

Grease seals GSM/W

DESCRIPTION

The GSM_w series grease seals are rotary shaft seals designed for the retention of lubricating greases in applications with limited axial space. The profile features an internal "L"-shaped metal reinforcement completely embedded in the elastomer, a flexible springless dynamic lip and a rubber-covered outer diameter with a wave/ribbed profile. This configuration reduces press-fitting force and improves static sealing even in the presence of significant thermal expansion of the housing.

PROFILES

GSM_w Standard

Springless single-lip profile with an outer diameter featuring parallel wave-shaped rubber ribs.

GSM_w Special

Variant with an additional front dust lip on the air side, where available for specific dimensions, to increase protection against external contaminants.

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 greases, NLGI classes from 00 to 3, high-viscosity lubricating oils, water splashes and environmental dust.

FEATURES

Main features

Ribbed outer diameter

The wave-shaped rubber ribs deform in a controlled manner during insertion into the housing. The profile reduces the mechanical press-fitting force and limits the risk of scoring or damage to the housing.

Compensation for aluminium housings

The flexibility of the multi-wave outer profile compensates for thermal expansion of light-alloy housings, such as aluminium and magnesium, contributing to seal stability at high temperatures.

Low-friction springless lip

The lip uses the elastic interference of the vulcanized rubber against the shaft without the use of a garter spring. This configuration reduces frictional heat generation and is also suitable for non-case-hardened or non-hardened shafts.

ADVANTAGES

Advantages of the GSM_w profile

Static sealing

The wave-shaped profile creates a series of barriers within the housing, improving static sealing even on surfaces with non-optimal roughness.

Easier installation

The ribbed profile facilitates insertion into the housing and counteracts the elastic rebound of the seal towards the outside immediately after mechanical press-fitting.

Optimized axial dimensions

The compact design, without the space required for a spring, allows the seal to be used in applications characterized by particularly limited axial space.

COMPLIANCE AND STANDARDS

International standards

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

VARIANTS

Available configurations

NBR 70

GSM_w Standard

Standard configuration for grease retention in aluminium housings operating at medium temperatures. It combines installation flexibility with competitive cost.

ADVANTAGES

Easy manual or servo-assisted installation, excellent static sealing and torsional stability within the housing.

FKM / VITON

GSM_w Premium

Specific configuration for applications exposed to high peripheral speeds, up to 15 m/s, or significant temperature fluctuations, particularly when the aluminium housing is subject to substantial thermal expansion.

ADVANTAGES

Continuous thermal resistance up to +200 °C, retention of the elastic memory of the wave-shaped outer profile and compatibility with special synthetic lubricants.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	GSM_W STANDARD - NBR	GSM_W PREMIUM - FKM / VITON
Net Seals	Springless Oil Seal Series GSM_w / G-w	Viton Springless Oil Seal Series GSM_w FKM
Freudenberg (Simrit)	Simmerring® G Wave Profile	G FKM Wave Profile
Trelleborg Sealing Solutions	Type G Ribbed Radial Profile	Type G Ribbed Viton Profile
Dichtomatik	WAG Wave Profile	WAG FKM Wave Profile
Corteco	Ribbed Grease Seal Series (NBR)	Ribbed Grease Seal Series FKM