

Grease seals GSM

DESCRIPTION

The GSM series grease seals are rotary seals designed for the retention of high-density and high-viscosity lubricating greases within moving mechanical components. The profile features an internal "L"-shaped reinforcing metal insert, completely vulcanized into the elastomer, and a reinforced springless dynamic lip. This configuration provides reduced axial dimensions and controlled friction.

PROFILES

GSM Standard

Profile with an angular metal insert completely covered in rubber, a smooth or ribbed outer diameter and a short, flexible radial sealing lip.

GSM Mirrored / Dual Function

Geometric variant suitable for use as a bidirectional barrier when installed in back-to-back pairs, allowing the separation of two different fluids or 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

COMPATIBLE FLUIDS

Mineral and synthetic lubricating greases, NLGI classes from 00 to 3, high-viscosity mineral oils, atmospheric agents and environmental moisture.

FEATURES

Main features

No garter spring

The lip uses the elastic memory of the elastomer and calibrated radial interference against the shaft. The absence of a spring reduces overall friction and localized heat generation.

Internal "L"-shaped metal casing

The stamped steel structural insert is completely embedded and vulcanized into the elastomer, providing the geometric rigidity required for stable press-fitting and protecting the reinforcement against corrosion.

Ultra-thin axial section

The compact design, without the space required for a garter spring, reduces the width of the seal and allows installation in particularly limited axial spaces.

ADVANTAGES

Advantages of the GSM profile

Reduced breakaway torque

The absence of radial spring preload reduces the power absorbed by friction during start-up, limiting localized wear even on non-case-hardened or relatively soft metal shafts.

Rubber-covered static fit

The rubber-covered outer diameter adapts to the housing, compensating for structural thermal expansion and micro-roughness of the housing surface.

Protection against light contamination

In addition to retaining the internal grease, the geometry and orientation of the dynamic lip contribute to protection against light water splashes, environmental dust and contaminants.

COMPLIANCE AND STANDARDS

International standards

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

VARIANTS

Available configurations

NBR 70

GSM Standard

Universal and cost-effective configuration for grease protection and retention in industrial and agricultural mechanical components operating at medium-low rotational speeds.

ADVANTAGES

Good value for money, resistance to grease-induced ageing and wide dimensional availability.

FKM / VITON

GSM Premium

Specific configuration for applications exposed to high peripheral speeds, up to 15 m/s, or significant temperature fluctuations generated by friction or proximity to motors.

APPLICATION

High-speed industrial gearboxes for continuous operation, heavy-duty wheel hubs and systems exposed to high-temperature synthetic lubricants.

ADVANTAGES

Continuous thermal resistance up to +200 °C and increased resistance to chemical degradation.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	GSM STANDARD - NBR	GSM PREMIUM - FKM / VITON
Net Seals	Springless Oil Seal Series GSM / G	Viton Springless Oil Seal Series GSM FKM
Freudenberg (Simrit)	Simmerring® G Profile / Static	G FKM Profile
Trelleborg Sealing Solutions	Type G Radial Profile	Type G Viton Profile
Dichtomatik	WAG Profile	WAG FKM Profile

MANUFACTURER	GSM STANDARD - NBR	GSM PREMIUM - FKM / VITON
Corteco	Standard Grease Seal Series (NBR)	FKM High-Temp Grease Seal Series
SKF	HMS4 Radial Shaft Seals (springless)	—