

MP rotating shaft oil seals

DESCRIPTION

The MP series rotary shaft seals, known on the market as metal-cased oil seals with dust lip or Type MP, are double-lip dynamic seals designed for the retention of fluid oils and greases. The profile combines an exposed "L"-shaped outer metal reinforcement, precision-ground, with a double-lip system: a main lip preloaded by a garter spring for internal fluid sealing and a second auxiliary front lip without a spring. This configuration ensures high mechanical locking within the housing and protects the system against abrasive external contaminants.

PROFILES

Type MP / WC Standard

Double-lip profile, with a spring-loaded main sealing lip and an auxiliary dust lip without a spring, with an exposed ground metal outer diameter.

Type MP Special

Variant with increased metal insert thickness or modified dust-lip geometries for highly contaminated applications or applications characterized by strong radial vibrations.

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

Metal structure

Exposed metal casing	Stamped and ground carbon steel
Casing option	AISI 304/316 stainless steel
Garter spring	Spring steel
Spring option	AISI 302/316 stainless steel for corrosive environments

COMPATIBLE FLUIDS

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

FEATURES

Main features

Ground metal outer diameter

The exposed outer steel surface is mechanically press-fitted into the housing with precise diametrical interference. The metal-to-metal fit ensures high flatness and stable structural locking within the housing.

Double-lip protective action

The main lip, supported by the spring, ensures lubricant retention inside the housing, while the second auxiliary lip intercepts 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 is filled with lubricating grease during installation. This reduces friction on the auxiliary lip and helps trap the finest abrasive particles.

ADVANTAGES

Advantages of the MP profile

Torsional stability

The press-fitted metal casing limits axial movement and elastic rebound during installation and counteracts the risk of ejection caused by vibrations or mechanical shocks.

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.

Heat transfer

Direct metal-to-metal contact between the oil seal's outer casing and the cast-iron or steel housing promotes dissipation of the heat generated by friction between the dynamic lip and the shaft.

COMPLIANCE AND STANDARDS

International standards

Construction dimensions, geometric tolerances and installation dimensions in compliance with DIN 3760 Form BS and ISO 6194-1 Type 2C standards, corresponding to the universal WC / BC / AS-P profile.

VARIANTS

Available configurations

STEEL + NBR

Type MP Standard

Traditional configuration for general heavy-duty mechanical applications exposed to the external environment. It is ideally suited to stable housings machined in cast iron or steel, providing protection against dust and moisture at competitive cost.

ADVANTAGES

High mechanical locking within the housing, long-term geometric stability and wide availability of dimensional ranges.

STAINLESS STEEL + FKM / VITON

Type MP Premium

Specific configuration for high-speed shafts up to 35 m/s or operating at high temperatures in contact with aggressive synthetic oils and in highly contaminated outdoor environments. The stainless-steel casing counteracts oxidation, while the fluoroelastomer withstands synthetic lubricants.

ADVANTAGES

Continuous thermal resistance up to +200 °C, high lip stability at high temperatures and protection against corrosion.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	TYPE MP STANDARD - NBR	TYPE MP PREMIUM - FKM / VITON
Net Seals	Metal Oil Seal Series with Dust Lip WC / MP	Viton Metal Oil Seal Series WC / MP FKM
Freudenberg (Simrit)	Simmerring® BS / 827S SL Profile	Simmerring® BS FKM Profile
Parker Prädifa	SBL / BC Profile	SBL (FKM) Profile
Dichtomatik	WC Profile	WC FKM Profile
Kastas Sealing Technologies	K28 Metal Profile	—
Corteco	Type MP External Metal Oil Seal Series with Dust Lip	—
SKF	—	Viton metal-cased seals with auxiliary lip (CRWA5)