



Motivated by Innovation
Manufacture of Mechanical Shaft Seals & Components

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Company Introduction

India was Estd. in 2009 for manufacture " Mechanical Seal" Fi-Bros Engineering seals are designed to with stand stringent industrial application in any type of industry, let it be Chemical, Refining and Petrochemical, Pharmaceutical, Fertilizer and Oil extraction plant, Sugar industries, Power plant, Steel Industries and Shipping.

Special Care is take to achieve flatness on both the faces viz. rotary and stationary. This flatness and stationary finish is generated by use of spacial purpose Lapping machines. Flatness on both rotary and stationary face to aan accuracy of microns are assured by 100% inspection of each part individually by Optical Light bands. This is the heart of percision and quality incorporated in Fi-Bros Engineering make Mechanical Seals. Special care is taken to choose the correct materials for a given application. This is the point where Application engineering and experience come in to picture.

We provide service of taking necessary physical dimension of equipment at customers site followed by installation and running trials services. Inventory levels of Mechanical Seal and spares which are manufactured by us are maintained to meet the customer's requirement.

www.fibrosseal.com

These seals are easy to install and operate for different application being used in various industries. These seals are compact in design for handling liquids of varying contamination including Slurries Sludge, sewage, Viscous and crystallizing Solution. These Seals are designed in both balanced and unbalanced version based on pressure parameters. Spring clogging does not occur in single spring seals.

**Material**

- > Seal face : Carbon, ceramic, silicon Tungsten carbide,
- > Secondary sealing : Viton, PTFE, Aflas
- > Metal parts : SS316, Hastelloy c, Alloy-20

Operating Limit

- > Seal size : 14 mm to 90mm
- > Pressure : 10 kg/cm²
- > Temp : -30°C.... to 150°C
- > Speed : up to 20 m/s

Application

- > Petrochemicals
- > General Chemical
- > Light hydrocarbons

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced
- > Depended on direction of rotation

These seals are provided with O-Ring Sealing device due to its compact design and narrow cross section, these seals occupies very less area in stuffing box. Lower spring loads provided through wedge or O-Ring minimizes shaft fretting. One can easily assemble and dismantle these seals through the circlip provided. These seals can be changed to balance version of its type merely by changing the carbon face only & can be provided with single, double or tandem arrangement with external seal support system and devices.

**Material**

- > Seal face : Carbon, ceramic, silicon Tungsten carbide,
- > Secondary sealing : Viton, GFT, PTFE, Aflas
- > Metal parts : SS316, Hastelloy c, Alloy-20

Operating Limit

- > Seal size : 14 mm to 150mm
- > Pressure : 10 kg/cm²
- > Temp : -30°C.... to 200°C
- > Speed : up to 20 m/s

Application

- > Petrochemicals
- > General Chemical
- > Light hydrocarbons
- > Petroleum refinery

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced

single coil conical spring , unbalanced seal with O-Ring as a secondary sealing device. These seal are dependent on the direction of rotation, as the torque transmission is done by single conical spring. Direction of rotation is seen from the drive end of the shaft. Right handed springs are provided for clockwise rotating shaft, and left handed spring are provided for anti clockwise rotating shafts. These seal can be easily assembled and dismantled as it consists very few parts. Due to its compact design no axial or radial extra space is required for installation. These seals are designed to handle contaminated liquids, hence spring clogging does not occur.

**Material**

- > Seal face : Carbon, ceramic, silicon Tungsten carbide,
- > Secondary sealing : Viton, GFT, PTFE, Aflas
- > Metal Components : SS-316/Hast-C/Alloy-20

Operating Limit

- > Seal size : 14 mm to 90mm
- > Pressure : 10 kg/cm²
- > Temp : -20°C.... to 180°C
- > Speed : up to 15 m/s

Application

- > Water pump circulation
- > Pump chemical process pump
- > Sewage & submersible pump

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced
- > Depended on direction of rotation

Wave spring seals for most general application, being used in industries like Paper and Pulp, Sugars, Sewage, Polymer, Rubber etc. Its compact design with reduced axial length is the major advantage of using single wave spring seals. These seal are designed to handle dirty and slurry application as spring clogging does not occur.

**Material**

- > Seal face : Carbon, ceramic, silicon Tungsten carbide,
- > Secondary sealing : Viton, GFT, PTFE, Aflas, TTV
- > Material : SS 316, Hastelloy c, Alloy-20

Operating Limit

- > Seal size : 18 mm to 100mm
- > Pressure : 8 kg/cm²
- > Temp : -20°C.... to 180°C
- > Speed : up to 20 m/s

Application

- > Corrosive chemical
- > Hydrocarbon
- > General and light chemical

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced
- > Depended on direction of rotation

Teflon Bellow Seals designed to handle highly corrosive chemical, such as concentrated acids, caustic, strong oxidizing and reducing agents, and chemically active organic components. These seals are externally mounted with easy installation procedure. These seal can be offered in composite or replaceable face design, replaceable face version give flexibility to select face material for the media to be sealed. All the components which come in contact with media to be sealed are made of chemically inert material, hence it is effective and reliable to perform against extreme corrosive media. Metallic Components such as clamping ring and spring does not come in contact with the media to be sealed.

**Material**

- > Seal face : Carbon, Ceramic, Silicon, GFT
- > Secondary sealing : PTFE Bellow
- > Metal components : SS 316, Hastelloy c, Alloy-20

Application

- > Extremely corrosive service & acids
- > Alkalies

Operating Limit

- > Seal size : 18 mm to 100mm
- > Pressure : 04 kg/cm²
- > Temp : -20°C.... to 110°C
- > Speed : up to 20 m/s

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced
- > Teflon bellow seal with replaceable Sic face

These seals are provided with O-Ring Sealing device due to its compact design and narrow cross section, these seals occupies very less area in stuffing box. Lower spring loads provided through wedge or O-Ring minimizes shaft fretting. One can easily assemble and dismantle these seals through the circlip provided. These seals can be changed to balance version of its type merely by changing the carbon face only & can be provided with single, double or tandem arrangement with external seal support system and devices.

**Material**

- > Seal face : Carbon, ceramic, silicon Tungsten carbide, Chrome cast
- > Secondary sealing : Viton, Nitrile, Neoprene

Application

- > Water pump, Gear pump,
- > Refrigeration compressor
- > Fuel injection pumps
- > Submersible pumps, Sewage pump

Operating Limit

- > Seal size : 20 mm to 90mm
- > Pressure : 10 kg/cm²
- > Temp : -20°C.... to 150°C
- > Speed : up to 20 m/s

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced
- > Elastomer bellow seal

Metal bellow seals designed to handle moderate temperature applications, corrosive as well as abrasive and viscous media. These seals are independent of direction of rotation and are widely used in refineries, petrochemicals and chemical industries. The possibility of seal hang-up is prevented as there is no dynamic 'o' ring used in this type of seal, hence static O-ring is used as a secondary member.

**Material**

- > Seal face : Carbon, silicon tungsten carbide,
- > Secondary sealing : Viton, GFT, PTFE, Aflas
- > Metal Components : SS 316, Am 350, Hastelloy c, Alloy-20

Application

- > Petrochemicals
- > Oil refinery

Operating Limit

- > Seal size : 25 mm to 100mm
- > Pressure : 10 kg/cm²
- > Temp : -20°C.... to 250°C
- > Speed : up to 15 m/s

Seal Features

- > Single seal
- > Inside mounted
- > Unbalanced
- > Welded metal bellow

Reverse balanced seal, which are externally mounted . These seals are designed to handle corrosive or abrasive media , as the metal components of these seal do not come in contact with the media to be sealed. Due to its compact design neither radial nor axial extra space is required for installation. These seal can also be installed in double back to back arrangement as internal seal. Though the pressure of the barrier fluid goes down this seal will not allow the process fluid to get mix with barrier fluid, hence it is called a reverse balanced seal.

**Material**

- > Seal face : Carbon, ceramic, silicon TC
- > Secondary sealing : Viton, GFT, PTFE, TTV
- > Metal Components : SS-316/Hast-C/Alloy-20

Application

- > Corrosive chemical
- > Hydrocarbon
- > General and light chemical

Operating Limit

- > Seal size : 19 mm to 100mm
- > Pressure : 15 kg/cm²
- > Temp : -20°C.... to 180°C
- > Speed : up to 20 m/s

Seal Features

- > Single seal
- > Outside mounted
- > Balanced

Single cartridge mechanical seals, which could be directly installed without any dimensional adjustment during installation. These cartridge balanced seals are independent of direction of rotation being designed to handle slurries, sludge, thick syrup and polymerising fluids. The spring provided in the cartridge construction are being isolated from the fluid enhancing the seal life.

**Material**

- > Seal face : Carbon, Ceramic, Silicon, Tungsten Carbide
- > Secondary sealing : Viton, PTFE, GFT

Application

- > General Chemicals
- > Food industries

Operating Limit

- > Seal size : 20 mm to 100mm
- > Pressure : 10 kg/cm²
- > Temp : -20°C.... to 150°C
- > Speed : up to 20 m/s

Seal Features

- > Single seal, Inside mounted
- > Unbalanced
- > Dependent on direction of rotation
- > Easy Installation, Field repairable
- > Interchangeable mating rings & seal ring

externally mounted reverse balanced dry seal with O-ring as a secondary sealing member for glass lined, ss mixers, agitators and reactor vessels. These seals are basically used on top entry agitators for food and pharmaceutical industries where contamination of the media with any other liquid inside the agitator is not permissible. These seals do not require any external lubrication to the seal faces, hence these seals are known as dry running seals.

**Material**

- > Seal face : Carbon, ceramic, silicon Tungsten carbide
- > Secondary sealing : Viton, GFT, PTFE, TTV
- > Metal components : SS316 / Hastolloy c / Alloy -20

Application

- > Corrosive chemicals
- > General light chemicals
- > Food Product
- > Pharmaceutical products

Operating Limit

- > Seal size : 25 mm to 150mm
- > Pressure : 8 kg/cm²
- > Temp : -20°C.... to 120°C
- > Speed : 200 rpm

Seal Features

- > Single seal
- > Outside mounted
- > Balanced
- > Dry Running seal

Double cartridge mechanical seals having integral sleeve and gland plate. These multi spring design seal are pre-assembled, which could be directly installed without any dimensional adjustment during installation. These seals are balanced, independent of direction of rotation and are offered in back to back and tandem arrangements as per API plan-53

**Material**

- > Seal face : Carbon, Ceramic, Silicon, Tungsten Carbide
- > Secondary sealing : Viton, PTFE, GFT, Kalrez, Aflas
- > Metal Components : SS 316 / Hastelloy c / Alloy -20

Application

- > Pulp & paper industries
- > Chemical industries Slurry Pump
- > Sludge Pump

Operating Limit

- > Seal size : 20 mm to 100mm
- > Pressure : 10 kg/cm²
- > Temp : -20°C.... to 180°C
- > Speed : up to 20 m/s

Seal Features

- > Double seal, Cartridge unit
- > Inside Mounted, Balanced
- > Easy Installation, Field repairable
- > Interchangeable mating rings & seal ring

Single agitator seals which are dynamically tested being used for steel, glass lined, ss mixers, agitators and reactor vessels. Clean soft water is mainly preferred because of its good heat transfer qualities, as these seals are used with non pressurised barrier fluid. To ensure cool running these seals can be supplied with cooling water jacket.

**Material**

- > Seal face : Carbon, Ceramic, Silicon, Tungsten Carbide
- > Secondary sealing : Viton, PTFE, GFT, FEP, TTV
- > Metal Components : SS 316 / Hastelloy c Alloy -20

Application

- > Pharma industries
- > Chemical industries
- > Foods industries

Operating Limit

- > Seal size : 20 mm to 140mm
- > Pressure : 8 kg/cm²
- > Temp : -20°C.... to 150°C
- > Speed : up to 25 m/s

Seal Features

- > Single seal, Cartridge unit
- > Inside mounted, Balanced
- > Easy Installation, Field repairable
- > Interchangeable mating rings & seal ring