Single-acting rod seal

Type: RS 01

The single-acting rod seal type RS 01 is used primarily in cylinders where pressure is applied on one side. The operating media here range from mineral oil-based hydraulic fluids through to environment-friendly bio-oils, water, flame-resistant hydraulic fluids and air. It offers slip-stick free movement and also good dry-running properties.

While the PTFE profile ring provides dynamic sealing against the rod surface, the elastic O-ring ensures even pressure distribution of the PTFE profile ring against the rod surface and thus secures static sealing between profile ring and groove base.

The rod seal achieves good sealing performance even at low pressures owing to the inherent prestress force of the PTFE profile ring and due to the contact force of the preloaded O-ring. At elevated system pressures, the fluid increases the load on the O-ring which presses the PTFE seal against the rod surface.

Various combinations of materials are used so that the rod seal performs reliably across the whole pressure, speed and temperature range.

Operating media

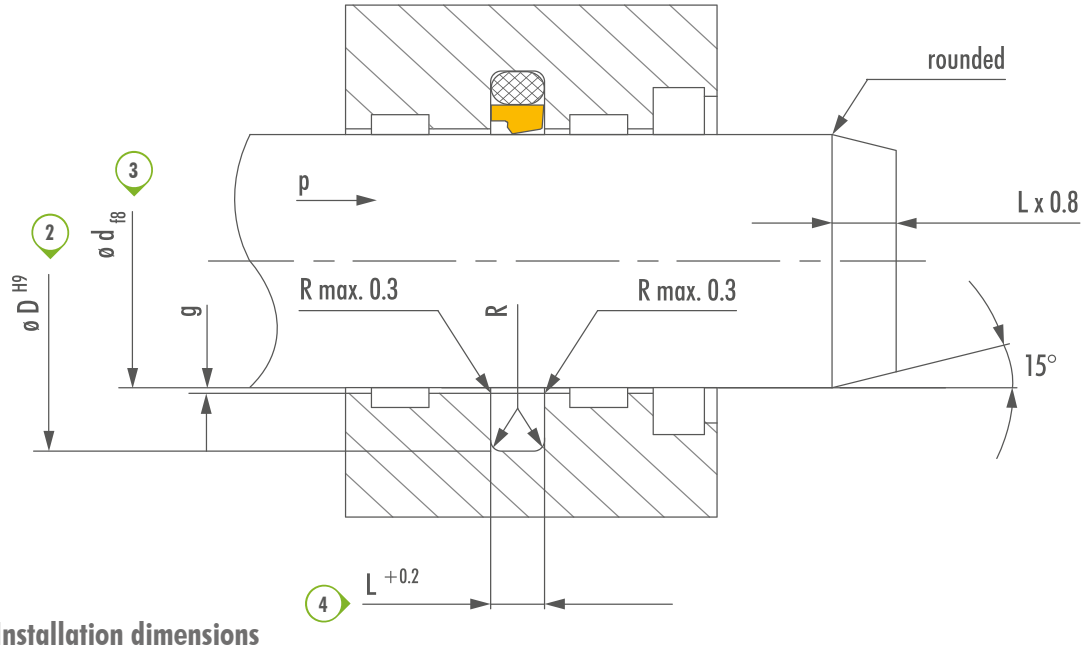
Mineral oil-based hydraulic fluids	Environment-friendly bio-oils
Water	Flame-resistant hydraulic fluids
Air	Other media acc. to O-ring material

Operating range

Pressure	up to 40 MPa (400 bar)
Speed	up to 15 m/s
Temperature	– 30 °C to + 200 °C (acc. to O-ring material)

Surface quality

Roughness	Ra	Rt
Contact surface	≤ 0.3 µm	≤ 3.0 µm
Groove base	≤ 1.6 µm	≤ 16.0 µm
Groove flank	≤ 1.6 µm	≤ 16.0 µm



Installation dimensions

Rods ø d						Gap dimension g			
Heavy-duty version	Standard version	Light-duty version	Groove base ø D	Groove width L +0.2	Radius R	10 MPa max.	20 MPa max.	40 MPa max.	O-ring cross section ø
-	-	8.0 - 18.9	ø d + 4.9	2.2	0.4	0.3	0.2	0.15	1.78
-	8.0 - 18.9	19.0 - 37.9	ø d + 7.3	3.2	0.6	0.4	0.25	0.15	2.62
8.0 - 18.9	19.0 - 37.9	38.0 - 199.9	ø d + 10.7	4.2	1.0	0.4	0.25	0.2	3.53
19.0 - 37.9	38.0 - 199.9	200.0 - 255.9	ø d + 15.1	6.3	1.3	0.5	0.3	0.2	5.33
38.0 - 199.9	200.0 - 255.9	256.0 - 649.9	ø d + 20.5	8.1	1.8	0.6	0.35	0.25	7.0
200.0 - 255.9	256.0 - 649.9	650.0 - 900.0	ø d + 24.0	8.1	1.8	0.6	0.35	0.25	7.0
256.0 - 649.9	650.0 - 900.0	-	ø d + 27.3	9.5	2.5	0.7	0.5	0.3	8.4

Material selection PTFE profile ring

PTFE + bronze	Standard for hydraulic applications, good sliding behavior, particularly pressure and abrasion resistant, not for use in aqueous media or acids
PTFE + glass-MoS_2	Particularly wear and abrasion resistant, can be used in media with poor lubricating properties, in water and also water-oil emulsions
PTFE + carbon	Exceptionally abrasion and extrusion resistant, can be used in water hydraulic systems

Find additional materials in our PTFE materials overview in the technical information section.

Selection of materials O-ring

Nitrile rubber NBR	Temperature range – 30 °C to + 120 °C
Fluorinated rubber FPM	Temperature range – 25 °C to + 200 °C

To place a quick order for the correct product, please use the order information system below.

SYSTEM: RS01 Groove base ø D (1) x Rod diameter ø d (2) x Groove width L (3) » Material (4) (5)

EXAMPLE: RS01 90.1 x 75 x 6.3 CCN-BRR40

(1) Single-acting rod seal (2) Groove base diameter ø D 90.1 mm
(3) Rod diameter ø d 75 mm (4) Groove width L 6.3 mm (5) Material PTFE + 40% bronze