

Mechanical Seal Range



Nishant Seals
Mechanical Seals & Spares

Sole Distributor



MEKEL
SOLUTIONS
Connecting Technical Services



Nishant Seals have more than 31 years of experience in the field of Engineering, Manufacturing and Marketing Mechanical Sealing Devices. As a leading Manufacturer, we leverage our expertise in variety of markets and products to give our customer the most innovative and comprehensive solutions to their performance challenges. Today it provides the most complete selection of engineered mechanical seals and sealing support systems for use in pumps, reactors, compressors and other rotating equipments.

Nishant Seals offers a complete range of seal designs including single and double cartridge seals, metal bellows seals as well as custom engineered seals. Each is available in a broad range of materials and sizes.

Stringent quality policy ensures that the products manufactured pass through the test lab for various stages of inspection and on due approval and quality certification, the products are supplied to the customer. Customer satisfaction is our motto and we thrive hard to achieve, sustain & improve ourselves at all times. We strictly adhere to the delivery schedule with an individual attention to our customers. We not only supply sealing systems but educate & train our customers to use the products correctly. Our services and our extensive product line can help our customer to lower their total sealing cost.





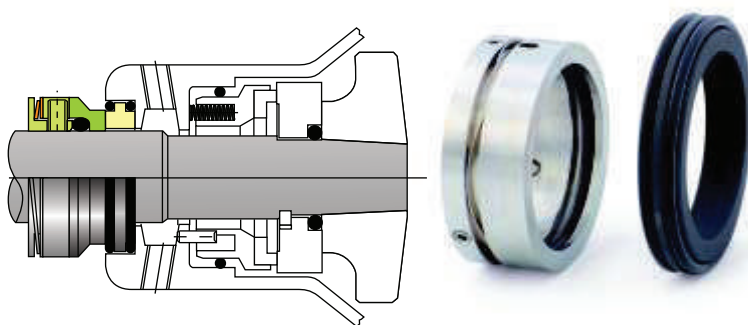
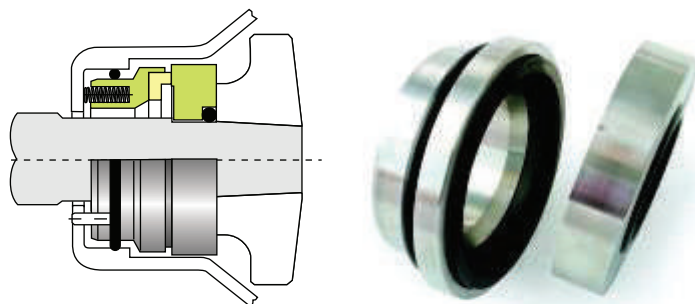
Food and Beverage Industry Component Seal Range

INOXPA PROLAC PUMPS

These seals are used in Beverages and Dairy Applications.
Seals can be given in single as well as double.
Seal Size: 15.8mm, 28mm, 25.4mm, 35mm, 38.1mm, 50mm and 65mm

Face combinations: Car/SIC, SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²

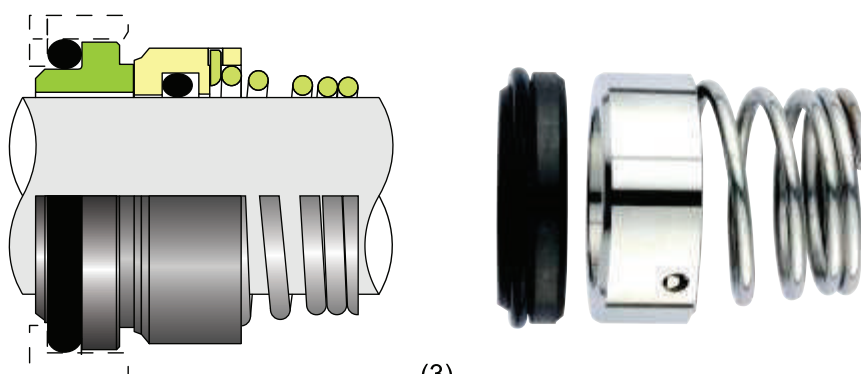
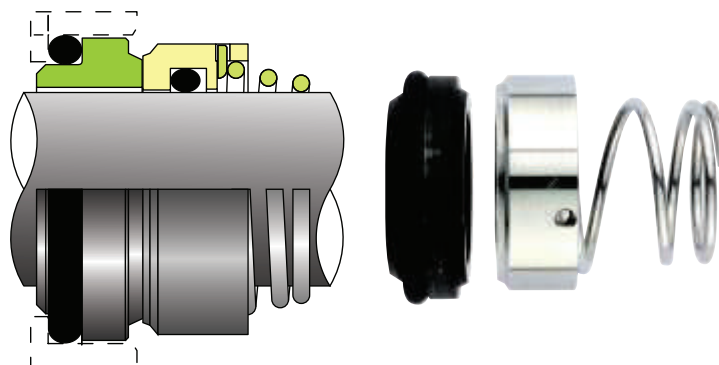


IDMC PUMP SEALS

These seals mostly used in Beverages and Dairy Applications.
Seal Size: 14mm, 18mm, 24mm, 28mm, 34mm and 38mm

Face Combinations: Car/SS, CAR/TC, CAR/SIC, TC/TC, SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²





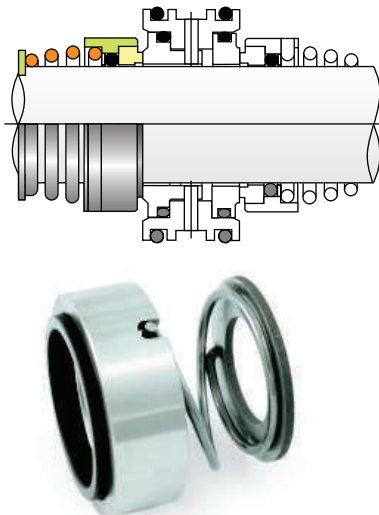
FRISTAM PUMP SEALS

Models: FP 752, FP 742, FP 722, FP 712, FP 3402, FP 1152, FP 3552, FP 3452, FP 3532, FP 3522, FP 1251

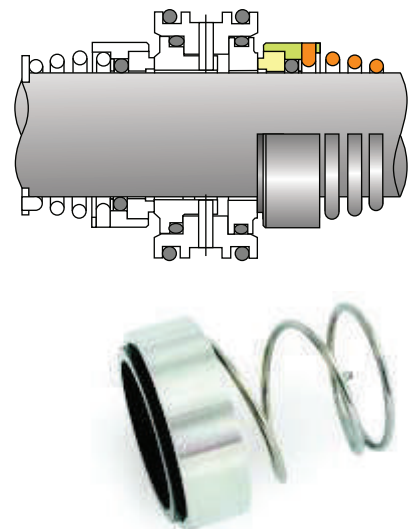
Seal Size: 22mm, 30mm, 35mm & 60mm

This is a conical spring seal. Specially used in Beverages, Milk and Milk Products. Seals are available in Single as well As double seal.

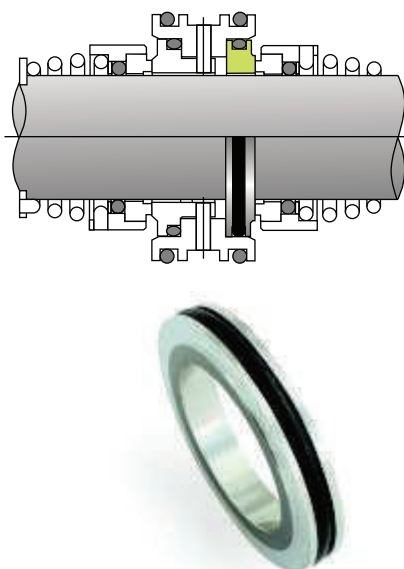
Inboard Rotary with base plate



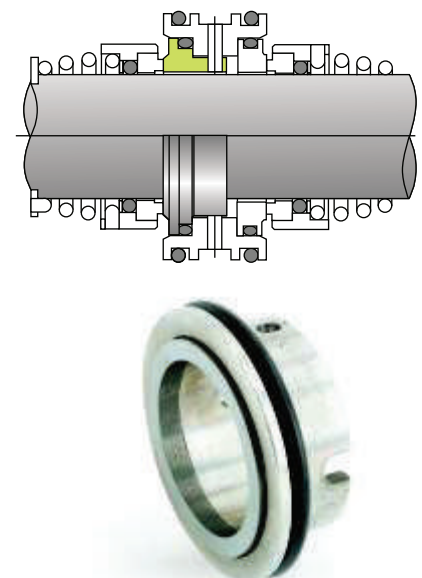
Outboard Rotary with left hand springs



H type Insert with O ring



L type Insert with O ring





22mm outboard encased rotary with Carbon Face



22mm Inboard encased rotary with Carbon Face

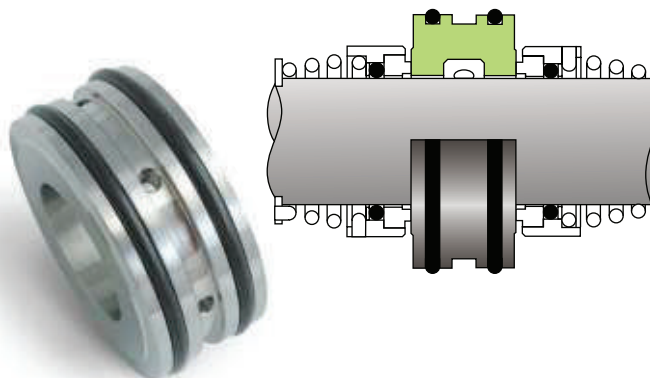
22mm Center Collets in Carbon Face / SS face / TC Face

Face combinations:

Car/TC, Car/SIC, TC/TC and SIC/SIC

Temp: Upto 120 Degree

Pressure : Upto 10 kg/cm²



ALFALAVAL PUMP SEALS

FM/GM/EM

This a Single spring seal. Specially used in Beverages and Dairy Applications.

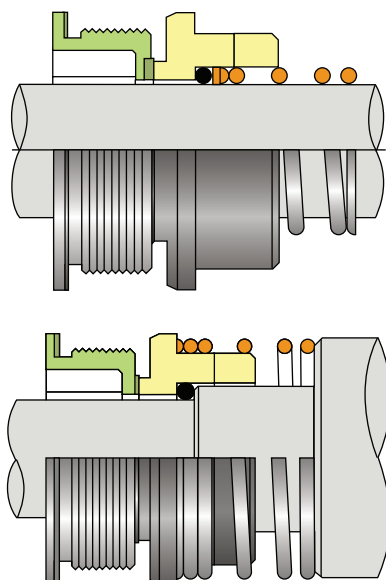
Seals are available in Single as well as double seal

Seal Size: 22mm

Face combinations: Car/SS, Car/TC, Car/SIC, TC/TC and SIC/SIC

Temp: Upto 120 Degree

Pressure : Upto 10 kg/cm²





FM OS

Seal Size: 22mm

This is a single spring seal. Specially used in Beverages. Seals are available in Single as well as double seal

Face combinations: Car/SS, Car/TC,
Car/SIC, TC/TC and SIC/SIC
Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²



ALC 1 SERIES

Seal Size: 40mm, 53mm

Mechanical Seals to suit the ALC series pumps widely utilised in the food and beverage process industries.

Face Combinations: Car/SIC, Car/Ceramic

Elastomers: Nitrile, EPDM, Viton®.



ALC2 / ALC3 SERIES PUMP

Seal Size: 2.00"

Mechanical Seals to suit the ALC series pumps widely utilised in the food and beverage process industries.

Face Combinations: Car/SIC, Car/Ceramic,
Car/TC, TC/TC, SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²



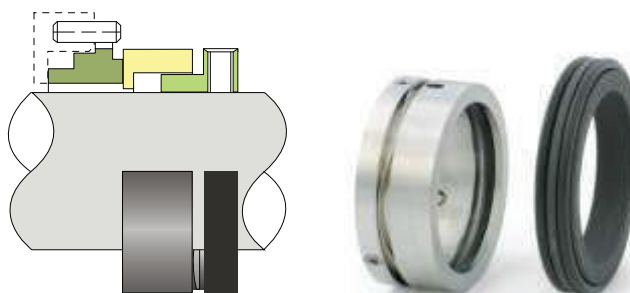
SRU PUMP SEALS

Seal Size: 20mm, 30mm, 35mm, 45mm, 55mm & 75mm

Mechanical Seals to suit the ALC series pumps widely utilised in the food and beverage process industries.

Face Combinations: Car/SIC, Car/Ceramic, Car/TC
TC/TC, SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²





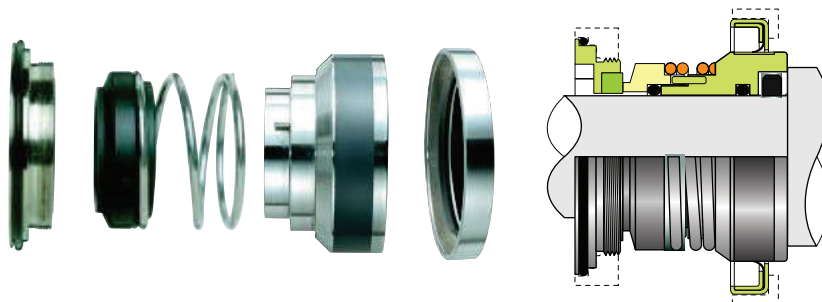
LKH 5 / 10 / 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 60

Seal Size: 31.7mm

Mechanical seals used in food, Dairy, Beverage and Biopharm

Face combinations: Car/SS, Car/TC, Car/SIC, SIC/TC and SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²

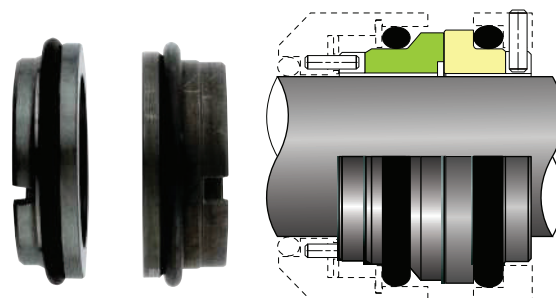


LKH 112 / 113 / 114

Mechanical seal kit with Rotary and Stationary Faces and O rings. These seals are mostly used in food, Dairy, Beverage and Biopharm

Face Combination: Car/SIC, SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 12 kg/cm²



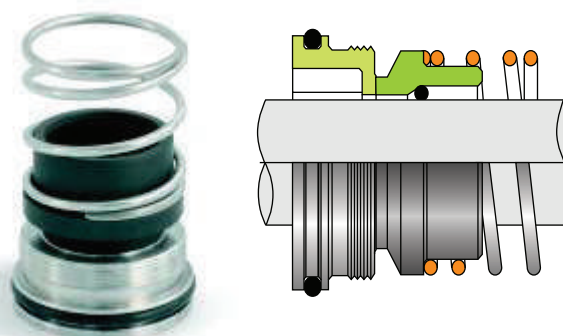
MR 185A - MR 200

Seal Size: 27mm

This a Single spring seal. Specially used in Beverages and Dairy Applications

Face combinations: Car/SS, Car/TC, Car/SIC and SIC/SIC

Temp: upto 120 Degree
Pressure : upto 10 kg/cm²



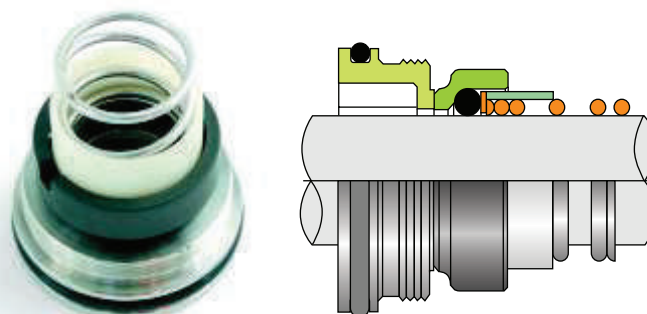
MR 166A / MR 166B / 166E

Seal Size: 22mm

This a Single spring seal. Specially used in Beverages and Dairy Applications

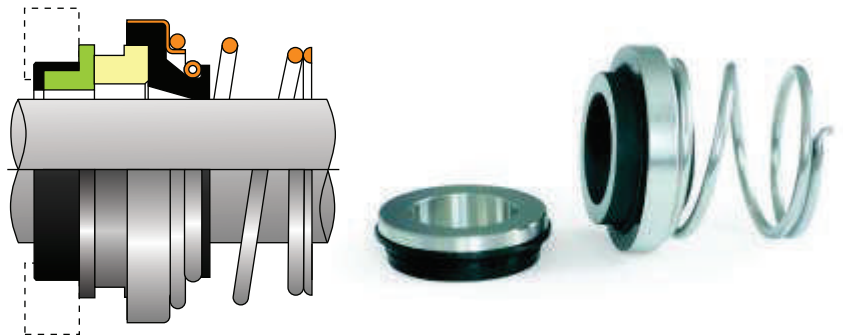
Face combinations: Car/SS, Car/TC, Car/SIC and SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²





APV PUMP SEALS



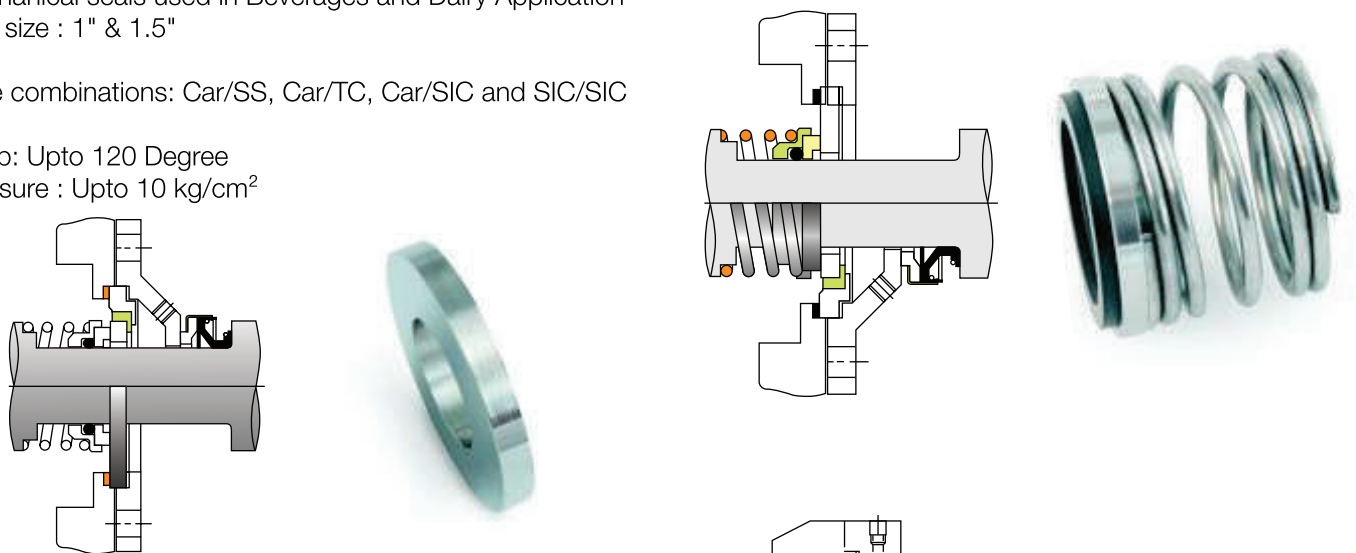
Mechanical seals suitable for APV ZMA, ZMB, ZMD, ZMH, ZMS AND ZMK Rosita and Pasilac Pumps. Specially used in Beverages and Dairy Applications

APV PUMA

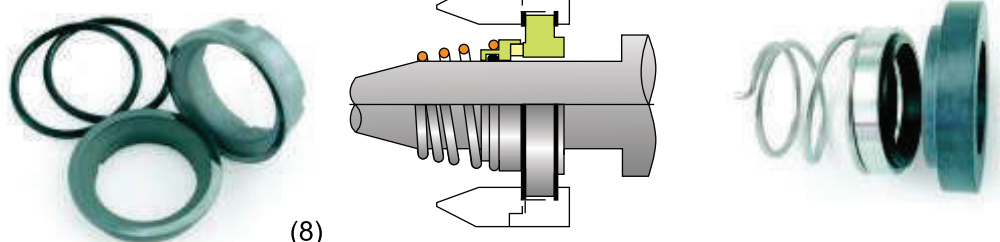
Mechanical seals used in Beverages and Dairy Application
Seal size : 1" & 1.5"

Face combinations: Car/SS, Car/TC, Car/SIC and SIC/SIC

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²



APV W AND W+ PUMPS





Grundfos Seal

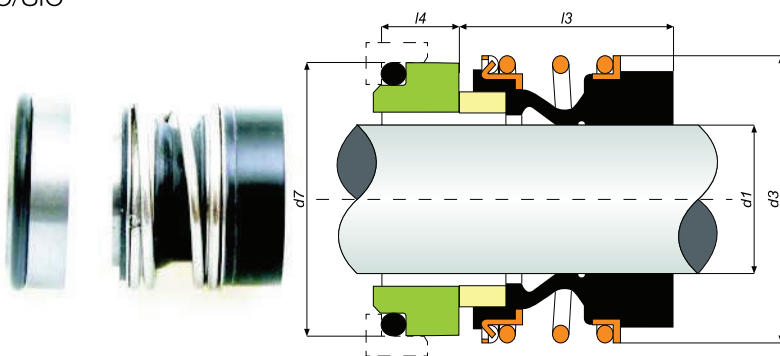
Elastomer bellows seal designed to replace the Grundfos Seal. Style A, Style B, Style C for Pumps Style: CHI ,CHIE, CRK, SPK, CP, CRN, LM, LP, NM, NP, DNM, DNP, CLM, TP, TPD & AP.

Seal Size: 12mm,16mm, 22mm and 33 mm

Face combinations: Car/TC, TC/TC, Car/SiC and SiC/SiC
Secondary Sealing: EPDM or Viton

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²

d1 mm	d3 mm	d7 mm	I3 mm	I4 mm
12	24.00	23.00	25.90	15.00
16	28.00	27.00	28.40	12.30
22	36.00	37.00	30.00	11.10
33	51.00	48.00	35.00	7.50



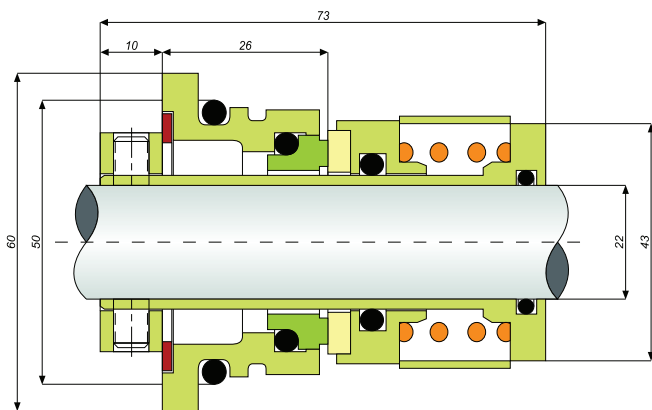
Cartridge seal to replace the Grundfos Seal Style E. Ideal replacement for Grundfos Pump Style MTR, CR/CRN 32, CR/CRN 45, CR/CRN 64 CR/CRN 90.

Seal Size: 22mm

Face combinations: Car/TC, SiC/SiC, TC/TC
Secondary Sealing: EPDM or Viton

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²

d1 mm	d3 mm	d7 mm	I3 mm	I4 mm
22	43.00	60.00	36.00	37.00

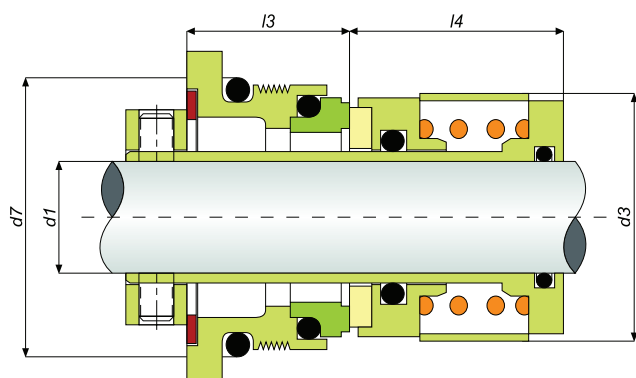
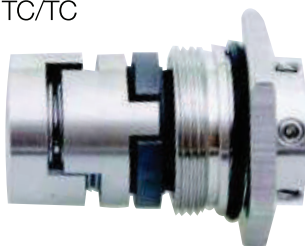


Cartridge seal with screw to replace the Grundfos Seal Style H. Ideal replacement for Grundfos Pump Style MTR, CR/CRN 32, CR/CRN 45, CR/CRN 90

Seal Size: 12mm, 16mm

Face combinations: Car/TC, SiC/SiC, TC/TC
Secondary Sealing: EPDM or Viton

Temp: Upto 120 Degree
Pressure : Upto 10 kg/cm²

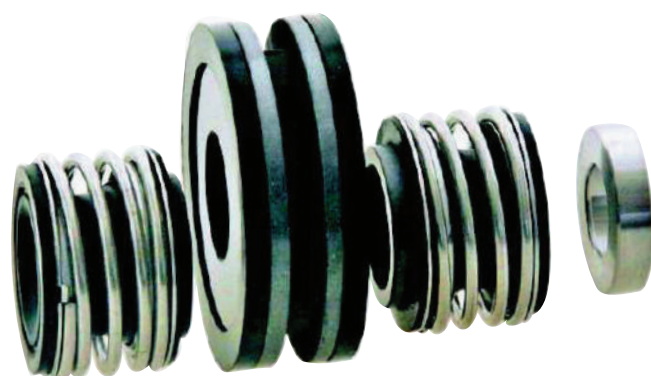


d1 mm	d3 mm	d7 mm	I3 mm	I4 mm
12	25.20	29.00	19.50	32.00
16	29.70	34.00	20.50	32.00



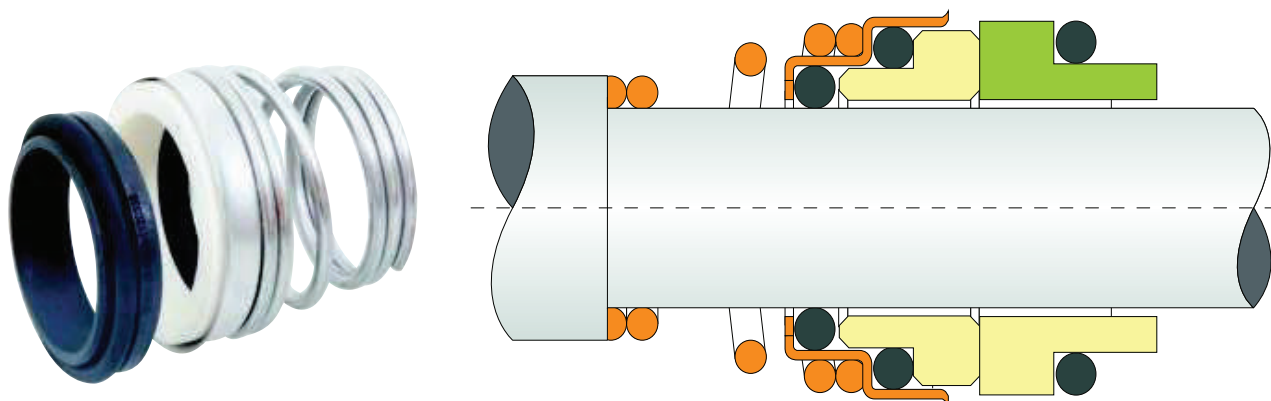
Flygt and Grindex Submersible Pumps and Mixers

Style DT16 seal is a direct replacement seal for Flygt and Grindex submersible pumps and mixers, with no pump modification necessary. The Style DT16 require no additional fitting tool, and most types have pre-set working length operated by a removable setting clip, for easy installation. The DT16 seals are manufactured with resilient stainless steel components, as opposed to the plastic parts commonly utilised in the O.E.M designs. These seals benefit from utilising solid seals face with improved materials and designs which results in better and superior seal performance, reliability and life. All Style DT16 are supplied fitted with NBR elastomers and O-Rings as standard, with Carbon vs. Tungsten Carbide faces for Upper seals, Tungsten Carbide vs. Tungsten Carbide for Lower Seals. The one exception is the Style DT16D 15mm Double seals, which has Silicon Carbide vs Silicon Carbide faces inboard, Silicon Carbide vs. Carbon faces outboard.



Lowara CEA/A, BG/A, CO/A, and HM/A Pumps

Style DT5 seal to suit Lowara CEA/A, BG/A, CO/A, and HM/A pumps fitted with the new SM Motor. They are modified Style DT5 tapered right-hand spring seals, with Silicon or Tungsten Carbide Faces vs. Silicon or Tungsten Carbide stationary supplied with the usual choice of O-Rings, please specify at time of order. Practically all common Lowara pumps can be fitted with a direct replacement Style DT5 seal or similar.





Chemical and Petrochemical Industry Mechanical Seal Range

MULTI SPRING SEALS - NS01 / NS05

These are pusher type seals with PTFE wedge or 'O' ring. These are extremely effective seal designed to meet API std and featuring multiple spring action is suitable for a wide range of application. These seals can be provided as Cartridge construction in Single, Double or Tandem arrangements in Balanced or Unbalanced.

These seals are equivalent to Eagle Burgmann P01, P02, Johncrane 9/9T/8/109 and Flowserve RO/ROTT/QB seals.

Face Materials : CAR/TC, CAR/SIC, SIC/SIC, TC/TC

Metal components: SS 316

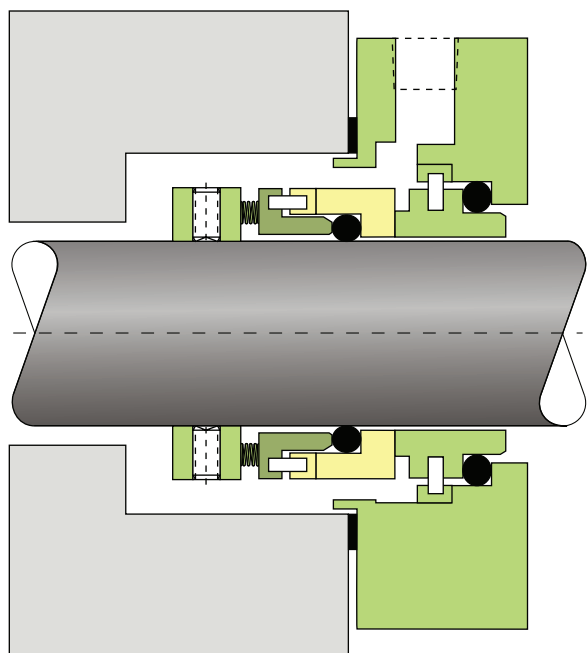
Secondary Sealing: FKM / Viton / PTFE

Operating Conditions:

Pressure: Vacuum upto 10kg/cm² for unbalanced and upto 20kg/cm² for Balanced

Temperature: -40°C to 200°C

Speed: Upto 3600 RPM





SINGLE COIL SPRING SEALS-ANS01 / ANS05

These are pusher type seals with heavy duty spring. The open design of springs avoid accumulation of Solids. These seals can be used for corrosive/viscous fluids for pumps mostly used in refinery , petrochemical and marine pump application. These seals can be provided as cartridge construction in Single arrangements both balanced and Unbalanced.

These seals are equivalent to Eagle Burgmann E01, E02, Johncrane 209 and Flowserve CRO seals.

Face Materials: CAR/TC, CAR/SIC, SIC/SIC, TC/TC

Metal components: SS 316

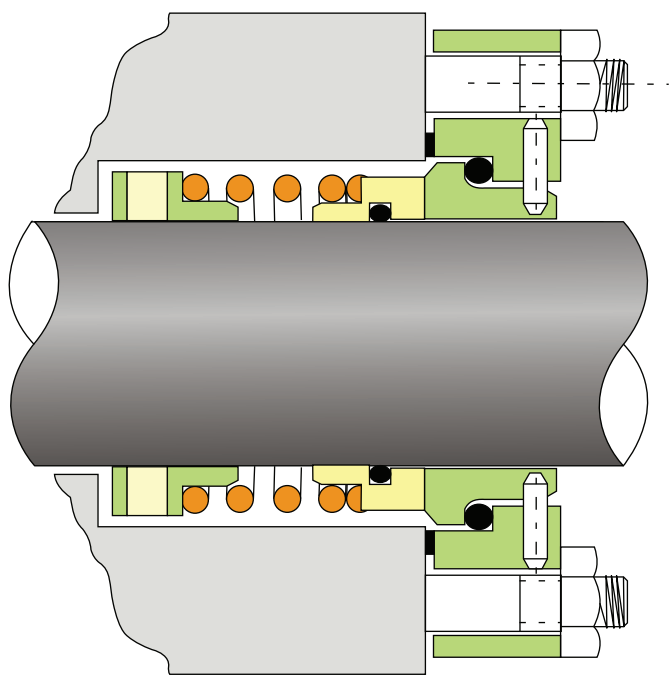
Secondary Sealing: FKM / Viton / PTFE

Operating Conditions:

Pressure: Vacuum upto 10kg/cm^2 for unbalanced and upto 20kg/cm^2 for Balanced

Temperature: -75°C to 220°C

Speed: Upto 3600 RPM





WAVE SPRING SEALS-NSW

Wave spring Mechanical seals are designed for universal applications. These seals go well for media containing solids with high viscosity e.g. sugar, paper, sewage and waste water industry. The super-sinus spring permits an almost uniform introduction of forces over the whole range of increased axial movement tolerances of Mechanical seals. Seal can be provided as balanced and unbalanced.

These seals are equivalent to Eagle Burgmann HJ92N and M7N

Face Materials: CAR/TC, CAR/SIC, SIC/SIC, TC/TC

Metal components: SS 316

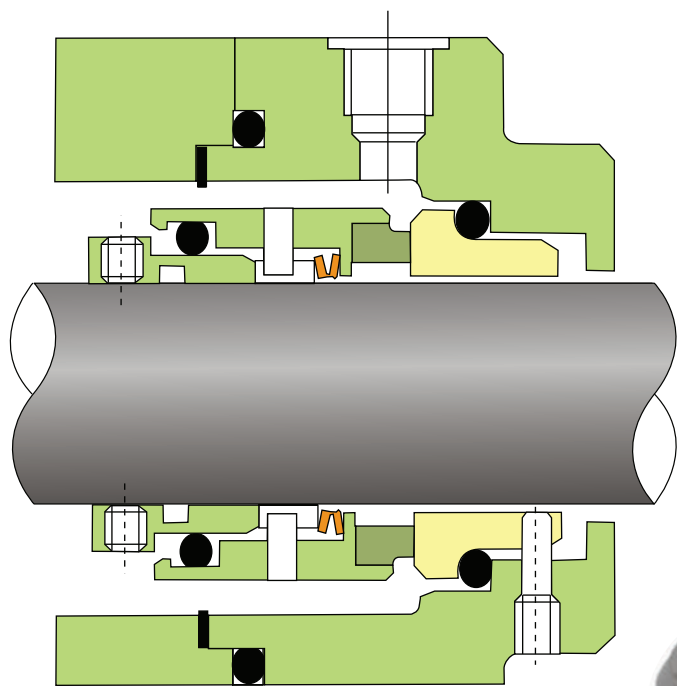
Secondary Sealing: Neoprene / Viton / Nitrile

Operating Conditions:

Pressure: 25kg/cm²

Temperature: -50 °C to 220 °C

Speed: Upto 3600 RPM





TEFLON BELLOW SEALS - TB/TBR

These seals are outside mounted seals used in corrosive application. This seal is designed in such a way that no metal parts are in contact with process liquid.

TB Seals:

The rotary unit of Bellow seal consists of SS 316 collar, Set screw in SS 304, Spring in Hastelloy C, Shroud in Teflon and GFT Seal Ring integral with Teflon Bellow.

TBR Seals :

It consists of removable face which can replace worn out seal faces without replacement of Rotary unit. The replaceable face can be given in Carbon, GFT and SIC. Both TB & TBR are in Cartridge design as springs are not in contact with atmosphere.

Ceramic Stationary is high purity Ceramic (99.5% Alumina Oxide) clamped "T" seal guards against corrosive fluids.

SIC stationary can be supplied in SIC solid clamped "T" seal guards against corrosive fluids.

These seals are equivalent to Eagle Burgmann Y29, Johncrane 10/10T and Flowserve TB/TBR

Face Materials: GFT / CERAMIC, SIC / CERAMIC, SIC / SIC

Metal components: SS 316

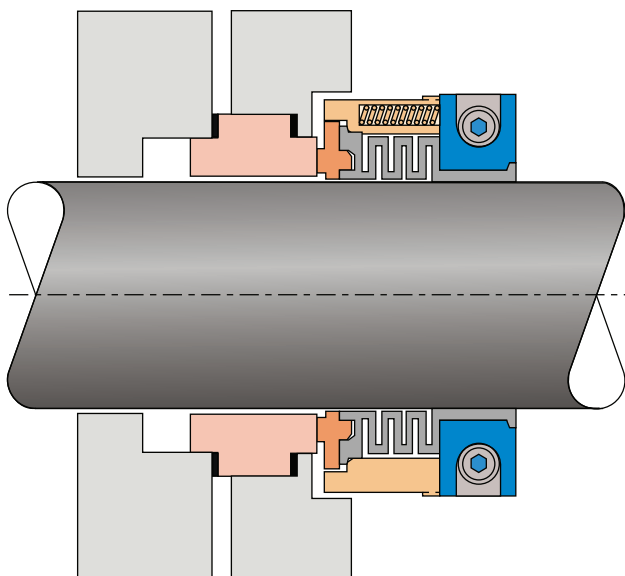
Secondary Sealing: PTFE

Operating Conditions:

Pressure: 5kg/cm²

Temperature: AMBIENT

Speed: Upto 3600 RPM





ELASTOMER BELLOW SEALS - RB

These seals have been designed for general sealing purpose having a Unique Rubber Bellow secondary seal. The seal assembly is done in such a way that the driving torque is not transmitted through coil spring. The unique rubber bellow seal provides high degree of axial flexibility to compensate for misalignment & lack of concentricity of the shaft and wear due to thrust movement of the shaft. As there is not relative movement between rubber bellow and shaft, there is no fretting & seal can react quickly to any movement. It is generally used in hot & cold water pumps, oil pumps, refrigeration, compressor.

Another type of rubber bellow seals are with outer spring, drives the seal and secures face contact in both directions. These seals are used for Slurries, sewage and waste water.

These seals are equivalent to Eagle Burgmann 560 / Mg1 / MG12, Johncrane Type 1 / 2 / 21 and Flowserve CHEMIEPAC 970

Face Materials: CAR / SIC, CAR / TC, CAR / CERAMIC, SIC / SIC

Metal components: SS304 / SS 316

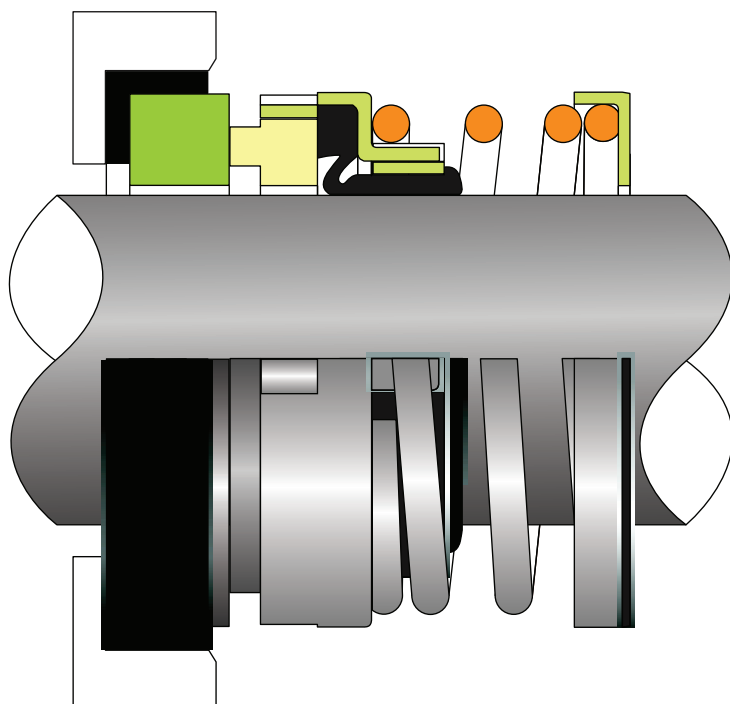
Secondary Sealing: NITRILE / NEOPRENE / VITON

Operating Conditions:

Pressure: Upto 10kg/cm²

Temperature: -20 °C to 120°C

Speed: Upto 2900 RPM





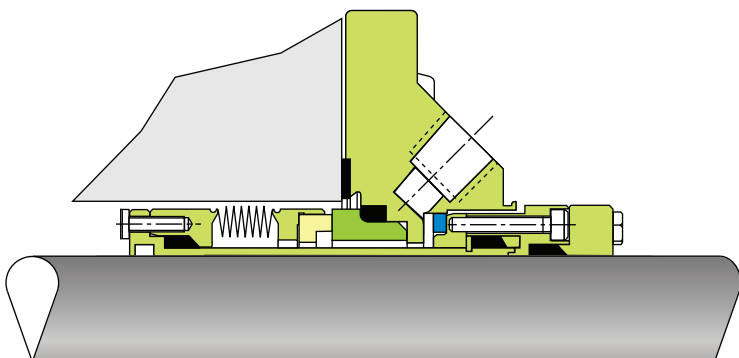
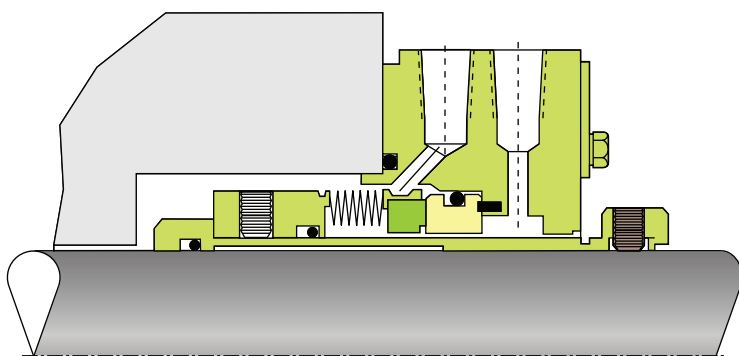
METAL BELLOW SEALS – MBR / MBS / MBH

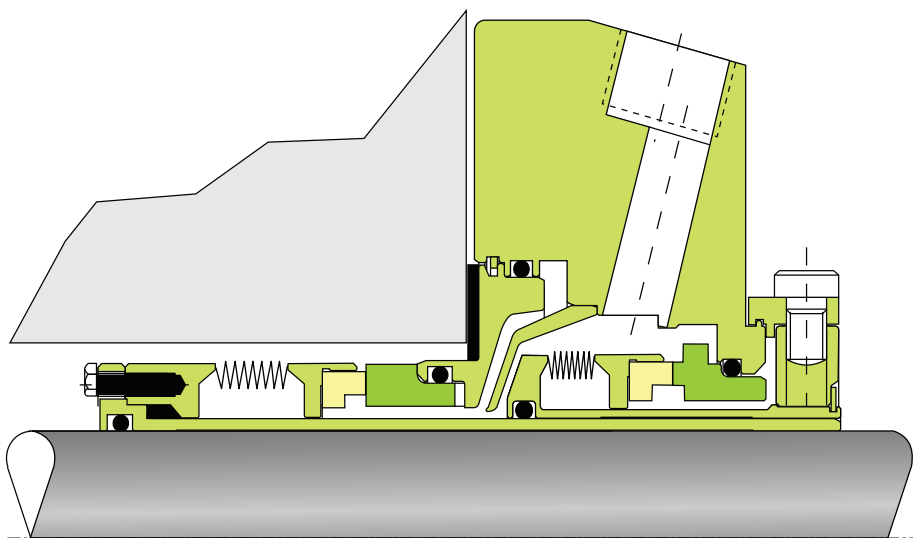
High temperature Metal Bellow is used for high temperature application such as refinery, Petrochemical & Chemical Industries. Due to its narrow seal cross section design, can replace most type of seal used in ANSI pumps. Secondary seals are made up of Grafoil which can withstand high temp upto 425 deg C. It is resistant to abrasive particles in pumpage and not Shaft / Sleeve fretting.

The edge welded bellows are produced by stamping out a male and a female diaphragm and welding them edge to edge. These diaphragms typically have several ripples running from ID to OD.

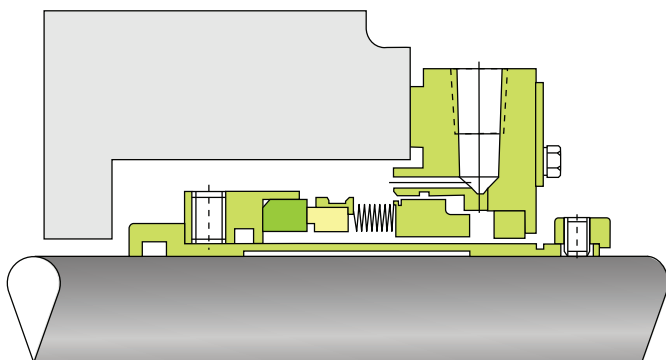
These seals can be provided as Cartridge seals in Single and Double design. Metal Bellow Cartridge seal is ready to install Mechanical Cartridge Seal. All parts of Mechanical seal form a compact unit together with the shaft sleeve, casing parts, connection flange & torque transmission element. Cartridge seals benefit is to reduce down-time periods and enables mechanical seals to be installed in hand-to-access place. We have different Models like MBRC , MBSC, MBRDC & MBS DC to suit the various applications

MBR Seal has a Rotating bellow assembly whereas MBRC is a Rotating Bellow Single Cartridge assembly . MBRDC is a Rotary Bellow Double Cartridge assembly.





MBS has a stationary bellow assembly where as MBSC is Stationary Bellow Single Cartridge assembly. MBSDC is a Stationary Bellow Double Cartridge assembly.



MBH Mechanical seal is hook sleeve design for handling heat transfer media & high temp hydrocarbons. The seal is self-cleaning without springs. Metal bellow seals are pressure balanced seals.

These seals are equivalent to Eagle Burgmann Y13 / Y14 / Y15 / MFL85N / Mtex , Johncrane 115WT and Flowserve BX / BXB / BXR seals.

Face Materials: CAR/SIC , CAR/TC, TC/TC, SIC/SIC

Metal components: SS 316

Bellow Components: AM 350 / INCOLNEL 718 / HAST C & B

Secondary Sealing: GRAFOIL

Operating Conditions:

Pressure : Vacuum upto 20 kg/cm²

Temperature: 75°C to 425°C

Speed: Upto 3600 RPM



STANDARD CARTRIDGE SEALS - NSC

Cartridge seals are self-contained units consisting of a shaft sleeve, seal and Gland Plate. The unit is fitted onto the Pump Shaft as a built assembly and no further fitting is required. Cartridge seals are an attempt to overcome the fitting problems of conventional seals. They are supplied in single and double form and the Gland plate is often fitted with various tappings to provide flushing, cooling water injection & disaster control. Specially used in paper industries, Petrochemicals & Petroleum refinery.

Face Materials: CAR / TC, CAR / SIC, SIC / SIC, TC / TC

Metal components: SS 316

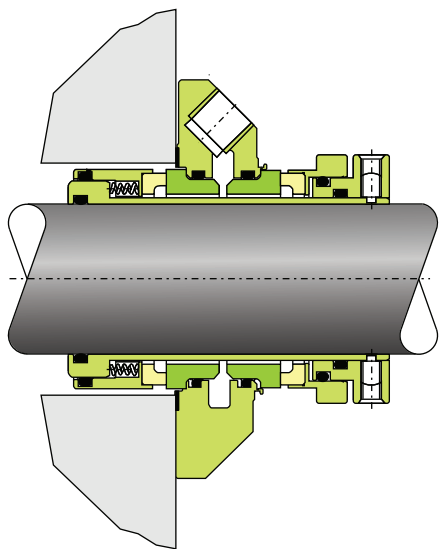
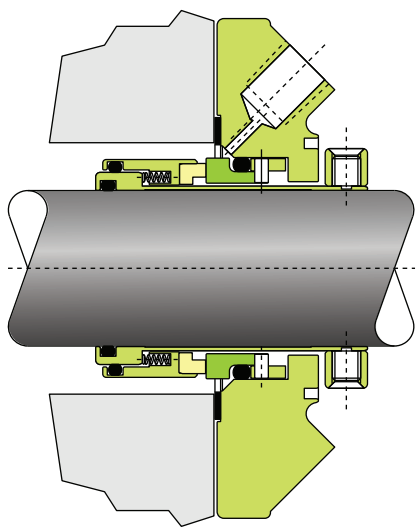
Secondary Sealing: Neoprene / Viton / Nitrile

Operating Conditions:

Pressure: Vacuum upto 10 kg/cm^2 for unbalanced and upto 20 kg/cm^2 for Balanced

Temperature: -20°C to 160°C

Speed: 3600RPM





DRY RUNNING SEALS - NRA

Agitator seals of series NRA are factory assembled & dynamically tested units on steel, glass lined and SS mixers, agitator & vessels.

This is a multispring externally mounted, balanced seal with "O" ring as secondary sealing member. This seal can be used for corrosive services as the metallic components i.e retainer, spring, thrust ring do not come in contact with liquid to be sealed.

Dry running seals do not require any external media for lubricating the faces. Thus these seals are used in food products and pharmaceutical industries where external liquids can contaminate the product & affect its quality.

Also the seal accommodates the shaft movement, vibrations and deflection.

These seals are equivalent to Eagle Burgmann Dr1 and Flowserve MD 200 / VRA.

Face Materials: CAR / SIC , CAR / TC, TC / TC, SIC / SIC

Metal components: SS 316 , Nickel Alloys

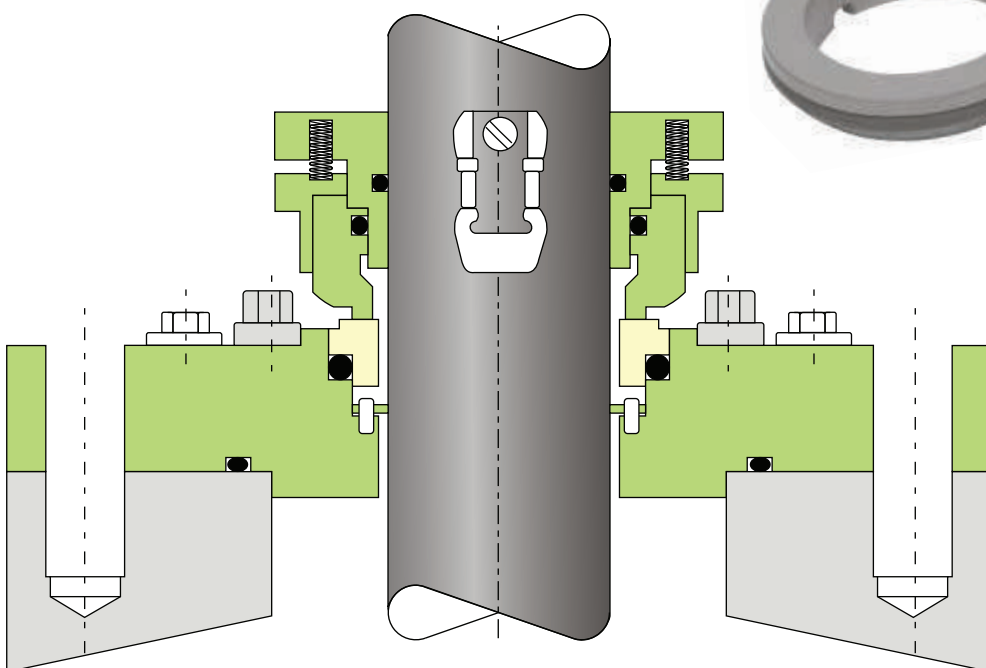
Secondary Sealing: EPR, VITON & EPDM GRAFOIL

Operating Conditions :

Pressure: Vacuum upto 6 kg/cm²

Temperature: 150°C

Speed: 1 m/s





SLURRY SEALS - NS - SL

Slurry seals are developed mainly for Pumps handling abrasive products in mineral ore plants. Specially used in Chemical, Fertilizer industries, Paper & Pulp industries with Slurry applications. These are single, balanced, rotating spring, Cartridge seal specially designed to operate without a flush. No flush reduces operating costs, eliminates Product dilution, increases plant throughput and maintains process efficiency. These seals can be given in double back to back arrangements.

These seals are equivalent to Eagle Burgmann SL1 and Flowserve SLM6000

Face Materials: CAR / TC, CAR / SIC, SIC / SIC, TC / TC

Metal components: SS 316

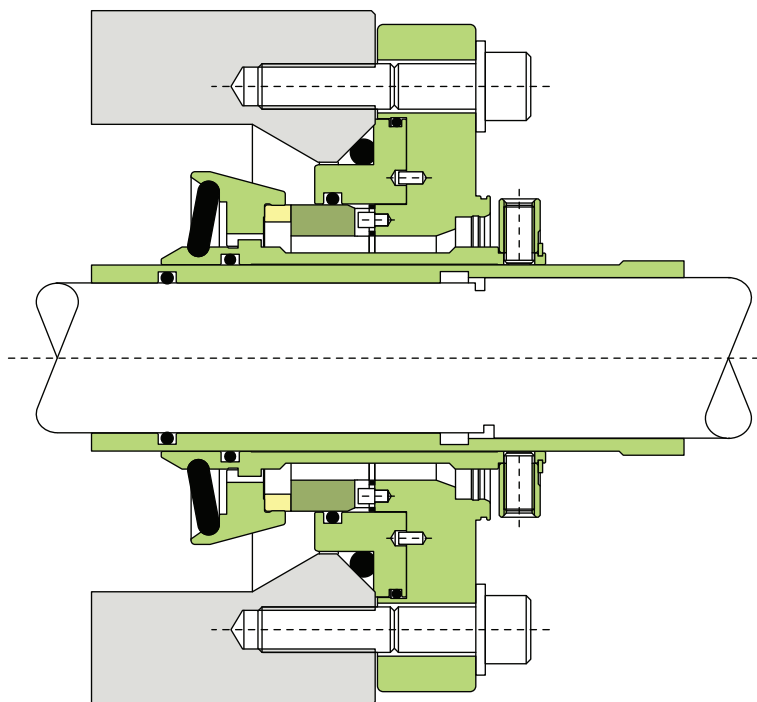
Secondary Sealing: Neoprene / Viton / Nitrile

Operating Conditions:

Pressure: Vacuum up to 20kg/cm²

Temperature: -40°C to 149°C

Speed: Upto 3600RPM





AGITATOR SEALS - NRT / NPT

Agitator Seals can be manufactured in top entry & bottom entry designs. The Seals can be made balanced or unbalanced depending on the pressure.

Agitator seal are widely used in chemical industries. These seals are prefactory assembled and dynamically tested cartridge units.

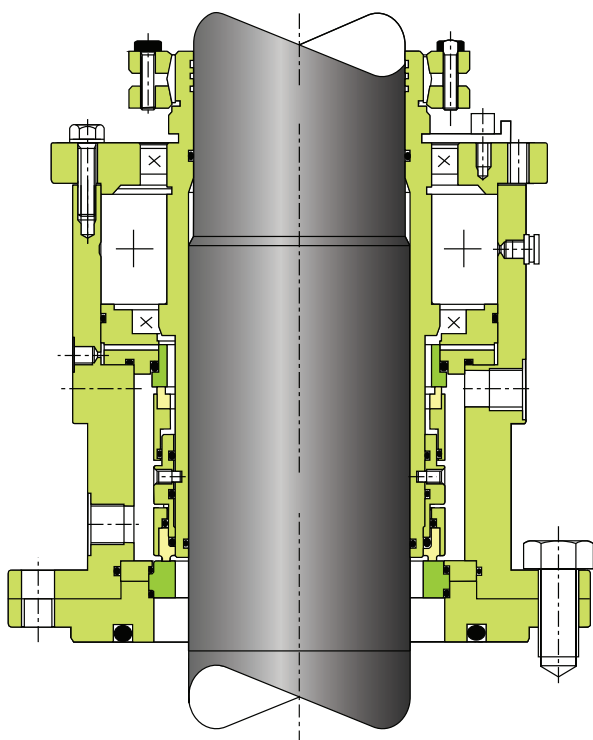
Agitator seals also can be manufactured in Double back to back or Tandem Design. Back to back double seals are used with pressurized buffer fluid preferably clean soft water because of its good transfer quantities. Fluids like oil, hydrocarbons solvents etc can also be used as buffer fluid by considering the corrosion resistance of the wetted parts and compatibility with main media being sealed. The cartridge assembly has integral bearings which are close to the seals ensuring optimum running and sealing conditions. These seals are supplied with cooling water Jacket which ensure good running of the seal. Agitator seals can be used in Petrochemical Plants, Chemical Plants and Hydrocarbons.

These seals are equivalent to Eagle Burgmann AG1 and Flowserve – 2561-2564 seals

Face Materials: CAR / TC, CAR / SIC, SIC / SIC, TC / TC
Metal components: SS 316 / NICKEL / ALLOY 20 / Hast B / Hast C
Secondary Sealing: EPDM / Viton / PTFE / KALREZ / CHEMRAZ

Operating Conditions:

Pressure: Upto 10kg/cm² for unbalanced above 10 kg/cm² for Balanced Seals
Temperature: 121°C
Speed: Upto 2m/sec





SEAL EQUIVALENT CHART

NISHANT	EAGLE BURGMANN	JOHNCRANE	FLowsERVE	DESCRIPTION
NS O1	P01	9/9T/8/109	RO/QB	MULTISPRING SEAL WITH "O" RING
NS 05	P02	9	ROTT	MULTISORING SEAL WITH TEFLON PKG
ANS 01	E01	209	CRO	SINGLE COIL SPRING SEAL WITH "O" RING
ANS05	EO2	209	CRO	SINGLE COIL SPRING SEAL WITH TEFLON PKG
NSW	HJ92N	-	-	WAVE SPRING SEAL
TB / TBR	TB	10 /10T	TB/TBR	TEFLON BELLOW SEAL
RB	560/MG1/MG12	1/2//21	CHEMIEPAC 970	RUBBER BELLOW SEAL
MBR	Y 13/MFL85N	115 WT	BX/BXB	METAL BELLOW ROTARY ASSEMBLY
MBS	Y 14	-	-	METAL BELLOW STATIONARY ASSEMBLY
MBH	Y 15	-	-	METAL BELLOW HOOK SLEEVE DESIGN
MBRC / MBSC	Mtex	-	BXR	CARTRIDGE METAL BELLOW SEALS
NSC	MD 250	-	SCM6000	CARTRIDGE PUSHER TYPE SEAL
NS-SL	SLI	-	SLM6000	SLURRY SEALS
NRA	DR1	-	MD200/VRA	DRY RUNNING SEALS
NRT/NPT	AG1	-	2561-2564	AGITATOR SEALS





TEMPERATURE LIMITATIONS OF FACE MATERIALS

MATERIAL	MAXIMUM	TEMPERATURE
	F°	C°
STELLITE FACE	350	177
TUNGSTON CARBIDE SOLID	750	400
TUNGSTON CARBIDE SHRUNK FIT	350	177
BRONZE	350	177
CERAMIC	350	177
CARBON	525	275
SILICON CARBIDE	3000	1650
GLASS FILLED TEFLON	350	177
SILICON CARBIDE	3000	1650
GLASS FILLED TEFLON	350	177

COMPOSITION OF COMMON ROTARY UNIT & GLAND RING MATERIALS

MATERIAL	COMPOSITION (% OF EACH ELEMENT)
304 S. S	18-20 Chrome, 8-12 Nickel, .08 Carbon, 64-70 Iron, 1 Silicon, 2 Manganese, .030 Sulphur, .045 Phosphorus.
316 S. S	'16-18 Chrome, 10-14 Nickel, .08 Carbon, 62-71 Iron, 1 Silicon, 2 Manganese, 2-3 Molybdenum, .030 Sulphur, .045 Phosphorus.
20 S. S	20 Chrome, 29 Nickel, ".07 Carbon, 44.18 Iron, 1 Silicon,.75 Manganese,2 Molybdenum, 3 Copper.
MONEL	63-70 Nickel, 24-31 Copper, .30 Carbon, 2.50 Iron, .50 Silicon,2 Manganese, .024 Sulphur, Trace of Cobalt.
HASTELLOY B	64 Nickel, 1 Chrome, .12 Carbon, 5 Iron, .70 Silicon, .80 Manganese,28 Molybdenum, 2.50 Columbium.
HASTELLOY C	53 Nickel, 16-50 Chrome, .15 Carbon, 5 Iron, .70 Silicon, .80 Manganese,17 Molybdenum, 4 Tungsten, 2.50 Cobalt.
TITANIUM	99.03 Titanium, .10 Carbon, .40 Iron, .50 Nitrogen, .40 Oxygen, .015 Hydrogen.
NICKEL	99 Nickel, . 15 Iron, .05 Silicon, .10 Copper, .05 Cobalt.
TANTALUM	99.81 Tantalum, .013 Nickel, .027 Carbon, .015 Iron, .20 Silicon, .01 Tungsten, 012 Titanium, .044 Columbium, .014 Nitrogen, .007 Hydrogen, .027 Oxygen.

TEMPERATURE LIMITATIONS OF SECONDARY SEAL MATERIALS

MATERIAL MAX. TEMP.LIMIT*		FORM		MIN. TEMP. LIMIT*	
		F	C	F	C
Buna N (Nitrile)	"O" Ring	-40	-40	+225	+107
Neoprene	"	-40	-40	+225	+107
Butyl	"	-40	-40	+225	+107
Silicone	"	-80	-62	+400	+204
Fluorosilicone	"	-80	-62	+400	+204
Hypalon	"	-40	-40	+225	+107
Kel-F	"	0	-18	+350	+177
Viton	"	0	-18	+400	+204
EPR/EPT(Ethylene Propylene)	"	-40	-40	+300	+150
Kalrez	"	0	-18	+500	+260
Teflon (TFE Resin)	"V" Ring	-100	-73	+350	+177
Glass-filled Teflon	"V" Ring	-175	-115	+450	+232
Graphite (Pure Graphite)	Square Ring	-450	268	+750	+400

* The minimum and maximum temperature limits listed are general limits and will vary with the liquid in contact with the Elastomer.



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