

2022



诺信橡塑  
NUOXINXIANGSU

衡水诺信橡塑制品有限公司

Hengshui nuosen rubber and Plastic Products Co. , Ltd.





# 公司简介

## Company Profile



**衡水诺信橡塑制品有限公司**始建于上世纪八十年代改革开放初期，距今已有 30 余年，是国内唯一专业生产销售石油设备、潜油电机橡胶配件的单位。本公司以特种橡胶为主，和西北橡胶研究院合作，经过多年的努力，完善并形成了潜油电机橡胶配件的配方设计和技术工艺，保障了质量控制，产品合格率达到了一百。经过十几年的创业，到 2000 年后，公司有了突飞猛进的发展，拥有了精良的生产和检验设备，雄厚的技术力量和科学的管理方式，产品的各项技术指标均达到了行业标准，并通过了 ISO9001 产品质量管理体系认证、ISO14001 环境管理体系认证、OHSAS18001 职业健康安全管理体系认证。



Hengshui NUOXIN RUBBER AND PLASTIC PRODUCTS CO., Ltd. was founded in the early stage of reform and opening up in the 1980s, more than 30 years ago, is the only professional production and sales of petroleum equipment, submersible motor rubber accessories units.

The company is based on special rubber, and Northwest rubber Research Institute cooperation, after years of efforts, improve and form the submersible motor rubber parts formula design and technical process, to ensure quality control, product qualified rate reached 100 percent.

After more than ten years of entrepreneurship, after 2000, the company has a rapid development, with sophisticated production and inspection equipment, strong technical force and scientific management mode, the product's technical indicators are up to the industry standard.

And through the ISO9001 product quality management system certification, ISO14001 environmental management system certification, OHSAS18001 occupational health and safety management system certification.

## 生产能力

品质，只因经久历练！经过一代代诺信人的艰辛开拓、发展、至今历经30多年的发展创新历程，公司拥有了当下雄厚的技术力量，先进的生产设备，产品规格种类齐全，检测手段成熟，有着科学的质量管控并配备各种高精度的橡胶制品实验室。

现有生产设备：橡胶全自动硫化机30台，全自动注射机2台，开炼机5台，密炼机3台；试验设备：密度仪2台，X光分析仪2台，硬度计2台等；检测设备：全自动品检机2台，闪测仪2台，三坐标测试仪2台对等一系列先进设备和仪器。



## Nosin Capacity

Quality, just because of experience! After a generation of generation of dyno people hard development, development, development and innovation through more than 30 years, the company has a strong technical force, advanced production equipment, product specifications complete, testing means mature, with scientific quality control and equipped with a variety of high-precision rubber products laboratory.

Existing production equipment: rubber full-automatic curing machine 30, full-automatic injection machine 2, Open Mill 5, mixer 3; test equipment: densimeter 2, x-ray Analyzer 2, hardness Tester 2, etc. ; testing equipment: 2 automatic product inspection machine, Flash Tester 2,3-d Tester 2 equal series of advanced equipment and instruments.





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## 人员稳定，设备稳定

公司技术人员稳定，生产员工10年以上工龄的占80%。生产上设备24H不停机，定期维护，人员三班倒。因此能保证产品生产的温度、压力、工艺的一致性。

## 供货能力与交货期

公司生产设备20台，一直保证40%的剩余生产能力，从而应对加急订单，保证交货期。在不影响其他产品正常生产的同时，O形密封圈在24H的时间内最高可生产上千条。

## 模具自主开发制造

公司具备从图纸制作，模具设计，开发，制造于一体的生产能力。现公司拥有日本进口高精度数控加工中心3台，可缩短模具制作周期一倍以上。

## Stable personnel, stable equipment

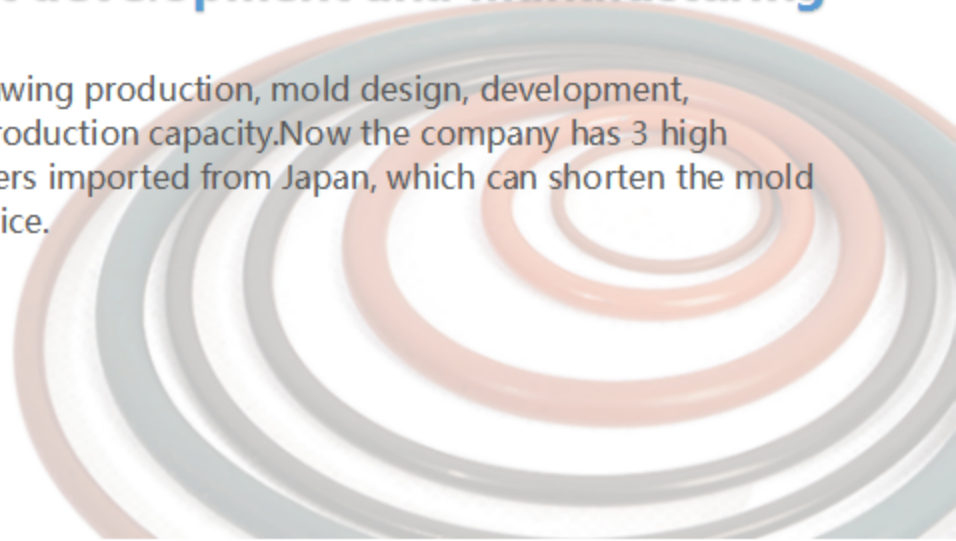
The company's technical staff is stable, production staff more than 10 years of service accounted for 80%. Production equipment 24 hours non-stop, regular maintenance, personnel on three shifts. So can ensure the product production temperature, pressure, process consistency.

## Supply capacity and delivery time

The company produces 20 sets of equipment, and has always guaranteed 40% surplus production capacity, so as to deal with urgent orders and ensure delivery time. Without affecting the normal production of other products, at the same time, the O-ring can be produced up to thousands of pieces within 24 hours.

## Mould independent development and manufacturing

The company has from the drawing production, mold design, development, manufacturing in one of the production capacity. Now the company has 3 high precision CNC machining centers imported from Japan, which can shorten the mold production cycle more than twice.



The background features a large, stylized arrow pointing to the right. The arrow is composed of several overlapping geometric shapes: a dark blue shape at the top left, a yellow shape at the top right, and a teal shape at the bottom left. A white network diagram with nodes and connecting lines is overlaid on these shapes. In the bottom right corner, there are several concentric circles in shades of orange and grey, resembling a target or a ripple effect. The text '资质证明' and 'Qualifications' is centered within a dark blue rectangular box.

# 资质证明

## Qualifications

# 资格证书



# Qualification Certificate







材料篇  
Material report



优质的材料供应商

Quality material supplier



意大利苏威集团

Solvay Group of Italy

**AGC**

AGC化工美洲公司


AGC Chemical Americas Inc

**ZEONEX**

日本瑞翁株式会社

Japan Rayon Co. LTD





石油勘探和开采对密封件提出了非常具有挑战性的条件。比如极端温度，腐蚀性化学物质和气体，高压和破坏力的结合，使密封件经受了世界上最恶劣的环境的考验。

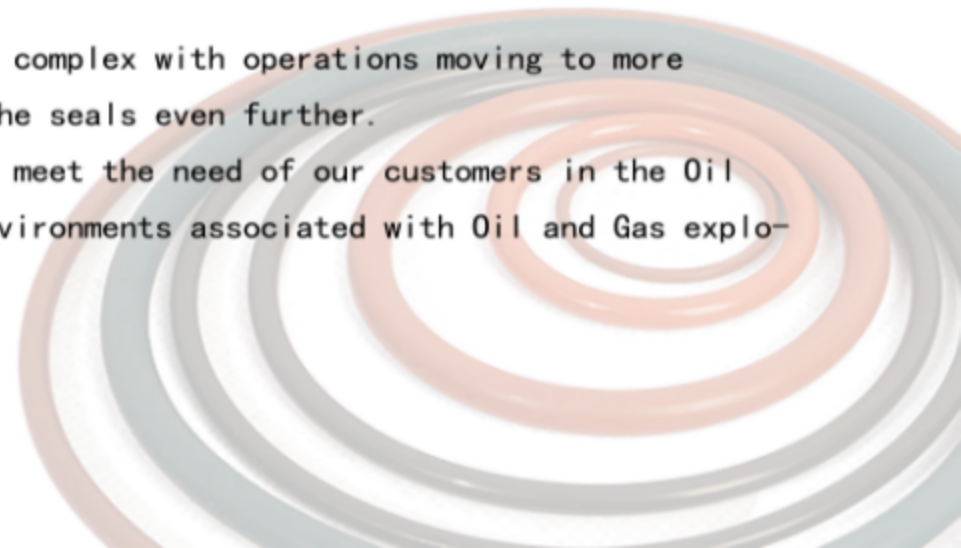
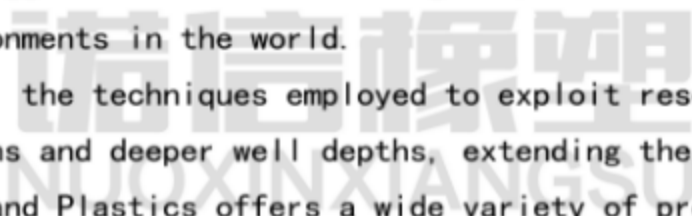
另外，随着作业向更偏远的位置和更深的井深移动，用于开采的技术也变得越来越复杂，从而进一步推动了密封件向更高要求发展。

衡水诺信公司可提供各种橡胶和塑料材料来满足我们的油田和天然气客户的需求，同时我们也更了解与油气勘探和运输相关的高温高压环境的本质，从而无论是原材料或者是产品，我们都能更高效的为您服务。

Oil exploration and extraction presents very challenging conditions for Elastomeric seals; a combination of extreme temperatures, aggressive chemicals and gases, abrasive media, high pressure and destructive forces, subject seals to the harshest environments in the world.

In addition, the techniques employed to exploit reserves are becoming more complex with operations moving to more remote locations and deeper well depths, extending the operating demands on the seals even further.

Our Rubber and Plastics offers a wide variety of products and materials to meet the need of our customers in the Oil field and gas, We understands the nature of high pressure high temperature environments associated with Oil and Gas exploration and



## 丁腈橡胶 (NBR)

丁腈橡胶是合成橡胶中最常用的弹性体,常用于O型圈和大多数密封件制品,它是丁二烯和丙烯腈的共聚物。丁二烯段赋予了橡胶一定的弹性和耐低温性能,但同时因为含有大量不饱和双键,所以它的耐热性,化学介质兼容性,抗氧化能力都会有一定的损失。丙烯腈段的存在,赋予了丁腈橡胶自身的硬度、抗拉强度、耐磨性、透气性能,耐油性。

丁腈橡胶的温度使用范围通常在-2°C到12°C之间,然而,可以通过调整丁二烯和丙烯腈的比列来改变丁腈橡胶的耐温性、抗撕裂强度、压缩永久变形等各项性能。

以丁腈橡胶为主体,诺信公司开发出能应对150°C和180°C高温的新配方,为油田高温工况急速减低了采购成本

NBR is the most commonly used elastomer in synthetic rubber. It is commonly used in O-ring and most seal products. It is a copolymer of butadiene and acrylonitrile. Butadiene segment endows rubber with certain elasticity and low temperature resistance, but at the same time, because it contains a large number of unsaturated double bonds, its heat resistance, chemical medium compatibility and oxidation resistance will be lost to a certain extent. The existence of acrylonitrile segment endows NBR with hardness, tensile strength, wear resistance, air permeability and oil resistance. Usually, the NBR rubber only can be used between -21°C and 121°C. But the temperature resistance, tear strength and compression set of NBR are usually changed by adjusting the ratio of butadiene to acrylonitrile. We developed several new compounds based on NBR rubber, include some compounds even can bear high temperature up to 150°C and 180°C. This is a good news for oil and gas industries for Cost-saving and Profit-increasing.

NBR在以下方面表现良好:

- 石油和燃料
- 硅油和润滑脂
- 乙二醇
- 稀酸
- 水 (低于100°C)

NBR PERFORMS WELL IN:

- Petroleum oils & fuels
- Silicone oils & greases
- NITRILE - BUNA N 111
- Ethylene glycol
- Dilute acids

NBR在以下方面表现不佳:

- 芳烃 (苯、甲苯、二甲苯)
- 汽车制动液
- 卤素衍生物 (四氯化碳, 三氯乙烯)
- 酮 (MEK、丙酮)

NBR DOES NOT PERFORM WELL IN:

- Aromatic hydrocarbons (benzene, toluene, xylene)
- Automotive brake fluid
- Halogen derivatives (carbon tetrachloride, trichloroethylene)
- Ketones (MEK, acetone)
- Phosphate ester hydraulic fluids
- Strong acids



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## 丁腈橡胶材料性能表 (NBR Capabilities)

材料 Material	材料代码 Compound	硬度 Hardness	温度 Temperature	特性 Production Capacities
丁腈橡胶 (NBR)	N1061	90	-34°C--+120°C	通用材料
	N1060	70	-34°C--+120°C	通用材料
	N1051	90	-46°C--+110°C	耐低温, 低压缩永久变形
	N1050	70	-46°C--+110°C	耐低温, 低压缩永久变形
	N7370	90	-21°C--+121°C	耐磨
	N7371	80	-21°C--+121°C	通用材料
	N4397	90	-21°C--+150°C	耐高温, 耐磨, 耐油
	N4398	70	-21°C--+150°C	耐高温, 耐磨, 耐油
	N7499	90	-21°C--+180°C	耐高温
	N7480	80	-21°C--+180°C	耐高温

# 氢化丁腈橡胶 (HNBR)

为了制造出更具抵抗力的化合物，在20世纪80年代发展起来一款更高级别的丁腈橡胶，最初被称为是饱和丁腈橡胶，后面更多的被称为氢化丁腈橡胶，顾名思义，氢化丁腈橡胶是由丁腈橡胶氢化反应生成，氢化反应是在丁二烯段加入氢原子的过程，加氢后大大降低了丁二烯段双键的数量，从而使得氢化丁腈橡胶具有更高的耐热性，更好的耐化学腐蚀性能，以及更具优异的耐磨性能。

自推出以来，HNBR已在许多领域证明了自己的实力。越来越深的油井需要耐热材料，同时，面对原油、硫化氢(H<sub>2</sub>S)、胺基缓蚀剂、蒸汽和爆炸减压的有害影响。氢化丁腈橡胶满足这些需求并用于各种产品，包括O型圈、封隔器胶筒、填料、井口密封、钻头密封件、防喷器和钻杆保护器等多数密封件制品。

Though the double bonds within nitrile\* s butadienesegments are needed for cross-linking (see NitrileBuna N), they are also the main attack sites for heat, chemicals, and oxidation. As part of an ongoing effort to engineer more resistant compounds, a new class of nitrile was developed in the 1980s. Initially known as highly saturated nitrile (HSN), this class is now more commonly called hydrogenated nitrile butadiene rubber (HNBR), or just hydrogenated nitrile

Since its put forward, HNBR has proved what a good side in many fields. Deeper and deeper oil wells developed at the meantime heat resistant materials are needed the harmful effects of heat-resistant materials. At the same time, In order to handle of the harmful effects of crude oil, hydrogen sulfide (H<sub>2</sub>S), amine corrosion inhibitor, steam or explosion decompression. HNBR can meets all of these requirements and is used in a variety of products, including O-rings, packer elements, packing, wellhead seals, bit seals, blowout preventers seals and drill pipe protector seals and so on.

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HNBR在以下方面表现良好:

- 酸气
- 水/乙二醇
- 石油
- 硅脂
- 水蒸气
- 大多数制冷剂, 包括R134a
- 稀酸和碱

HNBR PERFORMS WELL IN:

- Sour gas
- Water/glycol
- Petroleum Oils
- Silicone greases
- Water/Steam
- Most refrigerants including R134a
- Dilute acids and bases

HNBR在以下方面表现不佳:

- 极性溶剂
- 强酸
- 燃料类
- 臭氧
- 氯化烃
- 丙酮
- 醇类
- 脂肪烃

HNBR DOES NOT PERFORM WELL IN:

- Polar solvents
- Strong acids
- Fuels
- Ozone
- Chlorinated hydrocarbons
- Acetone
- Aldehydes
- Aliphatic hydrocarbons



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## 氢化丁腈橡胶材料性能表 (HNBR Capabilities )

材料 Material	材料代码 Compound	硬度 Hardness	温度 Temperature	特性 Production Capacities
氢化丁腈橡胶 (HNBR)	H4975	90	-32°C~ + 150°C	通用材料
	H4974	80	-32°C~ + 150°C	通用材料
	H4973	70	-32°C~ + 150°C	通用材料
	H4995	90	-21°C~ + 177°C	耐高温
	H4998	70	-21°C~ + 177°C	耐高温
	H6895	95	-32°C~ + 150°C	抗气爆
	H3810	90	-32°C~ + 150°C	耐磨
	H3820	70	-32°C~ + 150°C	耐磨

## 氟橡胶 (FKM&VITON)

众所周知，杜邦公司是著名氟橡胶生产商之一，VITON®是杜邦公司早期的注册商标，以至于VITON®后来被用作氟橡胶(FKM)的通用术语。

氟橡胶也称为氟弹性体，是含氟碳元素的热固性弹性体。因其具有优异的耐化学、耐油性和耐极端温度(-25°C~+204°C)，因此可制造出优良的O型圈，封隔器胶筒、V型圈等产品，氟橡胶通过特殊处理可以进一步将动态密封的低温极限延长到-3CTC左右，在静态应用中可将其延长至-4CTC左右。氟橡胶通常具有良好的抗压性能、低的透气性和抗压缩性能、耐臭氧和紫外线性能。

在过去的五十年里，这种显著的性能促使FKM密封件在各种要求苛刻的行业中使用。虽然它们最初是为航空航天应用而研制的，但FKM化合物现在已经被广泛应用于石油开采各个环节。

Perhaps the most well-known fluorocarbon manufacturer is DuPont, to the point that the trade name for their compound, Viton®, is often used as if it were a generic term for FKM.

Also referred to as fluoroelastomers, Fluorocarbons make excellent general purpose O-rings due to their exceptional resistance to chemicals, oil, and temperature extremes (-25°C~+204°C). Specialty compounds can further extend the low temperature limit down to about -30° C for dynamic seals and about -40° C in static applications. Fluorocarbons usually have good compression set resistance, low gas permeability, and resistance to ozone and sunlight. Over the last five decades, this remarkable combination of properties has prompted the use of FKM seals in a variety of demanding sectors. Though they were initially formulated for use in aerospace applications, FKM compounds are now widely used in the process of oil development.

FKM在以下方面表现出色：

- 矿物油和油脂，ASTM 1号油以及IRM 902和IRM 903油
- 不可燃液压油 (HFD)
- 硅油和油脂
- 矿物和植物油和油脂
- 脂施 (丁烷，丙烷，液化气)
- 芳香烃 (苯，甲苯)
- 氯化烃 (三氯乙烯和四氯化碳)
- 汽油 (包括高酒精含量)

FKM PERFORMS WELL IN:

- Mineral oil and grease, ASTM oil No. 1, and IRM 902 and IRM 903 oils
- Non-flammable hydraulic fluids (HFD)
- Silicone oil and grease
- Mineral and vegetable oil and grease  
Aliphatic hydrocarbons (butane, propane, natural gas)
- Aromatic hydrocarbons (benzene, toluene)
- Chlorinated hydrocarbons (trichloroethylene and carbon tetrachloride)
- Gasoline (including high alcohol content)

FKM在以下方面表现不佳：

- 胺
- 热氯磺酸
- 热氢氟酸
- 碳氧化物 (硝基)
- 酮
- 低分子量酯和醚
- 防火液压油 (如Skydrol®)
- 强碱
- 过热水和水蒸气

FKM DOES NOT PERFORM WELL IN:

- Amines
- Hot chlorosulfonic acid
- Hot hydrofluoric acid
- Hydrocarbons (nitro)
- Ketones
- Low molecular weight esters & ethers
- Fireproof hydraulic fluids (e.g. Skydrol®)
- Strong Alkaline Solution





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## 氟橡胶材料性能表 (FKM Capabilities)

材料 Material	材料代码 Compound	硬度 Hardness	温度 Temperature	特性 Production Capacities
氟橡胶 (VITON/FKM)	V4495	90	-23°C - +230°C	通用材料
	V4485	80	-23°C - +230°C	通用材料
	V4475	70	-23°C - +230°C	通用材料
	VT966	90	-23°C - +204°C	低气透、低永久压缩变形
	VT965	70	-23°C - +204°C	低气透、低永久压缩变形
	VG500	85	-23°C - +204°C	抗气爆
	VG501	95	-23°C - +204°C	抗气爆

# 四丙氟橡胶 (AFLAS)

AFLAS橡胶是由四氟乙烯和丙烯共聚而成，AFLAS橡胶对热，蒸汽，胺，碱和酸性气体 (H<sub>2</sub>S)，润滑剂 和某些燃料具有出色的抵抗力。由TAFLAS材料在水，蒸汽和多种苛性碱溶液中显示出卓越的性能，因此 它们成为石油和天然气行业，尤其是勘探和开采行业中的应用的理想材料选择

HELLOSEASL特殊配方可提供对快速气体减压 (RGD) 或爆炸性减压 (ED) 的抵抗力，使其成为高压气 体应用的理想选择。

但是，在高温应用中使用AFLAS化合物时，必须小心，因为它们的耐挤出性较差，应尽可能使用高模量 支撑或抗挤出环。另外，由TAFLAS耐低温性能比较差，因此对于低于 + 5。 (2的低温应用也需要格外注意。

Tetrafluoroethylene Propylene is a Co-Polymer which is commonly referred to as Aflas®, TFE/P or FEPM. Aflas® is a registered trademark of the Asahi glass company. TFE/P (Aflas®) compounds provide excellent resistance to heat, steam, amines, bases and sour gas (H<sub>2</sub>S), lubricants and some fuels. Because TFE/P materials show superior performance properties in water, steam and a number of caustic solutions, they make an ideal partner for applications in oil and gas sector, especially those in the exploration and extraction industry.

Specially formulated compounds can offer resistance to Rapid Gas Decompression (RGD) or Explosive Decompression (ED) which make them a good choice for high pressure gas applications.

CAUTION must be taken however when utilising TFE/P (Aflas®) compounds in high temperature applications as they can exhibit poor extrusion resistance, high modulus back-up or anti-extrusion rings should be employed where possible. The same cautionary rule must be taken with low temperature applications below +5° C as the material has poor low temperature flexibility and can stiffen rapidly below this temperature. and so on.

AFLAS在以下方面表现出色：

- 出色的耐蒸汽和腐蚀性，最高可达 204°C (400° F)
- 耐酸，碱和高反应性的有机和无机化学品
- 胺和H<sub>2</sub>S抗性
- 耐臭氧性
- 辐射抵抗力高达200 MRad的伽马射线辐射
- 出色的体积电阻率 (大于10<sup>16</sup>Ω cm)

AFALS PERFORMS WELL IN:

- Excellent steam and caustic resistance up to 400°C (204° F)
- Resistant to acids, bases and highly reactive organic and inorganic chemicals
- Amines and H<sub>2</sub>S resistance
- Ozone resistance
- Radiation resistance up to 200 MRad of gamma-ray radiation
- Excellent volume resistivity (greater than 10<sup>16</sup>Ω cm)

AFLAS在以下方面表现不佳：

- 芳香燃料
- 酮类
- 四氯化碳 •氯化烃 •有机制冷剂

FKM DOES NOT PERFORM WELL IN:

- Aromatic Fuels
- Ketones
- Carbon tetrachloride •Chlorinated Hydrocarbons •Organic Refrigerants

## 四丙氟橡胶材料性能表 (AFLAS Capabilities )

材料 Material	材料代码 Compound	硬度 Hardness	温度 Temperature	特性 Production Capacities
四丙氟橡胶 (AFLAS)	A4947	90	.-23°C~+204°C	通用材料, 高强度
	A4948	80	.-230°C~+204°C	通用材料, 高强度
	A4875	70	.-23°C~ + 204°C	通用材料, 高强度
	AG895	95	.-23°C~+204°C	抗气爆
	A1959	90	.-230°C~ +204°C	低门尼, 通用材料
	A1958	80	.-23°C~ + 204°C	低门尼, 通用材料
	A1957	70	.-23°C~ + 204°C	低门尼, 通用材料

## 全氟橡胶 (FFKM)

全氟弹性体 (FFKM) 将弹性体材料的韧性与 Teflon® 的化学惰性相结合，具有出色的耐极端高温性能，HELLOSEALS 特殊牌号的工作温度可超过 316° C。相对于其他橡胶而言，FFKM 可以抵抗几乎所有化学试剂的侵蚀。

几乎在所有的行业和应用中，工况都变得越来越复杂，不仅要求密封件要承受长期的高温，而且对他们的化学兼容性也提出了一定的考验，例如：耐高温蒸汽，耐极性溶剂，耐高温胶等，除此之外，还面临着超高的压力，这就要求我们必须使用最高等级的弹性体：FFKM。

Perfluoroelastomer (FFKM) combines the toughness of an elastomeric material with the chemical inertness of Teflon®. FFKM has excellent resistance to extreme temperatures from -10° C to +260° C and some special compounds can operate beyond 316° C. FFKM resists attack by nearly all chemical reagents and provides long-term service where corrosive additives can cause other elastomers to swell or degrade.

In all sectors and applications, the requirements are becoming ever more complex: Not only must seals be resistant to temperature; they must also be able to withstand a wide variety of chemicals. They must be resistant to steam - as well as to solvents. Or they need to be able to resist changes in media, plus high pressure. Only seals made from the very highest quality elastomer material meet these requirements

FFKM 在以下方面表现出色：

- 耐高温 (-15° C - 316° C)。
- 优异的耐化学性 (同类中最好，与 PTFE 相似)。
- 优异的抗气体和液体渗透性。
- 优异的耐候性和耐臭氧性。
- 自熄，在空气中不可燃。
- 高密度。
- 良好的机械性能，提高了密封性能
- 适用于爆炸性减压、CIP、SIP 和 FDA

FFKM PERFORMS WELL IN:

- Wide temperature range (-15° C - 316° C)
- Excellent chemical resistance (best in class, similar to PTFE).
- Excellent gas and liquid permeation resistance.
- Excellent weather ability and ozone resistance.
- Self-extinguishing and non-flammable in air
- High Density
- Good mechanical properties, improving sealing performance.
- Suitable for explosive decompression, CIP, SIP and FDA.

FFKM 在以下方面表现不佳：

- 在氟化溶剂中会明显膨胀。
- 不应呆融或气态减金属一起使用。
- 热系数大于其他弹性体，因此需要定制沟槽尺寸。
- 成本高，因此通常在没有其他弹性体合适的情况下使用。

FFKM DOES NOT PERFORM WELL IN:

- Can swell significantly in fluorinated solvents.
- Should not be used with molten or gaseous alkali metals.
- Thermal coefficient larger than other elastomers, so seal housing size may need modifying.
- High cost, so generally used when no other elastomer is appropriate.

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## 全氟橡胶材料性能表 (FKM Capabilities)

材料 Material	材料代码 Compound	硬度 Hardness	温度 Temperature	特性 Production Capacities
全氟橡胶 (FKM)	HS5095	95	-15到+230	抗气爆
	HS5075	75	-30到+230	耐低温
	HS7090	90	-15到+317	耐高温
	HS7075	75	-15到+317	耐局温
	HS8090	90	-15到+300	过热水, 水蒸气
	HS8075	75	-15到+300	过热水, 水蒸气
	HS9095	95	-15到+260	抗气爆, 水蒸气
	HS9075	75	-15到+260	耐高温胺

## 聚四氟乙烯 (PTFE)

聚四氟乙烯 (PTFE), 通常称为特氟龙, 是体积最大含氟聚合物, 聚四氟乙烯具有独特的性能组合。例如, 它具有出色的耐热性, 耐化学性, 在熔点以下不溶于所有普通溶剂, 并且其摩擦系数在所有聚合物中最低 (自润滑和不粘)。但是, 由于其高结晶度, 极高的熔点 (600 K) 和熔体粘度, 因此无法通过塑料的常规标准熔体加工方法进行加工。相反, 类似于金属和陶瓷粉末, 通过在环境温度下压缩模制然后在高结晶熔点的 SST 炉来加工粒状树脂。

PTFE 非常适用于需要耐化学性, 在较宽的使用温度范围内具有较高的耐久性, 优异的介电性能和低摩擦系数的应用。它可以在很高的温度 (最高 530K) 和极低的温度下使用。重要的应用包括低摩擦轴承, 齿轮和滑板; 耐化学腐蚀的阀门, 泵零件, 过滤器和隔膜; 模具, 模具和炊具的不粘涂料; 连接器组件, 电缆和印刷电路板中的电绝缘体。

Polytetrafluoroethylene (PTFE), more commonly known as "teflon", is the largest-volume fluoropolymer which has a unique combination of properties. For example, it has outstanding thermal, electrical and chemical resistance, is insoluble in all common solvents below its melting point, and its coefficient of friction is among the lowest of all polymers (self-lubricating and non-stick). However its high crystallinity; very high melting point (600 K), and melt viscosity do not allow its processing by the usual standard melt-processing methods for plastics. Instead, similar to metal and ceramic powders, the granular resins are processed by compression molding at ambient temperature followed by sintering above the crystalline melting point.

PTFE is ideally suited for applications where broad chemical resistance, high durability over a wide service temperature range, excellent dielectric properties and a low coefficient of friction are required or are advantageous. It can be used both at very high (up to 530 K) and extremely low temperatures. Important applications include low-friction bearings, gears and slide plates; chemical resistant valves, pump parts, filters and membranes; non-stick coatings for moulds, dies, and cookware; electrical insulators in connector assemblies, cables and in printed circuit boards.

## 聚醚醚酮 (PEEK)

聚醚醚酮(PEEK)是一种半结晶的高性能工程热塑性塑料。这种坚硬的不透明(米黄色)材料提供了耐化学药品,耐磨,疲劳和抗蠕变性能,以及极高的耐高温性能(高达260。。该聚合物属于聚酮聚合物家族(PEK, PEEK, PEEKK, PEKK, PEKEKK),其中, PEEK已经被广泛地使用和大规模生产。

石油和天然气领域涉及到最复杂、最恶劣的工作环境,它需要特殊的高性能材料来保证系统正常和稳定的运行,其中,PEEK就是一种非常合适的材料,在石化领域(甚至是深水钻井以及非常规作业)选择PEEK有着充分的理由,首先,PEEK具有很好的耐化学性。它是能应对暴露于酸性气体环境的为数不多的聚合物之一,其次,它具有极高的比强度和比刚度,这意味着重量比钢或钛轻并且具备出色的强度和刚度。此外,从原材料的生产,服务和报废处理整个过程,PEEK不会对环境造成重大负面影响。加上低摩擦,极高的温度性能和出色的耐磨性能,可以解决石油和天然气行业中遇到的许多难题。

PEEK可以通过常规方法进行加工,例如注射成型,挤出,压缩成型等。尽管聚合物价格高昂,但PEEK材料带来的附加价值包括重量轻,强度或韧性好,并且能够在恶劣的环境中生存更长的时间,从而被广泛的使用。

Polyetheretherketone (PEEK) is a semi crystalline; high-performance engineering thermoplastic. This rigid opaque (grey) material offers a unique combination of mechanical properties, resistance to chemicals, wear; fatigue and creep as well as exceptionally high temperature resistance, up to 260° C (480° F). The polymer belongs to polyketone family of polymers (PEK, PEEK, PEEKK, PEKK, PEKEKK) and amongst them, PEEK is the most widely used and manufactured in large scale.

The oil and gas industry involves some of the harshest, most aggressive environments. It takes special materials to provide the performance and reliability that is demanded. PEEK is one of the materials that rises to the occasion, There is good reason behind the choice of PEEK for so many petrochemical applications (even deepwater drilling and unconventional oil and gas operations). PEEK is very chemically resistant. It is one of the few polymers that can handle exposure to sour gas environments. It has an extremely high specific strength and specific stiffness. This means that the excellent strength and stiffness can be achieved with components that weight less than steel or titanium. In addition, PEEK itself does not have a significant negative environmental impact. This includes its creation, service, and end-of-life disposal. Add to that low friction, extreme temperature performance, and excellent wear properties, and you have a winning solution to many of the problems encountered in the oil and gas industry.

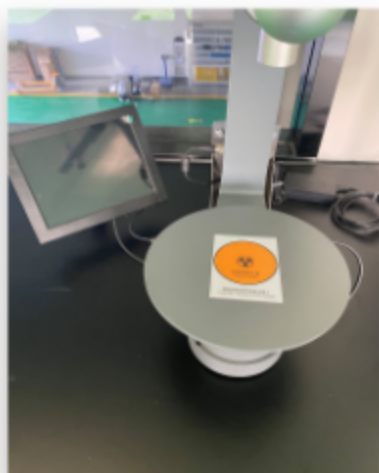
PEEK can be processed by conventional methods such as injection molding, extrusion, compression molding etc. Despite high price of the polymer; the added value that PEEK materials bring by offering the possibility of manufacturing parts include lightweight, strength or toughness and able to survive longer in harsh environments.



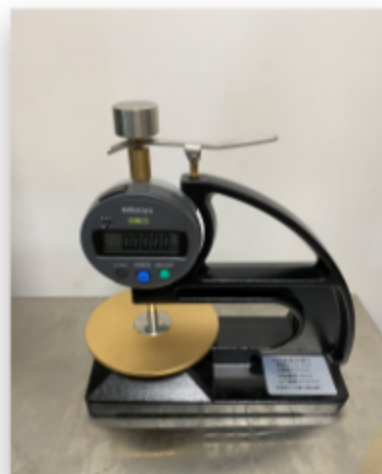
设备篇  
Equipment







X光测试仪  
X-ray tester



测厚仪  
Thickness gauge



冲片机  
Film processor



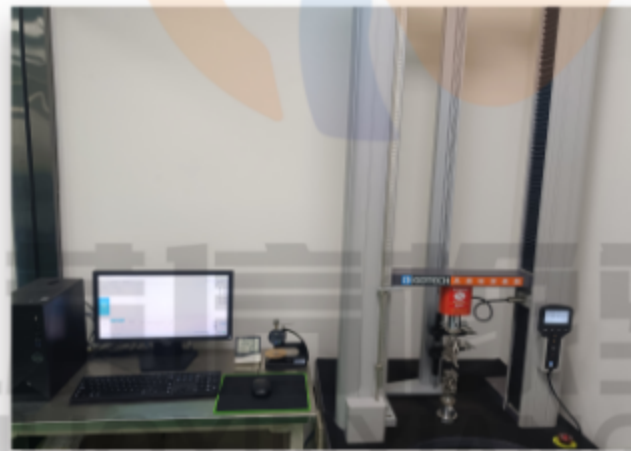
高铁硬度计  
High iron  
hardness tester



拉力测试仪  
Tension Tester



低温测试仪  
Cryogenic tester



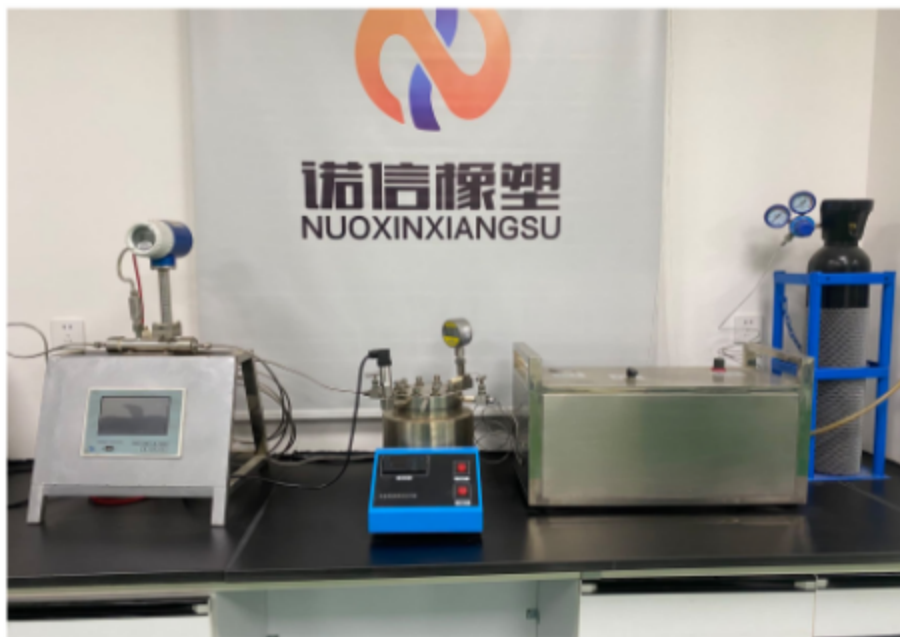
高铁拉力试验机  
Tension testing machine  
for high speed railway



高温试验箱  
High Temperature  
Test Chamber



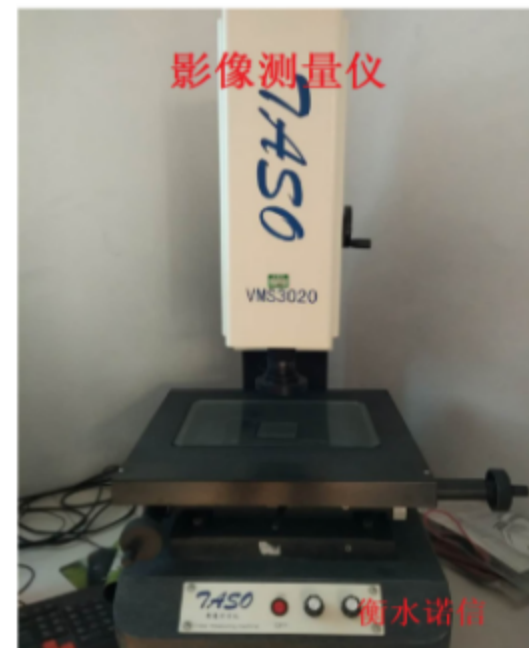
耐油试验箱  
Oil resistance  
test box



井下模拟试验反应釜  
Downhole simulation test reactor



无转子硫变仪  
No rotor sulfur meter



影像测量仪  
Image measuring instrument



产品篇  
Products





# 潜油泵胶囊保护器 ESP Protector

## 产品的应用场景

- 深井潜油电泵
- 深井水油电泵

## 产品的使命

- 隔离并保护电机不受井筒流体的影响
- 使潜油泵内部马达压力与环境平衡
- 吸收潜油泵轴向的推力
- 可以与热循环机油的冷 热来进行 膨胀和收缩
- 更长的运行寿命，由于径向稳定

## APPLICATIONS

- Water wells
- Oil wells
- Offshore/remote ESP installations

## BENEFITS

- Isolates and protects the motor from well bore fluids
- Equalizes internal motor pressure with annulus
- Absorbs axial shaft thrust
- Allows for the expansion and contraction of motor oil due to thermal cycle
- Longer run life due to radial stabilization

深井潜油泵是潜入上千米深的油井中进行工作的。胶囊则是其密封保护器的关键组件之一，它的性能和工作质，对于深井潜油泵稳定可靠的运行具有举足轻重的意义。胶囊式密封保护器对于潜油电机而言是起轴向密封作用的。当其机组系统产生冲击时，则依靠胶囊的扩张或收缩，使之维持平衡状态，避免冲撞而造成部件的损坏，以保证潜油泵机组的安全运行。潜油泵的使用条件，介质为原油(含水和硫化氢气体等)；环境温度为-30℃—+120℃；压力为20MPa。我厂生产潜油泵密封件，已有数年历史。材质有氟橡胶、硅橡胶、高饱和丁腈(HSN)、AFLAS橡胶等。可满足不同井温、介质及无礼性能需要。产品除供国内市场外，还配套出口到苏丹、俄罗斯、印尼、美国等国家。产品质量稳定，深得用户好评。

The electric submersible pump in deep well works in the oil well of upper dry meter depth. The capsule is one of the key components of the sealing protector. Its performance and working medium are very important for the stable and reliable operation of the submersible electric pump in deep wells. Capsule type sealing protector is axial sealing for submersible motor. When the system has impact, it depends on the expansion or contraction of the capsule to keep the balance and avoid the damage of the components, so as to ensure the safe operation of the submersible electric pump unit. Products in addition to the domestic market, but also supporting exports to Sudan, Russia, Indonesia, the United States and other countries. Product quality stability, won the praise of users.





ESP protector is located between the motor and pump intake and serves four primary functions:

- Isolates and protects the motor from well bore fluids
- Equalizes internal motor pressure with annulus
- Absorbs axial shaft thrust
- Allows for the expansion and contraction of motor oil due to thermal cycle

The protectors, or seals, are modular in design and their selection criteria includes: well geometry, well fluid characteristics, operating temperature rise and thrust handling requirements.

The ESP Protector contains multiple redundant separation chambers of both labyrinth and bag design.

ESP胶囊保护器位于电机和泵进气口之间，并有四个主要功能：

- 隔离并保护电机免受井下液体的影响
- 通过胶囊保护器来平衡电机内部的压力。
- 吸收轴向推力
- 可以于电机机油的冷热来进行膨胀和收缩

胶囊保护器或密封件在设计上是模块化的，其选择标准包括：井的几何形状、井的流体特性、操作温度和推力处理要求。

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# 橡胶密封圈

## O-RING



O 形环在泵、气缸、连接器和阀门中非常常见，有助于密封不同部件之间的连接，防止流体和气体泄漏。它们与静态、动态、液压和气动元件一起使用，使它们成为一个非常广泛的工程问题的通用解决方案。如上所述，你会使用 O 形环非常类似于你使用任何其他类型的垫圈：基于弹性体的圆形截面坐落在一个特别设计的凹槽（其几何形状是相当普遍的），在那里它变得压缩在两个或两个以上的部件一旦组装和互锁。由此产生的 O 形环密封既经济又可靠，而且弹性相对较好，在需要时易于维护/更换。O 形环密封的一个关键优点是，在它连接的部件被拆卸并且作用在它上面的压缩力被消除之后，它将恢复到原来的形状。随着时间的推移，重复这一过程将开始对材料的弹性和均匀性以及密封环的形状产生影响，最终，如果密封要保持紧密，就需要更换 O 形环。在压力下，O 形环将在其槽内向密封件的低压侧移动，迫使其越来越紧密地抵抗在两个部件之间产生的压盖的内壁和外壁。在一定程度上，这会造成密封越来越紧，但是最重要的是不要在 O 形环上施加超过其设计能力的压力，因为过大的变形最终会导致密封再次开始泄漏。

O-rings are very commonly found in pumps, cylinders, connectors and valves, helping to seal joints between separate parts and prevent leaking of fluids and gases. They're used with static, dynamic, hydraulic and pneumatic components, making them an especially versatile solution to a very widespread engineering issue.

As noted above, you'd use an o-ring very similarly to the way you'd use any other type of gasket: the elastomer-based circular cross-section sits in a specially engineered groove (the geometry of which is fairly universal), where it becomes compressed between two or more parts once they're assembled and interlocked. The resulting o-ring seal is both economical and reliable, as well as relatively resilient and easy to maintain/replace when needed.

One of the key strengths of an O-ring-type seal is that after the parts it joins are disconnected and the compression forces acting on it are removed, it will return to its original shape. Over time, repeating this process will start to have an effect on the resilience and uniformity of the materials and the torus shape of the seal, and ultimately the o-ring will need swapping out for a new one if the seal is to remain tight.

Under pressure, the o-ring will shift in its groove towards the lower-pressure side of the seal, forcing it more and more tightly against the inner and outer walls of the gland created between two components. Up to a point, this will create a tighter and tighter seal, but it's vital not to put more stress on an o-ring than it's designed to handle, as too much deformation will eventually cause the seal to start leaking again.

# O型圈PTFE涂层

## O-ring PTFE coating

聚氟合物涂层O-ring密封圈上具有以下性能

- 一、在没有使用润滑剂的情况下，降低摩擦系数，因而使O-ring密封圈的安装简易，同时有助于防止O-型密封圈相互粘着的问题。
  - 二、可以避免使用润滑剂如油、滑石粉或硅油。
  - 三、提高了O-ring密封圈的耐化学性和耐候性，使其免受溶剂、盐水等的腐蚀。
  - 四、使O-ring密封圈具有颜色代码，以便区分。可提供一系列颜色的O-ring密封圈特氟龙涂层加工，从传统的黑色到橙色。
  - 五、5-15微米的PTFE涂层，就可以改善O型圈表面诸多问题。
  - 六、环保的水性聚氟合物干性润滑涂层都适用于各种基材的橡胶O-ring密封圈。
- 如果您想了解更多有关O型密封圈自润滑特氟龙涂层信息，请联系本公司相关技术人员。

The fluoropolymer coated O-ring seal ring has the following properties

Reduce the friction coefficient without the use of lubricants, thus making the installation of O-ring seals easy and helping to prevent the problem of O-ring seals sticking together. Second, the use of lubricants such as oil, talcum powder or silicone oil can be avoided. 3. The chemical resistance and weatherability of O-ring seal ring are improved to protect it from the corrosion of solvent, brine, etc. . Color-coded O-ring seals for easy identification. Available in a range of colors, the O-ring seals are teflon coated and machined from traditional black to orange. Five, 5-15 micron PTFE coating, can improve the o-ring surface many problems. The environmental protection water-based polyfluoropolymer dry lubrication coating is suitable for all kinds of substrate rubber O-ring seal ring. If you want to know more about the self-lubricating teflon coating of o-ring, please contact the relevant technical personnel of our company.

O型圈彩色PTFE涂层



O型圈彩色PTFE涂层

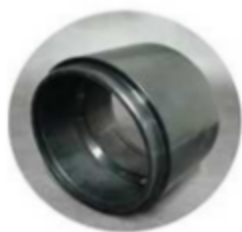


# 封隔器胶筒

## Packer elements

衡水诺信橡塑制品有限公司，自成立之初，就在用最大的努力去解决每一处泄露问题，至今，我们不仅可以提供高质量的密封产品，我们更能够为客户提供一整套的设计方案，包括金属加工件，这就可以理解为什么我们在短短的几年里已经被越来越多的客户认可

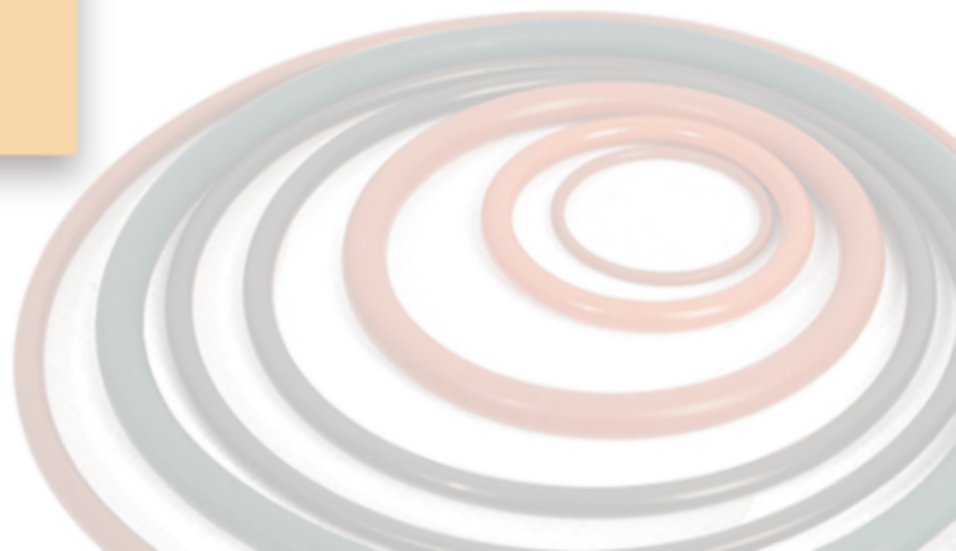
Hengshui nuoxin rubber and Plastic Products Co., Ltd., since its inception, has been doing its best to solve every leak problem, so far, we can not only provide high-quality sealing products, we are more able to provide customers with a complete set of design programs, including metal parts, which can understand why we have been in just a few years more and more customers recognized.



### 设计摘要 (Design Considerations )

- 油田温度、压力、介质。
- 工具类型
- 材料选择
- 可靠的结构

- Temperature, pressure and medium.
- Tool types
- Material selection
- Reliable structure







# V型组合密封

## Vee Packing

V型组合密封一般采用多片式设计，这些材料有可能是由AFLAS、PTFE、PEEK或者RYTON组成，每一片都发挥固有的特性并由后面一片给予辅助和保护，这种密封一般在弹性体无法解决的环境里使用，比如滑套的往复开关并要求极低摩擦系数，这种密封的磨损低，寿命长，特别适用于井下的滑动密封，相对于极高要求的加工能力，这种V型组合的设计并不是无章可循，诺信可提供在不同环境，不同工具中使用的各种组合，从而保证整个系统的安全运转。

Vee packing generally adopts multi piece made of different materials. These materials may be composed of AFLAS, PTFE, PEEK or RYTON. Each piece has its own characteristics and protected by the adjacent piece. This kind of seal is generally used in the environment that can not be solved by elastomer, such as sliding sleeve, it requires extremely low friction coefficient. This kind of seal has low wear and long life service. It is especially suitable for down-hole sliding tools. Compared with the extremely high processing capacity, the design of this vee packing is also has its own rules. We can provide various types used in different environments and tools, so as to ensure the system for safely running.



### 设计摘要 (Design Considerations )

- 油田温度、压力、介质。
- 工具类型
- 是否过孔
- 运动行程
- 加工精度
  
- Temperature, pressure and medium.
- Tool type.
- Cross hole
- Moving distance
- Machining accuracy

# 金属粘接密封

## Bonded Seals

金属粘接密封，也叫模态密封或者定位密封，是井下防砂工具或者定位密封必不可少的零件之一，这是一种对橡胶耐磨性以及和金属粘接力要求很高的密封，不仅对橡胶的最终尺寸有着极高的要求，对于模具开发也是有非常大的挑战，随着井下更复杂的工作环境，我们开发出各类型的产品，包括AFLAS橡胶，来适应井下的高温高压环境。

Bonded Seals represent a combination of metal ring and elastomer seal vulcanised to the edge of the metal. Which can be used in production wells Injection wells as well as in sand-control completions. The highest requirements for abrasion resistance and tear resistance are needed in these kinds of seals. Not only extremely stricted with final dimensions, but also biggest challenge with mould development. Our many readily available combinations of seal types and materials allow us to quickly fulfill requirements for most downhole environments such as high pressure, high temperature.



### 设计摘要 (Design Considerations)

- 油田温度、压力、介质。
- 工具类型
- 沟槽尺寸
- 运动行程
- 加工精度
  
- Temperature, pressure and medium.
- Tool type.
- Cross hole
- Moving distance
- Machining accuracy

# 0型圈挡圈

## Back-up rings

支撑环是由工程塑料或橡胶制成，用于防止O形圈从间隙挤出。当在O形圈上施加高压时，其软橡胶材料，可能会被挤出间隙，导致失封。而坚硬的支撑环材料可以有效的防止O形圈材料流入间隙中，从而防止过早失效。在开式沟槽的安装中，我们提供不同角度形式的切口，更容易提升安装效率。我们的PEEK系列化合物由于具有耐高压和高温性能，因此是用于支撑环的理想材料。除此之外，支撑环材料还包括其他类型的PEEK化合物、PTFE、碳氟化合物/Vitons或者NBR材料。

Back-up rings are plastic or rubber rings used to prevent the O-ring from entering the clearance gap. When high pressures are exerted on the O-ring, its soft rubber material can be forced into the clearance gap causing the O-ring to extrude. The hard back-up ring material will keep the O-ring material from flowing into the gap which will prevent premature failure. Plastic Back-up rings come in cut with several different types as to improve assembly efficiency. Our PEEK PK001 compound is ideal material for back-up rings due to the compound's high pressure and high temperature capabilities. Additional back-up ring materials include other PEEK compounds, PTFE, fluorocarbon/Viton™, and nitrile.



### 设计摘要 (Design Considerations )

- 油田温度、压力、介质。
- 沟槽尺寸
- 间隙尺寸
- 材料选择
- 开口形式
  
- Temperature, pressure and medium.
- Groove dimension
- Gap size
- Material selected
- Notch size and notch angle

# 弹簧蓄能圈

## Spring Lip Seals

安全阀是井下的最后一道保障，用于井下安全阀的弹簧蓄能圈是一种要求极高的密封产品，它不仅能承受最极端的温度、压力，还要在这种温度压力的保持下，保证足够小的摩擦阻力和最低的磨损要求，因为它在井下有3-5年甚至10年的工作寿命，任何一点出问题都有可能酿成重大的责任事故甚至是生命安全，在此，我们的产品经受了严格的工况测试和大量的市场验证。

除此之外，弹簧蓄能圈还在API 6A闸阀、API 6D球阀，调节阀、LNG等领域大量使用，足以证明其有着橡胶制品不可替代的优势。

The downhole safety valve is the last guarantee in the underground. The spring lip seal is made of engineering plastic and energized by V-style spring used on downhole safety valve with highest requirements. Not only extremely high temperature and high pressure are need to stand, but also low friction resistance and material abrasion are ensured for this kind material. Because it should be continued 3-5 years lifetime in working conditions even could be 10 years. Any problem will lead to major accidents and even safety of life. Here our seals are successfully by strict working condition test and a lot of market validation.

In addition, spring lip seals are also widely used in gate valve of API 6A, ball valve of API 6D, regulating valve and LNG field, which proves that it has irreplaceable advantages compared to rubber materials..



### 设计摘要 (Design Considerations )

- 温度、压力、介质。
- 沟槽尺寸
- 间隙尺寸
- 材料选择
- 泄露等级
- Temperature, pressure and medium.
- Groove dimension
- Gap size
- Material selected
- Leakage level

# 定制化服务

## Customized sealing: the design of seals

衡水诺信在各种结构的密封定制领域可以为客户提供全套的密封解决方案, 通常我们会直接参与到密封产品的结构设计中去, 这样才能为您量身定制一款最合适的产品。密封设计是一个非常严格细致的过程, 过程中各种因素都必须考虑到, 衡水诺信有着丰富的知识和经验, 确保每一件产品能够成功交付。

Nosin supplies total solutions in the field of customized sealing in a wide variety of constructions. Usually Nosin is therefore directly involved in the design of new constructions. In this way we can ensure that the right seal is made to measure for you. The design process of a seal is a meticulous process in which various factors have to be taken into account. HELLOSEALS has the knowledge and experience to bring the design of your construction to a successful conclusion with the right seal.

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### 定制过程 (Customization process )

- 充分的沟通
  - 材料选择
  - 结构设计
  - 样品生产
  - 性能测试
  - 批量生产
  - 包装运输
  - 产品使用跟
- Deep communication.
  - Material selected
  - Constructure design
  - Samples prepared
  - Test according to working conditions
  - Production
  - Packaging and delivery
  - Follow up

