

Rotating shaft oil seals G/W

DESCRIPTION

The G_W series seals are dynamic rotary shaft seals designed for optimal retention of fluid lubricating oils and greases. The profile features an internal "L"-shaped metal reinforcement completely embedded in the elastomer, a primary dynamic lip preloaded by a garter spring and a rubber-covered outer diameter with a ribbed/wave profile. This configuration combines effective hydrodynamic fluid sealing with superior static stability within the housing.

PROFILES

G_W Standard

Single dynamic sealing lip profile equipped with an internal garter spring and an outer diameter with parallel rubber waves.

G_W Dust Lip

Geometric variant equipped with a second auxiliary front lip, on the air side, without a spring, for additional protection against external dust.

MATERIALS

Materials and operating conditions

MATERIAL / COMPOUND	PERIPHERAL SPEED	TEMPERATURE	MAX PRESSURE
NBR Nitrile rubber 70 / 80 ShA	Up to 12.0 m/s Up to 0.5 m/s in low-speed applications	−30 / +100 °C	0.05 MPa Standard atmospheric pressure
FKM Fluoroelastomer / Viton	Up to 35.0 m/s	−20 / +200 °C	—

REINFORCEMENT COMPONENTS

Internal structure

Internal reinforcement	Stamped carbon steel integrated into the compound
Garter spring	Spring steel
Option	AISI 302/316 stainless steel for corrosive environments

COMPATIBLE FLUIDS

Mineral hydraulic oils, fluid gear lubricating oils, mineral and synthetic greases, water and lubricating emulsions.

FEATURES

Main features

Multi-wave rubber-covered outer surface

The wave-shaped ribs deform elastically during mechanical press-fitting into the housing. This design reduces insertion force compared with a smooth outer surface and limits the risk of elastic rebound or scoring of the housing.

Compensation for aluminium housings

The wave-shaped outer finish ensures constant static sealing by compensating for the high thermal expansion coefficient of housings made from light alloys such as aluminium and magnesium.

Self-lubricating radial load

The garter spring maintains calibrated and constant radial pressure on the rotating shaft diameter. The dynamic lip creates a hydrodynamic wedge that uses the oil film to seal and lubricate the running surface.

ADVANTAGES

Advantages of the G_W profile

Hydrodynamic barrier

The combination of the spring and the machined sealing edge ensures high efficiency even with very fluid, low-viscosity lubricating oils.

Labyrinth effect in the housing

The external ribs create a series of micro-barriers in the housing groove, counteracting secondary static leakage even with surfaces that are not perfectly finished.

Easier installation

The wave profile reduces mechanical stress on the soft metals of the housing during press-fitting and helps prevent geometric deformation of the seal.

COMPLIANCE AND STANDARDS

International standards

Construction dimensions, geometric tolerances and installation dimensions in compliance with DIN 3760 Form A (Wave) and ISO 6194-1 Type 1 standards, for profiles with ribbed outer surfaces.

VARIANTS

Available configurations

NBR 70**G_W Standard**

Widely used configuration for industrial replacement parts and general automotive applications, particularly suitable for aluminium housings operating with conventional mineral oils at standard temperatures.

ADVANTAGES

Excellent value for money, easy manual or power-assisted installation and wide availability in the product range.

FKM / VITON**G_W Premium**

Specific configuration for high-speed shafts up to 35 m/s or for high-temperature environments in contact with aggressive synthetic oils, where thermal expansion of the aluminium housing is more significant.

ADVANTAGES

Continuous thermal resistance up to +200 °C, outer waves resistant to loss of elastic memory and a dynamic lip resistant to premature hardening.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	G_W STANDARD - NBR	G_W PREMIUM - FKM / VITON
Net Seals	Oil Seal Series G_W / WA-w / SC-w	Viton Oil Seal Series G_W / WA-w FKM
Freudenberg (Simrit)	Simmerring® BA Wave Profile	Simmerring® BA FKM Wave Profile
Parker Prädifa	OSHA Ribbed Profile	OSHA FKM Ribbed Profile
Dichtomatik	WA Wave Profile	WA FKM Wave Profile
Corteco	Type G Ribbed Oil Seal Series with Spring	—
SKF	—	Viton wave-profile radial shaft seals