

Rod seals GDIM

DESCRIPTION

GDI and GDIM rod seals are unidirectional dynamic seals with an asymmetric lip, designed mainly for pneumatic cylinders and light-duty hydraulic actuators. The geometry differentiates the functions of the two lips: the outer lip, taller and more robust, ensures static stability within the groove, while the inner lip, shorter and more flexible, provides dynamic sealing on the rod, reducing friction and stick-slip phenomena.

PROFILES

GDIM and GDI

GDI Standard Type

Asymmetric profile with inch dimensions, featuring sharp-edged finished lips. It is suitable for cylinders and housings based on British or American dimensional standards.

Dimensions	Inch
Lip finish	Sharp edge

GDIM Type

Geometric variant developed for metric dimensions, with negative-cut finished lips to facilitate initial sliding and reduce stick-slip.

Dimensions	Metric
Lip finish	Negative cut

MATERIALS

Materials and operating conditions

MATERIAL	COMPOUND	LINEAR SPEED	TEMPERATURE	MAX PRESSURE
Nitrile rubber	NBR 90 Shore A	Up to 0.1 m/s	−30 / +100 °C	Up to 2.0 MPa 20 bar in pneumatic applications

STRUCTURE

Seal body

Configuration	Single asymmetric body
Standard material	NBR 90 Shore A
Feature	High mechanical wear resistance

SPECIAL COMPOUNDS

Options on request

FKM / Viton	High temperatures up to +200 °C and chemicals
EPDM	Brake fluids or steam
VMQ / Silicone	Food and cryogenic applications

COMPATIBLE FLUIDS

Lubricated or dry compressed air, industrial greases and hydrocarbon-based mineral oils.

FEATURES

Main features

Sharp-edge cut

The geometric finish of the lips promotes the removal of the fluid film or condensation present on the rod, reducing the drag effect and improving dynamic sealing performance.

Outer retaining lip

The outer lip is intentionally taller and generates strong mechanical interference within the housing, counteracting axial displacement of the seal during cycle reversals.

Optimized flexibility

The flexibility of the lips is designed to provide low-friction operation during rod movement, limiting localized wear.

ADVANTAGES

Advantages of the GDI / GDIM profile

Pneumatic versatility

The geometry of the inner lip allows use with both lubricated and dry compressed air, extending the range of applications in pneumatic systems.

Interchangeability

GDI and GDIM geometries are designed to facilitate interchangeability with commercial profiles used in major industrial pneumatic applications.

Simplified installation

The elasticity of the NBR 90 Shore A compound allows manual insertion of the seal into closed grooves without requiring dedicated mechanical deformation tools.

COMPLIANCE AND SPECIFICATIONS

Interchangeability

Nominal dimensions, tolerances and radial housing grooves are defined according to industrial profile interchangeability specifications and the corresponding surface roughness parameters.

COMMERCIAL EQUIVALENTS

Market equivalents

MANUFACTURER / DISTRIBUTOR	GDI / GDIM STANDARD TYPE
Net Seals	GDI / GDIM Rod Seal Series
ATS Srl	DI-DIM Pneumatic Profile
Extended interchangeability	SNI24 / LDIMC / DI / IUH / PDI / MRUN