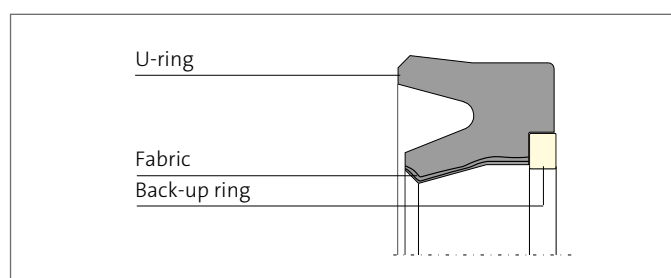


# MERKEL

## U-RING SEAL SET 0214



Merkel U-ring Seal Set 0214 is a two-piece seal set comprising of one elastomer U-ring with an elastomer sealing edge, fabric reinforcement on the running surface and an active back-up ring.



### Applications

Single-acting rod seal for the use in hydraulic and pneumatic applications.

### Material

#### Profile ring

Material	Description	Color
Nitrile rubber	NBR	black
Cotton fabric	BI-NBR	black

#### Back-up ring

Material	Description	Color
D < 300 mm Polyacetal	POM	white
D > 300 mm Polyamide	PA	white

### VALUE TO THE CUSTOMER

- Low friction due to fabric reinforcement
- Large dimension range
- Resistant to extrusion owing to activated back-up ring
- Low return capability (not suitable for sealing systems)
- Easy to install in non-axial housings from 100 mm diameter



## FEATURES AND BENEFITS

### Operating conditions

Material	NBR/BI-NBR/POM or PA
Hydraulic oils HL, HLP	−30 ... +100 °C
HFA fluids	+5 ... +60 °C
HFB fluids	+5 ... +60 °C
HFC fluids	−30 ... +60 °C
HFD fluids	–
Water	+5 ... +100 °C
HETG (rapeseed oil)	−30 ... +80 °C
HEES (synthetic esters)	−30 ... +80 °C
HEPG (glycol)	−30 ... +60 °C
Mineral greases	−30 ... +100 °C
Pressure Hydraulic	25 or 40* MPa
Pressure Pneumatic	5 MPa
Sliding speed v	1,5 m/s

\*max. pressure depends on the profile

The figures given are maximum values and must not be applied simultaneously.

With U-ring 0214 the max. pressure should only be exploited in the last section (closing pressure) if long strokes are executed; during the stroke max. 16 MPa.

### Surface finish

Peak-to-valley heights	$R_a$	$R_{max}$
Sliding surface	0,05 ... 0,3 $\mu\text{m}$	$\leq 2,5 \mu\text{m}$
Groove base	$\leq 1,6 \mu\text{m}$	$\leq 6,3 \mu\text{m}$
Groove sides	$\leq 3,0 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

Material content  $M_r$  >50% to max. 90%, with cut depth  $c = R_z/2$  and reference line  $C_{ref} = 0\%$

### Design notes

Please note the general design remarks in our Technical Manual.

### Gap dimension

The dimension D2 is determined by factoring in the maximum permissible extrusion gap, the tolerances, the guide clearance, the deflection of the guide under load, and the pipe expansion. Please also consult our Technical Manual. The maximum permissible extrusion gap with a one-sided position of the piston rod is significantly determined by the maximum operating pressure and the temperature-dependent dimensional stability of the seal material. Please also consult our Technical Manual.

Profile dimension [mm]	Max. permissible gap dimension [mm]			
Profile	16 MPa	26 MPa	32 MPa	40 MPa
<15	1,2	1,0	0,65	0,5
>15	1,8	1,4	0,9	0,7

### Tolerances

Diameter	Tolerance
D	H10

The tolerance for the diameters d and D<sub>2</sub> is specified in connection with the gap dimension calculation. In typical hydraulic applications up to a nominal dimension of 1.000 mm, the tolerance fields f7 and f8 or H7 and H8 are usually chosen.

### Installation & assembly

Reliable seal function is dependent on correct installation. Please also consult our Technical Manual.



## FEATURES AND BENEFITS

### Installation diagram

