm
MSK3	3	5.9	2.4
MSK4	4	6.9	2.4
MSK5	5	7.9	2.4
MSK6	6	3.1	2.4
MSK8	8	5.1	2.4
MSK10	10	7.1	2.4
MSK12	12	9.1	2.4
MSK14	14	9.5	3.6
MSK15	15	10.5	3.6
MSK16	16	11.5	3.6
MSK18	18	13.5	3.6
MSK20	20	15.5	3.6
MSK22	22	17.5	3.6
MSK25	25	18.8	4.8
MSK28	28	21.8	4.8
MSK30	30	23.8	4.8
MSK32	32	25.8	4.8
MSK35	35	28.8	4.8
MSK36	36	29.8	4.8
MSK40	40	33.8	4.8
MSK42	42	35.8	4.8
MSK45	45	38.8	4.8
MSK48	48	38.6	7.1
MSK50	50	40.6	7.1
MSK52	52	42.6	7.1
MSK55	55	45.6	7.1
MSK56	56	46.6	7.1
MSK60	60	50.6	7.1
MSK63	63	53.6	7.1
MSK65	65	55.6	7.1
MSK70	70	60.6	7.1
MSK75	75	65.6	7.1
MSK80	80	70.6	7.1
MSK85	85	75.6	7.1

产品编号 Part No.	孔径 Hole diameter d h9	沟槽直径 Groove diameter D H9	沟槽宽度 Groove Width L+0.2
	mm	mm	mm
MSK90	90	80.6	7.1
MSK95	95	85.6	7.1
MSK100	100	90.6	7.1
MSK105	105	95.6	7.1
MSK110	110	100.6	7.1
MSK115	115	105.6	7.1
MSK120	120	110.6	7.1
MSK125	125	112.8	9.5
MSK130	130	117.8	9.5
MSK135	135	122.8	9.5
MSK140	140	127.8	9.5
MSK150	150	137.8	9.5
MSK160	160	147.8	9.5
MSK170	170	157.8	9.5
MSK180	180	167.8	9.5
MSK190	190	177.8	9.5
MSK200	200	187.8	9.5
MSK210	210	197.8	9.5
MSK220	220	207.8	9.5
MSK230	230	217.8	9.5
MSK240	240	227.8	9.5
MSK250	250	237.8	9.5
MSK280	280	267.8	9.5
MSK300	300	287.8	9.5
MSK320	320	307.8	9.5
MSK350	350	337.8	9.5
MSK360	360	347.8	9.5
MSK400	400	387.8	9.5
MSK500	500	487.8	9.5
MSK600	600	587.8	9.5
MSK700	700	687.8	9.5
MSK800	800	787.8	9.5
MSK900	900	887.8	9.5

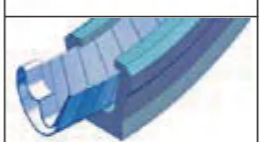
弹簧类型
Spring Type

U型弹簧
U-Spring



O型弹簧
O-Spring

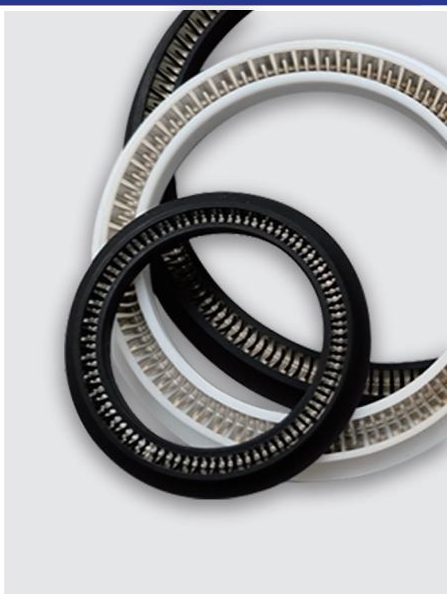
N型弹簧
N-Spring



V型弹簧
V-Spring

全面接触型弹簧
Full Contact Spring

旋转泛塞封
Rotate Variseal



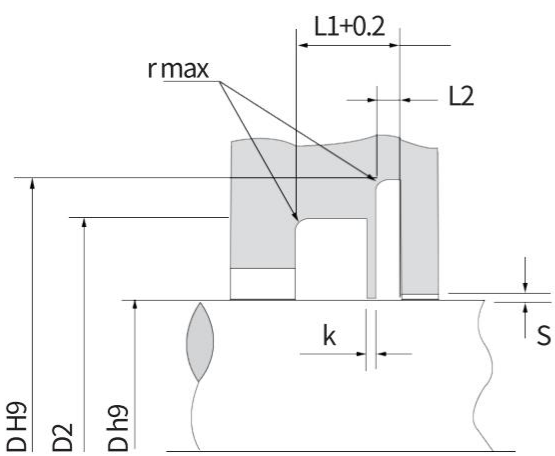
旋转泛塞密封圈是一种用于旋转轴处的单向作用密封圈。被广泛应用于各种液压系统，此外，由于密封和弹簧对相应材料都具有良好的相容性，在化学、医药和食品工业也广泛被应用。

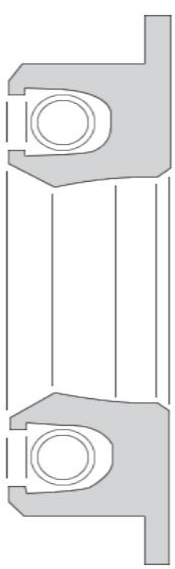
The rotate Variseal is a one-way acting seal ring used at the rotating shaft. It is widely used in various hydraulic systems. In addition, due to the good compatibility of seals and springs with corresponding materials, it is also widely used in chemical, pharmaceutical and food industries.

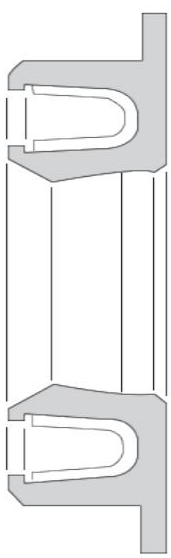
工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
2m/s	0~15MPa	-55°C ~ +260°C	所有液体、化学制品和气体 All liquids, chemicals and gases	2mm-1500mm

旋转泛塞封沟槽尺寸
Dimension of groove for Rotate Variseal







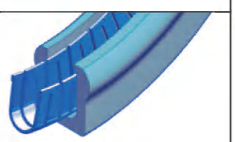
轴径 Shaft diameter d h9	沟槽直径 Groove diameter		沟槽宽度 Groove Width L+0.2	半径 radius r1	导入倒角 Import chamfer k	最大径向间隙 S Maximum radial clearance s		
	D1 H9	D2 H9				2MPa	10MPa	20MPa
mm	mm	mm	mm	mm	mm	mm	mm	mm
5.0-19.9	d+5.0	d+9.0	3.6	0.8	0.3	0.25	0.15	0.10
20.0-39.9	d+7.0	d+12.5	4.8	1.1	0.4	0.35	0.20	0.15
4-0.0-400.9	d+l0.5	d+17.5	7.1	1.4	0.5	0.5	0.25	0.20
401-999.9	d+l4.0	d+22.0	9.5	1.6	0.6	0.6	0.30	0.25

旋转泛塞封规格表
Specification of rotate Variseal

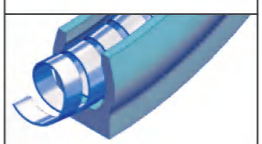
产品编号 Part No.	轴径 Shaft diameter d h9	沟槽直径 Groove diameter		沟槽宽度 Groove Width L+0.2
		D1 H9	D2 H9	
	mm	mm	mm	mm
MSR5	5	10.0	14.0	3.6
MSR6	6	11.0	15.0	3.6
MSR8	8	13.0	17.0	3.6
MSR10	10	15.0	19.0	3.6
MSR12	12	17.0	21.0	3.6
MSR14	14	19.0	23.0	3.6
MSR15	15	20.0	24.0	3.6
MSR16	16	21.0	25.0	3.6
MSR18	18	23.0	27.0	3.6
MSR20	20	27.0	32.5	4.8
MSR22	22	29.0	34.5	4.8
MSR25	25	32.0	37.5	4.8
MSR28	28	35.0	40.5	4.8
MSR30	30	37.0	42.5	4.8
MSR32	32	39.0	44.5	4.8
MSR35	35	42.0	47.5	4.8
MSR36	36	43.0	48.5	4.8
MSR40	40	50.5	57.5	7.1
MSR42	42	52.5	59.5	7.1
MSR45	45	55.5	62.5	7.1
MSR48	48	58.5	65.5	7.1
MSR50	50	60.5	67.5	7.1
MSR52	52	62.5	69.5	7.1
MSR55	55	65.5	72.5	7.1
MSR56	56	66.5	73.5	7.1
MSR60	60	70.5	77.5	7.1
MSR63	63	73.5	80.5	7.1
MSR65	65	75.5	82.5	7.1
MSR70	70	80.5	87.5	7.1
MSR75	75	85.5	92.5	7.1
MSR80	80	90.5	97.5	7.1
MSR85	85	95.5	102.5	7.1
MSR90	90	100.5	107.5	7.1
MSR95	95	105.5	112.5	7.1

产品编号 Part No.	轴径 Shaft diameter d h9	沟槽直径 Groove diameter		沟槽宽度 Groove Width L+0.2
		D1 H9	D2 H9	
	mm	mm	mm	mm
MSR100	100	110.5	117.5	7.1
MSR105	105	115.5	122.5	7.1
MSR110	110	120.5	127.5	7.1
MSR115	115	125.5	132.5	7.1
MSR120	120	130.5	137.5	7.1
MSR125	125	135.5	142.5	7.1
MSR130	130	140.5	147.5	7.1
MSR135	135	145.5	152.5	7.1
MSR140	140	150.5	157.5	7.1
MSR150	150	160.5	167.5	7.1
MSR160	160	170.5	177.5	7.1
MSR170	170	180.5	187.5	7.1
MSR180	180	190.5	197.5	7.1
MSR190	190	200.5	207.5	7.1
MSR200	200	210.5	217.5	7.1
MSR210	210	220.5	227.5	7.1
MSR220	220	230.5	237.5	7.1
MSR230	230	240.5	247.5	7.1
MSR240	240	250.5	257.5	7.1
MSR250	250	260.5	267.5	7.1
MSR280	280	290.5	297.5	7.1
MSR300	300	310.5	317.5	7.1
MSR320	320	330.5	337.5	7.1
MSR350	350	360.5	367.5	7.1
MSR360	360	370.5	377.5	7.1
MSR400	400	410.5	417.5	7.1
MSR420	420	434.5	442.0	9.5
MSR450	450	464.5	472.0	9.5
MSR480	480	494.5	502.0	9.5
MSR500	500	514.5	522.0	9.5
MSR600	600	614.5	622.0	9.5
MSR700	700	714.5	722.0	9.5
MSR800	800	814.5	822.0	9.5
MSR900	900	914.5	922.0	9.5

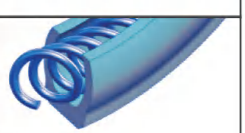
弹簧类型
Spring Type



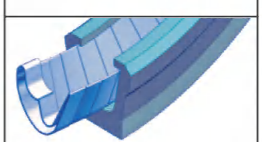
U型弹簧
U-Spring



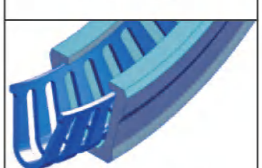
O型弹簧
O-Spring



N型弹簧
N-Spring

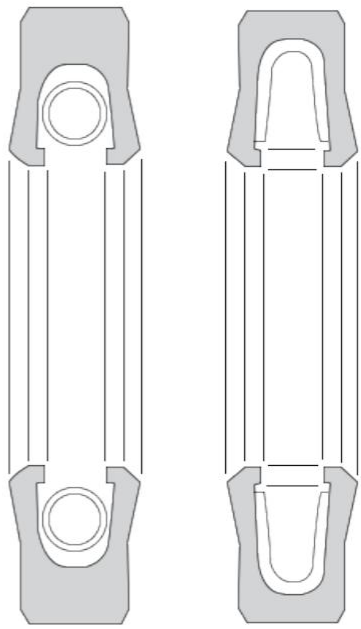


V型弹簧
V-Spring



全面接触型弹簧
Full Contact Spring

端面内向泛塞封
End face inward Variseal



端面内向泛塞密封圈由一个内向 U 形的 PTFE 密封圈内装特殊 V 形不锈钢弹簧的端面内向静密封件。这种密封件适用于单向作用，高压、静态密封。它用于在压力处于内部的工况。被广泛应用于各种静态密封和慢速动密封场合，对于较轻的气体、制冷剂和真空有较好的密封作用，也可用在表面光洁度不太理想的场合。

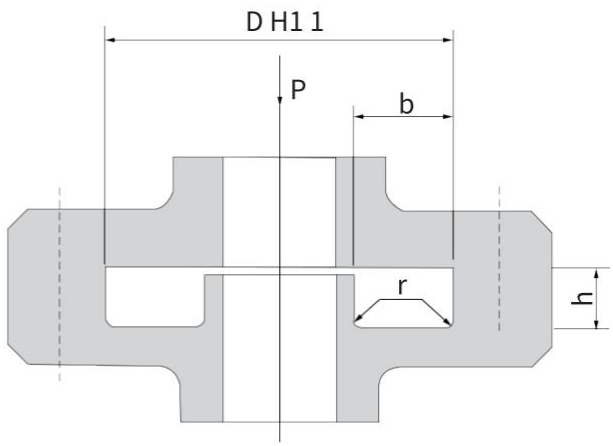
he end face inward Variseal consists of an inward U-shaped PTFE sealing ring with a special V-shaped stainless steel spring end face inward static seal. This kind of seal is suitable for one-way action, high pressure and static sealing. It is used for working conditions when the pressure is inside. It is widely used in all kinds of static sealing and slow dynamic sealing occasions. It has good sealing effect for lighter gases, refrigerants and vacuum, and can also be used in the occasions where the surface finish is not ideal.

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
—	0~45MPa	-55°C ~ +260°C	所有液体、化学制品和气体 All liquids, chemicals and gases	2mm-1500mm

端面内向泛塞封沟槽尺寸
Dimension of groove for end face inward Variseal

沟槽外侧直径DH11 Outside diameter of groove		沟槽宽度b Groove Width b min	半径r radius r	沟槽深度 Groove Depth	
标准范围 Standard	适用范围 application			深度 Depth h	公差 TOL
mm	mm	mm	mm	mm	mm
10-13. 9	10-40	2.4	0.4	1.45	0.03
14-44. 9	13-200	3.6	0.4	2.25	0.05
45-79. 9	18-400	4.8	0.6	3.1	0.08
80-109. 9	28-700	7.1	0.8	4.7	0.1

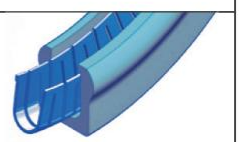


端面内向泛塞封规格表
Specification of end face inward Variseal

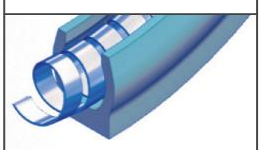
产品编号 Part No.	沟槽外径 Outside diameter D	沟槽内径 Inner diameter d	沟槽深度 Groove Depth h
	mm	mm	mm
MSI14	14	6.8	2.25
MSI16	16	8.8	2.25
MSI18	18	10.8	2.25
MSI20	20	12.8	2.25
MSI22	22	14.8	2.25
MSI26	26	188	2.25
MSI28	28	20.8	2.25
MSI30	30	22.8	2.25
MSI38	38	30.8	2.25
MSI42	42	34.8	2.25
MSI46	46	36.4	3.1
MSI48	48	38.4	3.1
MSI50	50	40.4	3.1
MSI58	58	48.4	3.1
MSI62	62	52.4	3.1
MSI66	66	56.4	3.1
MSI70	70	60.4	3.1
MSI78	78	68.4	3.1
MSI82	82	67.8	4.7
MSI86	86	71.8	4.7
MSI90	90	75.8	4.7
MSI100	100	85.8	4.7
MSI110	110	91	6.1
MSI120	120	101	6.1
MSI130	130	111	6.1
MSI140	140	121	6.1
MSI150	150	131	6.1
MSI160	160	141	6.1
MSI170	170	151	6.1

产品编号 Part No.	沟槽外径 Outside diameter D	沟槽内径 Inner diameter d	沟槽深度 Groove Depth h
	mm	mm	mm
MSI180	180	161	6.1
MSI190	190	171	6.1
MSI200	200	181	6.1
MSI220	220	201	6.1
MSI250	250	231	6.1
MSI260	260	241	6.1
MSI270	270	251	6.1
MSI280	280	261	6.1
MSI290	290	271	6.1
MSI300	300	281	6.1
MSI320	320	301	6.1
MSI360	360	341	6.1
MSI380	380	361	6.1
MSI400	400	381	6.1
MSI450	450	431	6.1
MSI500	500	481	6.1
MSI550	550	531	6.1
MSI600	600	581	6.1
MSI650	650	631	6.1
MSI700	700	681	6.1
MSI750	750	731	6.1
MSI800	800	781	6.1
MSI850	850	831	6.1
MSI900	900	881	6.1
MSI920	920	901	6.1
MSI930	930	911	6.1
MSI950	950	931	6.1
MSI980	980	961	6.1
MSI1000	1000	970	9.5

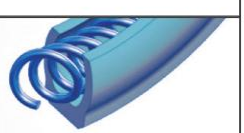
弹簧类型
Spring Type



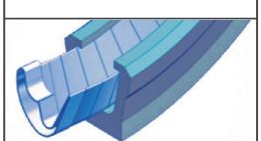
U型弹簧
U-Spring



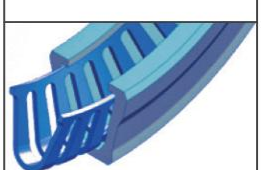
O型弹簧
O-Spring



N型弹簧
N-Spring

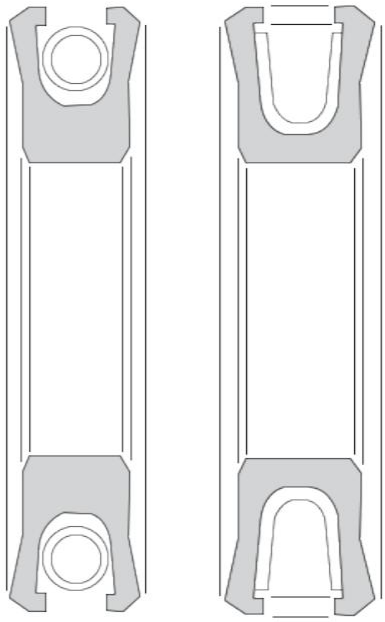


V型弹簧
V-Spring



全面接触型弹簧
Full Contact Spring

端面外向泛塞封
End face outward Variseal



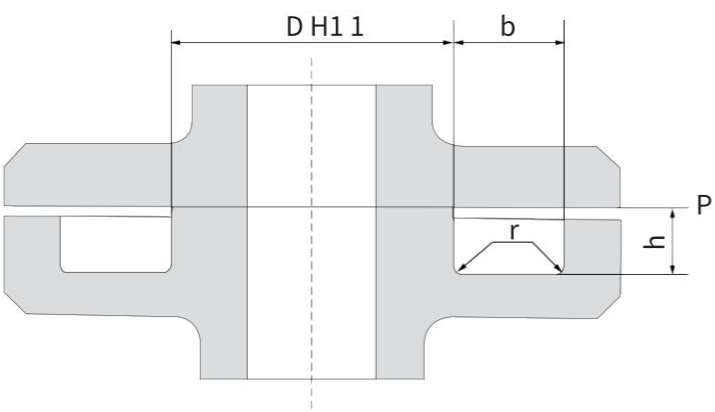
端面外向泛塞密封圈由一个外向 U 形的 PTFE 密封圈内装特殊 V 形不锈钢弹簧的端面外向静密封件。这种密封件适用于单向作用，高压、静态密封。它用于在压力处于内部的工况。被广泛应用于各种静态密封和慢速动密封场合，对于较轻的气体、制冷剂和真空有较好的密封作用，也可用在表面光洁度不太理想的场合。

The end face outward Variseal consists of an outward U-shaped PTFE sealing ring with a special V-shaped stainless steel spring end face outward static seal. This kind of seal is suitable for one-way action, high pressure and static sealing. It is used for working conditions when the pressure is inside. It is widely used in all kinds of static sealing and slow dynamic sealing occasions. It has good sealing effect for lighter gases, refrigerants and vacuum, and can also be used in the occasions where the surface finish is not ideal.

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
—	0~45MPa	-55°C ~ +260°C	所有液体、化学制品和气体 All liquids, chemicals and gases	2mm-1500mm

端面外向泛塞封沟槽尺寸
Dimension of groove for end face outward Variseal



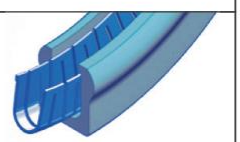
沟槽外侧直径DH1 1 Outside diameter of groove		沟槽宽度 b Groove Width b	半径r radius	沟槽深度 Groove Depth	
标准范围 Standard	适用范围 application	min	max	深度 Depth h	公差 TOL
mm	mm	mm	mm	mm	mm
3-9.9	3-40	2.4	0.4	1.45	0.03
10-19.9	8-200	3.6	0.4	2.25	0.05
20-39.9	12-400	4.8	0.6	3.10	0.08
40-119.9	20-700	7.1	0.8	4.70	0.10
120-999.9	35-1000	9.5	0.8	6.10	0.15
1000-1500	120-1500	15.0	0.8	9.50	0.20

端面外向泛塞封规格表
Specification of end face outward Variseal

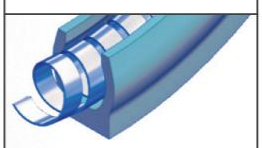
产品编号 Part No.	沟槽外径 Outside diameter D	沟槽内径 Inner diameter d	沟槽深度 Groove Depth h
	mm	mm	mm
MSO8	8	12.8	1.45
MSO10	10	17.2	2.25
MSO12	12	19.2	2.25
MSO14	14	21.2	2.25
MSO15	15	22.2	2.25
MSO16	16	23.2	2.25
MSO18	18	25.2	2.25
MSO20	20	29.6	3.1
MSO22	22	31.6	3.1
MSO24	24	33.6	3.1
MSO28	28	37.6	3.1
MSO30	30	39.6	3.1
MSO38	3.8	47.6	3.1
MSO42	42	56.2	4.7
MSO46	46	60.2	3.1
MSO48	48	62.2	4.7
MSO50	50	64.2	4.7
MSO58	58	72.2	4.7
MSO62	62	76.2	4.7
MSO66	66	80.2	4.7
MSO70	70	84.2	4.7
MSO78	78	92.2	4.7
MSO82	82	96.2	4.7
MSO86	86	100.2	4.7
MSO90	90	104.2	4.7
MSO100	100	114.2	4.7
MSO110	110	124.2	4.7
MSO120	120	139	6.1

产品编号 Part No.	沟槽外径 Outside diameter D	沟槽内径 Inner diameter d	沟槽深度 Groove Depth h
	mm	mm	mm
MSO130	130	149	6.1
MSO140	140	159	6.1
MSO150	150	169	6.1
MSO160	160	179	6.1
MSO170	170	189	6.1
MSO180	180	199	6.1
MSO190	190	209	6.1
MSO200	200	219	6.1
MSO210	210	229	6.1
MSO220	220	239	6.1
MSO230	230	249	6.1
MSO240	240	259	6.1
MSO250	250	269	6.1
MSO300	300	319	6.1
MSO350	350	369	6.1
MSO400	400	419	6.1
MSO450	450	469	6.1
MSO500	500	519	6.1
MSO550	550	569	6.1
MSO600	600	619	6.1
MSO650	650	669	6.1
MSO700	700	719	6.1
MSO750	750	769	6.1
MSO800	800	819	6.1
MSO850	850	869	6.1
MSO900	900	919	6.1
MSO950	950	969	6.1
MSO1000	1000	1030	9.5

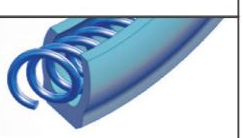
弹簧类型
Spring Type



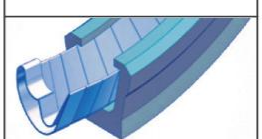
U型弹簧
U-Spring



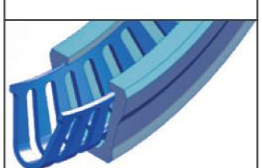
O型弹簧
O-Spring



N型弹簧
N-Spring

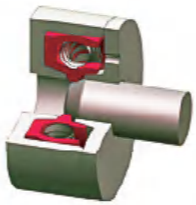


V型弹簧
V-Spring



全面接触型弹簧
Full Contact Spring

抗吹出活塞杆密封圈
Anti-Blowout Rod Seals



这种独特设计在阀门行业已经使用超过50 年。在需要活塞杆与密封圈脱离的应用中，抗吹出设计可避免动态密封唇在压力下变形。

This unique design has been used in the valve industry for more than 50 years. In applications requiring the rod to disengage from the seal, the anti-blowout design prevents the dynamic sealing lip from deforming under pressure.

整体活塞密封
Integral Piston Seals

对于中等压力的小直径应用，整体活塞密封是减少精密机加工金属零部件数量的创新方法。除了易于装配外，该设计还可作为密封圈和导向轴承使用。

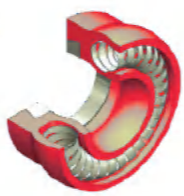
For small diameter applications at moderate pressures, the integral piston seal is an innovative approach to reducing the number of precision machined metal parts and components. In addition to allowing easy assembly, this design serves as a seal and as a guide bearing.

卫生级密封圈
Sanitary Seals

设计将弹簧与介质隔离，避免进入弹簧内部，并且方便清洁。这是一种在食品灌装以及其他注胶设备上非常出色的设计。

The design shields the spring from the media, prevents entrapment in the spring and allows easier cleaning. This design is excellent in food filling and other dispensing equipment.

带背压环的高压密封圈
High-Pressure Seals with Back-up Rings



许多设计选项可用于解决高压密封问题。为避免夹套材料咬合，可在大多数类型密封圈内安装背压环。通常推荐使用压力驱动的背压环封闭多个间隙或承受配合零件侧面负荷。

A number of design options are available for high-pressure sealing problems. Back-up rings can be configured into most seal types to prevent extrusion of the jacket material. Pressure actuated back-up rings are often recommended for closing multiple gaps or for dealing with hardware sidloads.

抗吹出球阀密封圈
Anti-Blowout Ball Valve Seals

球阀密封圈的机械加工严格遵循制造商所要求的精确公差。石化阀门所采用的抗吹出设计是此类密封圈的一个成功应用。敏硕的工程师协助客户将抗吹出功能设计到配合零件内。

Ball valve seals are machined to the exact tolerances called for by manufacturers. A highly successful example of this type of seal is the anti-blowout design, which is used in petrochemical valves. MASCOT engineers assist customers in designing a captive anti-blowout feature into hardware.

双向密封圈
Bidirectional Seals

这种多功能设计可将两个密封圈和一个导向轴承组合到为一个单件部件。双向密封圈推荐用于需要装配方便和更换快速的中等温度/ 压力应用。在没有内径结构时，也可作为浮动活塞使用。

This versatile design combines two seals and a guide bearing into a one-piece component. The bidirectional seal is recommended for moderate temperature/ pressure applications where simple assembly and quick replacement are required. When designed without an inside diameter it also serves as a floating piston.

成型加工密封圈
Formed Seals

成型加工密封圈是一种独特的特种密封产品，敏硕密封圈有能力根据客户配合零件要求制造大部分特殊形状的主密封。航空航天检修门和流体热交换器均为成形加工密封圈的成功应用。

Our formed seals are a unique specialty sealing product. Saint-Gobain Seals has the ability to manufacture most of the major seal cross sections in special shapes to fit the customer's hardware. Successful applications of formed seals include aerospace access doors and liquid heat exchangers.

平衡弹簧式密封圈
Balance spring seal

利用平衡垫圈加强的端面密封圈可在不存在弹簧失效风险的情况下实现较大的挠曲度。平衡密封圈的另一个优点是，其可制造成比大多数弹簧蓄能密封圈更小的直径。

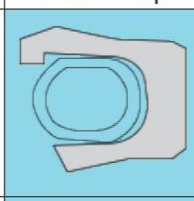
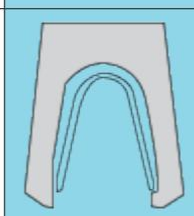
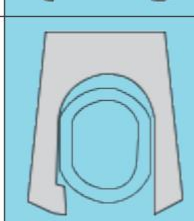
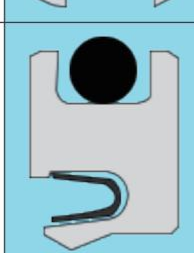
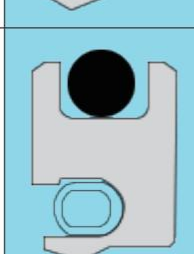
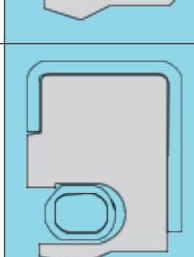
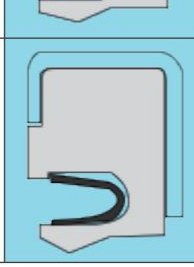
Face seals energized with Belleville washers provide high deflection without risk of the spring collapsing. Another advantage of a Belleville seal is that they can be manufactured in smaller diameters than most spring-energized seals.

多蓄能器
Multiple Energizers

如果密封圈的横截面相比其他密封圈尺寸而言过大，则多蓄能器设计可能成为首选。

If the cross section of the seal is too big compared to the other seal dimensions, a multiple spring design may be preferred.

型号及工况条件
Part No.&working condition

型号 Part No.	截面形状 Section shape	速度 speed	压力范围 Pressure range	温度范围 temperature range	特点 Feature
MST1		15m/s	0~40MPa	-70°C ~ +300°C	刮片适合那些需要密切控制摩擦或者转矩的应用，或者存在更宽的硬件公差或偏心率。 Blades are suitable for applications where friction or torque needs to be closely controlled, or where there is a wider hardware tolerance or eccentricity.
MST2		—	0~60MPa	-100°C ~ +200°C	应用于静态、缓慢旋转或者在两个端面之间存在震荡的工况。 It can be used in the condition of static, slow rotation or vibration between two end faces.
MST3		—	0~60MPa	-150°C ~ +200°C	除了带有斜面线圈弹簧在小直径和横截面的情况下使用更具灵活性外，其余和 MST2 都相同。 It is the same as MST3 except that coil spring with inclined plane is more flexible in the case of small diameter and cross section.
MST4		15m/s	0~25MPa	-55°C ~ +205°C	密封件外径沟槽中的 O 形圈能够用来防止密封件跟着轴旋转，并且在外径上提供了积极作用的静密封。 The O-ring in the groove of the outer diameter of the seal can be used to prevent the seal from rotating with the shaft, and provide a positive static seal on the outer diameter.
MST5		15m/s	0~25MPa	-55°C ~ +205°C	应用工况和 MST4 一样，不同的是需要密切控制摩擦或扭矩，或者存在更宽的硬件公差或偏心率。 Application conditions are the same as MST4, but the difference is that friction or torque needs to be closely controlled, or there is a wider hardware tolerance or eccentricity.
MST6		15m/s	0~25MPa	-70°C ~ +300°C	金属外壳 MST6 型泛塞封，这个金属能够防止上述所有旋转密封件跟着轴旋转。 Metal housing MST6 type universal plug seal, this metal can prevent all the above rotating seals from rotating with the shaft.
MST7		15m/s	0~25MPa	-70°C ~ +300°C	同 MST6 型泛塞封相似，采用斜面线圈弹簧施力的设计，能够提供更低的摩擦并且能够更密切的控制扭矩值。 Similar to MST6 type universal plug seal, it adopts inclined coil spring force application design, which can provide lower friction and control torque value more closely.

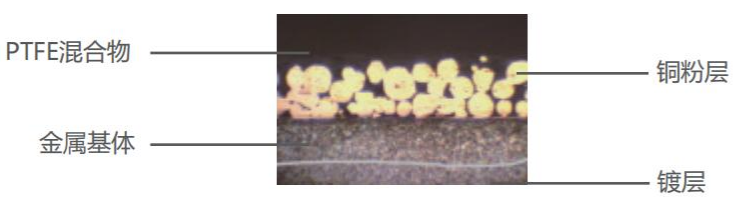
敏硕还可以根据客户参数要求或样品进行定制。
MASCOT can also be customized according to customer parameters or samples.

PTFE 轴封 PTFE Shaft Seal

PTFE轴封是能够在极端的温度，腐蚀性的介质，高表面速度，高压以及缺少润滑等苛刻的环境中正常运行，可以帮助人们显著改善轴封产品的性能。其具体表现为：
· 超强的抗化学性能；· 低摩擦（可以延长使用寿命）
· 能够在润滑不足/无润滑情况下运行；· PV值高
· 提供广泛的唇边和外壳材料选择；
· 能够承受40m/s的表面速度；· 压力可达2 MPa
· 极端工作温度（-60℃至260℃，瞬间300度）
· 260度高速转高压旋转轴封，寿命是传统橡胶骨架油封10倍
应用环境：耐强酸、强碱或强氧化剂等，适用无油自润滑环境，清洁度高的食品医疗产品加工环境。
MASCOT科技生产的PTFE不锈钢轴封，形式有：单唇、双唇、三唇、四唇；正向或反向唇口，亦可以正反向均有。唇口部分选用的材料为PTFE复合材料，经过FDA环保认证;大大提高了密封唇的耐磨性、抗疲劳性；骨架选用了304/316不锈钢（具有良好腐蚀性）。
适用机械：螺杆空压机，真空泵，发动机，变速箱，面粉搅拌机，饮料切片机，炒菜机，机器人，药品磨床，离心机，鼓风机等。

PTFE shaft seals can operate normally in harsh environments such as extreme temperatures, corrosive media, high surface speeds, high pressures, and lack of lubrication, which can help significantly improve the performance of shaft seal products. Its specific manifestation is:
·Super strong chemical resistance· Low friction (can extend service life)
·Able to operate under insufficient/no lubrication conditions· High PV value
·Provide a wide selection of lip and shell materials;
·Capable of withstanding a surface velocity of 40m/s· Pressure can reach 2 MPa
·Extreme working temperature (-60 ℃ to 260 ℃, instantaneous 300 ℃)
·260 degree high-speed to high-pressure rotating shaft seal, with a lifespan 10 times that of traditional rubber skeleton oil seals
Application environment: resistant to strong acids, alkalis, or oxidizing agents, suitable for oil-free self-lubricating environments, and high cleanliness food and medical product processing environments.
The PTFE stainless steel shaft seals produced by MASCOT Technology, form of single lip, double lip, three lip, and four lip; Positive or negative lips can also be positive or negative. The material used for the lip part is PTFE composite material, which has been certified by FDA for environmental protection; Greatly improving the wear resistance and fatigue resistance of the sealing lip; The skeleton is made of 304/316 stainless steel (with good corrosion resistance).
Applicable : screw air compressor, vacuum pump, engine, gearbox, flour mixer, beverage slicer, fryer, robot, medicine grinder, centrifuge, blower, etc

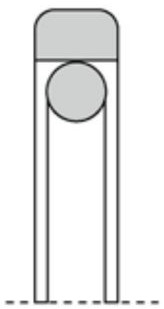
PTFE 复合轴承 PTFE Composite Bearing



PTFE基金属塑料自润滑轴承以优质金属材料为基体，中间烧结多孔球形青铜粉，表面覆着以 PTFE为主的耐磨材料作为轴承的工作表面;金属基体提供了轴承最基本的机械性能，中间铜粉层则提高了耐磨材料与钢板间的结合强度同时由于铜合金具有较高的热传导系数，因此可以快速转移轴承运作时产生的热量，以PTFE为主的表面耐磨材料设计可使用于干摩擦工况条件。这种材料结构使得轴承具有很好的尺寸稳定性，优良的热传导能力，优异的耐磨性能和极低的摩擦系数。

PTFE based metal plastic self-lubricating bearings are made of high-quality metal materials as the substrate, sintered with porous spherical bronze powder in the middle, and coated with PTFE based wear-resistant materials as the working surface of the bearings; The metal matrix provides the most basic mechanical properties of the bearing, while the intermediate copper powder layer improves the bonding strength between the wear-resistant material and the steel plate. At the same time, due to the high thermal conductivity of copper alloy, it can quickly transfer the heat generated during bearing operation. Surface wear-resistant materials mainly made of PTFE can be designed for dry friction conditions. This material structure provides bearings with excellent dimensional stability, excellent heat conduction ability, excellent wear resistance, and extremely low friction coefficient.

孔用格莱圈
piston Glyd ring



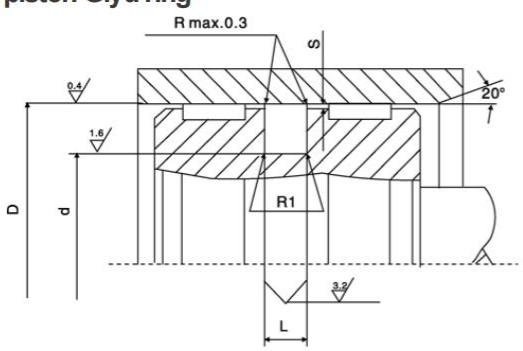
孔用格莱圈由抗磨填充聚四氟乙烯(PTFE)环与 O 形橡胶密封圈组成,O 形圈可提供预紧力并补偿 PTFE 环磨损。它适用于液压缸活塞,为双向密封,常与导向环配套。依靠 O 形圈弹性形成初始密封,系统压力升高时,O 形圈进一步挤压 PTFE 环,增强贴合度与接触应力,实现高效密封。

The hole-used Glyd ring consists of a wear-resistant filled polytetrafluoroethylene (PTFE) ring and an O-shaped rubber seal ring. The O-ring can provide preload and compensate for the wear of the PTFE ring.It is suitable for hydraulic cylinder pistons, featuring bidirectional sealing, and is often used with guide rings. It relies on the elasticity of the O-ring to form an initial seal. When the system pressure increases, the O-ring further squeezes the PTFE ring, enhancing the fitting degree and contact stress to achieve efficient sealing.

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
⩽5m/s	0~40MPa	-30°C ~ +200°C	液压油、气体和水 Hydraulic Oil，gases and Water	8mm-2500mm

孔用格莱圈尺寸
piston Glyd ring



缸筒直径 Cylinder bore diameter D h9			沟槽内径 Groove inner diameter B h9	沟槽宽度 Groove width F+0.2	径向间隙 Radial clearance S max		最大半径 maximum radius R	O 型圈内径 O-ring inner diameter	O 型圈线径 O-ring cord diameter
重载系列	标准系列	轻载系列			0-20Mpa	20-40Mpa			
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
-	8-14.9	15-39.9	D-4.9	2.2	0.6-0.4	0.4-0.3	0.3-0.5	B+0.1-0.2	1.78
-	15-39.9	40-79.9	D-7.5	3.2	0.8-0.5	0.5-0.3	0.5-0.8	B+0.2-0.3	2.62
15-39.9	40-79.9	80-132.9	D-11.0	4.2	0.8-0.5	0.5-0.3	0.8-1.2	B+0.3-0.4	3.53
40-79.9	80-132.9	133-329.9	D-15.5	6.3	1.0-0.6	0.6-0.4	1.2-1.5	B+0.4-0.5	5.33
80-132.9	133-329.9	330-669.9	D-21.0	8.1	1.0-0.6	0.6-0.4	1.5-2.0	B+0.5-0.6	7.00
133-329.9	330-669.9	670-999.9	D-24.5	8.1	1.2-0.7	0.7-0.5	1.5-2.0	B+0.5-0.6	7.00
330-669.9	670-999.9	-	D-28.0	9.5	1.4-0.8	0.8-0.6	2.0-3.0	B+0.6-0.7	8.40

孔用格莱圈规格表
Specification of piston Glyd ring

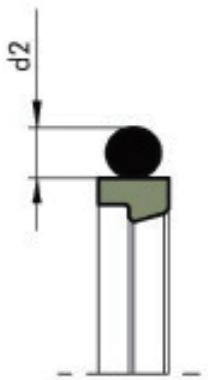
产品编号 Part NO.	缸筒直径 Cylinder bore diameter D h9	沟槽内径 Groove inner diameter B h9	沟槽宽度 Groove width F+0.2
	mm	mm	mm
MSG8	8	3.1	2.2
MSG10	10	5.1	2.2
MSG12	12	7.1	2.2
MSG15	15	7.5	3.2
MSG16	16	8.5	3.2
MSG18	18	10.5	3.2
MSG20	20	12.5	3.2
MSG22	22	14.5	3.2
MSG24	24	16.5	3.2
MSG25	25	17.5	3.2
MSG25.4	25.4	17.9	3.2
MSG28	28	20.5	3.2
MSG28.5	28.5	21.0	3.2
MSG30	30	22.5	3.2
MSG31.7	31.7	24.2	3.2
MSG32	32	24.5	3.2
MSG35	35	27.5	3.2
MSG36	36	28.5	3.2
MSG38	38	30.5	3.2
MSG39	39	31.5	3.2
MSG40	40	29.0	4.2
MSG42	42	31.0	4.2
MSG44.5	44.5	33.5	4.2
MSG45	45	34.0	4.2
MSG48	48	37.0	4.2
MSG50	50	39.0	4.2
MSG50.8	50.8	39.8	4.2
MSG52	52	41.0	4.2
MSG55	55	44.0	4.2
MSG57.1	57.1	46.1	4.2
MSG60	60	49.0	4.2
MSG63	63	52.0	4.2
MSG63.5	63.5	52.5	4.2
MSG64	64	53.0	4.2

产品编号 Part NO.	缸筒直径 Cylinder bore diameter D h9	沟槽内径 Groove inner diameter B h9	沟槽宽度 Groove width F+0.2
	mm	mm	mm
MSG65	65	54.0	4.2
MSG69.8	69.8	58.8	4.2
MSG70	70	59.0	4.2
MSG70	70	54.5	6.3
MSG75	75	64.0	4.2
MSG76.2	76.2	65.2	4.2
MSG80	80	64.5	6.3
MSG80	80	59.0	8.1
MSG82.5	82.5	67.0	6.3
MSG85	85	69.5	6.3
MSG85	85	64.0	8.1
MSG89	89	73.5	6.3
MSG90	90	74.5	6.3
MSG90	90	69.0	8.1
MSG95	95	79.5	6.3
MSG95	95	74.0	8.1
MSG100	100	84.5	6.3
MSG100	100	79.0	8.1
MSG101.6	101.6	86.1	6.3
MSG105	105	89.5	6.3
MSG105	105	84.0	8.1
MSG110	110	94.5	6.3
MSG110	110	89.0	8.1
MSG114.3	114.3	98.8	6.3
MSG115	115	99.5	6.3
MSG115	115	94.0	8.1
MSG120	120	104.5	6.3
MSG120	120	99.0	8.1
MSG125	125	109.5	6.3
MSG125	125	104.0	8.1
MSG127	127	111.5	6.3
MSG130	130	114.5	6.3
MSG130	130	109.0	8.1
MSG132	132	116.5	6.3

轴用斯特封
Stepseal

斯特封是一种组合式双向密封件，广泛适用于液压、气动系统中的活塞与活塞杆，由弹性体密封圈（如丁腈橡胶NBR、氟橡胶FKM等）和填充聚四氟乙烯（PTFE）或其复合材料制成的耐磨环组成。其核心作用是实现活塞与缸筒、活塞杆与缸筒之间的双向密封，有效防止介质（液压油、压缩空气等）从高压侧泄漏到低压侧，同时保障系统密封性能的稳定性与耐用性。

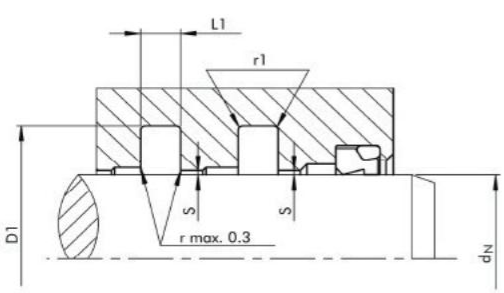
Stepseal is a combined bidirectional seal for pistons and piston rods in hydraulic/pneumatic systems. It consists of an elastomeric ring (e.g., NBR, FKM) and a wear-resistant ring made of filled PTFE or composites. It provides bidirectional sealing between piston/rod and cylinder, preventing media (hydraulic oil, compressed air, etc.) from leaking from high to low pressure sides while ensuring stable, durable sealing performance.



工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
⩽5m/s	0~40MPa	-30°C ~ +200°C	液压油、气体和水 Hydraulic Oil，gases and Water	8mm-2500mm

轴用斯特封尺寸
Stepseal



活塞杆直径 dN f8			沟槽尺寸 Groove diameter D1 H9	沟槽宽度 Groove width L+0.2	圆角 Fillet r1	最大间隙 S max Maximum clearance			O 型圈截面 ring cross-section d2
重载系列	标准系列	轻载系列				10Mpa	20Mpa	40Mpa	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
-	3-7.9	8-18.9	d+4.9	2.2	0.4	0.30	0.20	0.15	1.78
-	8-18.9	19-37.9	d+7.3	3.2	0.6	0.40	0.25	0.15	2.62
8-18.9	19-37.9	38-199.9	d+10.7	4.2	1	0.40	0.25	0.2	3.53
19-37.9	38-199.9	200-255.9	d+15.1	6.3	1.2	0.5	0.30	0.2	5.33
38-199.9	200-255.9	256-649.9	d+20.5	8.1	1.5	0.6	0.35	0.25	7
200-255.9	256-649.9	650-999.9	d+24.0	8.1	1.8	0.6	0.35	0.25	7
256-649.9	650-999.9	-	d+27.3	9.5	2.5	0.7	0.50	0.3	8.4
⩾1000			d+38.0	13.8	3	1	0.70	0.6	12

轴用斯特封规格表
Specification of Stepseal

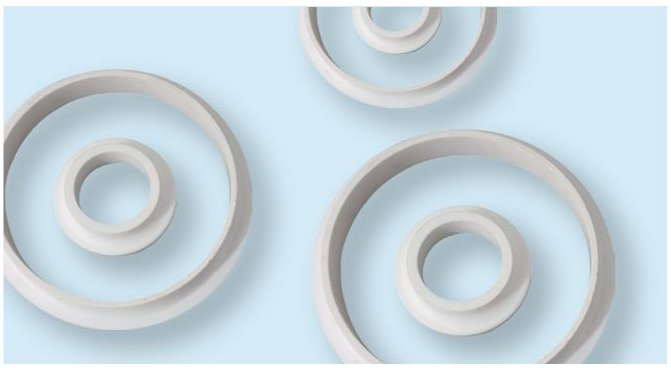
产品编号 Part NO.	轴径 Shaft diameter d h9	沟槽底径 Groove bottom diameter D h9	沟槽宽度 Groove width L+0.2
	mm	mm	mm
MSS4	4	8.9	2.2
MSS5	5	9.9	2.2
MSS6	6	10.9	2.2
MSS8	8	12.9	2.2
MSS8A	8	15.3	3.2
MSS10	10	14.9	2.2
MSS10A	10	17.3	3.2
MSS12	12	16.9	2.2
MSS12A	12	19.3	3.2
MSS14	14	18.9	2.2
MSS14A	14	21.3	3.2
MSS15	15	19.9	2.2
MSS15A	15	22.3	3.2
MSS16	16	20.9	2.2
MSS16A	16	23.3	3.2
MSS16B	16	26.7	4.2
MSS18	18	22.9	2.2
MSS18A	18	25.3	3.2
MSS18B	18	28.7	4.2
MSS20	20	27.3	3.2
MSS20A	20	30.7	4.2
MSS22	22	29.3	3.2
MSS22A	22	32.7	4.2
MSS24	24	34.7	4.2
MSS25	25	32.3	3.2
MSS25A	25	35.7	4.2
MSS28	28	35.3	3.2

产品编号 Part NO.	轴径 Shaft diameter d h9	沟槽底径 Groove bottom diameter D h9	沟槽宽度 Groove width L+0.2
	mm	mm	mm
MSS28A	28	38.7	4.2
MSS30	30	37.3	3.2
MSS30A	30	40.7	4.2
MSS30B	30	45.1	6.3
MSS32	32	39.3	3.2
MSS32A	32	42.7	4.2
MSS35	35	42.3	3.2
MSS35A	35	45.7	4.2
MSS36	36	43.3	3.2
MSS36A	36	46.7	4.2
MSS36B	36	51.1	6.3
MSS38	38	48.7	4.2
MSS38A	38	53.1	6.3
MSS40	40	50.7	4.2
MSS40A	40	55.1	6.3
MSS42	42	52.7	4.2
MSS42A	42	57.1	6.3
MSS45	45	55.7	4.2
MSS45A	45	60.1	6.3
MSS48	48	58.7	4.2
MSS48A	48	63.1	6.3
MSS50	50	60.7	4.2
MSS50A	50	65.1	6.3
MSS55	55	65.7	4.2
MSS55A	55	70.1	6.3
MSS60	60	70.7	4.2
MSS60A	60	75.1	6.3

PTFE阀门密封件
PTFE valve seals

PTFE密封圈是以聚四氟乙烯为原料制成，解决了传统橡胶 O 型圈在极端工况下（如强腐蚀、高温、强溶剂环境）密封失效的问题，具备极强化学稳定性、宽温适应性（-200°C至 + 260°C）与低摩擦系数，能在强酸强碱、高低温等极端工况下实现可靠密封，广泛应用于化工、石油、制药、食品等行业的密封场景。

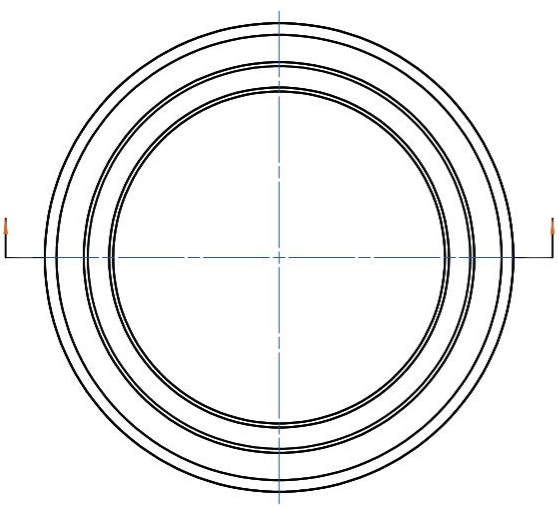
Stepseal is a combined bidirectional seal for pistons and piston rods in hydraulic/pneumatic systems. It consists of an elastomeric ring (e.g., NBR, FKM) and a wear-resistant ring made of filled PTFE or composites. It provides bidirectional sealing between piston/rod and cylinder, preventing media (hydraulic oil, compressed air, etc.) from leaking from high to low pressure sides while ensuring stable, durable sealing performance.

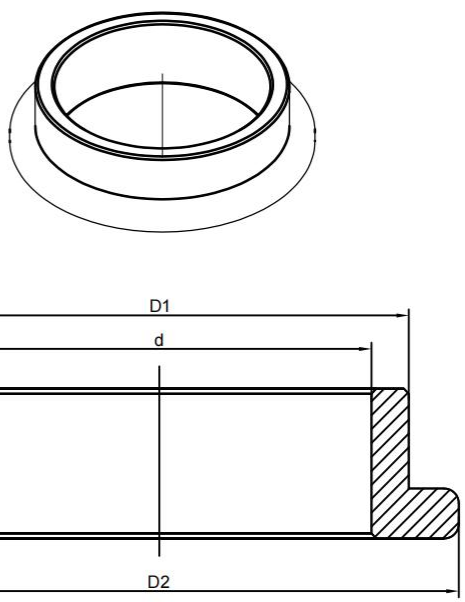


工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
⩽5m/s	5~30MPa	-200°C ~ +260°C	强酸、强碱、有机溶剂、强氧化剂等 strong acid、strong base、 org. solvent、strong oxidant	3mm-1600mm

PTFE阀门密封件
Stepseal





PTFE阀门密封件规格表
Specification of PTFE valve seals

产品编号 Part NO.	内径 Inner diameter	槽外径 Outer diameter
	mm	mm
MSV8	8	14
MSV8A	8	16
MSV8B	8	18
MSV10	10	16
MSV10A	10	18
MSV10B	10	20
MSV12	12	18
MSV12A	12	20
MSV12B	12	22
MSV14	14	20
MSV14A	14	22
MSV14B	14	24
MSV16	16	22
MSV16A	16	24
MSV18	18	24
MSV18A	18	26
MSV18B	18	28
MSV20	20	26
MSV20A	20	28
MSV20B	20	30
MSV22	22	28
MSV22A	22	30
MSV22B	22	32
MSV24	24	32
MSV24A	24	34
MSV24B	24	36
MSV25	25	36
MSV25A	25	37
MSV26	26	36
MSV26A	26	38
MSV26B	26	40
MSV28	28	36
MSV28A	28	38

产品编号 Part NO.	内径 Inner diameter	槽外径 Outer diameter
	mm	mm
MSV28B	28	40
MSV30	30	38
MSV30A	30	40
MSV30B	30	42
MSV32	32	40
MSV32A	32	42
MSV32B	32	44
MSV34	34	46
MSV34A	34	48
MSV35	35	45
MSV35A	35	50
MSV36	36	48
MSV36A	36	50
MSV36B	36	52
MSV38	38	48
MSV38A	38	50
MSV38B	38	52
MSV40	40	50
MSV40A	40	52
MSV40B	40	54
MSV45	45	55
MSV45A	45	60
MSV45B	45	63
MSV48	48	60
MSV48A	48	65
MSV48B	48	68
MSV50	50	60
MSV50A	50	65
MSV50B	50	70
MSV60	60	70
MSV60A	60	75
MSV60B	60	80

导向环
Guide Ring

导向环，又称导向套、支撑环，是液压与气动系统中核心的导向支撑元件，主要安装在液压缸、气缸的缸筒、活塞或活塞杆等部件上，通过限制运动部件（如活塞、活塞杆）的径向位移，避免其与缸筒内壁直接摩擦，同时辅助密封元件保持稳定密封性能，是保障液压气动设备高效、长寿运行的关键配件。

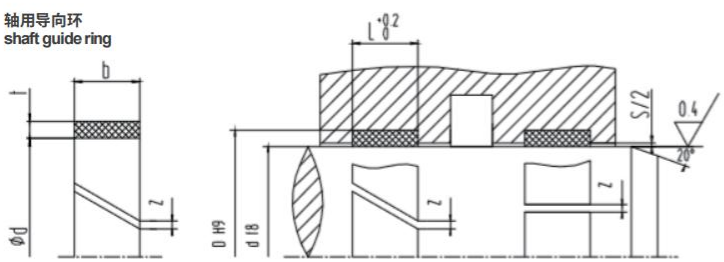
Guide rings, also known as guide sleeves or support rings, are core guiding and supporting components in hydraulic and pneumatic systems. They are mainly installed on parts such as the cylinder barrel, piston or piston rod of hydraulic cylinders and air cylinders. By limiting the radial displacement of moving components (e.g., pistons, piston rods), they prevent direct friction between these components and the inner wall of the cylinder barrel. Meanwhile, they assist sealing elements in maintaining stable sealing performance, serving as key accessories to ensure efficient and long-life operation of hydraulic and pneumatic equipment.

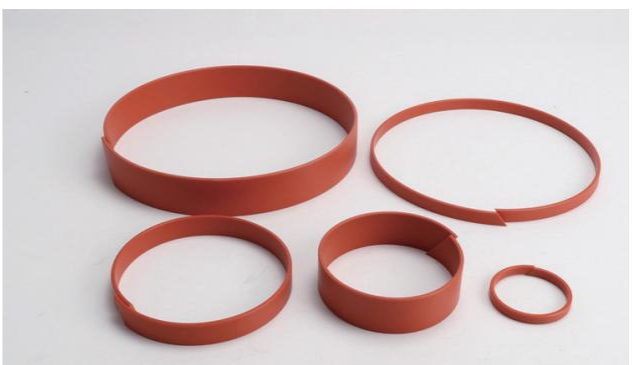
工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
⩽15m/s	7~40MPa	-200°C ~ +200°C	液压油、气、水、乳化液 Hydraulic Oil、Compressed Air、Water、Emulsion	5mm-1500mm

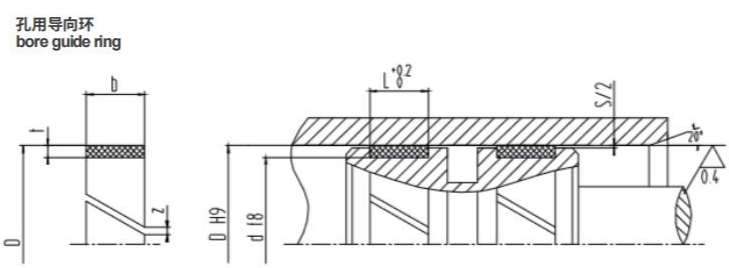
导向环尺寸
Guide ring

轴用导向环
shaft guide ring





孔用导向环
bore guide ring



轴用导向环规格表
Specification of shaft guide ring

杆径 Rod Diameter d f8	沟槽宽度 Groove width L+0.2	沟槽底径 Groove Bottom Diameter D H9	间隙 Clearance S≤
mm	mm	mm	mm
8~20	3.2	d+3	0.4-1.0
15~35	4.2	d+5	0.5~2.0
20~75	6.3		
30~250	8.1		
35~300	9.7		
120~900	15.0		
200~900	20.0		
300~900	25.0		
300~999	30.0		

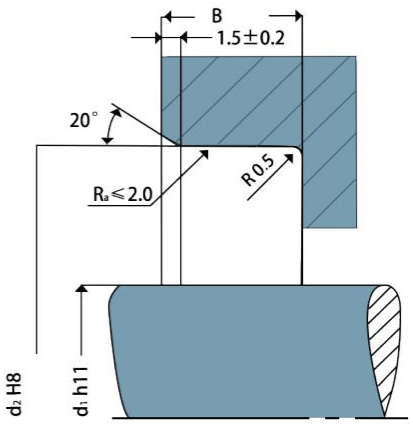
孔用导向环规格表
Specification of bore guide ring

缸径 D H9	沟槽宽度 Groove width L+0.2	沟槽底径 Groove Bottom Diameter d f8	间隙 Clearance S≤
mm	mm	mm	mm
10~25	3.2	D-3	0.4~10.0
20~40	4.2	D-5	0.5~2.0
25~80	6.3		
40~270	8.1		
40~320	9.7		
125~900	15.0		
200~900	20.0		
300~900	25.0		
300~999	30.0		

PTFE 轴封
PTFE Shaft Seal

PTFE不锈钢轴封是一种外壳采用不锈钢材质、核心密封唇为聚四氟乙烯（PTFE）的旋转轴密封装置，兼具不锈钢的高强度与耐腐蚀性，以及 PTFE 的耐极端温化、低摩擦自润滑和强化学稳定性，能在化工、食品医药、高温高压等苛刻工况下，实现旋转设备的可靠密封，防止介质泄漏与外界杂质侵入。

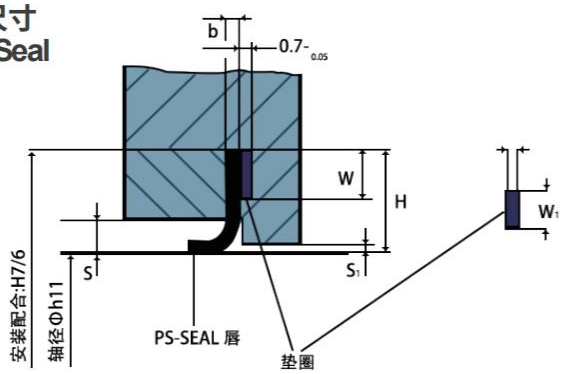
The PTFE stainless steel shaft seal is a rotating shaft sealing device with a stainless steel outer casing and a core sealing lip made of polytetrafluoroethylene (PTFE). It combines the high strength and corrosion resistance of stainless steel, as well as PTFE's resistance to extreme temperatures, low friction and self-lubrication, and strong chemical stability. It can achieve reliable sealing of rotating equipment under harsh working conditions such as chemical industry, food and pharmaceutical industry, high temperature and high pressure, preventing medium leakage and the intrusion of external impurities.



工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
30m/s	0.2~2MPa	-60°C ~ +260°C	强酸、强碱、强氧化剂等 strong acid、strong base、 strong oxidizing agent	8mm-1600mm

PTFE 轴封尺寸
PTFE Shaft Seal



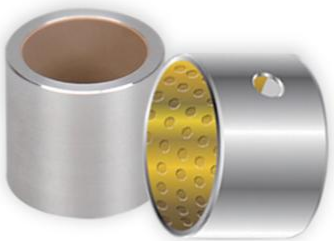
轴径 Shaft diameter h11	密封唇高度 Sealing lip height H	孔深 Hole depth b	垫圈高度 Washer height W	垫圈宽度 Washer width W1	径向间隙 Radial clearance S max		
					0.5Mpa	1.0Mpa	2.5Mpa
mm	mm	mm	mm	mm	mm	mm	mm
<9	6.0	0.8	2.5	2.0	2.0	0.5	0.2
20-49	7.5	0.8	3.5	2.5	2.5	0.5	0.2
50-149	10.0	1.0	4.5	3.5	3.0	0.5	0.2
150-299	12.5	1.0	6.0	4.5	3.0	0.5	0.2
300-450	15.0	1.0	8.0	6.0	3.0	0.5	0.2

PTFE 轴封规格表
Specification of PTFE Shaft Seal

产品编号 Part NO.	轴径 Shaft diameter	孔径 Bore diameter	孔深 Hole depth
	mm	mm	mm
MSP8	8	18	5
MSP10	10	22	6
MSP12	12	28	8
MSP15	15	30	8
MSP16	16	30	8
MSP17	17	28	8
MSP17A	17	35	8
MSP20	20	35	8
MSP22	22	40	8
MSP25	25	35	8
MSP25A	25	42	8
MSP25B	25	52	7
MSP28	28	47	10
MSP30	30	47	10
MSP30A	30	52	10
MSP32	32	47	8
MSP32A	32	47	10
MSP35	35	47	8
MSP35A	35	50	10
MSP38.1	38.1	63.5	12.7
MSP40	40	55	10
MSP40A	40	60	10
MSP40B	40	62	10
MSP40C	40	68	10
MSP42	42	62	8
MSP42A	42	60	10

产品编号 Part NO.	轴径 Shaft diameter	孔径 Bore diameter	孔深 Hole depth
	mm	mm	mm
MSP45	45	62	10
MSP45A	45	65	10
MSP48	48	65	10
MSP50	50	65	10
MSP50A	50	70	10
MSP50B	50	72	10
MSP55	55	72	10
MSP60	60	75	8
MSP60A	60	80	10
MSP62	62	80	10
MSP65	65	85	10
MSP70	70	90	10
MSP73	73	100	10
MSP75	75	100	10
MSP75A	75	95	13
MSP80	80	100	10
MSP85	85	120	12.7
MSP90	90	110	10
MSP90A	90	120	12
MSP95	95	120	12
MSP100	100	130	13
MSP110	110	140	13
MSP120	120	150	12
MSP140	140	165	10
MSP150	150	180	12

PTFE复合轴承
PTFE Composite Bearing



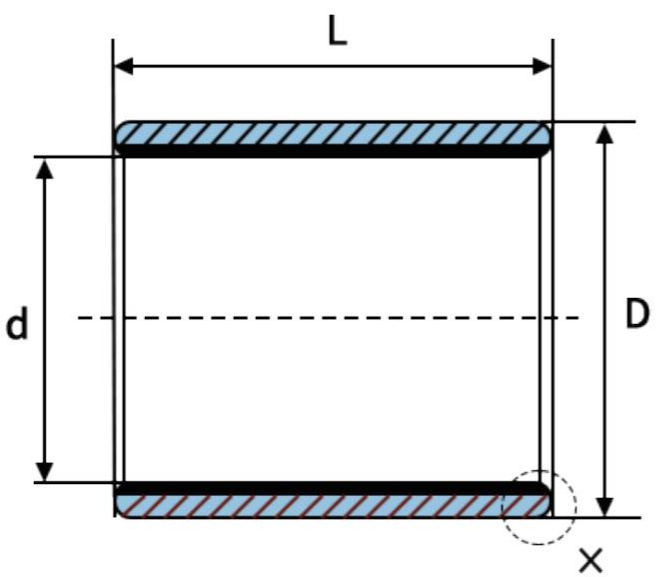
PTFE复合轴承是以PTFE（含改性填充或织物编织形式）为核心减摩层，通过与金属基体（如高强度钢背、青铜烧结层）及增强材料复合而成的高性能滑动轴承，既依托PTFE实现极低摩擦系数与长效自润滑，又借助金属基体保障优异承载能力，还具备耐酸碱腐蚀、耐高低温的特性，能适配粉尘、潮湿、无润滑等多种恶劣工况，广泛用于机械、汽车、医疗、水利等领域。

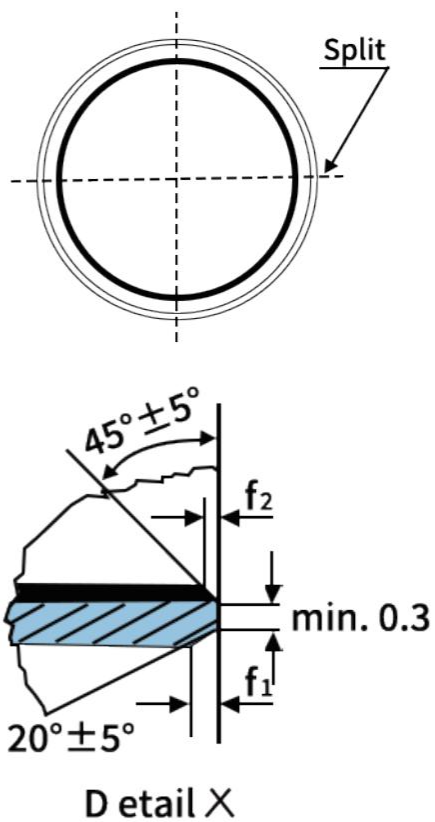
PTFE composite bearings are high-performance sliding bearings, with PTFE (modified filling or fabric weaving) as the core friction-reducing layer, combined with a metal matrix (e.g., high-strength steel backing, bronze sintered layer) and reinforcing materials. They use PTFE for ultra-low friction coefficient and long-term self-lubrication, the metal matrix for excellent load-bearing capacity, and feature acid/alkali corrosion resistance plus high/low temperature resistance—suitable for harsh conditions like dust, humidity, and non-lubrication. They are widely used in machinery, automotive, medical, water conservancy and other fields.

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
≤5m/s	0~40MPa	-200℃ ~ +300℃	强酸、强碱和水 strong acid、strong base、water	3mm-150mm

PTFE复合轴承
PTFE Composite Bearing





PTFE复合轴承公差
PTFE Composite Bearing Tolerances

产品编号 Part NO.	相配轴径公差 Mating shaft diameter tolerance	相配座孔公差 Mating bore diameter tolerance H7	轴承外径公差 Bearing outer diameter tolerance
	mm	mm	mm
MSC6	6	8	8
MSC8	8	10	10
MSC10	10	12	12
MSC12	12	14	14
MSC13	13	15	15
MSC14	14	16	16
MSC15	15	17	17
MSC16	16	18	18
MSC17	17	19	19
MSC18	18	20	20
MSC20	20	23	23
MSC22	22	25	25
MSC24	24	27	27
MSC25	25	28	28
MSC28	28	32	32
MSC30	30	34	34
MSC32	32	36	36
MSC35	35	39	39
MSC38	38	42	42
MSC40	40	44	44
MSC45	45	50	50
MSC50	50	55	55
MSC55	55	60	60
MSC60	60	65	65

产品编号 Part NO.	相配轴径公差 Mating shaft diameter tolerance	相配座孔公差 Mating bore diameter tolerance H7	轴承外径公差 Bearing outer diameter tolerance
	mm	mm	mm
MSC65	65	70	70
MSC70	70	75	75
MSC75	75	80	80
MSC80	80	85	85
MSC85	85	90	90
MSC90	90	95	95
MSC95	95	100	100
MSC100	100	105	105
MSC105	105	110	110
MSC110	110	115	115
MSC120	120	125	125
MSC125	125	130	130
MSC130	130	135	135
MSC140	140	145	145
MSC150	150	155	155
MSC160	160	165	165
MSC180	180	185	185
MSC190	190	195	195
MSC200	200	205	205
MSC220	220	225	225
MSC250	250	255	255
MSC260	260	265	265
MSC280	280	285	285
MSC300	300	305	305

聚四氟乙烯垫片
PTFE Gasket

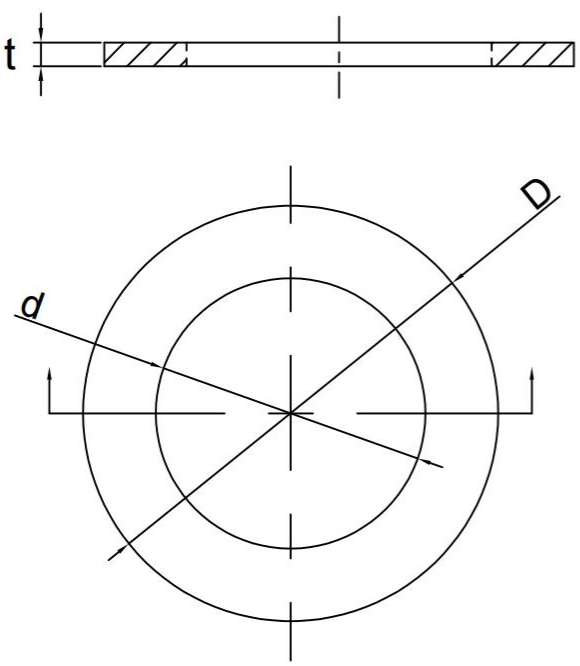
聚四氟乙烯垫片是以PTFE树脂为原料，经模压、烧结、切削等工艺制成的平面密封元件，凭借 “化学惰性”核心优势，能耐受强酸、强碱、强氧化剂及多数有机溶剂侵蚀，且耐温范围宽泛，兼具低摩擦系数、优异耐老化性与电绝缘性，还符合食品级（FDA）、医药级（GMP）卫生标准，无有害物质析出；其通过自身压缩形变填充密封面间隙，实现管道法兰、设备端盖、阀门等部位的静态密封，广泛应用于化工、石油、医药、食品、电子、航空航天等领域。

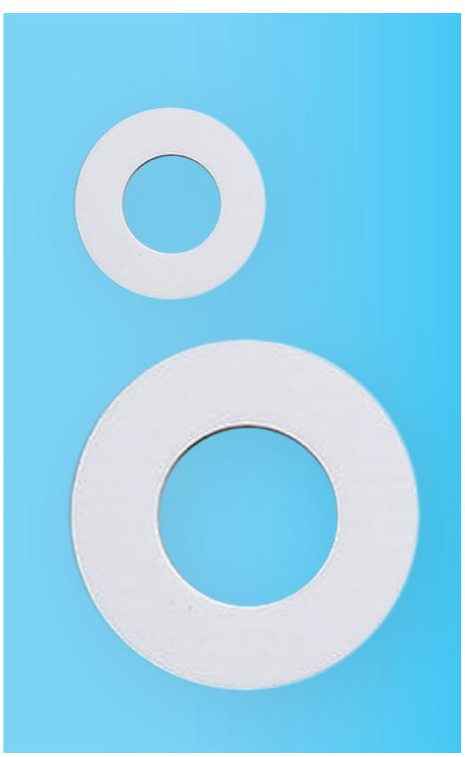
PTFE gaskets are flat sealing parts made from PTFE resin via molding, sintering and machining. With their core strength of "chemical inertness", they resist corrosion from strong acids, alkalis, oxidizers and most organic solvents. They also have a wide temperature range, low friction coefficient, excellent aging resistance and electrical insulation, while meeting food-grade (FDA) and pharmaceutical-grade (GMP) hygiene standards with no harmful substance leaching.Through compressive deformation, they fill gaps on sealing surfaces to achieve static sealing for pipe flanges, equipment end caps and valves, and are widely used in chemical, petroleum, pharmaceutical, food, electronics and aerospace fields.

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
-	-0.1MPa~6.4MPa	-45°C ~ +260°C	强酸、强碱、强氧化剂等 strong acids、strong bases、 strong oxidizing agents	10mm-600mm

聚四氟乙烯垫片
PTFE Gasket





聚四氟乙烯垫片规格表
Specification of PTFE Gasket

产品编号 Part NO.	内径 Inner Diameter	外径 Outside Diameter	厚度 Thickness
	mm	mm	mm
MSD3	3.00	6.00	1.25
MSD4	4.00	7.00	1.25
MSD5	5.00	8.00	1.25
MSD6	6.00	9.00	1.25
MSD7	7.00	10.00	1.25
MSD8	8.00	11.00	1.25
MSD9	9.00	12.00	1.25
MSD10	10.00	13.00	1.25
MSD10	10.00	14.00	1.25
MSD11	11.00	15.00	1.25
MSD11.2	11.20	15.20	1.25
MSD12	12.00	16.00	1.25
MSD12.5	12.50	16.50	1.25
MSD14	14.00	18.00	1.25
MSD15	15.00	19.00	1.25
MSD16	16.00	20.00	1.25
MSD18	18.00	22.00	1.25
MSD20	20.00	24.00	1.25
MSD21	21.00	25.00	1.25
MSD22	22.00	26.00	1.25
MSD22.4	22.40	28.40	1.25
MSD22A	22.00	28.00	1.25
MSD24	24.00	30.00	1.25
MSD25	25.00	31.00	1.25
MSD25.5	25.50	31.50	1.25
MSD26	26.00	32.00	1.25
MSD28	28.00	34.00	1.25
MSD29	29.00	35.00	1.25
MSD29.5	29.50	35.50	1.25
MSD30	30.00	36.00	1.25

法兰四氟带滤网垫片
Flange PTFE Gasket with Filter Screen

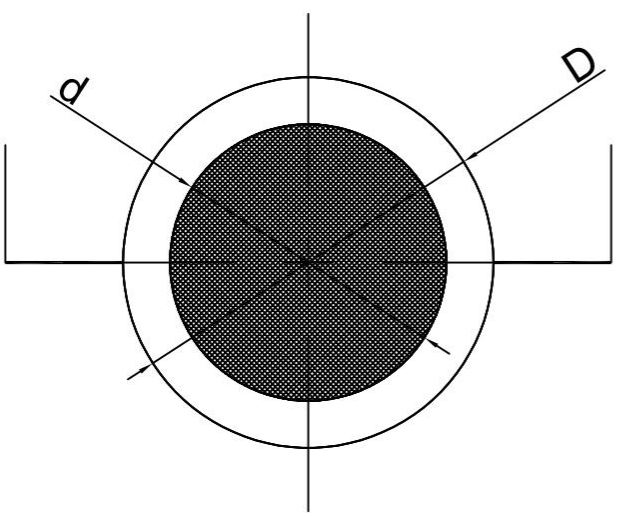
法兰四氟带滤网垫片是一款集“密封”与“过滤”功能于一体的复合型工业元件，以高纯度PTFE树脂为密封基体，通过模压、烧结工艺制成，同时复合304/316L不锈钢或食品级聚丙烯滤网。它既具备PTFE材质的极致耐腐蚀性、宽温域适配性及食品/医药级卫生安全特性，又能通过内置滤网高效拦截管道内固体颗粒、碎屑等杂质，防止下游阀门、泵体等精密设备堵塞磨损。

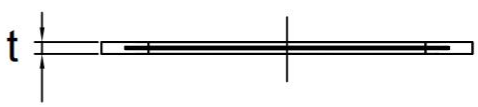
The PTFE flange gasket with filter screen is a composite industrial component integrating sealing and filtration functions. It uses high-purity PTFE resin as the sealing base, manufactured through molding and sintering processes, and is compounded with 304/316L stainless steel or food-grade polypropylene filter screens.It not only has PTFE's outstanding properties—extreme chemical resistance, wide temperature adaptability, and food/pharmaceutical-grade hygiene and safety—but also can efficiently intercept impurities such as solid particles and debris in pipelines via the built-in filter screen, preventing blockage and wear of downstream precision equipment like valves and pumps.

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
⩽5m/s	≤4.0MPa	-200°C ~ +260°C	强酸、强碱、强氧化剂等 strong acids、strong bases、 strong oxidizing agents	40mm-679mm

法兰四氟带滤网垫片
Flange PTFE Gasket with Filter Screen





法兰四氟带滤网垫片规格表
Specification of Flange PTFE Gasket with Filter Screen

产品编号 Part NO.	公称通径 Nominal Diameter	外径 Outside Diameter	内径 Inner Diameter	厚度 Thickness
		mm	mm	mm
MSF15	DN15	45	18	3
MSF20	DN20	58	25	3
MSF25	DN25	68	32	3
MSF32	DN32	78	38	3
MSF40	DN40	88	45	3
MSF50	DN50	102	57	3
MSF65	DN65	122	76	3
MSF80	DN80	138	89	3
MSF100	DN100	158	108	3
MSF125	DN125	188	133	3
MSF150	DN150	212	159	3
MSF200	DN200	268	219	3
MSF250	DN250	320	273	3
MSF300	DN300	378	325	3
MSF350	DN350	438	377	3
MSF400	DN400	490	426	3
MSF450	DN450	532	478	3
MSF500	DN500	590	530	3

聚四氟乙烯O型圈
PTFE O-Ring

聚四氟乙烯O型圈是以聚四氟乙烯为主要原料制成的环形密封元件，凭借聚四氟乙烯优异的耐化学腐蚀性、宽泛的耐温范围、出色的耐老化性与不粘性，以及良好的电绝缘性和低摩擦系数，广泛应用于化工、石油、医药、食品、电子、航空航天等领域；其密封原理是依靠自身压缩形变填充密封面间隙，实现静态或低速动态下的流体密封。

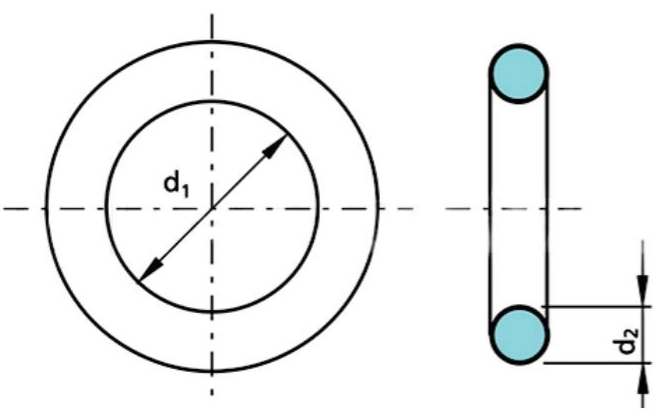
PTFE O-rings are annular sealing components made mainly from polytetrafluoroethylene (PTFE). Leveraging PTFE's excellent chemical resistance, wide temperature tolerance range, outstanding aging resistance, non-stick property, as well as good electrical insulation and low friction coefficient, they are widely used in fields such as chemical engineering, petroleum, pharmaceuticals, food, electronics, and aerospace.

Their sealing principle relies on their own compressive deformation to fill gaps on sealing surfaces, achieving fluid sealing under static or low-speed dynamic conditions

工况条件
Working condition

速度 speed	压力范围 Pressure range	温度范围 temperature range	介质 medium	可提供直径范围 Diameter range available
-	-0.1MPa~6.4MPa	-45°C ~ +260°C	强酸、强碱、有机溶剂、强氧化剂等 strong acid、strong base、 org. solvent、strong oxidant	1mm-1500mm

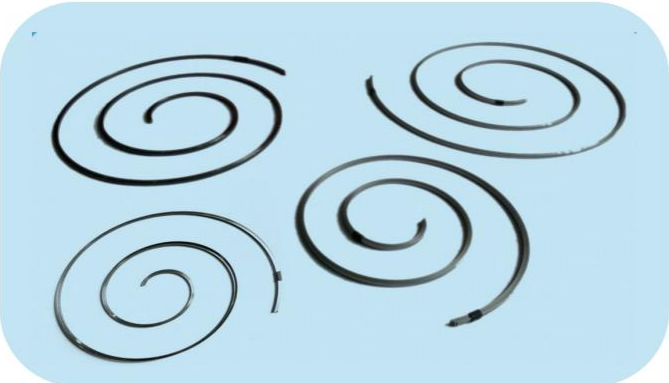
聚四氟乙烯O型圈
PTFE O-Ring



聚四氟乙烯O型圈规格表
Specification of PTFE O-Ring

产品编号 Part NO.	截面直径 Section Diameter	沟槽宽度 Groove width	沟槽深度 Groove depth
	mm	mm	mm
MSQ1.5	1.50	1.70	1.30
MSQ1.6	1.60	1.80	1.40
MSQ1.78	1.78	2.00	1.60
MSQ2	2.00	2.20	1.80
MSQ2.4	2.40	2.60	2.15
MSQ2.5	2.50	2.80	2.25
MSQ3	3.00	3.30	2.70
MSQ3.53	3.53	3.90	3.15
MSQ4	4.00	4.40	3.60
MSQ5	5.00	5.50	4.50
MSQ6	6.00	6.60	5.60
MSQ7	7.00	7.70	6.30
MSQ8	8.00	8.80	7.20

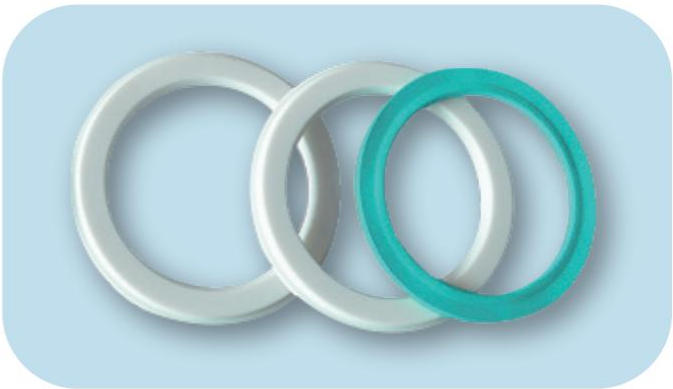
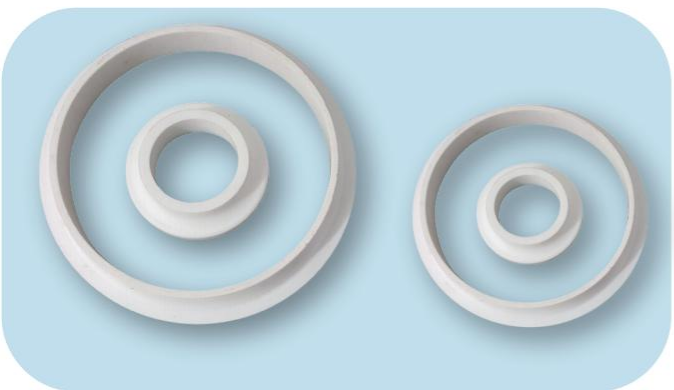
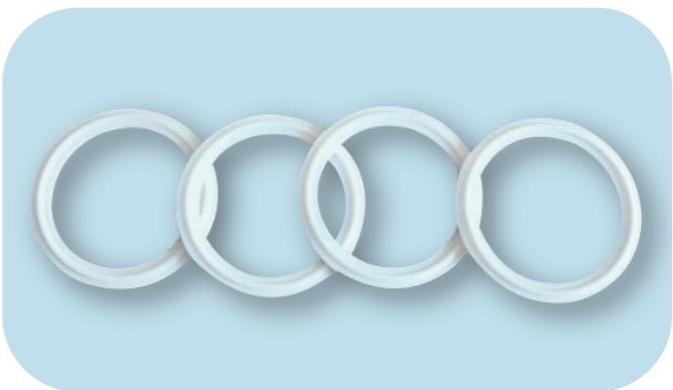
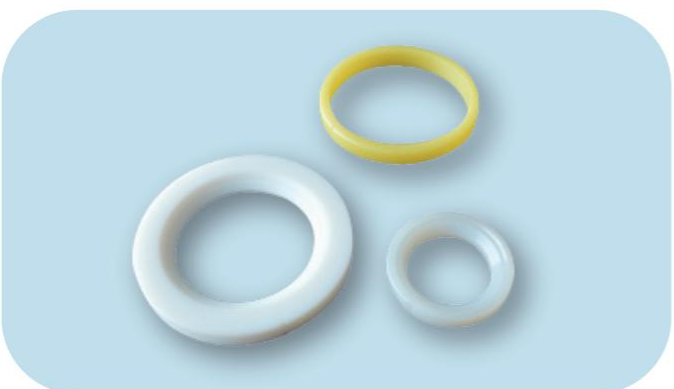
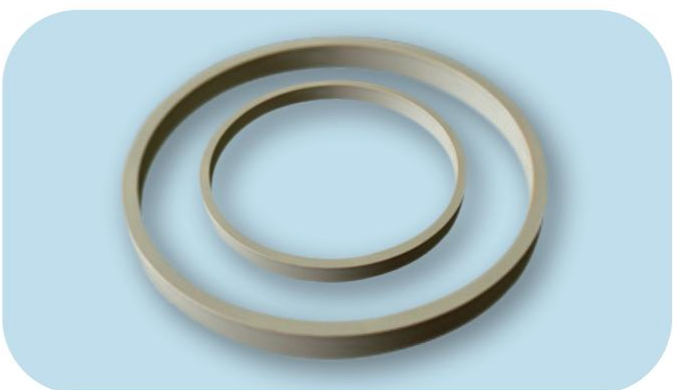
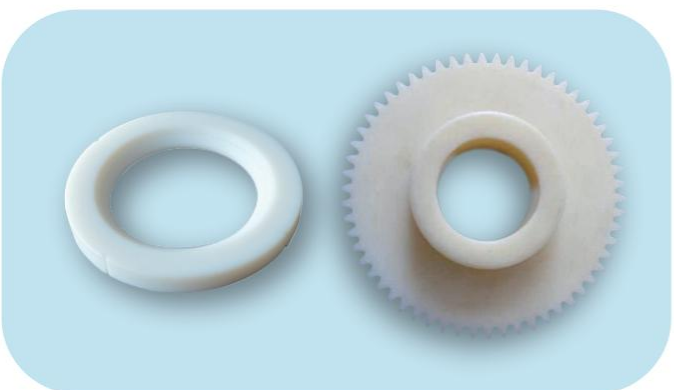
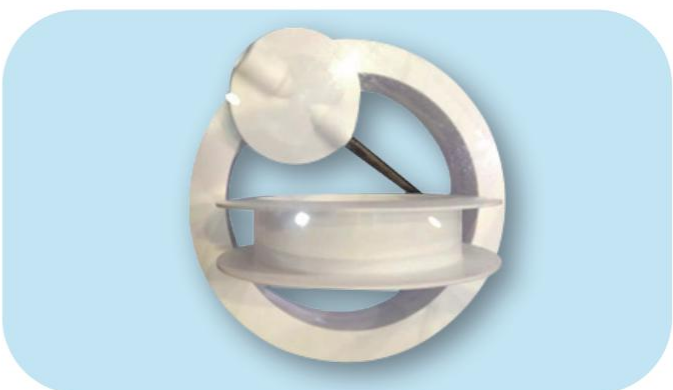
压缩机密封件
compressor Seal



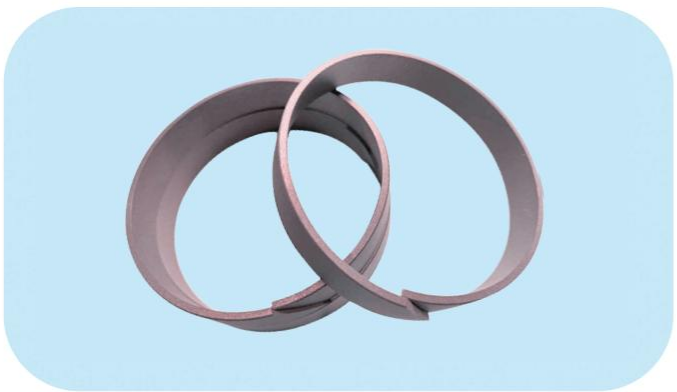
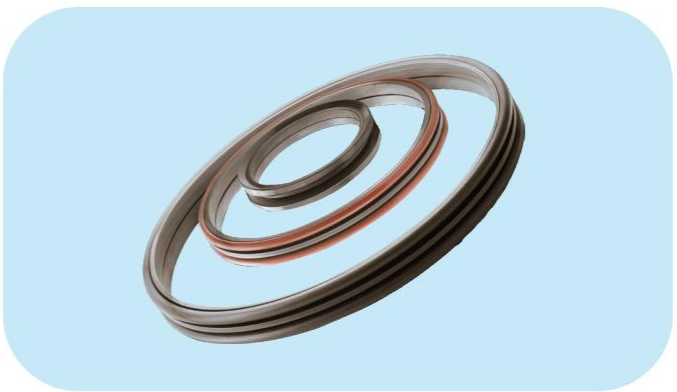
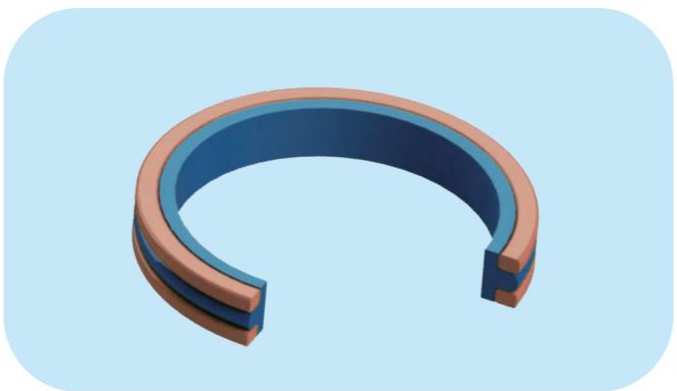
涡轮式压缩机在运行过程中，动、静涡盘的密封条靠轴向背压被压紧而使得动、静涡盘紧密接触，并在冷冻油或者空气的帮助下实现良好的密封效果，从而使得内泄露几乎不存在：当密封条端平面被磨损后，可以沿轴向方向自动补偿，以保证动涡盘端面和静涡盘底面始终贴紧，而且空压机工作时间越长，这些贴紧的相对运动面的配合越好，密封效果也越好。

During the operation of the turbine compressor, the sealing strips of the dynamic and static vortex discs are compressed by the axial back pressure to make the dynamic and static vortex discs in close contact, and achieve good sealing effect with the help of refrigerant oil or air, so that the internal leakage is almost non-existent: when the flat surface of the end of the sealing strip is worn, it can be automatically compensated along the axial direction, To ensure that the end face of the moving vortex disk and the bottom face of the static vortex disk are always close, and the longer the working time of the air compressor, the better the coordination of these close relative moving surfaces and the better the sealing effect.

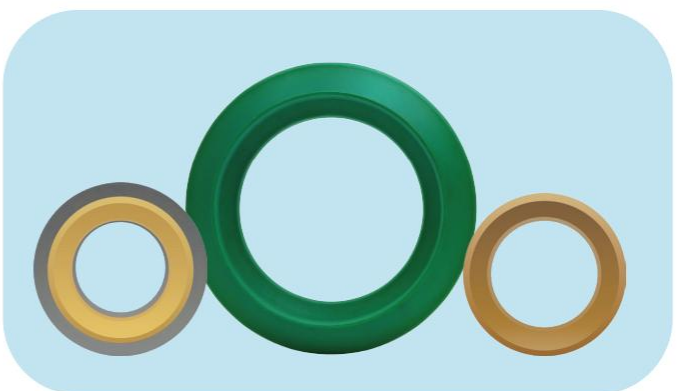
阀门密封件
Valve Seal

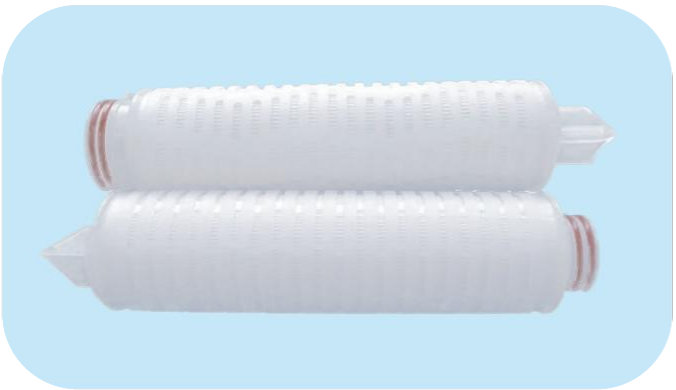
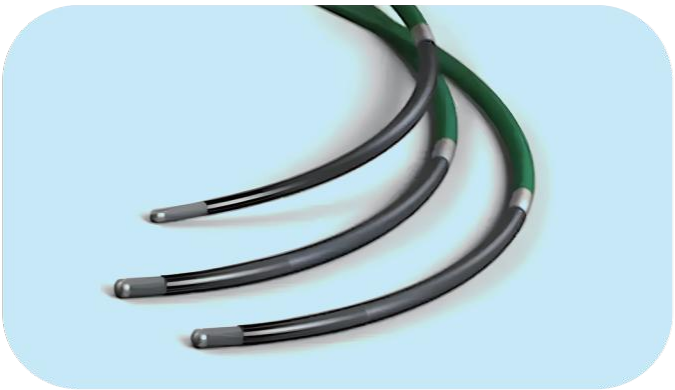
石油天然气设备密封件
Oil and Gas Seals

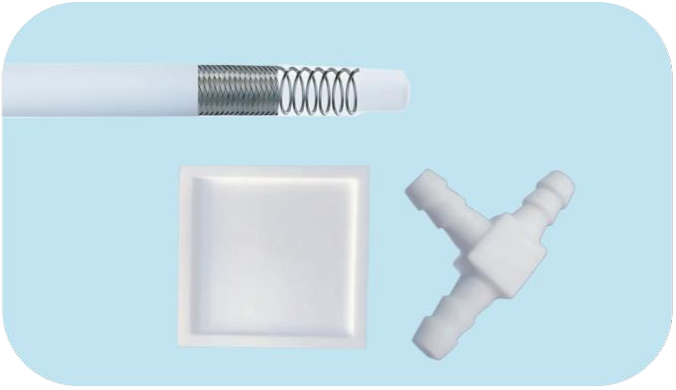
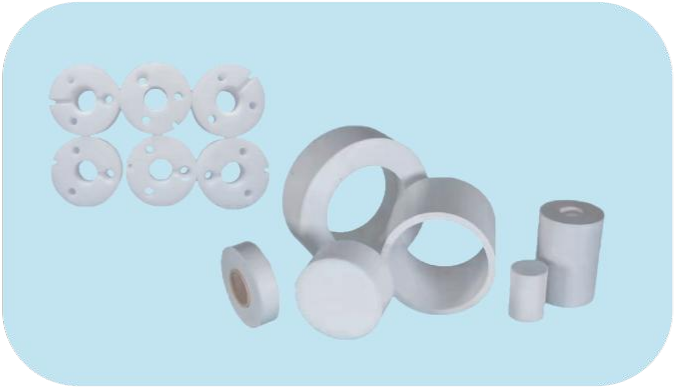


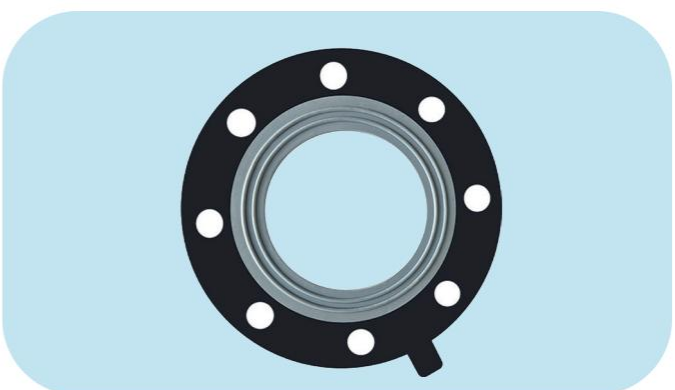
医用级别PTFE制品
Medical Grade PTFE Products



其他四氟及peek产品
Other PTFE and Peek Products



专利证书
Patent Certificate

证书号第20491076号

实用新型专利证书

实用新型名称：一种弹簧密封圈

发　明　人：何毓鑫;孔静

专　利　号：ZL 2023 2 2225117.7

专利申请日：2023年08月18日

专利权人：敏硕环境科技（江苏）有限公司

地　　址：215400 江苏省苏州市太仓市娄东街道发达路161号

授权公告日：2024年02月20日　　授权公告号：CN 220505777 U

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局长
申长雨

2024年02月20日

第1页(共2页)

其他事项参见续页

证书号第20483500号

实用新型专利证书

实用新型名称：一种使用寿命长的密封圈

发　明　人：何毓鑫;孔静

专　利　号：ZL 2023 2 2242958.9

专利申请日：2023年08月21日

专利权人：敏硕环境科技（江苏）有限公司

地　　址：215400 江苏省苏州市太仓市娄东街道发达路161号

授权公告日：2024年02月20日　　授权公告号：CN 220505778 U

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局长
申长雨

2024年02月20日

第1页(共2页)

其他事项参见续页

证书号第20489399号

实用新型专利证书

实用新型名称：一种防脱离的密封圈

发　明　人：何毓鑫;孔静

专　利　号：ZL 2023 2 2242976.7

专利申请日：2023年08月21日

专利权人：敏硕环境科技（江苏）有限公司

地　　址：215400 江苏省苏州市太仓市娄东街道发达路161号

授权公告日：2024年02月20日　　授权公告号：CN 220505780 U

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局长
申长雨

2024年02月20日

第1页(共2页)

其他事项参见续页

证书号第20991283号

实用新型专利证书

实用新型名称：一种弹簧蓄能圈

发　明　人：何毓鑫;孔静

专　利　号：ZL 2023 2 2803959.6

专利申请日：2023年10月19日

专利权人：敏硕环境科技（江苏）有限公司

地　　址：215400 江苏省苏州市太仓市娄东街道发达路161号

授权公告日：2024年05月24日　　授权公告号：CN 221003758 U

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局长
申长雨

2024年05月24日

第1页(共2页)

其他事项参见续页

质量证书
Quality Certificate

Certificate of Registration

nqa

This is to certify that the Quality Management System of:

Mascot Technology (Jiangsu) Co., Ltd.

No. 161, Fada Road, Loudong Street, Taicang, Suzhou City, Jiangsu Province, 215400, China
(IATF USI: GLRR6X)
(See appendix for additional locations)

applicable to:

Manufacturing of hardware spring, sealing ring

has been assessed and registered by NQA, Warwick House, Houghton Hall Park, Houghton Regis, Dunstable, LU5 5ZX, UK
against the provisions of:

IATF 16949:2016

(Clause 8.3 product design of IATF 16949:2016 is justifiably excluded)

This registration is subject to the company maintaining a quality management system to the above standard, which will be monitored by NQA.

Managing Director

NQA Certificate No:	T201042
IATF Certificate No:	0563659
First Issue Date:	24 January 2025
Valid Until:	23 January 2028
Version:	1

Revision Date: Feb 2017

Issue 5

Certificate of Registration

nqa

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Managing Director

NQA Certificate No: T201042
IATF Certificate No: 0563659
First Issue Date: 24 January 2025
Valid Until: 23 January 2028
Version: 1

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Revision Date: Feb 2017

Page 1 of 2

Issue 5

公司于2024年在苏州购买的20亩工业用地

20 acres of industrial land purchased by the company in Suzhou in 2024

20000平方米在建厂房效果图　将在2026年8月竣工

Rendering of a 20000 square meter factory under construction　It will be completed in August 2026

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