

Rotating shaft oil seals KAS-4

DESCRIPTION

The KAS-4 series rotary shaft seals are high-performance double-lip dynamic seals designed for the retention of fluid lubricating oils and the simultaneous exclusion of severe external contaminants. The profile features a main lip preloaded by a garter spring and a geometrically optimized auxiliary outer dust lip. The rubber-covered outer casing ensures static sealing within the mechanical housing.

PROFILES

KAS-4 Standard

Double-lip profile, with a spring-loaded main sealing lip and an asymmetric dust lip without a spring, a completely smooth elastomer outer diameter and an internal "L"-shaped metal reinforcement.

KAS-4 Special

Variant with modified compounds or spring preload for applications operating under conditions of high eccentricity (run-out) of the rotating shaft.

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 fully embedded in the rubber casing
Garter spring	Spring steel
Option	AISI 302/316 stainless steel for marine/chemical environments

FLUIDS AND CONTAMINANTS

Mineral hydraulic oils, fluid gear lubricants, mineral and synthetic greases, water, mud and abrasive or silica-based dust.

FEATURES

Main features

Optimized dust lip

The outer auxiliary lip features a more pronounced axial relief angle and high flexibility. Its special geometry shields and centrifugally expels mud, sand and fine dust, preventing them from reaching the internal spring.

Grease cavity

The geometric space between the main sealing lip and the protective lip acts as a pre-lubrication chamber. Filled with grease during installation, it lubricates the outer lip and traps abrasive micro-contaminants.

Smooth rubber-covered outer casing

The full elastomer coating ensures static sealing against the housing, compensating for structural thermal expansion and tolerating minor surface roughness or light machining marks in the groove.

ADVANTAGES

Advantages of the KAS-4 profile

Superior mechanical protection

The system isolates the internal transmission components from external contaminants, protecting the primary sealing lip and reducing the risk of premature scoring on the metal shaft.

Hydrodynamic radial load

The internal garter spring maintains calibrated and constant radial pressure on the shaft, compensating for rotational vibrations and thermal stiffening of the rubber over time.

Housing-friendly installation

The rubber-covered outer casing reduces the force required for press-fitting into the housing and limits the risk of scratches or deformation in seats made from soft metals such as aluminium.

COMPLIANCE AND STANDARDS

International standards

Construction dimensions, geometric tolerances and installation dimensions in compliance with DIN 3760 Form AS and ISO 6194-1 Type 2 standards, corresponding to the standardized high-performance WAS / TC / AS / GP series.

VARIANTS

Available configurations

NBR 70**KAS-4 Standard**

Configuration used in general mechanical engineering and standard agricultural replacement parts. Suitable for protection against dust and moisture when used with conventional mineral oils at medium temperatures.

ADVANTAGES

Excellent value for money, manual or power-assisted installation and wide availability of dimensional ranges.

FKM / VITON**KAS-4 Premium**

Specific configuration for shafts operating at high rotational speeds, up to 35 m/s, or subject to significant cyclic temperature fluctuations. The fluoroelastomer provides greater resistance to synthetic lubricants and frictional heat.

ADVANTAGES

Continuous thermal resistance up to +200 °C, high stability of the dynamic lips and long operating life under demanding conditions.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	KAS-4 STANDARD - NBR	KAS-4 PREMIUM - FKM / VITON
Net Seals	Oil Seal Series with Dust Lip GP / WAS / TC	Viton Oil Seal Series WAS / TC / GP FKM
Freudenberg (Simrit)	Simmerring® BASL / 829N Profile	Simmerring® BASL FKM Profile
Kastas Sealing Technologies	K28 / K30 Profile	—
Parker Prädifa	OSHAL / TC Profile	OSHAL (FKM) Profile
Dichtomatik	WAS Profile	WAS FKM Profile
Corteco	KAS-4 Oil Seal Series with Dust Lip	—
SKF	—	Viton rubber-covered seals with auxiliary lip (HMSA10)