

Grease seals MSM

DESCRIPTION

The MSM series grease seals are rotary shaft seals designed for the retention of high-viscosity lubricating greases in applications with limited axial space. The profile features an exposed "L"-shaped outer metal casing, precision-ground, and a flexible springless elastomer dynamic lip. This configuration provides a rigid fit within the housing and high mechanical stability.

PROFILES

MSM Standard

Springless profile with an exposed ground metal outer diameter and a single flexible dynamic sealing lip facing inward.

MSM Mirrored

Variant suitable for installation in pairs, back-to-back, to provide physical separation between two areas lubricated with different greases.

MATERIALS

Materials and operating conditions

MATERIAL / COMPOUND	PERIPHERAL SPEED	TEMPERATURE	MAX PRESSURE
NBR Nitrile rubber 70 / 80 ShA	Up to 6.0 m/s	−30 / +100 °C	Atmospheric No pressure
FKM Fluoroelastomer / Viton	Up to 15.0 m/s	−20 / +200 °C	Atmospheric No pressure

STRUCTURAL COMPONENT

Outer casing

Metal casing	Stamped and ground carbon steel
Surface	Exposed metal
Option	AISI 304/316 stainless steel

COMPATIBLE FLUIDS

Mineral and synthetic lubricating greases, NLGI classes from 00 to 3, high-viscosity lubricating oils, environmental dust and trace moisture.

FEATURES

Main features

Ground metal outer surface

The exposed steel outer surface is mechanically press-fitted into the housing with precise diametrical interference. The metal-to-metal fit ensures high rigidity and stability within the housing.

Low-friction springless lip

The lip relies exclusively on the radial elastic interference of the vulcanized rubber against the shaft diameter. The absence of a spring reduces radial load and frictional heat generation.

Ultra-thin axial profile

Eliminating the space required for a garter spring reduces the axial dimensions of the seal, making it suitable for particularly compact housings.

ADVANTAGES

Advantages of the MSM profile

Torsional stability

The metal casing press-fitted into the housing counteracts axial movements, elastic rebound during installation and possible displacement caused by vibrations or mechanical stresses.

Reduced breakaway torque

The absence of a spring reduces the power absorbed by friction during shaft start-up compared with a conventional spring-loaded oil seal.

Alignment precision

The rigid steel-to-steel press fit promotes correct alignment of the dynamic lip with the shaft's axis of rotation and uniform contact during operation.

COMPLIANCE AND STANDARDS

International standards

Construction dimensions, geometric tolerances and installation dimensions in compliance with international standards for springless metal radial shaft seals: ISO 6194-1 Type 4C or DIN 3760 Form H.

VARIANTS

Available configurations

STEEL + NBR

MSM Standard

Traditional configuration for general mechanical applications, suitable for stable housings machined from cast iron or steel and for grease retention at moderate temperatures.

ADVANTAGES

High mechanical stability within the housing, good long-term geometric stability and competitive cost.

STAINLESS STEEL + FKM / VITON

MSM Premium

Configuration for applications with high peripheral speeds, up to 15 m/s, or subject to high temperatures. The stainless steel casing improves resistance to oxidation in humid environments, while the fluoroelastomer is suitable for more aggressive synthetic lubricants.

ADVANTAGES

Continuous thermal resistance up to +200 °C, increased protection against environmental corrosion and chemical resistance.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	MSM STANDARD - NBR	MSM PREMIUM - FKM / VITON
Net Seals	Springless Metal Oil Seal Series MSM / B-G	Viton Metal Oil Seal Series MSM FKM
Freudenberg (Simrit)	Simmerring® B Profile / Springless Metal	B FKM Springless Profile
Trelleborg Sealing Solutions	Type B Metal Cased Radial Profile	Type B Metal Cased Viton Profile
Dichtomatik	WB-G Profile	WB-G FKM Profile
Corteco	External Metal Grease Seal Series (NBR)	Metal Grease Seal Series FKM
SKF	Springless Metal Radial Shaft Seals	—