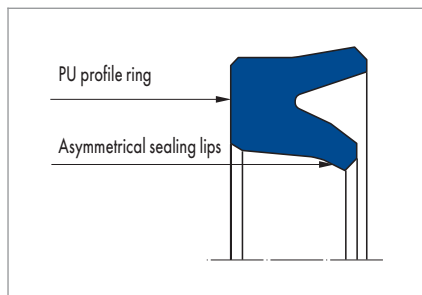


# MERKEL U-RING TM 20



## PRODUCT DESCRIPTION

Merkel U-ring with asymmetrical profile, inner lip set back and press fit at the outside diameter.

## PRODUCT ADVANTAGES

Single-acting rod seal for hydraulic cylinders. With new production technology even special sizes can be manufactured quickly and flexibly.

- Good media resistance
- Wide operating temperature range
- Very good static and dynamic tightness
- Use as an individual seal or as a secondary seal in sealing systems possible
- Large range of dimensions
- No moulding tools

## APPLICATION

- Large cylinders
- Presses
- Heavy machinery manufacture
- Injection moulding machines

## MATERIAL

<500 mm

Material	Code	Hardness	Colour
Polyurethane	95 AU V142	95 Shore A	Blue

>500 mm

Material	Code	Hardness	Colour
Polyurethane	93 AU V168	93 Shore A	Red

## OPERATING CONDITIONS

<b>Pressure p</b>	40 MPa
<b>Running speed v</b>	0,5 m/s

If TM 20 is fitted in a sealing system as a secondary seal, higher running speeds can be allowed.

Medium/Temperature	93 AU V168	95 AU V142
Hydraulic oils HL, HLP	-25 °C ... +100 °C	-30 °C ... +110 °C
HFA fluids	+5 °C ... +80 °C	+5 °C ... +50 °C
HFB fluids	+5 °C ... +60 °C	+5 °C ... +50 °C
HFC fluids	-25 °C ... +40 °C	-30 °C ... +40 °C
HFD fluids	-	-
Water	+5 °C ... +60 °C	+5 °C ... +50 °C
HETG (rapeseed oil)	-25 °C ... +60 °C	-30 °C ... +60 °C
HEES (synthetic ester)	-25 °C ... +80 °C	-30 °C ... +80 °C
HEPG (glycol)	-25 °C ... +50 °C	-30 °C ... +50 °C
Mineral greases	-25 °C ... +100 °C	-30 °C ... +110 °C

## DESIGN NOTES

Please observe our general design notes in → Technical Manual.

### Surface quality

Peak-to-valley heights	R <sub>a</sub>	R <sub>max</sub>
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<sub>p</sub> >50% to max. 90% at cutting depth c = Rz/2 and reference line C ref = 0%.

### Admissible gap dimension

Profile dimension	16 MPa	26 MPa	32 MPa	40 MPa
<5,0 mm	0,45 mm	0,40 mm	0,35 mm	-
>5,0 mm ... ≤7,5 mm	0,50 mm	0,45 mm	0,40 mm	0,35 mm
>7,5 mm ... ≤12,5 mm	0,55 mm	0,50 mm	0,45 mm	0,40 mm
15,0 mm	0,60 mm	0,55 mm	0,45 mm	0,40 mm
>15,0 mm ... ≤20,0 mm	0,65 mm	0,60 mm	0,50 mm	0,45 mm
>20,0 mm ... ≤25,0 mm	0,65 mm	0,60 mm	0,50 mm	0,45 mm

**Tolerances**

D2 "System" is based on the use of Merkel TM 20 as a secondary seal in a sealing system. The specified D2 dimensions are based on the use of Merkel fabric-base laminate guide ring SB or metal guide. They provide high security against gap extrusion and also metal tarnish. → Technical Manual. If the stated operating parameters range is not fully exploited or only for a short period, larger D2 dimensions may be selected. With high lateral forces or high deflection we recommend a metal guide.

Nominal $\varnothing$ d	D
≤400 mm	H11
>400 mm	+0,4

**FITTING & INSTALLATION**

The rod seals can be fitted into plunge-cut grooves by hand or with a fitting tool. In the case of different housings, e.g. in old plant, please ask our advisory service.

**LEAD-IN CHAMFERS**

Dimension C → Technical Manual.