

High pressure GBP

DESCRIPTION

The GBP series rotary shaft seals, known on the market as reinforced pressure oil seals with dust lip or BABSL type with auxiliary lip, are double-lip dynamic seals designed to operate under high internal back-pressure. The profile features a short main sealing lip supported by a garter spring, combined with a front dust lip. The smooth rubber-covered outer casing ensures static sealing within the housing, counteracting hydraulic thrust and the ingress of abrasive external contaminants.

PROFILES

Type GBP Standard

Double-lip profile with a short spring-loaded main sealing lip and an auxiliary dust lip without a spring. The outer diameter is made of completely smooth elastomer with an "L"-shaped structural reinforcement insert.

Type GBP Special

Variant with specific spring-load characteristics or modified compounds, designed for applications characterized by the simultaneous presence of severe environmental contamination and high pressure peaks.

MATERIALS

Materials and operating conditions

MATERIAL / COMPOUND	PERIPHERAL SPEED	TEMPERATURE	MAX PRESSURE
NBR Nitrile rubber 70 / 80 ShA	Up to 12.0 m/s	−30 / +100 °C	Up to 1.0 MPa 10 bar continuous, depending on shaft peripheral speed
FKM Fluoroelastomer / Viton	Up to 35.0 m/s	−20 / +200 °C	—

REINFORCEMENT COMPONENTS

Internal structure

Internal reinforcement	Heavy-gauge stamped carbon steel, fully embedded and vulcanized
Garter spring	Precision stabilized spring steel
Spring option	AISI 302/316 stainless steel

FLUIDS AND CONTAMINANTS

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

FEATURES

Main features

Short reinforced lip

The geometry of the primary lip reduces the flexible area exposed to hydraulic pressure. The reinforced base counteracts bending and outward deformation, allowing continuous pressures up to **10 bar (1.0 MPa)** to be tolerated.

Double-lip protection

The spring-loaded main lip retains the lubricating fluid inside the circuit, while the second front lip shields and repels contaminants such as sand, soil and water splashes.

Smooth rubber-covered outer casing

The rubber coating ensures static sealing against the housing, compensates for thermal expansion of the metals and counteracts axial displacement of the oil seal caused by internal pressure.

ADVANTAGES

Advantages of the GBP profile

Pressure containment

Allows direct use on rotating shafts where the fluid reaches high pressures, such as in hydraulic pumps or hydraulic motors, reducing the need for external drainage circuits.

Wear protection

The dust lip prevents external abrasive particles from reaching the main lip, protecting the dynamic sealing area and the garter spring from contamination that could accelerate wear.

Grease cavity

The space between the main lip and the dust lip can be filled with grease during installation, reducing friction on the auxiliary lip and helping to trap the finest dust particles.

COMPLIANCE AND STANDARDS

International standards

Construction dimensions, geometric tolerances and installation dimensions in compliance with international standards and specifications for ISO 6194 hydraulic pumps and special BABSL-type high-pressure profiles with dust lip.

VARIANTS

Available configurations

NBR 70

Type GBP Standard

Reference configuration for standard mobile hydraulics and hydraulic motors exposed to moderate dust. It provides resistance to hydraulic pressure and long-term axial stability at a competitive cost.

ADVANTAGES

Excellent value for money, high static elastic memory and easy stock management.

FKM / VITON

Type GBP Premium

Specific configuration for high-speed shafts, up to 35 m/s, or subject to significant cyclic temperature fluctuations. The fluoroelastomer provides greater resistance to synthetic lubricants and to heat generated by operation under pressure.

ADVANTAGES

Continuous thermal resistance up to +200 °C and high stability of the dynamic lips at high temperatures.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER	TYPE GBP STANDARD - NBR	TYPE GBP PREMIUM - FKM / VITON
Net Seals	Pressure Oil Seal Series with Dust Lip BABSL / TCN / GBP	Viton Pressure Oil Seal Series BABSL / GBP FKM
Freudenberg (Simrit)	Simmerring® BABSL Profile with Auxiliary Lip	Simmerring® BABSL FKM Profile with Auxiliary Lip
Parker Prädifa	TCN / BP Pressure Lip with Dirt Lip Profile	TCN (FKM) Profile
Kastas Sealing Technologies	K33 / K34 Profile with Dust Lip	—
Corteco	High-Pressure Oil Seal Series with Dust Lip	—
Dichtomatik	—	BABSL FKM Profile with Dust Lip
SKF	—	Viton High-Pressure Seals with Auxiliary Lip