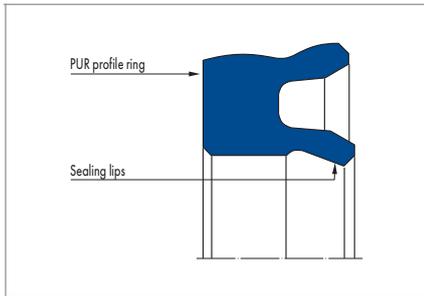


MERKEL U-RING TMP 21



PRODUCT DESCRIPTION

Single-acting Merkel U-Ring TMP 21 made from polyurethane.

PRODUCT ADVANTAGES

Piston seal that is primarily used in pneumatic cylinders in heavy-duty mechanical engineering. The U-rings are designed for application of pressure on one side.

- High tightness
- Large range of dimensions
- Suitable for dry air
- No mould tools required

APPLICATION

- Large cylinders
- Presses

MATERIAL

<500 mm

Material	Code	Hardness	Colour
Polyurethane	93 AU V167	93 Shore A	red

>500 mm

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

OPERATING CONDITIONS

Pressure p	2,0* MPa
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* short version <1,2 MPa

Running speed v	1,5 m/s
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Pneumatic	Air, dried or oiled
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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	$\leq 2,5 \mu\text{m}$
Groove base	$\leq 1,6 \mu\text{m}$	$\leq 6,3 \mu\text{m}$
Groove flanks	$\leq 3,0 \mu\text{m}$	$\leq 15,0 \mu\text{m}$

Percentage contact area $M_r > 50\%$ to max 90% at cutting depth $c = RZ/2$ and reference line $C_{ref} = 0\%$. Abrasive surfaces, ridges, scratches and blow-holes are to be avoided.

Tolerances

Nominal $\varnothing D$	D	d
$\leq 250 \text{ mm}$	H8	h11
$> 250 \text{ mm}$	H8	h10

HOUSING RECOMMENDATIONS FOR NEW DESIGNS

D	d	L	C
$> 70 \dots 200 \text{ mm}$	$D - 20 \text{ mm}$	16 mm	8,5 mm
$> 125 \dots 345 \text{ mm}$	$D - 25 \text{ mm}$	20 mm	10,0 mm
$> 180 \dots 660 \text{ mm}$	$D - 30 \text{ mm}$	24 mm	11,5 mm
$> 440 \dots 840 \text{ mm}$	$D - 40 \text{ mm}$	32 mm	12,5 mm
$> 850 \dots 1250 \text{ mm}$	$D - 50 \text{ mm}$	40 mm	16,0 mm
$> 1060 \dots 2000 \text{ mm}$	$D - 60 \text{ mm}$	48 mm	18,0 mm

FITTING & INSTALLATION

The piston seals can be pulled over the metallic face support shoulder by hand or by using an assessment aid (Gi-Hammer, lightly oiling or greasing seal). For different housings, e.g. in old plants, please consult our advisory service. For an optimum running-in and operation behaviour, the U-Rings should be lightly oiled or greased (initial lubrication) prior to use.