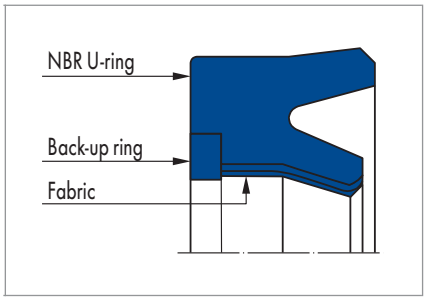
MERKEL U-RING SEAL SET 0214



PRODUCT DESCRIPTION

Two-piece Merkel seal set comprising an elastomer U-ring with an elastomer sealing edge, fabric reinforcement on the contact area and an active back-up ring.

PRODUCT ADVANTAGES

Single-acting rod seal for use in hydraulics and pneumatics.

- Low friction due to fabric reinforcement
- Large range of dimensions
- Protection against extrusion through activated back-up ring
- Low deformation value (not suitable for sealing systems)
- Easily installed in non-axial housings
- From 100 mm diameter

APPLICATION

- Iron and steel technology
- Presses
- Marine hydraulics
- Scrap cutters
- Injection moulding machines
- Steel hydraulics engineering
- Special cylinders

MATERIAL

Back-up ring
<300 mm

Material	Code
Polyacetal POM	POM PO202

Back-up ring
>300 mm

Material	Code
Polyamide	PA 6.G200

U-Ring

Material	Code
NBR	80 NBR B246
Cotton fabric	BI-NBR B4 B248

Other materials like PTFE bronze back-up ring on enquiry.

OPERATING CONDITIONS

Pressure p Hydraulic	25 or 40* MPa

* Max. pressure depends on the profile.

Pressure p Pneumatic	5 MPa
Running speed v	1,5 m/s

Medium/ Temperature	80 NBR B246/BI-NBR B4 B248/PA 6.G200	80 NBR B246/BI-NBR B4 B248/POM PO202
Hydraulic oils HL, HLP	−30 °C ... +100 °C	−30 °C ... +100 °C
HFA fluids	+5 °C ... +60 °C	+5 °C ... +60 °C
HFB fluids	+5 °C ... +60 °C	+5 °C ... +60 °C
HFC fluids	−30 °C ... +60 °C	−30 °C ... +60 °C
HFD fluids	–	–
Water	+5 °C ... +100 °C	+5 °C ... +100 °C
HETG (rapeseed oil)	−30 °C ... +80 °C	−30 °C ... +80 °C
HEES (synthetic ester)	−30 °C ... +80 °C	−30 °C ... +80 °C
HEPG (glycol)	−30 °C ... +60 °C	−30 °C ... +60 °C
Mineral greases	−30 °C ... +100 °C	−30 °C ... +100 °C

For Merkel U-Ring Seal Sets 0214, if long strokes are traversed, the max. pressure should only be applied to the last part of the stroke (closing pressure); during the stroke max. 16 MPa.

DESIGN NOTES

Please observe our general design notes in ➔ Technical Manual.

Surface quality

Peak-to-valley heights	R_a	R_{max}
Sliding surface	0,05 ... 0,3 µm	≤2,5 µm
Groove base	≤1,6 µm	≤6,3 µm
Groove flanks	≤3,0 µm	≤15,0 µm

Percentage contact area M_r >50% up to max. 90% at cutting depth c = Rz/2 and reference line C ref = 0%.

Admissible gap dimension

The decisive factor for the function of the seal is the largest gap dimension occurring during operation on the non-pressurised side of the seal. ➔ Technical Manual.

BR	16 MPa	26 MPa	32 MPa	40 MPa
2,5 mm	0,80 mm	0,70 mm	0,60 mm	0,40 mm
3,5 ... 4,0 mm	1,20 mm	1,00 mm	0,65 mm	0,50 mm
5,0 ... 6,0 mm	1,80 mm	1,40 mm	0,90 mm	0,70 mm
8,0 mm	2,00 mm	1,60 mm	1,10 mm	0,90 mm

The dimensions D1 and DF are to be viewed in connection with the sealing component used.

Tolerances

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account when designing d2. ➔ Technical Manual.

Nominal Ø d	D	d
140 ... 1000 mm	H10	f7

FITTING & INSTALLATION

Careful fitting is a prerequisite for the correct function of the seal. ➔ Technical Manual.