



FINE SEALS

Engineering

Engineers your dream with us

IF YOU HAVE A CONCEPT, WE HAVE THE SOLUTION

PRODUCT
CATALOG



YOU IMAGINE IT,
WE'LL BUILD IT

MANUFACTURER, SUPPLIER AND EXPORTER OF

All Types of Mechanical Shaft Seals, Rotary Joint, Rotary Union,
Components Seal & Customized Sealing Solutions





COMPANY PROFILE

Fine Seals Engineering Is the leading name in the field of sealing technology, **Since 2015** whether it is for Chemical Industry, Pharmaceutical Industry, Marine Industry, Paper & Pulp Industry, Steel Industry, Dairy, Refineries or any other industry where mechanical shaft sealing solutions are required, We have products for all of them, Through our experience over the decades, We are delivering high-quality Mechanical shaft seal products that are reliable and proven to have a long life through any process environment, For High-end Rotating Equipment - Pumps, Compressors, Mixers, Turbines And Other Industrial Machineries.

We are implementing **ISO 9001:2015** QMS & manufacture Mechanical seal according to international quality safety standard with some design & fitting.

Our product range includes **Single spring mechanical seals, Rubber bellow mechanical seals, Metal bellow mechanical seals, Pusher and non pusher mechanical seals, Single and double cartridge mechanical seals, Metal bellow cartridge mechanical seals, High pressure mechanical seals, Agitator mechanical seals, Dry running mechanical seals, Glass line agitator mechanical seals**, We manufacture mechanical seal as per own design or as per sample or GA Drawing provided by customer.

We can able to supply Mechanical seals for **KSB Pump, Kirloskar Pump, Flow Serve Pump, Sulzer Pump, Grundfos Pump, Johnson Pump, Alfa Laval Pump, Investa Pump** Others.

We also take all type of Mechanical Seals for repairing & refurbishment of any brands like **Eagle Burgmann, John Crane, Flowserve** etc.

Being the **Trusted Brand**, We provide long-lasting seals and reliable after-sales service to achieve complete customer satisfaction. All our credit goes to experienced engineers and skilled workers who have been working for decades to deliver the best product and services for our clients.

Why Us

10+ Years Experience
Advance Technologies
Mass Production

Skilled Engineers
Customized Products
An Effective Service
Self Inspection Report

Competitive And Effective Prices
On Time Delivery
A Quality Products
Raw Material Test Certificate

Products Application

Acid and Chemical Industries
Refinery Industries
Textile Industries

Food Industries
Pharmacy Industries
Medical Industries
Dairy Industries

Oil And Gas Industries
Beverages Industries
Power Generation
Medical Industries



PRODUCT DETAILS

SINGLE SPRING MECHANICAL SEAL

TYPE FS-20 & FS-21

Type **FS-20** & **FS-21** are single coil spring seal developed for light contamination, Dirty media and clogging type application. The mechanical drive of this seal is realised by grub screw which lock onto the shaft. Seal is not dependent on direction of shaft rotation.

Seal Combinations

- Seal Faces : Carbon / Ceramic / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / Alloy Steel
- Secondary Sealing : FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez

Operating Parameters

- Shaft Sizes d1 : 10...100mm
- Pressure p : 10 bar (max)
- Temperature t : -20...+200 °C
- Speed v : up to 23 m/s



FS-20

FS-21

MULTI SPRING MECHANICAL SEAL

TYPE FS-22 UNBALANCED SEAL

Type **FS-22** are multi spring, Pusher type unbalanced seals used for universal applications. The seals are compact in design suiting all types of rotating equipments, Pumps and mixers. Drive lugs in the retainer will provide torque transmission and reduce slippage on shaft and sleeve. A snap ring holds all components together, Helping in easy installation. The parts are interchangeable, **FS-22** can be converted by just changing the seal ring and the secondary member.

TYPE FS-23 BALANCED SEAL

Type **FS-23** mechanical seals are multi spring pusher type balanced seals suitable for high pressure application

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / Alloy / Titanium
- Secondary Sealing : FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez



FS-22 MUB

FS-23 MB

Operating Parameters

- Shaft Sizes d1 : 18...100mm
- Pressure p : 10/25 bar (max)
- Temperature t : -20...+20 °C
- Speed v : up to 23 m/s



PRODUCT DETAILS

REVERSE BALANCED MECHANICAL SEAL

TYPE FS-24

Type **FS-24** multi spring pusher type balanced seals used for universal applications. The seals are compact in design suiting all types of rotating equipments, Pumps and mixers. It is externally mounted completely out of the fluid area and are not exposed to any corrosive action. Seal is inherently balanced, Hence no need for stepping shaft or sleeve.

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / Alloy / Titanium
- Secondary Sealing : FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez

Operating Parameters

- Shaft Sizes d1 : 18...150mm
- Pressure p : 10 bar (max)
- Temperature t : -20...+150 °C
- Speed v : up to 23 m/s



CAPSULATED SPRING MECHANICAL SEAL

TYPE FS-25

Type **FS-25** are the balanced seal without need for step sleeve. This seals are designed for media containing solids or with high viscosity. The springs are protected from media, Thus no clogging of springs or springs compartment, Resulting in high reliability.

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / Alloy / Titanium
- Secondary Sealing : FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez

Operating Parameters

- Shaft Sizes d1 : 18...100mm
- Pressure p : 25 bar (max)
- Temperature t : -20...+140 °C
- Speed v : up to 23 m/s





PRODUCT DETAILS

PTFE BELLOW MECHANICAL SEAL

TYPE FS-26 TB & FS-27 TBR

Type **FS-26 TB & FS-27 TBR** are external mounted seal designed for extremely corrosive application such as acids, Salts, Organic compounds and reducing agents. All materials coming in contact with the liquid are made of chemically inert material. Metallic components are isolated from the liquid.

TBR

Seal faces are replaceable. Glass field PTFE face is composite moulded with flexible PTFE bellow.

Materials

- Seal Faces : GFT / CFT / SIC / Ceramic
- Metal Parts : SS316 / Hastelloy-C
- Secondary Sealing : PTFE



FS-26 TB



FS-27 TBR

Operating Parameters

- Shaft Sizes d1 : 18...100mm
- Pressure p : 4 bar (max)
- Temperature t : -45...+120 °C
- Speed v : up to 23 m/s

METAL BELLOW MECHANICAL SEAL

TYPE FS-28 & FS -29

Type **FS-28** seals specially designed for high temperature application and suitable for high start- up torque since the bellow unit is independent of torque transmission. Grafoil is used as a secondary member having excellent temperature range up to 400C. Shrunk fit seal face design minimize face distortion restricting leakage and wear rate to very low level under a wide range of condition.

TYPE FS-29

Type **FS-29** seals are widely used in refinery, petrochemicals and chemical industries. Static o-ring is used as a secondary member. The absence of dynamic o-ring prevents possibility of seal hang-up.



FS-28



FS-29

Operating Parameters

- Shaft Sizes d1 : 18...100mm
- Pressure p : 10 bar (max)
- Temperature t : -20...+400 °C
-20...+200 °C
- Speed v : up to 23 m/s

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / AM 350 / Carpenter 20 /
Carpenter 42 / Hastelloy-C / Alloy
- Secondary Sealing : FKM / EPDM / NBR / GRAFOIL / SILOCONE



PRODUCT DETAILS

CONICAL SPRING MECHANICAL SEAL

TYPE FS-30

Type **FS-30** Seals are single conical spring unbalanced seals with o-ring provided for secondary sealing. Since the Torque transmission is done by the Single coil spring the seals are dependent on the directions of rotation, Which is seen from the drive end the shaft Right handed spring and left handed springs are provided for clockwise and anticlockwise rotating Shafts respectively. These seals can carry a variety of seals faces, Serving applications in submersible, Sewage, Chemical transfer, Water pumps etc.



Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS304 / SS316
- Secondary Sealing : O-Ring / FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez

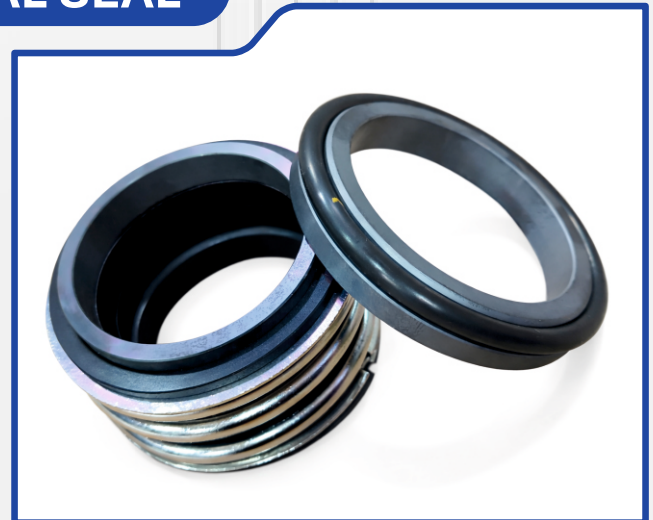
Operating Parameters

- Shaft Sizes d_1 : 10...100mm
- Pressure p : 10 bar (max)
- Temperature t : -20...+180 °C
- Speed v : up to 10 m/s

ELASTOMERIC BELLOW MECHANICAL SEAL

TYPE FS-31

- Shaft protection over the entire seal length
- Protection of the seal face during installation due to special bellows design
- Insensitive to shaft deflections due to large axial movement
- High flexibility due to wide offer on materials



Materials

- Seal Faces : Carbon / SIC / Tung. Carbide / Ceramic
- Metal Parts : SS304 / SS316 / CrNi steel
- Secondary Sealing : NBR / EPDM / FKM / SILICONE

Operating Parameters

- Shaft Sizes d_1 : 10...100mm
- Pressure p : 10 bar (max)
- Temperature t : -20...+140 °C
- Speed v : up to 10 m/s



PRODUCT DETAILS

ELASTOMERIC BELLOW MECHANICAL SEAL

TYPE FS-32

- Self-adjusting to shaft misalignment and deflections because of the loosely inserted seal face.
- Ability of bellows to stretch and tighten.
- The length of the contact area of the bellow with the shaft is an optimum compromise between ease of assembly and sufficient adhesives force for torque transmission.

TYPE FS-32

Type **FS-32** seals are widely used in refinery, Petrochemicals and chemical industries. Static o-ring is used as a secondary member. The absence of dynamic o-ring prevents possibility of seal hang-up.

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide / Ceramic
- Metal Parts : SS304 / SS316 / CrNi Steel
- Secondary Sealing : NBR / EPDM / FKM / SILICONE

Operating Parameters

- Shaft Sizes d1 : 12...70mm
- Pressure p : 7 bar (max)
- Temperature t : -20...+100 °C
- Speed v : up to 5 m/s



WAVE SPRING UNBALANCED MECHANICAL SEAL

TYPE FS-33

Type **FS-33** Seal has been designed for most general application like paper & pulp industries, Sugar & waste water etc. The **FS-33** mechanical seal range is designed for universal application and ideal suited for standardisation. It is robust drive mechanism. The loosely inserted seal faces are easily exchanged. It may also reduce spares inventory and the flexibility of maintenance.

Materials

- Hardware : SS 304 / SS 316
- Seal Ring : SIC / Special Caste / TC
- Metal Ring : SIC / Carbon / TC
- Secondary Seal : FKM / Silicon / NBR / EPR / Neoprene / Karlez

Operating Parameters

- Pressure p : Upto 15 kg/cm²
- Temperature t : Upto 280°C (Depending on elastomer)
- Speed v : 4000 RPM





PRODUCT DETAILS

GRUNDFOS PUMP CARTRIDGE MECHANICAL SEAL

TYPE FS-34

Type **FS-34** Cartridge type mechanical seals are very easy to replace and gives maximum reliability. It is durable and made from hardwearing material which prevent the downtime and prolong the lifetime of the seal. All axial movement has been eliminated, Preventing wear of the shaft and the rubber parts. There is no special tool required to replace the seal or dismantling the pump. With a custom built pump solution from Cartridge, Your pump is capable of handling even higher pressures, More aggressive liquids, Excessive liquid temperature etc.

Materials

- Hardware : SS 304 / SS 316
- Seal Ring : Carbon / SIC
- Metal Ring : TC / SIC / Carbon / Special Cast
- Secondary Sealing : PTFE / EPDM / Nitrile / Neoprene / Silicon / FKM

Operating Parameters

- Seal Size d1 : 12mm, 16mm, 22mm
- Pressure p : Upto 20 kg/cm²
- Temperature t : 200...+180 °C
- Speed v : 3000 RPM

Salient Features

- It gives long and reliable seal life.
- Easy to install without any tool.
- Can handle higher pressure and excessive liquid temperature.



DAIRY MECHANICAL SEAL

Type **FS-35 - FS-36 - FS-37 - FS-38** - are single spring seals specially designed for dairy and food industries. Most suitable for Alfa Laval, Fristam and IDMC pumps.

TYPE FS-35



TYPE FS-36



TYPE FS-37



TYPE FS-38





PRODUCT DETAILS

METAL BELLOW SAMI CARTRIDGE MECHANICAL SEAL

TYPE FS-39

Type **FS-39** A semi-cartridge metal bellow mechanical seal is a robust, Pre-assembled sealing unit for pumps, Using flexible metal bellows instead of elastomers for high-temperature, corrosive, Or challenging fluid applications, Offering easy installation (semi-cartridge) while handling severe conditions like hot oils, Chemicals, and vacuum, Where standard seals might fail due to heat or chemical attack.

Key Features & Benefits:

- **Metal Bellows** : Flexible, corrugated metal (like SS316L, Hastelloy) replaces rubber O-rings, eliminating elastomer failure from heat or chemicals.
- **Semi-Cartridge Design** : Pre-assembled for simpler, faster installation, reducing errors, yet more cost-effective than full cartridges.
- **High-Performance** : Handles extreme temperatures (up to 350°C) and corrosive media, preventing leaks in pumps, mixers, and agitators.
- **Self-Clearing** : Rotating bellows designs help clear debris, preventing clogging.
- **Versatile** : Used in petroleum, petrochemical, wastewater, food processing, and power generation.

Materials

- Metal Bellow : AM350, Alloy-20, Hast-C
- Material : SS316, Car. 42, Alloy 20, Hastelloy-C
- Elastomer : FKM, NBR, EPDM, Silicon, FEP, Graphoil, Karlez.



Operating Parameters

- Shaft Sizes d1 : 19...100mm (3/4" -4.0")
- Pressure p : 18 bar (max)
- Temperature t : -50...+350 °C
- Speed v : up to 25 m/s

HEAVY DUTY CARTRIDGE MECHANICAL SEAL

TYPE FS-40

Type **FS-40** series are designed to handle liquids of varying contamination including slurries, Sludges, Sewage, Viscous or abrasive media. The Type **FS-40** cartridge seal combines the advantage of easy installation and simple maintenance with total reliability, The Compactness of the design ensure that the seal fit all ANSI and DIN stuffing boxes. This Seal is specially design for high pressure application.

Materials

- Seal Faces : Carbon / SIC / Tung / Carbide
- Metal Parts : SS316 / Hastelloy-C / Alloy / Titanium
- Secondary Sealing : FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez



Operating Parameters

- Shaft Sizes d1 : 25...150mm
- Pressure p : 70 bar (max)
- Temperature t : -20...+220 °C
- Speed v : up to 23 m/s



PRODUCT DETAILS

METAL BELLOW CARTRIDGE MECHANICAL SEAL

TYPE FS-41

- Universal applicable for packing conversions & retrofit
- Suitable for high temperature
- Ideal seal for standardization
- Trouble-free running due to bellows unit with vibration dampers
- No dynamically loaded o-Ring
- Self cleaning effect of the bellows
- Installation faults are avoided & cost-effective
- No dimensional modification of the seal chamber necessary
- Easy installation due to preassembled unit (reduced down-times)

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / Alloy
- Secondary Sealing : FKM / NBR / AFLAS / EPDM / PTFE / FEP / Karlez



Operating Parameters

- Shaft Sizes d_1 : 25...100mm
- Pressure p : 20 bar (max)
- Temperature t : -40...+300 °C
- Speed v : up to 25 m/s

DRY- RUNNING MIXER MECHANICAL SEAL

TYPE FS-100

Type **FS-100** seals are factory assembled & dynamically tested units for glass lined, SS mixers, Agitator & vessels. It is multi spring balanced outside mounted seal, This seal are basically used on top entry agitator as dry running, The advantage of this seal is that it does not required any lubricant or any quenching system, It performs best in pharmaceutical applications, corrosive services and food products.

Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / Carpenter 20
- Secondary Sealing : FKM / PTFE / EPDM / Karlez



Operating Parameters

- Shaft Sizes d_1 : 18...200mm
- Pressure p : 10 bar (max)
- Temperature t : -20...+150 °C
- Speed v : up to 1.5 m/s



PRODUCT DETAILS

REACTOR - AGITATOR - MIXER MECHANICAL SEAL

TYPE FS-101

Agitator mechanical seals are factory-made cartridge units operated on mixtures, Agitators, And reactor vessels for corrosive and hazardous compounds throughout the reaction process.

Strongly designed with vibration-isolated faces to withstand conditions of drag and shear that destroy common seals. The agitator mixer offers excellent tolerance of motion and has the capabilities to bear the instant pressure shift.

The agitator mechanical seals are independent of the direction of rotation and have robust bearing support to drive smoothly and protect the seal faces from loads of other equipment parts.

The seals have interchangeable parts and can be converted by changing the dynamic ring and secondary seals, Making them compatible with a wide range of applications.

At popular pump seals, we develop agitator seals that are precisely designed in accordance with construction specifications to deliver optimum performance even in high vacuum conditions.



Materials

- Seal Faces : Carbon / SIC / Tung. Carbide
- Metal Parts : SS316 / Hastelloy-C / MS
- Secondary Sealing : FKM / PTFE / EPDM / Karlez

Operating Parameters

- Shaft Sizes d1 : 25...220mm
- Pressure p : vaccum40 bar (max)
- Temperature t : -20...+220 °C
- Speed v : up to 10 m/s

ROTARY JOINT ROTARY UNIONS

TYPE FS-150

- Monoflow and duoflow design
- Self-supported rotating union
- Radial housing connection
- Balanced mechanical seal
- 3 vent holes
- Forged brass housing
- Stainless steel rotor
- Special options :
 - threaded vent holes,
 - low torque design

Operating Parameters

- Sizes d1 : 1/4" - 3"
- Pressure p : 40 bar (water)
- Pressure p : 1 bar (saturated steam)
- Pressure p : 6.5 bar (hot oil)
- Temperature t : 120 °C
- Speed v : up to 2500 RPM



Applications

- Water
- Hot Water
- Hot Oil
- Saturated Steam

Seal Combinations

- Carbon Graphite / Bronze
- Carbon Graphite / Ceramic
- Tungsten Carbide / Ceramic



PRODUCT DETAILS

THERMOSIPHON SYSTEM

TYPE FS-200

The objective of a thermosiphon system is to provide a flow of cooling media to the mechanical seal at the required pressure.

The Media recirculates through the seal by heat convection generated as the pump shaft rotates through the seal. The media in the vessel is forced into the seal through the bottom line as the hot barrier fluid leaves the seal through the top line back into the vessel.

The media flows in the circuit and is cooled by contact with the walls of the tank and the cooling coil if used. The thermosiphon system is therefore passive and stand-alone, avoiding the cost and complexity of a conventional liquid pump.

In order to achieve this natural cooling effect, the tank containing a suitable sealing liquid must be located approx. 1-2 m above the seal and not more than 2 m on any side, Connecting the seal and the tank with pipes in stainless steel.

Depending on the application, local conditions and client preference, a thermosiphon system can be delivered in a number of different versions by combining several options and a basic package.

Circulation In Accordance With

API Plan 52, API Plan 53A, API Plan 54 with circulating pump in the seal inlet line



Item	Description
Tank	Volume : 12 Liters Approx. Media Volume 7 Liters Max. Operating Pressure : 16 Bar Material : EN. 1.4436 / AISI 316
Sight Glass	For media level inspection
Cooling Coils	Fixed cooling coil is standard in every tank
Manometer	Displays pressure in the tank
Thermometer	Displays media temperature in the seal return line
Ball valves	On the "in" and "out" ports, these are used to stop flow and isolate the seal during maintenance
Fittings	G-Series pipe thread hose fittings for "in" and "out" ports
Plugs for option ports	All unused ports are plugged and sealed.



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