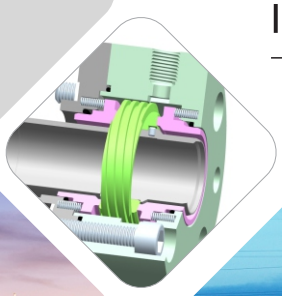
SINCE 2001

SUPERPROOF™

Innovative Sealing Solutions

MECHANICAL SEALS

DESIGN MANUAL

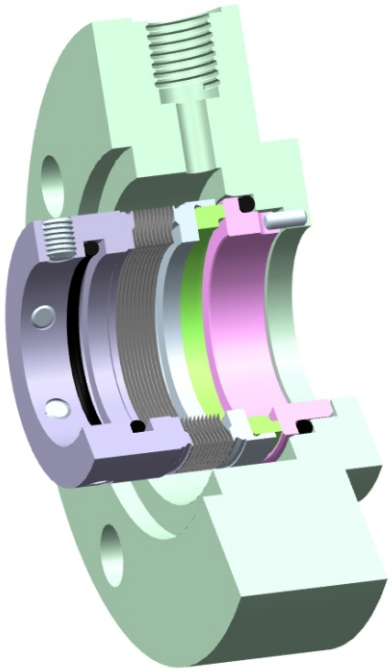


www.superproofseals.com

Seal Type 81 - Metal Bellow (O-Ring Type)

PRODUCT DESCRIPTION

Type 81 – O' ring type mechanical seals are destined for petrochemical, chemical, pharmaceutical and food processing industry, for process pumps and other equipment with rotating shaft. Rotating bellows design acts to clear convolutions and prevent accumulation of debris. These bellow seals are constructed by welding a series of diaphragms together at the edges to form a bellows unit. Recommended for high temperature mediums e.g. hot oils, pitch, tar and other hydrocarbons, fuels, liquid gases and other mediums with low content of abrasives.



DESIGN FEATURES

Single Acting. Dual directional. Inside mounted. Inherently Balanced Mechanical Seal. Independent of direction of rotation.

MATERIALS

Seal Ring Faces	: Carbon, SiC and TC
Seat Faces	: TC and SiC
Elastomer	: Viton, PTFE, FEP, EPDM and FFKM
End fitting MOC	: SS 316, Hast – C and Carpenter 42
Bellow MOC	: HAST – C, AM350 and Inconel

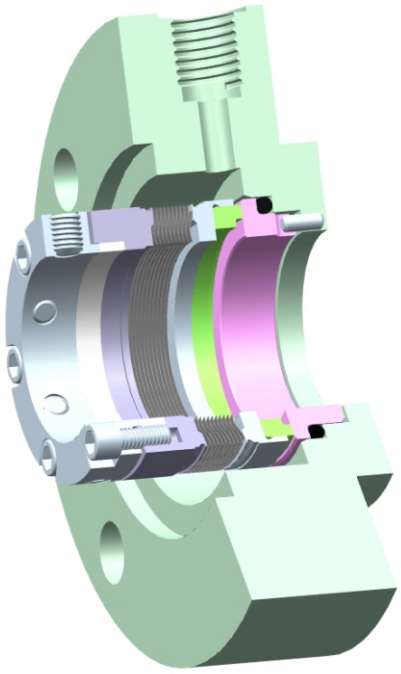
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 100mm
Pressure	: Up to 25 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 3000 r.p.m.

Seal Type 82 - Metal Bellow

PRODUCT DESCRIPTION

Type 82 – Grafoil Packing mechanical seals are destined for petrochemical, chemical, pharmaceutical and food processing industry, for process pumps and other equipment with rotating shaft. Rotating bellows design acts to clear convolutions and prevent accumulation of debris. These bellow seals are constructed by welding a series of diaphragms together at the edges to form a bellows unit. Recommended for high temperature mediums e.g. hot oils, pitch, tar and other hydrocarbons, fuels, liquid gases and other mediums with low content of abrasives.



DESIGN FEATURES

Single Acting. Dual directional. Inside mounted. Inherently Balanced Mechanical Seal. Independent of direction of rotation.

MATERIALS

Seal Ring Faces	: Carbon, SiC and TC
Seat Faces	: TC and SiC
Elastomer	: Flexible Graphite
End fitting MOC	: SS 316, Hast – C and Carpenter 42
Bellow MOC	: HAST – C, AM350 and Inconel

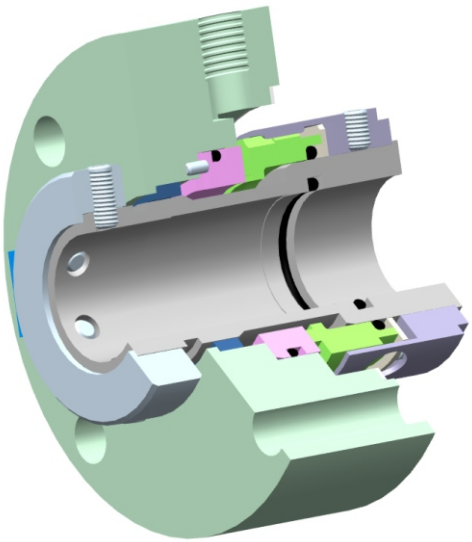
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 100mm
Pressure	: Up to 25 bar
Temperature	: -70°C to 350°C
Speed	: 3000 r.p.m.

Seal Type 55B/C - Balance Cartridge

PRODUCT DESCRIPTION

Seal Type 55B/C are Recommended for Clean media application. Seal Type 55B/C is Standard for using where Corrosive Liquid are being Processed. Construction of these Seal designs holds whole Rotary Parts together with the help of Snap Rings which is make easiest for Installation and Removal. This Type of Seals is designed for using for Petroleum Products, Low Aggressive Chemicals and Refrigerants in Centrifugal pumps and other Equipment with Rotating Shafts.



DESIGN FEATURES

Balance Pusher Seals available in Single Sealing Environmentally. Dual Directional. Mechanical Seal Drive – Reduces Slippage on Shaft or Sleeve to Eliminate Galling and Premature Wear. Heavy Duty Seal Faces remain flat during Operation to minimize Leakage. Components in Cartridge Design are Builds for the Highest Reliability and Simple Installation. Hydraulic Balance Seal Permits using Higher Pressure as well as it Create Low Heat Generated on Faces and provides long Life. Flushing Ports helps to reduces the Heat for Uniform Face Cooling. Advance designed Spring Holder Pumping Ring of Flushing Spring area. Unitized, Easy-to-Fit Design.

MATERIALS

Seal Ring Faces	: Carbon, TC and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, PTFE, and FFKM
MOC	: SS 316, Hast –C and Alloy - 20

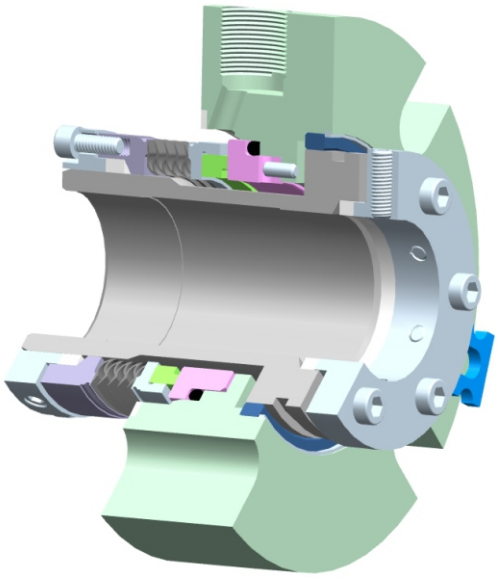
OPERATING CAPABILITIES

Shaft Dia.	: 10mm to 100mm
Pressure	: Up to 35 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 3000 r.p.m.

Seal Type 82/C - Metal Bellow Cartridge

PRODUCT DESCRIPTION

Type 82/C – Grafoil Packing Cartridge mechanical seals are destined for petrochemical, chemical, pharmaceutical and food processing industry, for process pumps and other equipment with rotating shaft. Rotating bellows design acts to clear convolutions and prevent accumulation of debris. These bellow seals are constructed by welding a series of diaphragms together at the edges to form a bellows unit. Recommended for high temperature mediums e.g. hot oils, pitch, tar and other hydrocarbons, fuels, liquid gases and other mediums with low content of abrasives.



DESIGN FEATURES

Single Acting. Dual directional. Inside mounted. Inherently Balanced Mechanical Seals. Independent of direction of rotation. Unitized, Easy-to-Fit Design.

MATERIALS

Seal Ring Faces	: Carbon, SiC and TC
Seat Faces	: TC and SiC
Elastomer	: Flexible Graphite
End fitting MOC	: SS 316, Hast – C and Carpenter 42
Bellow MOC	: HAST – C, AM350 and Inconel

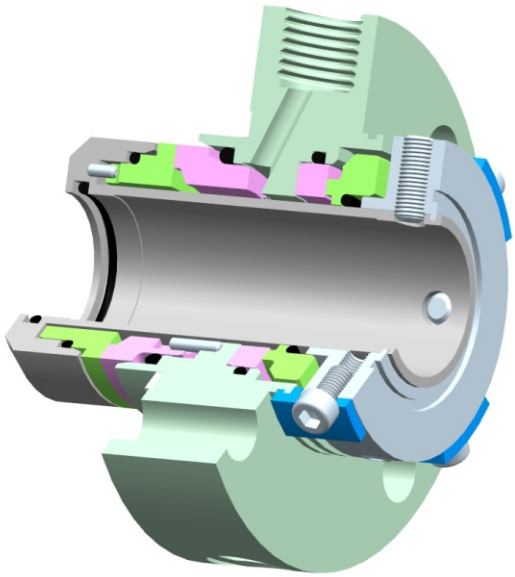
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 100mm
Pressure	: Up to 25 bar
Temperature	: -70°C to 350°C
Speed	: 3000 r.p.m.

Seal Type ZR600/D - Double Cartridge

PRODUCT DESCRIPTION

Seal Type ZR600/D are Recommended for Clean and dirty media application . Seal can tolerate reversal pressure. Seal Type ZR600/D is Standard for using where Corrosive Liquid are being Processed. This Type of Seals is designed for using for Petroleum Products, Low Aggressive Chemicals and Refrigerants in Centrifugal pumps and other Equipment with Rotating Shafts.



DESIGN FEATURES

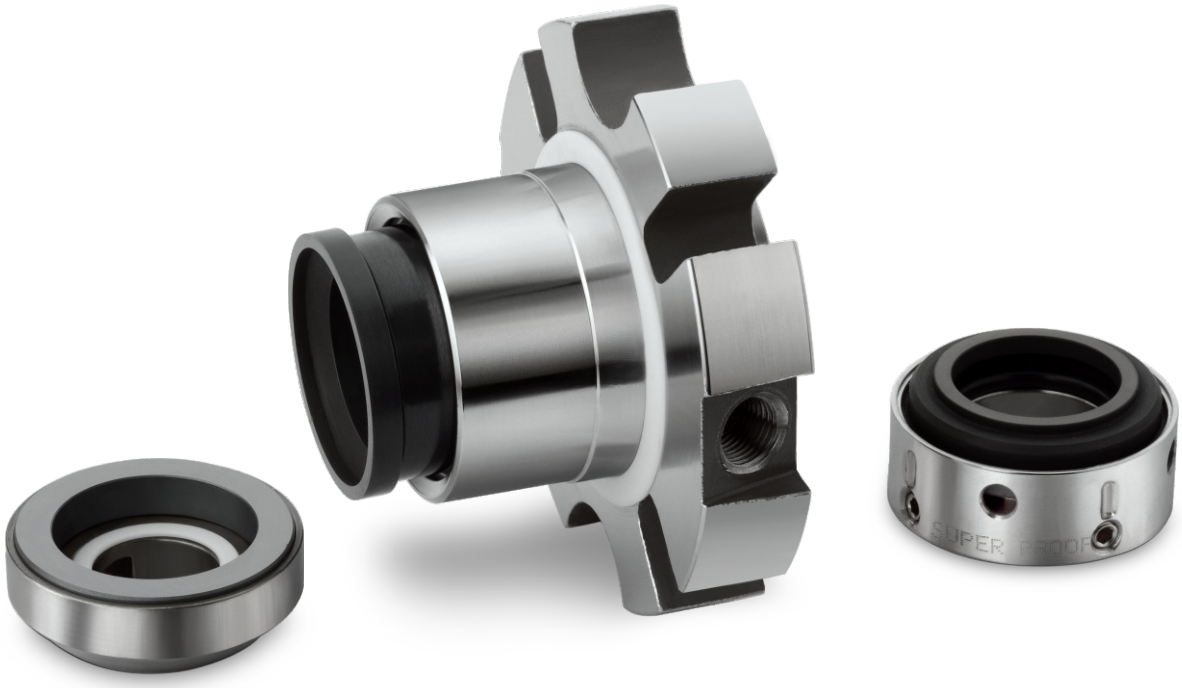
Balance Pusher Seals available in Single and Dual Configuration used for Sealing Environmentally. Dual Directional. Stationary spring design. Heavy Duty Seal Faces remain flat during Operation to minimize Leakage. Components in Cartridge Design are Builds for the Highest Reliability and Simple Installation. Hydraulic Balance Seal Permits using high Pressure as well as it Create Low Heat Generated on Faces and provides long Life. Unitized, Easy-to-Fit Design.

MATERIALS

Seal Ring Faces	: Carbon, TC and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, PTFE, and FFKM
MOC	: SS 316 - CHANGE OF MOC ON REQUEST

OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 100mm
Pressure	: Up to 15 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 3000 r.p.m.



Seal Type ZR100/D - Double Semi Cartridge

PRODUCT DESCRIPTION

Designed to handle solids up to 20% by weight. Hydraulically balanced faces for excellent seal reliability. Springs are located outside the process. Flushing helps to lubricate or cool the seal faces from atmospheric side of mechanical seal. They are cost effective for basic application such as Centrifugal Pumps and other Equipment with Rotating Shaft, Handling Crystallizing Slurry, Suspended Solid Slurry, Saturated Chemical Slurry, General Chemical Slurry.

DESIGN FEATURES

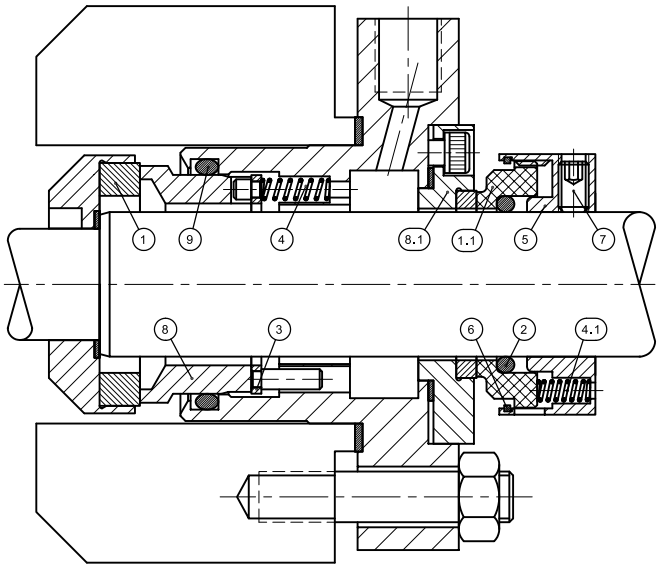
Slurry seal. Standardized modular design. Single Acting. Mechanical Seals. Inside Mounted

MATERIALS

Seal Ring Faces	: SiC, Carbon and TC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 80mm
Pressure	: Full Vacuum to 8 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 3000 r.p.m.



Part No.	Description
1	Seal Ring
1.1	Seal Ring
2	O-Ring
3	Thrust Ring
4	Spring
4.1	Spring
5	Spring Holder
6	Snap Ring
7	Set Screw
8	Seat
8.1	Seat
9	O-Ring

Seal Type ZR200/D - Double Semi Cartridge With Back Plate

PRODUCT DESCRIPTION

Designed to handle solids up to 60% by weight. Specially designed stuffing box in this particular seal type ZR200/D which gives better seal life and performance. Hydraulically balanced faces for excellent seal reliability. Springs are located outside the process. Flushing helps to lubricate or cool the seal faces from atmospheric side of mechanical seal. They are cost effective for basic application such as Centrifugal Pumps and other Equipment with Rotating Shaft, Handling Crystallizing Slurry, Suspended Solid Slurry, Saturated Chemical Slurry, General Chemical Slurry

DESIGN FEATURES

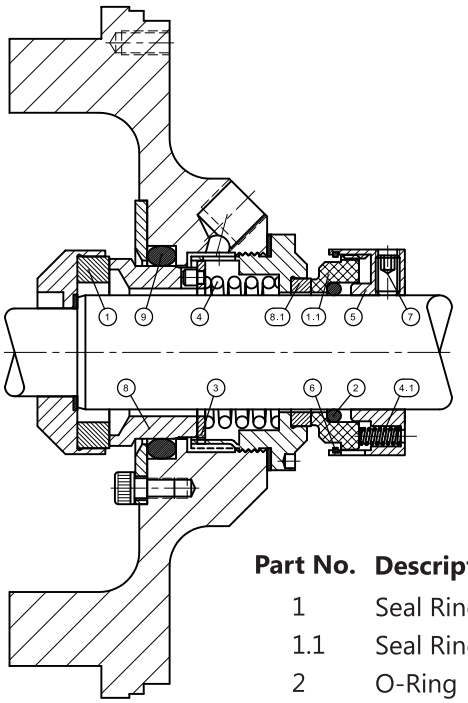
Slurry seal. Standardized modular design. Single Acting Mechanical Seals. Inside Mounted

MATERIALS

Seal Ring Faces	: SiC, Carbon and TC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 80mm
Pressure	: Full Vacuum to 8 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 3000 r.p.m.



Part No.	Description
1	Seal Ring
1.1	Seal Ring
2	O-Ring
3	Thrust Ring
4	Spring
4.1	Spring
5	Spring Holder
6	Snap Ring
7	Set Screw
8	Seat
8.1	Seat
9	O-Ring

Seal Type ZR300/D IMS - Slurry Seal For Non-Metallic Pump

PRODUCT DESCRIPTION

Designed to handle abrasive particles up to 30% by weight. Specially designed Back plate of pump and Impeller in this particular seal type ZR300/D which gives better seal life and performance. Hydraulically balanced faces for excellent seal reliability. Specially coated spring is located outside the process Flushing helps to lubricate the seal faces from atmospheric side of mechanical seal.

DESIGN FEATURES

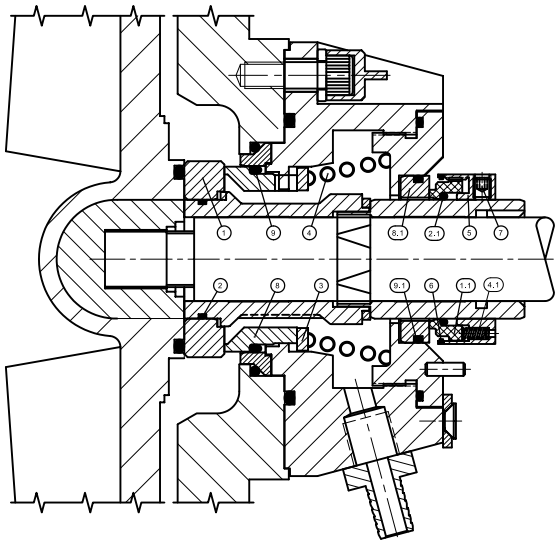
Slurry seal. Double seal for Non metallic pump. Standardized modular design. Inside Mounted.

MATERIALS

Seal Ring Faces	: SiC and Carbon
Seat Faces	: SiC and Ceramic
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316, PVDF – CHANGE OF MOC ON REQUEST

OPERATING CAPABILITIES

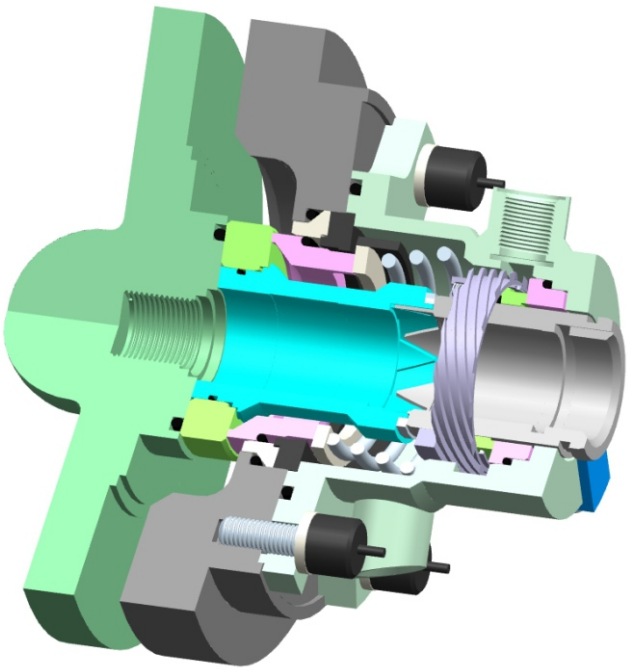
Shaft Dia.	: 20mm to 80mm
Pressure	: Up to 5 bar
Temperature	: Up to 120°C
Speed	: 3000 r.p.m.



Part No.	Description	Part No.	Description
1	Seal Ring	5	Spring Holder
1.1	Seal Ring	6	Snap Ring
2	O-Ring	7	Set Screw
2.1	O-Ring	8	Seat
3	Thrust Ring	8.1	Seat
4	Spring	9	O-Ring
4.1	Spring	9.1	O-Ring

APPLICATIONS

Specially developed for steel plants on CRM (Cold Rolling Mill) in acid circulation pumps and filter press for PP, PVDF & PFA Lining Pump.



Seal Type ZR300/51U/P IMS - Slurry Seal for Non-Metallic Pump

PRODUCT DESCRIPTION

Designed to handle abrasive practical up to 30% by weight. Specially designed Back plate of pump and Impeller in this particular seal type ZR300/51U/P which gives better seal life and performance. Hydraulically balanced faces for excellent seal reliability. Helical Pumping ring helps for better siphoning effect . Specially coated spring is located outside the process. Externally supplied barrier fluid helps to lubricate the seal faces from atmospheric side of mechanical seal.

DESIGN FEATURES

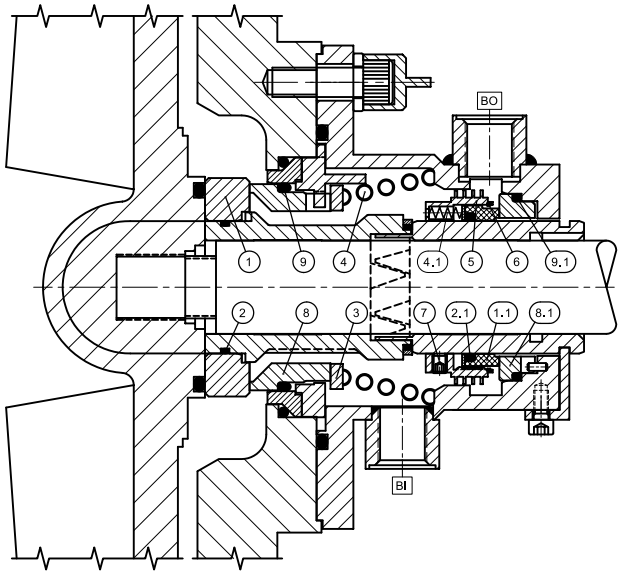
Slurry seal. Double seal for Non metallic pump. Standardized modular design. Inside Mounted

MATERIALS

Seal Ring Faces	: SiC and Carbon
Seat Faces	: SiC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316, PVDF – CHANGE OF MOC ON REQUEST

OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 80mm
Pressure	: Up to 8 bar
Temperature	: Up to 120°C
Speed	: 3000 r.p.m.



Part No.	Description	Part No.	Description
1	Seal Ring	5	Spring Holder
1.1	Seal Ring	6	Snap Ring
2	O-Ring	7	Set Screw
2.1	O-Ring	8	Seat
3	Thrust Ring	8.1	Seat
4	Spring	9	O-Ring
4.1	Spring	9.1	O-Ring

APPLICATIONS

Specially developed for steel plants on CRM (Cold Rolling Mill) in acid circulation pumps and filter press for PP, PVDF & PFA Lining Pump.

Type SPD103 & SPD103/B - Dry Running Seal

PRODUCT DESCRIPTION

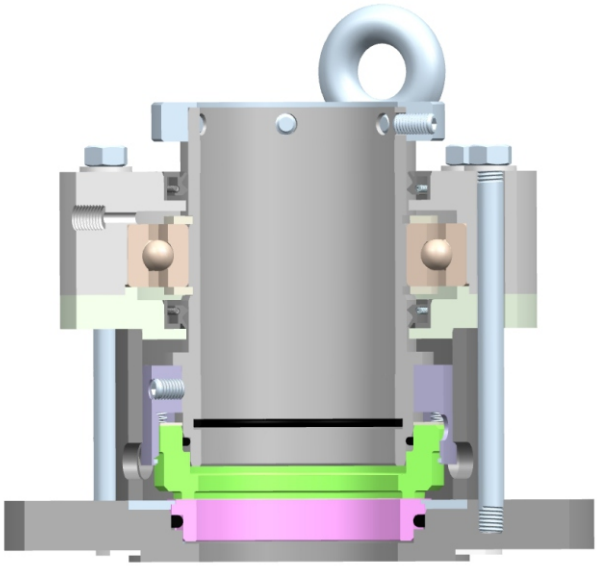
Seal Type SPD103 and SPD103/B Mechanical Seals are designed for Top, Bottom and Side Entry Drives in Agitators, Mixers OR Blenders and where Non-Aggressive and Non-Hazardous Media are Sealed with the use of Cooling Liquid preventing against Dry Running. Construction of MOC designed of these Seals purpose of holding whole Rotary Parts together with the help of Snap Rings which eases while Installation and Removal of Seals.

DESIGN FEATURES

Balance Pusher Seals which gives better performance in and for Sealing Environment. Dry Run Seals are excellent with Low RPM Operation in Vacuum conditions and as well as Undemanding Mixers Application. These Seals Design for using either without Bearing (Type SPD103) OR with Integral Bearing (Type SPD103/B). These Seals are a Multiple Spring basically External Mounted Seal with 'O' Ring as Secondary Sealing Member. Various Elastomer can be offer for various Liquid Applications. These Seal Designed with Cooling Water Jacket which ensure cool Running of Seals.

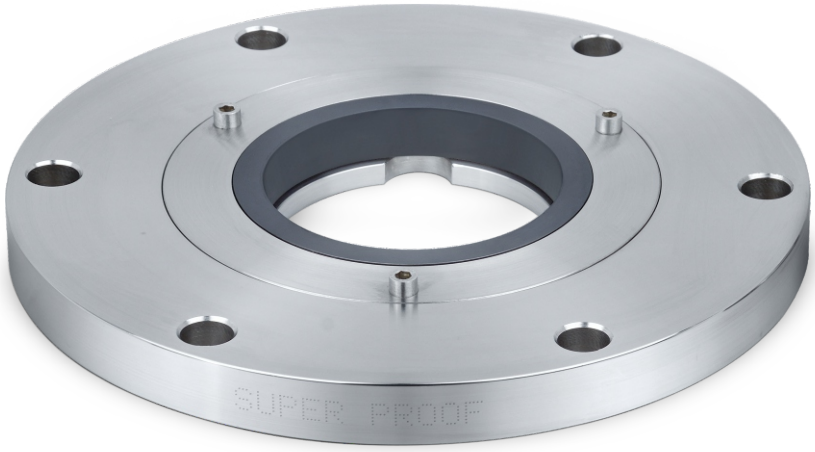
MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST



OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 150mm
Pressure	: Full Vacuum to 8 bar
Temperature	: -30°C to 150°C
Speed	: 300 r.p.m.



Type SPD104 & SPD104/B - Dry Running Seal For High Speed

PRODUCT DESCRIPTION

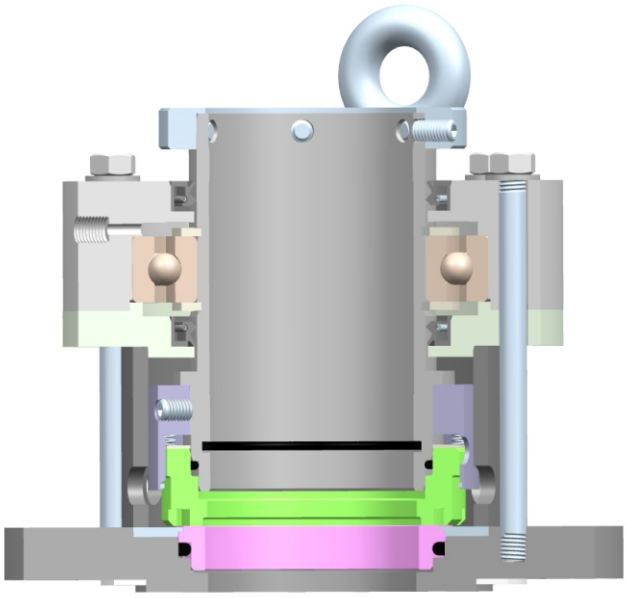
Seal Type SPD104 and SPD104/B Mechanical Seals are designed for Top, Bottom and Side Entry Drives in Agitators, Mixers OR Blenders in case when Non-Aggressive and Non-Hazardous Media are sealed with the use of Cooling Liquid Preventing against Dry Running. Construction of MOC designed of these Seals purpose of holding whole Rotary Parts together with the help of Snap Rings which make easy for Installation and Removal.

DESIGN FEATURES

Balance Pusher Seals used for Sealing Environment. Dry Run Seals are excellent in High Speed Seals for Operation in Vacuum Conditions as well as Undemanding Mixers applications. In SPD104/J & SPD104/B/J Cool Set designed Mating Ring help to dissipate the Heat from Faces. This Type Seal design may use either without Bearing OR with Integral Bearing. These Seals are a Multiple Spring basically externally Mounted Seal with 'O' Ring as Secondary Sealing member. Various Elastomers can be offered for various media application

MATERIALS

Seal Ring Faces	: Spl. Carbon
Seat Faces	: SiC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST



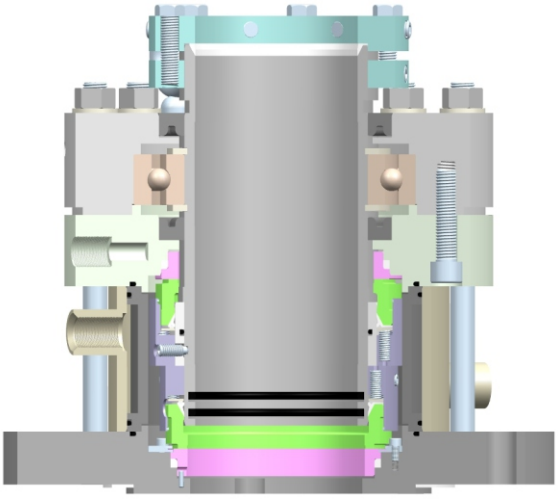
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 150mm
Pressure	: Full Vacuum to 8 bar
Temperature	: -30°C to 140°C
Speed	: 900 r.p.m.

Type 510/D & 510/D/B - Double Seal For SS Reactor

PRODUCT DESCRIPTION

Seal Type 510/D and 510/D/B Mechanical Seals are designed for Top, Side and Bottom Entry Drives in Agitators and Reactors. Compact Economical Cartridge Double Mechanical Seal for Agitators and Reactors. Seal Type 510/D/B Design Incorporate with location of Bearings very close to the Seal. These Seal specially designed for any mixed and pressurized liquid in Vessel with Top Entry Agitators where no leakage in Process Gas OR Fluids to the Environment can be tolerated. Complete Pre-assembled Tested Unit ready for installation. These Seal are used for Exclusive Solid Seal Faces, Stationary Seats, thus Lowest Level of Seal Face distortion when Expose to Compressive Load and Thermal Pressure.



DESIGN FEATURES

Balance Pusher Seals using for Sealing Environment. Double Seals are excellent with Low RPM Operation in Full Vacuum and Pressure. These Seals are a Multiple Spring Back to Back Arrangement with 'O' Ring as secondary Sealing member. The design may either without bearing (Type 510/D) or with integral bearing (510/D/B). Various Elastomer can be offer for various Liquid applications. The Cooling Chamber of Seals also having a Standard Feature with helps to maintain Cool Environment around the Seal.

MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

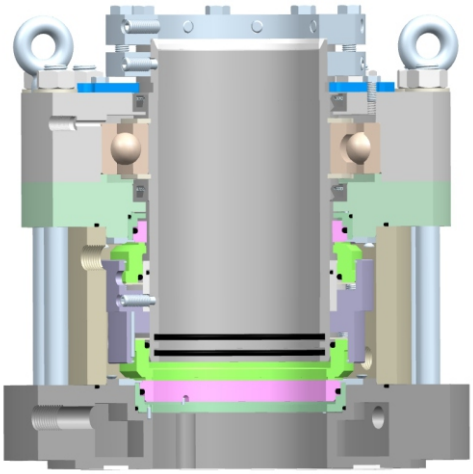
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 200mm
Pressure	: Full Vacuum to 30 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 300 r.p.m.

Type 511/D/B - Double Seal for Hydrogenator

PRODUCT DESCRIPTION

Seal Type 511/D/B Mechanical Seals are designed for Top Entry Drives in Hydrogenators. Seal Type 511/D/B Design Incorporate with location of Bearings very close to the Seal. These Seal specially designed for any mixed and pressurized liquid in Vessel with Top Entry Agitators where no leakage in Process Gas OR Fluids to the Environment can be tolerated. Complete Pre-assembled Tested Unit ready for installation. These Seal are used for Exclusive Solid Seal Faces, Stationary Seats, thus Lowest Level of Seal Face distortion when Expose to Compressive Load and Thermal Pressure.



DESIGN FEATURES

Balance Pusher Seals using for Sealing Environment. Double Seals are excellent with Low RPM Operation in Full Vacuum and Pressure. These Seals are a Multiple Spring Back to Back Arrangement with 'O' Ring as secondary Sealing member. The design with integral bearing. Various Elastomer can be offer for various Liquid applications. The Cooling Chamber of Seals also having a Standard Feature with helps to maintain Cool Environment around the Seal.

MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

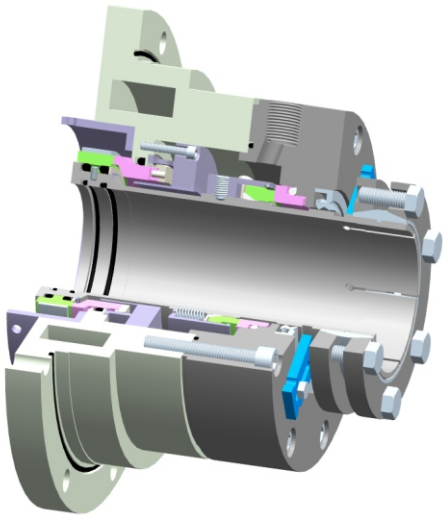
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 200mm
Pressure	: Full Vacuum to 50 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 400 r.p.m.

Type 531/D & 531/D/B - Double Seal for Mill

PRODUCT DESCRIPTION

Balance Pusher Seals using for Sealing Environment. Double Seals are excellent with high RPM Operation in Full Vacuum and Pressure. These Seals are a Multiple Spring Tandem Arrangement with 'O' Ring as secondary Sealing member. The design may either without bearing (Type 531/D) or with integral bearing (531/D/B). Various Elastomer can be offer for various Liquid applications.



DESIGN FEATURES

Seal Type 531/D and 531/D/B Mechanical Seals are designed for Side Entry Drives in Dyno mills, Sand mills and Mixtures. Compact Economical Cartridge Double Mechanical Seal for Side entry sealing equipments. Seal Type 531/D/B Design Incorporate with location of Bearings very close to the Seal. Complete Pre-assembled Tested Unit ready for installation. These Seal are used for Exclusive Solid Seal Faces, Stationary Seats, thus Lowest Level of Seal Face distortion when Expose to Compressive Load and Thermal Pressure. The Cooling Chamber of Seals also having a Standard Feature which helps to maintain Cool Environment around the Seal.

MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV and FEP
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

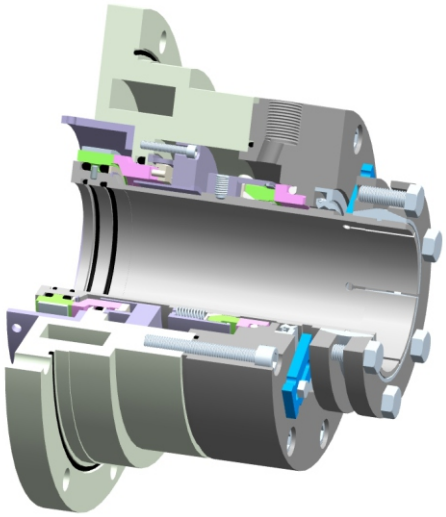
OPERATING CAPABILITIES

Shaft Dia.	: 50mm to 85mm
Pressure	: Full Vacuum to 10 bar
Temperature	: -30°C to 200°C
Speed	: 1500 r.p.m.

Type 532/D & 532/D/B - Double Seal For Bottom Entry

PRODUCT DESCRIPTION

Seal Type 532/D and 532/D/B Mechanical Seals are designed for Bottom and Side Entry Drives in Rectors. Compact Economical Cartridge Double Mechanical Seal. The design may either without bearing (Type 532/D) or with integral bearing (532/D/B). Complete Pre-assembled Tested Unit ready for installation. These Seal are used for Exclusive Solid Seal Faces, Stationary Seats, thus Lowest Level of Seal Face distortion when Expose to Compressive Load and Thermal Pressure.



DESIGN FEATURES

Balance Pusher Seals using for Sealing Environment. Double Seals are excellent with low RPM Operation in Full Vacuum and Pressure. These Seals are a Multiple Spring Back to Back Arrangement and Balance Seal with 'O' Ring as secondary Sealing member. Various Elastomer can be offer for various Liquid applications. The Cooling Chamber of Seals also having a Standard Feature which helps to maintain Cool Environment around the Seal.

MATERIALS

Seal Ring Faces	: Carbon, SiC and TC
Seat Faces	: SiC and TC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

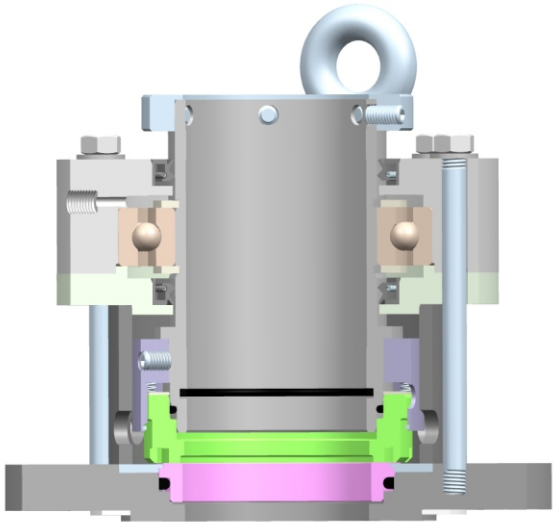
OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 150mm
Pressure	: Full Vacuum to 10 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 300 r.p.m.

Type SPD105 & SPD105/B - Dry Running Seal For Glass Lined

PRODUCT DESCRIPTION

Seal Type SPD105 and SPD105/B Mechanical Seals are designed for Top Entry Drives in Glass Lined Vessel. Compact Economical Cartridge Mechanical Seal for Glass Lined Vessel. These Seal specially designed for any mixed and pressurized liquid in Vessel with Top Entry Agitators where no leakage of Highly Acidic Process Gas OR Fluids to the Environment can be tolerated. Complete Pre-assembled Tested Unit ready for installation. These Seal are used for Exclusive Solid Seal Faces, Stationary Seats, thus Lowest Level of Seal face distortion when Expose to Compressive Load and Thermal Pressure.



DESIGN FEATURES

Balance Pusher Seals which gives better performance in and for Sealing Environment. Dry Run Seals are excellent with Low RPM Operation in Full Vacuum and Pressure. These Seals Design for using either without Bearing (SPD105) OR with Integral Bearing (SPD105/B). Various Elastomers can be offer for various Liquid applications. These Seals Designed with Cooling Water Jacket which ensure Cool Running of seals.

MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: SiC and Ceramic
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

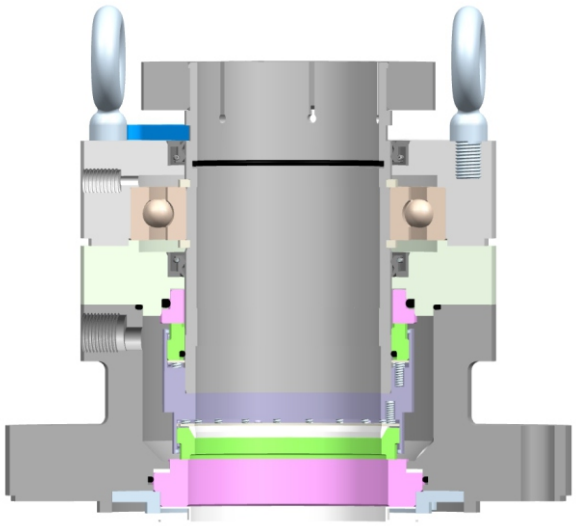
OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 150mm
Pressure	: Full Vacuum to 8 bar
Temperature	: -30°C to 150°C (Depending upon Elastomer)
Speed	: 250 r.p.m.

Type 521/D & 521/D/B - Double Seal for Glass Lined Reactor

PRODUCT DESCRIPTION

Seal Type 521/D and 521/D/B Mechanical Seals are designed for Top Entry Drives in Glass Lined Vessel. Compact Economical Cartridge Mechanical Seal for Glass Lined Vessel. These Seal specially designed for any mixed and pressurized liquid in Vessel with Top Entry Agitators where no leakage of Highly Acidic Process Gas OR Fluids to the Environment can be tolerated. Complete Pre-assembled Tested Unit ready for installation. These Seal are used for Exclusive Solid Seal Faces, Stationary Seats, thus Lowest Level of Seal face distortion when Expose to Compressive Load and Thermal Pressure.



DESIGN FEATURES

Balance Pusher Seals which gives better performance in and for Sealing Environment. Double Seals are excellent with Low RPM Operation in Full Vacuum and Pressure. The design may either without bearing (Type 521/D) or with integral bearing (521/D/B). Various Elastomers can be offer for various Liquid applications. These Seals Designed with Cooling Water Jacket which ensure Cool Running of seals.

MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: Ceramic and SiC
Elastomer	: Viton, TTV, FEP and FFKM
MOC	: SS 316 – CHANGE OF MOC ON REQUEST

OPERATING CAPABILITIES

Shaft Dia.	: 25mm to 150mm
Pressure	: Full Vacuum to 14 bar
Temperature	: -30°C to 260°C (Depending upon Elastomer)
Speed	: 250 r.p.m.

541/D/B - Double Mechanical Seal for ANFD

DESIGN FEATURES

Balance Pusher Seals using for Sealing Environment. Double Seals are excellent with low RPM Operation in Full Vacuum and Pressure. Solid antifriction linear integral with the sleeve. Heavy duty sturdy design with two tapper roller bearings. Bellow assembly with long fatigue life. The Cooling Chamber of Seals also having a Standard Feature which helps to maintain Cool Environment around the Seal

APPLICATION

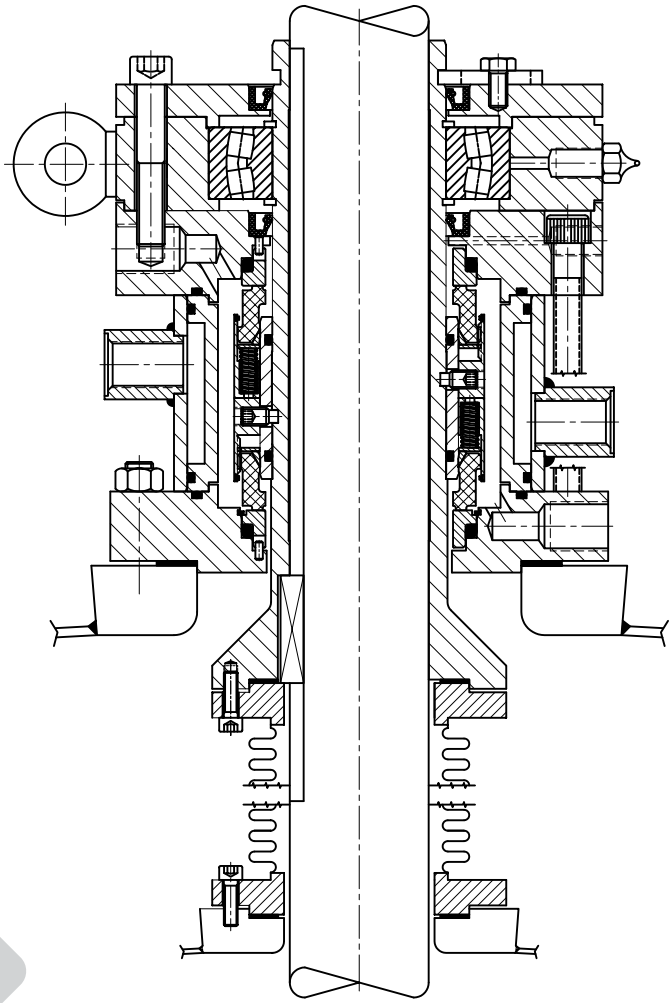
Agitated Nutsche Filters and Dryers
Rotary Vacuum Paddle Dryers
Horizontal Reactors With Expanding Shaft

OPERATING CAPABILITIES

Shaft Dia.	: 20mm to 200mm
Pressure	: Up to 5 bar
Temperature	: -30°C to 260°C
Speed	: 100 r.p.m.

MATERIALS

Seal Ring Faces	: Carbon and SiC
Seat Faces	: SiC and TC
Elastomer	: Viton, PTFE, EPDM, NBR, FFKM
MOC	: SS 316, Duplex, Super Duplex, Hastelloy C,



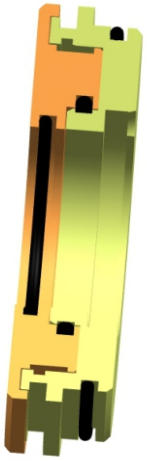
Type SPB01 - Bearing Isolator

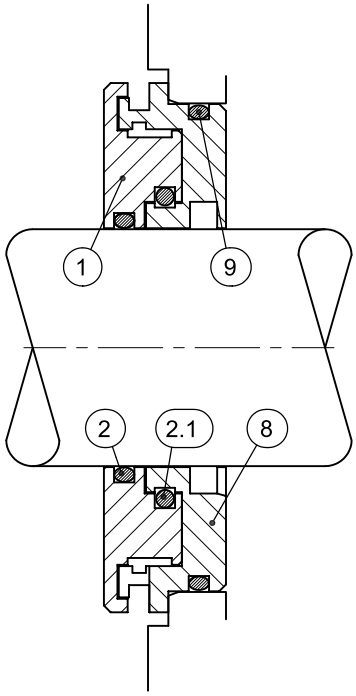
DESIGN FEATURES

Close tolerance Bearing Isolator design locks out moisture, grit and dust, extending bearing life. Easy to install one piece cartridge unit. On most equipment, requires no modification. No more shaft wearing as compare to conventional Oil seal.

APPLICATIONS

Installs on bearing frames used in oil & gas, chemical, mining, pulp & paper, power and general industries.





Part No.	Description
1	Rotor
2	O-Ring
2.1	O-Ring
8	Stator
9	O-Ring

Type TS 20 & TS 40 - Thermosyphon System

DESIGN FEATURES

The Thermosyphon provides lubrication, dissipate heat and maintain the temperature and required pressure gradient across the seal faces in case of double back to back and tandem seal arrangement for pumps and agitator seals. Plan 52 and 53A configurations. Economical light and heavy duty reservoir for general service applications. Instrumentation on each reservoir is according to local standards and can be adapted to suit application and customer requirements. 304 and 316 stainless steel construction. Cooling coil is optional.

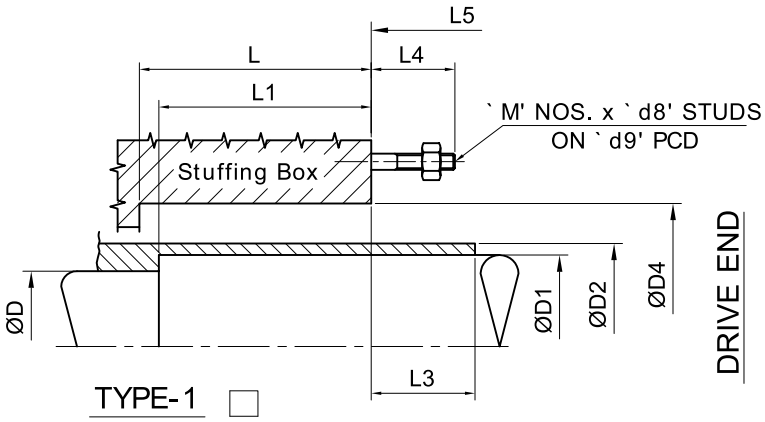
MATERIALS

MOC: SS 316, SS 304 and MS

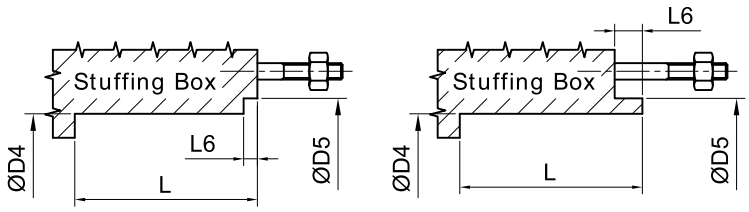
OPERATING CAPABILITIES

TS 20 Pressure Limit : 20 bar
TS 40 Pressure Limit : 40 bar
Temperature: Up to 200°C

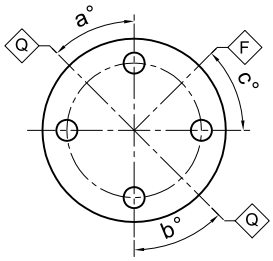
Pump Data



TYPE-1 ☐



TYPE-2 ☐ TYPE-3 ☐



a°	
b°	
c°	

F - FLUSHING
Q - QUENCHING

ORIENTATION FROM DRIVE END

D - Shaft OD	
D1 - Shaft OD	
D2 - Sleeve OD	
D4 - St. Box Bore	
D5 - Spigot Dia	
D8 - No. Of Bolts	
D9 - Bolt Circle	
M - Size Of Bolts	
L - St. Box Depth	
L1 - Shaft Ref.	
L3 - Sleeve Ext.	
L4 - Bolt Length	
L5 - Nearest Obst.	
L6 - Raised Collar	

Make & Model	
Tag No.	
Speed	
Suction Pressure	
Discharge Pressure	
M. O. C. of Pump	
Impeller Type	O ☐ S. O. ☐ C ☐
St. Box Jacket	Yes ☐ No ☐
API Plan	

Operating Parameter

Media	
Operating Temperature	
Viscosity	
Sp. Gravity	
Boiling Point	
Slurry %	
Corrossive (with respect to Ss316)	Yes ☐ No ☐

Specific Nature

Solidification	☐ At ☐ °C
Crystallization	☐ At ☐ °C
Polymerisation	☐ At ☐ °C

Toxic ☐ Hazardous ☐ Highly Evaporating ☐

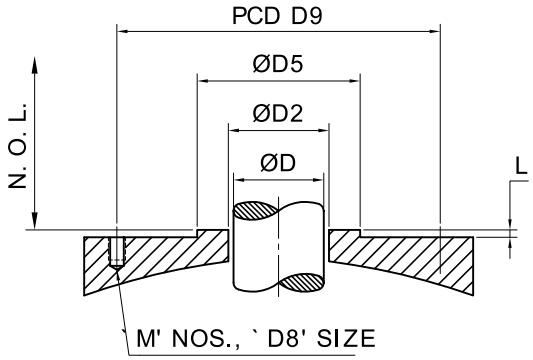
Special Notes :-

Customer Name :-

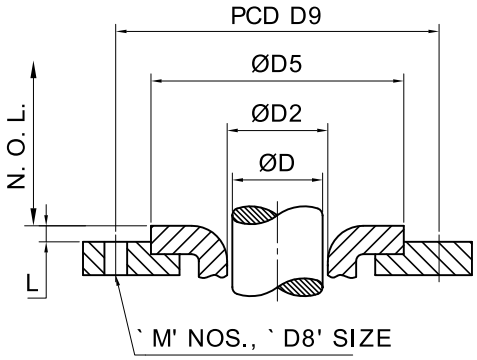
Contact Person :-

Site Address :-

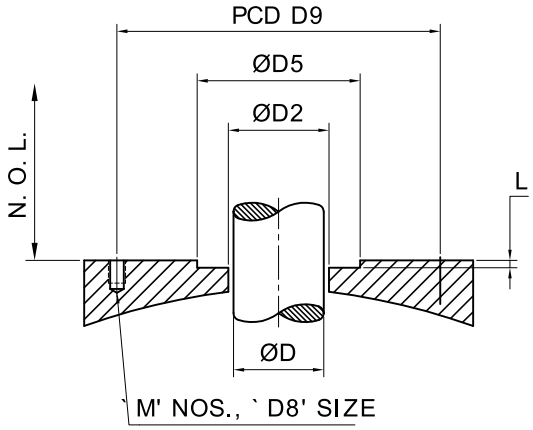
Agitator Data



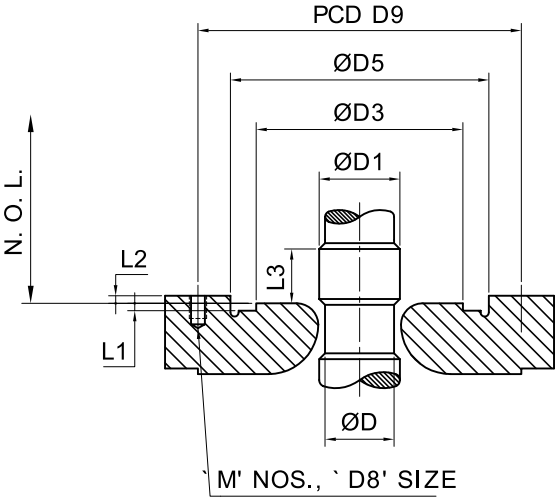
TYPE-1



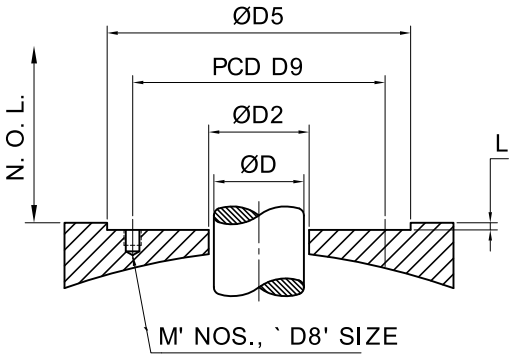
TYPE-4
(Glass Lined Reactor)



TYPE-2



TYPE-5
(Glass Lined Reactor)



TYPE-3

D Shaft OD	D1 Shaft OD	D2 Pad Plate ID	D3 Spigot (Location)	D5 Spigot (Location)	D8 Size Of Bolts	D9 PCD	L Collar	L1 Collar	L2 Collar	L3 Shaft Step From Pad	M No. Of Bolts	N. O. L.

Agitator Data

Type Of Agitator		Top Entry ☐ Bottom Entry ☐ Side Entry ☐
M. O. C. (Wetted parts)		
Shaft Diameter		mm
Pressure	Design	
	Operating	
Temperature	Design	
	Operating	
Speed		RPM
Present Sealing		Packing ☐ Mechanical Seal ☐

Media / Vapours

Name	
Slurry % (If any)	
Corrossive (with respect to SS 316)	Yes ☐ No ☐

Specific Nature

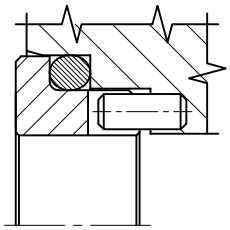
Crystallizing	Yes ☐ @ Temp. ☐ °C
Polymerizing	Yes ☐ @ Temp. ☐ °C
Evaporating	Yes ☐ @ Temp. ☐ °C

Compatible Media As Buffer Fluid	

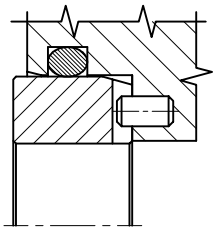
Special Notes : -
Customer Name: -
Contact Parson : -
Site Address : -

Standard Seat Types

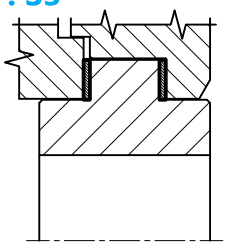
TYPE : S1



TYPE : S2



TYPE : S3



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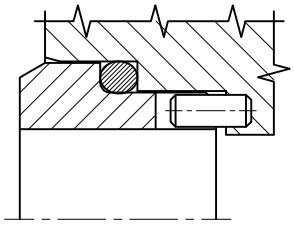
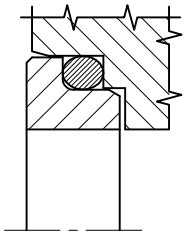


TYPE : S5



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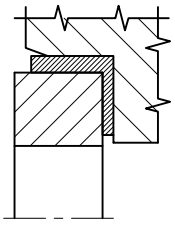

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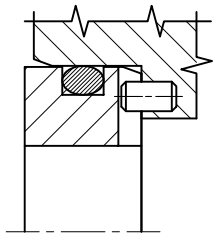

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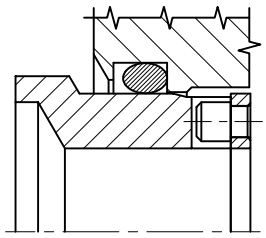

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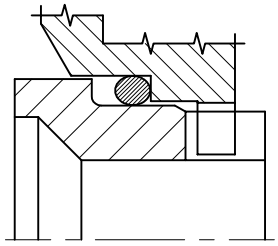
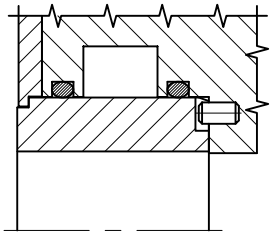
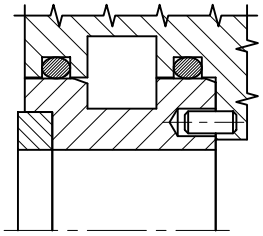


TYPE : S10



TYPE : S11



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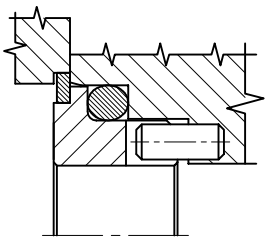

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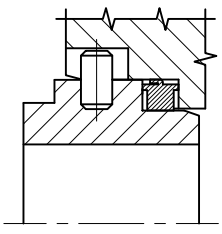

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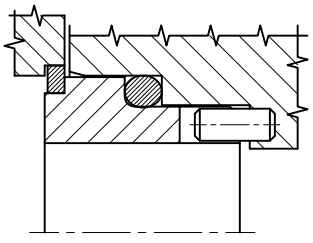
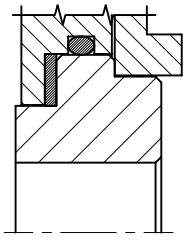


TYPE : S15



Technical Notes

BARRIER FLUID

Externally supplied fluid, At a pressure above the pump seal chamber pressure.

BUFFER FLUID

Externally supplied fluid, At a pressure lower than the pump seal chamber pressure.

FLUSH

Fluid which is introduced into the seal chamber on the process fluid side in close proximity to the sealing faces and typically used for cooling and lubricating the seal faces.

QUENCH

Neutral fluid, usually water or steam, introduced on the atmospheric side of the seal to retard formation of solids that may interfere with seal movement.

FLASHING

Rapidly changing fluid state, from liquid to gas.

CRYSTALLIZING FLUID

Fluid which is in the process of forming solids or which may form solids due to dehydration or chemicals.

FLOATING BUSHING

Bushing that fits around the shaft or sleeve and has sufficient clearance around the outside diameter so it can move or float radially. A spring pushes the bushing axially against a sealing surface of the housing, seal chamber, or gland plate to force the fluid to pass through the small clearance between the shaft and bushing insted of going in between the circumference of the bushing and the housing. A floating design can be used for the throat or throttle bushings. The radial float allows the diametrical clearance between the bushing ID and the shaft or sleeve OD to be very tight.

CONNECTION CODE

BI : BARRIER / BUFFER FLUID IN
BO : BARRIER / BUFFER FLUID OUT
CI : COOLING WATER IN
CO : COOLING WATER OUT
L : LEAK DETECTION PORT
G : GREASE PORT
F : FLUSH
Q : QUENCH
D : DRAIN

Notes : Viton® Registered trademark Dupont, USA. Grafoil® Registered trademark of Union Carbide Corporation, USA

SINCE 2001

SUPERPROOF™

Innovative Sealing Solutions

SUPERPROOF SEALS ENGINEERING PVT. LTD.

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Website: www.superproofseals.com

Mfg. Unit I : Unit No. 23, 2nd Floor, Shamroz Industrial Estate, Ram Mandir Road,
Opp. Movie Star Cinema, Goregaon (W), Mumbai – 400 104 (INDIA).

Mfg. Unit II : Plot No. 36-37, Khali Char Rasta, Near Meena Hotel, Khali,
Ta: Siddhpur, Dist. Patan – 384151 GUJARAT, (INDIA).

Branch : Plot No.10, 2nd Floor, Near Real Sweets & Farsan,
Old National Highway No.8, Near Railway Station,
Ankleshwar-2, Dist. Bharuch, Gujarat (India)

SP / DM 001 / 0115