



HI-TECH SEALS INDUSTRIES

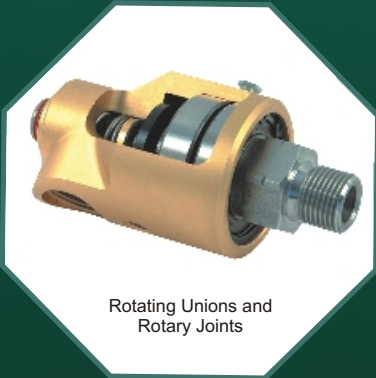
Mechanical Seals, Pump Spares, Rubber Components & Rotary Joints



AN
ISO 9001: 2008
Company



Mechanical Seals



Rotating Unions and
Rotary Joints



Milk Pumps



Oil Seals

INTRODUCTION

Originally Mechanical Seals were developed to overcome the negative issues affiliated with packed stuffing boxes. Single Mechanical Seals offered an alternative to fluid leakage. They eliminated the need for a routine maintenance schedule as once properly selected and installed they would function without attention until the seal faces themselves worn out which could be years later.

Hi Tech Seals Industries was formed by young engineers having many years of experience in designing and troubleshooting of Mechanical Seals.

APPLICATIONS

Hi Tech Seals Industries manufacture most reliable and efficient Mechanical Seals for all types of Pumps, Compressors, Reactors, Dyeing Machines etc. Our Mechanical Seals are being used in all types of Industries like Chemical plants. Solvent extraction plants, Refineries, Pharmaceutical plants, Distilleries, Beverages, Breweries, Milk plants, Dyeing Houses, Sugar Industries, Fertilizers etc. for various critical applications.

The Raw Materials used for Mechanical Seals faces are Tungsten Carbide, Silicon Carbide, Ceramic, Stellite, Ni-resist, Carbon, G.F.T., Chrome Oxide etc. The secondary packings are selected from various grades of rubber like Viton, Kalrez, Silicon, Neoprene, EPDM, and PTFE etc..

Hardware materials must be constructed of suitable metallurgy compatible with the fluid. The metal parts used are AISI-316, Hastelloy 'C', Alloy-20, Monel etc. The Flatness of Seal faces ensured between 2 to 3 light band maximum. Their extremely flat lapped mating faces, make it extremely difficult for the fluid to escape between them.

We repair all types of used Mechanical Seals and Rotary Unions.

If you use seals and rotary unions you know repairing them can easily save you upto 50% of the cost. Instead of throwing the old seal, we can reuse some of its parts and form a new with in less cost as compared to buying brand new seal.

We repair all brands, and all styles. We also replicate competitive brand seals and rotary unions, so if these are not repairable we can build you a new one at a lower cost than you are now buying!

Repaired seals can also be upgraded by replacing Carbon faces with Silicon or tungsten Carbide for much less than upgrading to a new seal.

All of the seals and rotary unions are repaired, cleaned, inspected for factory tolerance, replace new faces if required (otherwise lapped), new springs, new elastomer (rubber boot or o-rings), new set screws, new setting clips (if a cartridge seals), lapped to industry standards (2-3 light bands) assembled and shipped.



Multiple Spring Shaft Seals : Type - (HS-20S)

Type HS-20S series seals are multiple spring units. These seals are available in balance & unbalance configuration. Due to their compact design these seals are used in centrifugal pumps, Reactors etc. These seals are not effected by the directions of shaft rotation. These seals are designed to handle clear fluids.

Specification :

Shaft Diameter	: 1/2" to 8.0"
Pressure Unbalanced	: 10 bar
Pressure Balanced	: 35 bar
Speed	: 2900 rpm
Temperature	: -50°C to + 220°C
Face Combination	: Carbon, Ceramic (99.5%) Silicon carbide, Tungsten carbide etc.



Multiple Spring Shaft Seals : Type - (HS-21 RO)

Type HS-21 RO series seals are multiple spring seals, the rotary unit of these seals are comprises of three pieces, Compression ring, Multiple springs and Seal ring. The exposed design of Rotary Unit helps cleaning of accumulations around springs when used in dirty fluids. These seals are not effected by direction of shaft rotation.

Specifications :-

Shaft Diameter	: 1/2" to 10.0"
Pressure Unbalanced	: 8 bar
Pressure Balanced	: 35 bar
Speed	: 2900 rpm
Temperature	: -50°C to + 220°C
Face Combination	: Carbon, Ceramic (99.5%), Silicon carbide, Tungsten carbide, Stellite etc.



Reactor Seals : Type - (HS-22RB)

Type HS-22RB Series Seals are multiple spring type dry running seals. These seals are available in balanced configuration, the rotary unit of these seals are comprises of three pieces, Compression ring, Multiple springs and Seal ring. These seals are externally mounted and springs used for reactor where dry running conditions are required and also not effected by direction of shaft rotation.

Specifications :

Shaft Diameter	: 1" to 12.0"
Pressure Balanced	: 16 bar
Speed	: 200 rpm - 300 rpm
Temperature	: -20°C to + 160°C
Face Combination	: Carbon, Ceramic (99.5%), Silicon carbide, Tungsten carbide, Stellite etc.



Teflon Bellow Shaft Seals : Type - (HS-30TB)

Type HS-30S series seals are outside mounted, suitable for highly corrosive chemicals like Acids, Salts, Alkalies etc. The Seal components that come in contact with fluids are made of chemically inert materials like PTFE Bellow, GFT, Ceramic, Silicon Carbide. All hardware are in Haste-Alloy-C, Alloy-20 etc.

Shaft Diameter	: 18mm to 100mm
Pressure Unbalanced	: 10 bar
Speed	: 2900 rpm
Temperature	: 120°C
Face Combination	: GFT, Ceramic (99.5%), Silicon carbide, etc.



Wave Washer Shaft Seals : Type - (HS-40 WW)

Type HS-40WW series seals are wave washer spring seals. Main advantage of these seals are reduced length due to use of wave spring and work more efficiently in dirty applications as spring clogging does not occur.

Specifications :-

Shaft Diameter	: 14mm to 100mm
Pressure Unbalanced	: 10 bar
Pressure Balanced	: 25 bar
Speed	: 2900 rpm
Temperature	: -50°C to + 220°C
Face Combination	: Carbon, Ceramic (99.5%), Silicon carbide, Tungsten carbide, Stellite etc.



Single Spring Shaft Seals : Type - (HS-50SH)

Type HS-50SH Series Seals are single coil spring seals. These types of seals are available in balanced and unbalanced configuration. These seals are suitable for viscous fluids & abrasive slurries because of their low starting torque.

Specifications :-

Shaft Diameter	: 5/8" to 6.0"
Pressure Unbalanced	: 10 bar
Pressure Balanced	: 35 bar
Speed	: 2900 rpm
Temperature	: -50°C to + 250°C
Face Combination	: Carbon, Ceramic, Silicon carbide, Tungsten carbide, Stellite etc.



Single Spring for Dair : Type - (HS-51 ARO)

Type HS-51 ARO Series Seals are single coil spring seals. These types of seals are available in balanced and unbalanced configuration. These seals are suitable for viscous fluids & abrasive slurries because of their low starting torque.

Specifications

Shaft Diameter	: 5/8" to 6.0"
Pressure Unbalanced	: 10 bar
Pressure Balanced	: 35 bar
Speed	: 2900 rpm
Temperature	: -50°C to + 250°C
Face Combination	: Carbon, Ceramic, Silicon carbide, Tungsten carbide, Stellite etc.



Single Spring Shaft Seals : Type - (HS-52 CL)

Type HS-52CL series seals are Single Spring Seals driven by clutches, these seals are specially designed for Dyeing machines since these seals are not effected by rotation of shaft direction.

Specifications :-

Shaft Diameter	: 20mm to 60mm
Pressure Unbalanced	: 10 bar
Speed	: 2900 rpm
Temperature	: 180°C
Face Combination	: Carbon, Silicon carbide, Tungsten Carbide, Stellite etc.



Elastomers Bellow Seals : Type - (HS-53B)

Type HS-53B Series Seals are single spring seals with rubber bellow as secondary packing and torque transmission is done by the rubber bellow. These seals are suitable for Vacuum Pumps, Water Pumps, Oil Pumps etc.

Specifications :-

Shaft Diameter	: 10 to 100mm
Pressure	: 16 bar
Vacuum	: 0.5 Bar to 1 Bar
Temperature	: -20°C to + 140°C
Face Combination	: Carbon, Ceramic, Silicon carbide, Tungsten Carbide, Stellite etc.



Cartridge Type Mechanical Seal for Grundfos Pump:-

The cartridge seal used in the CR line combines the best features of standard seals, wrapped up in an ingenious cartridge design that provides unique advantages. All of these ensure extra reliability.

The durable seal is made from hardwearing materials which prevent downtime and prolong the lifetime of the seal. All axial movement has been eliminated, preventing wear of the shaft and rubber parts - a typical problem area for traditional seals. The cartridge seal is a balanced type seal, a fact which makes it less insensitive to pressure.

Size Available :-12MM, 16MM AND 22MM



Rubber Bellow Seals for Johnson Pumps

These rubber bellow mechanical seals are single conical helical spring seals. These seals are designed to handle fluids of varying contaminations like : Slurries, Sledges, Abrasive media etc. These are self setting seals and are easy to install. Design for Johnson Pump for ETP application.

Specification :-

Shaft Diameter	: 16mm to 25mm
Pressure	: 10 bar
Speed	: 2900 rpm
Temperature	: 120°C
Face Combination	: Carbon, Ceramic, Silicon carbide, Tungsten carbide, Stellite etc.



Metallic Bellow Shaft Seals : Type - (HS-100MB)

These Mechanical Seals are specially design to use at high temperature, self cleaning effect, independent of direction of rotation.

Specification :-

Shaft Diameter	: 20mm to 100mm
Pressure	: 25 bar
Speed	: 2900 rpm
Temperature	: -40°C to + 250°C
Face Combination	: Carbon, Silicon carbide, Tungsten carbide etc.



Conical Spring Shaft Seals : Type (HS 55C)

Type HS-55C series seals are single conical helical spring seals. These seals are designed to handle fluids at varying contaminations like slurries, sledges, abrasive media etc. These are self setting seals and easy to install.

Specification :-

Shaft Diameter	: 16mm to 80mm
Pressure Unbalanced	: 10 bar
Speed	: 2900 rpm
Temperature	: -50°C to + 220°C
Face Combination	: Carbon, Ceramic, Silicon carbide, Tungsten carbide, Stellite etc.

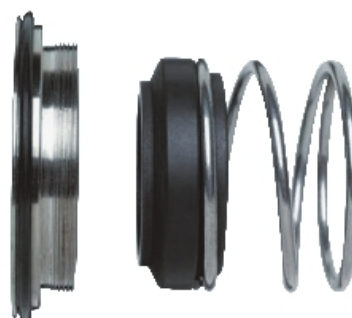


Single Spring Seals for Alfa Laval Pump

We offer single spring Mechanical seals for Alfa Laval Pump. These are self setting seals and are easy to install.

Specification :-

Shaft Diameter	: 22mm, 32mm etc.
Pressure Unbalanced	: 8 bar
Speed	: 2900 rpm
Temperature	: 150°C
Face Combination	: Carbon, Ceramic, Silicon carbide, Tungsten carbide, Stellite etc.



Agitator Mixer Seals

"Agitator Mechanical Seals" are top entry agitator double mechanical seal designed for medium to high pressure applications. These seal are successfully used for many years in all kind of mixer, reactors, paints and pulps etc. these seals can be easily installed without disturbing the delicate mating faces.

Application

Used in top entry mixer vessels in pharmaceuticals & chemical industries.

Operating Limits

Pressure	: up to 1.40 MPa
Temperature	: (-)10c to (+)150c
Speed	: up to 1 m/s
Sizes	: 25 mm to 100 mm

Material

Seal Face	: Carbon, Silicon, Ceramic, TC
Secondary Seals	: Viton / PTFE
Metal Parts	: SS 316, SS-304



Rubber Parts

We are manufacturing all types of rubbers 'U' Seals, 'V' Seals, Rod Seals, Wiper Seals, in Various rubbers like NBR, Silicon P.U., etc. We are also manufacturing PHE Gaskets, Packing Collars, Union Gaskets, Specially suitable for dairy, juice plants, distilleries, beverage plants.



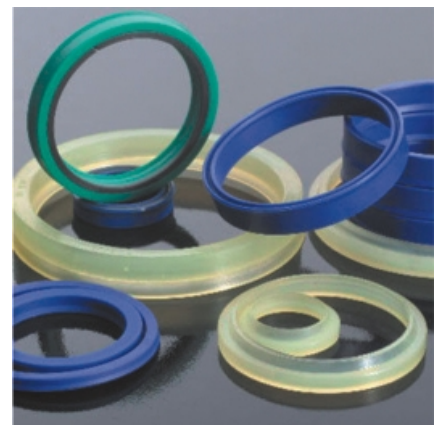
Silicone Cords

Silicone Cords offered are completely non toxic as well as heat resistant and can be made available from -60°C to 280°C. These find application in meeting the transfer needs of sterile liquids in peristaltic pumps so as to match up to the process requirements of transferring oral liquids like syrups, tonics and others. Further, these are also used in transferring of ointments, creams as well as in industry sectors like food & beverages, medical, surgical, pharmaceutical, electrical and others. These cords also feature superior dimensionally accurate finish and are made available with consistent physical properties throughout its length.



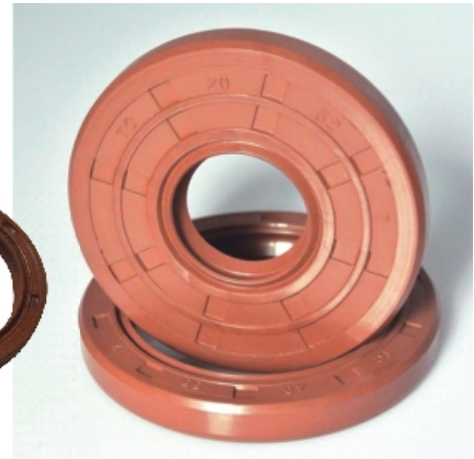
Hydraulic seals

Being the most respected organization guided by experienced and knowledgeable professionals, we provide an enormous assortment **PU Rod Seal** that is used for preventing leakage of fluid from within the cylinder to the outside. The offered seal is designed under the supervision of our adroit professionals using top notch quality raw material and modern technology. In order to meet the diversified needs of our clients, this seal is available in variegated designs and sizes.



Oil seal

A component of machine that seals lubricants, an oil seal is constructed of rubber, garter spring, and an internal case. While preventing the leakage of lubricants, water, or chemicals, an oil seal also prevents the entry of dust and dirt into a machine. We offer oil seals in various rubbers like viton, silicon, NBR etc.



Heat Exchanger Gaskets

Description :

We manufacture PHE Gaskets, Heat Exchanger Gaskets for various OEM's. Our range includes Alfa Laval, IDMC, Praj, SWEP, GEA Ecoflex etc. among others. We have many gaskets in-stock for various models. We even undertake contracts for replacement of Old Heat Exchanger gaskets.

Example: One of our clients faced a problem of their OE supplier of Heat Exchanger wrapping up its operations. The client had more than nine heat exchangers all due for replacement of their gaskets. Harkesh was successfully able to develop all the nine heat exchanger gaskets within a span of two months. This resulted in saving our client thousands of dollars. The largest gasket was of the size 345mm x 1594mm.

Our product range includes Rubber gasket for any type and make for plate heat exchanger can be developed & manufactured by us within a specific period. Our plate heat exchanger gaskets manufacturing range varies from 200mm to 3000mm length i.e. smallest to biggest.



U-Seals

Unlike a standard U-cup where both sides of the seal have the same dimensions, the asymmetrical unloaded U-cup is designed to have both a static and a dynamic side. The static side features a tall lip in order to increase the stability of the seal. On the dynamic side, the prominent feature is a reduced height seal lip, with good film breaking capabilities.

The asymmetrical U-cup is a single direction piston seal, meaning it can only seal if the pressure is coming from one direction. Since the sealing method is single directional, two loaded U-cups must be installed for dual direction hydraulic piston applications.

- | | |
|-------------------|---|
| Applications | : Medium Duty Applications such as Mobile Hydraulic; Agricultural; General Industrial |
| Materials | : Urethane or Hytrel |
| Max Pressure | : 5,000 psi |
| Temperature range | : -50 °F to +250 °F |
| Max Velocity | : 3.2 ft/sec |



O-Rings

An O-ring, also known as a packing, or a toric joint, is a mechanical gasket in the shape of a torus; it is a loop of elastomer with a round cross-section, designed to be seated in a groove and compressed during assembly between two or more parts, creating a seal at the interface.

The O-ring may be used in static applications or in dynamic applications where there is relative motion between the parts and the O-ring. Dynamic examples include rotating pump shafts and hydraulic cylinder pistons.

O-rings are one of the most common seals used in machine design because they are inexpensive, easy to make, reliable, and have simple mounting requirements. They can seal tens of megapascals (thousands of psi) of pressure.

AVAILABLE RAW MATERIALS ARE NBR, SILICON, EPDM, NEOPRENE, FKM, FFKM ETC.



PTFE Rod Seal

PTFE is the outstanding high performance engineering fluoropolymer with an incomparable profile of unique properties!

Chemical Resistance: It can be used in the most corrosive environments yet will not contaminate the most sensitive medium.

Electrical Resistance: Outstanding electrical properties with a low dielectric constant and dielectric loss factor. Does not support tracking or arcing.

Temperature Resistance: A wide range of working temperature cryogenic to about 280°C. No embrittlement in liquid helium.

Flexibility: Outstanding resistance to fatigue and excellent flex properties-one of the best flexural materials known.

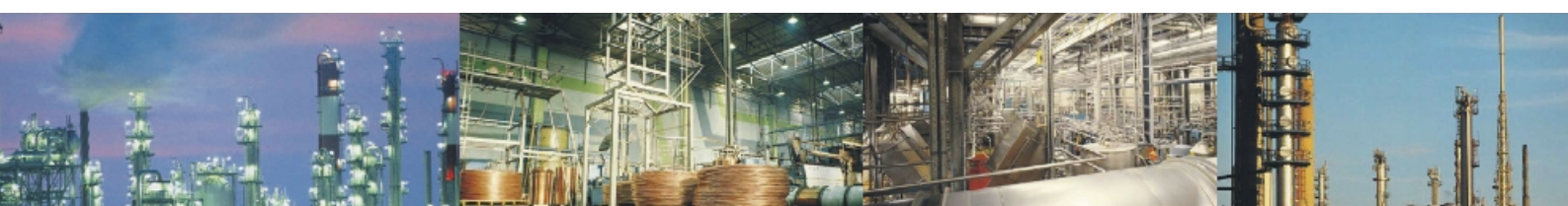
Extended Performance: The performance of PTFE can be dramatically altered by the use of fillers-FILLED PTFE materials can be tailored for an exact application by choosing from a wide variety of additives like Carbon, Glass, Graphite, Bronze etc.

Self Lubrication: Frictional coefficients for PTFE are the lowest for all solids and other materials have little or no adhesion to PTFE.

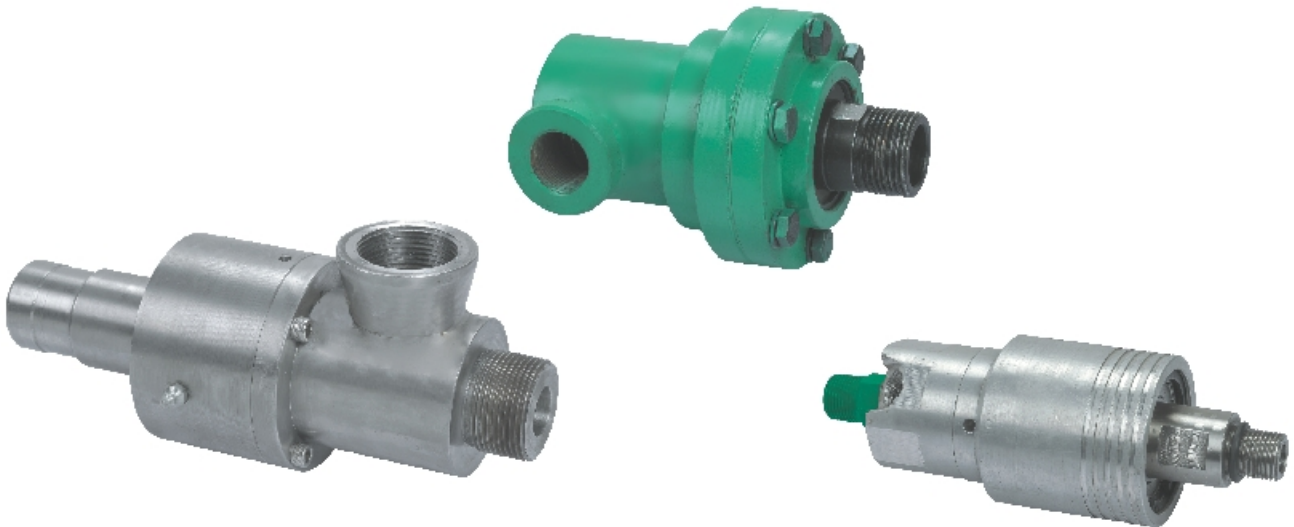


Carbon Seal Ring

We bring forth a premium range of mechanical carbon & graphite sealing rings in the marketplace. We make them available in various designs, shapes and sizes. Our graphite sealing rings' range has close dimensional tolerance and is apt for usage as a part of mechanical seals in general utility pumps, water pumps and chemical pumps. The carbon sealing rings, we supply, are used as the wear face of various mechanical seals for the sealing of fluids in all types of industries. Carbon & graphite seal faces are compatible with a wide range of other counter faces also. So, these qualities of our products have made us one of the most reliable graphite sealing rings manufacturers and suppliers in India.

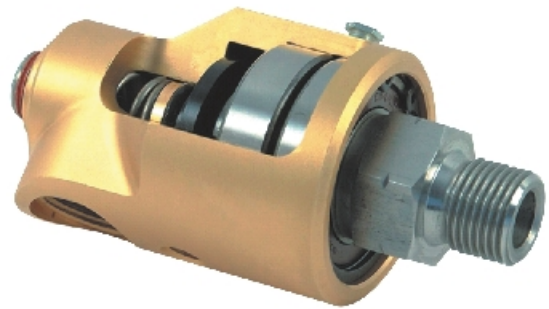


Rotating Unions and Rotary Joints



Rotating Unions and Rotary Joints (also known as rotary swivels, rotary couplings) are precision mechanical devices used to transfer fluid from a stationary source, such as a supply pipe, into a rotating piece of machinery. Rotating Unions and Rotary Joints are used in numerous manufacturing processes to cool, heat, or transfer fluid (pneumatic or hydraulic) power. Rotary Joints and Rotary Unions allow the feed through of water, glycol, air, hydraulic, coolant, MQL, hot oil, steam, vacuum and a variety of other media. Rotary Joints and Rotary Unions that can be configured for installation at the end of a shaft or around.

We also repair all types of used Rotary Unions.



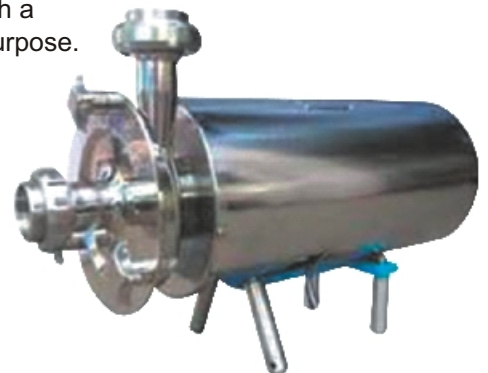
Milk Pump

Sanitary (hygienic) centrifugal pump also called milk pump, CIP pump, food pump, which is one type of centrifugal pump which mainly used for pharmaceutical, food industry, dairy industry, winery, turnkey project.

The pumps are made of Stainless steel 316L or SS 304, which with a surface polished, can be used to the above industry for sanitary purpose.

Details of sanitary pump (centrifugal pump):

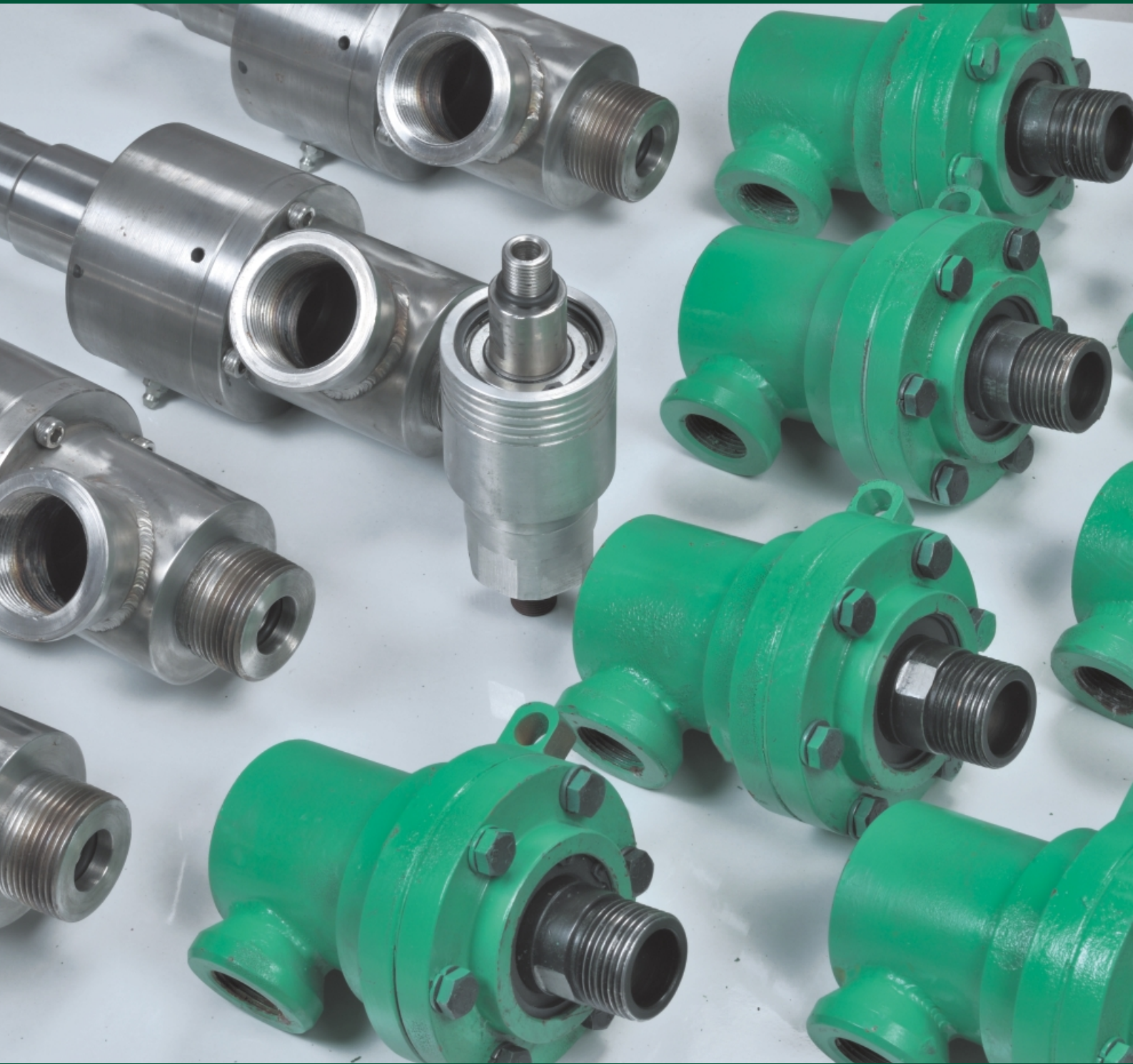
1. SS 316 L or SS 304
2. Mechanical seal/ SIC VITON
3. Standard: DIN, ISO, SMS
4. Open or close impeller



Certifications



AN ISO 9001: 2008 Company



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