

Rotating shaft oil seals GP

DESCRIPTION

The GP series rotary shaft seals, universally known on the market as rubber-covered oil seals with dust lip or Type GP, are double-lip dynamic seals designed for the retention of fluid oils and greases. The profile combines a main lip preloaded by a garter spring, for internal fluid sealing, with an additional front lip without a spring. This configuration is specifically designed for mechanical components exposed to contaminated environments, as it prevents dust, dirt and moisture from entering from the outside.

PROFILES

Type GP / WAS Standard

Double-lip profile, with a spring-loaded main sealing lip and an auxiliary dust lip without a spring, with a completely smooth elastomer outer diameter.

Type GP Special

Variant with modified or reinforced dust-lip geometries for specific highly contaminated applications, for example in the agricultural sector.

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	—

STRUCTURAL COMPONENTS

Internal structure

Internal reinforcement	Stamped carbon steel, fully embedded
Garter spring	Spring steel
Option	AISI 302/316 stainless steel for corrosive environments

COMPATIBLE FLUIDS

Mineral hydraulic oils, fluid gear lubricants, mineral and synthetic greases, water, mud and environmental dust.

FEATURES

Main features

Double-lip protective action

The main lip, supported by the spring, ensures lubricant retention inside the housing, while the second auxiliary lip intercepts and repels environmental contaminants such as dust, water splashes and pollen before they reach the primary dynamic sealing area.

Grease cavity

The space between the main lip and the dust lip can be filled with lubricating grease during installation, reducing friction on the auxiliary lip and trapping the finest abrasive particles.

Smooth rubber-covered outer casing

The full elastomer coating ensures uniform static sealing inside the housing and compensates for thermal expansion and minor surface roughness of the seat.

ADVANTAGES

Advantages of the GP profile

Extended service life

The dust lip prevents external abrasive particles from penetrating beneath the main lip, reducing the risk of premature scoring on the rotating shaft diameter.

Self-compensating radial load

The garter spring maintains calibrated and continuous radial pressure on the shaft, compensating for vibrations, rotational eccentricity and the natural thermal hardening of the rubber.

Housing-friendly installation

The rubber-covered outer casing reduces the mechanical force required for press-fitting into the housing and limits the risk of damage or scoring in seats made from soft metals.

COMPLIANCE AND STANDARDS

International standards

Construction dimensions, geometric tolerances and installation dimensions manufactured in compliance with DIN 3760 Form AS and ISO 6194-1 Type 2 standards, corresponding to the universal WAS / TC profile.

VARIANTS

Available configurations

NBR 70**Type GP Standard**

Common configuration in the replacement-parts market, suitable for protection against dust and retention of conventional mineral oils at medium temperatures.

ADVANTAGES

Excellent value for money, quick installation and wide availability of dimensional ranges in stock.

FKM / VITON**Type GP Premium**

Specific configuration for applications exposed to high peripheral speeds, up to 35 m/s, or to significant temperature fluctuations generated by friction, with the use of synthetic lubricants.

ADVANTAGES

Continuous thermal resistance up to +200 °C, dust lip resistant to hardening and high chemical stability.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	TYPE GP STANDARD - NBR	TYPE GP PREMIUM - FKM / VITON
Net Seals	Oil Seal Series WAS / TC / GP	Viton Oil Seal Series WAS / TC / GP FKM
Freudenberg (Simrit)	Simmerring® BASL / 829N Profile	Simmerring® BASL FKM Profile
Parker Prädifa	OSHAL / TC Profile	OSHAL (FKM) Profile
Dichtomatik	WAS Profile	WAS FKM Profile
Kastas Sealing Technologies	K28 / K30 Profile	—
Corteco	Type GP Oil Seal Series with Dust Lip	—
SKF	—	Viton rubber-covered seals with auxiliary lip (HMSA10)