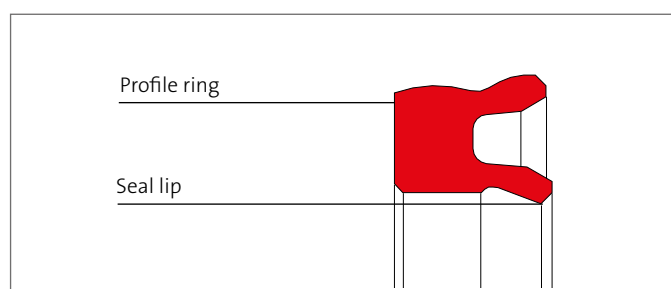


# MERKEL U-RING TMP 21



Merkel U-ring TMP 21 is a single-acting U-ring made of polyurethane used as a piston seal.



## Applications

Merkel U-ring TMP 21 is mainly used in pneumatic cylinders in heavy-duty mechanical engineering. Designed to face pressure from one side only.

## Material

For diameter <500 mm

Material	Designation	Color
Polyurethane	93 AU V167	red

For diameter >500 mm

Material	Designation	Color
Polyurethane	93 AU V168	red

## VALUE TO THE CUSTOMER

- High degree of tightness
- Large range of dimensions
- Suitable for dry air
- No molding cost



## FEATURES AND BENEFITS

### Operating conditions

Material	93 AU V167/93 AU V168
Pneumatic, dry air or lubricated air	-10 ... +80 °C
Pressure	2 MPa
Sliding speed	1,5 m/s

### 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  $C_{ref} = 0$  %. Abrasive surfaces, scratches and blowholes are to be avoided.

### Tolerances

If the installation space is designed according to our housing recommendations (vide our Technical Manual), the following tolerances can be chosen:

Diameter	Tolerance
D	H8
$d_2$	h9

Diameter d [mm]	Tolerance
<250	h11
>250	h10

### Design notes

Please read the general design notes in our Technical Manual.

### Housing recommendations for new design

d [mm]	D [mm]	$d_s$ [mm]	L [mm]	C [mm]
>70 ... 220	D -20	d +6,5	16	8,5
>125 ... 345	D -25	d +8,5	20	10
>180 ... 660	D -30	d +10	24	11,5
>440 ... 840	D -40	d +13,5	32	12,5
>850 ... 1.250	D -50	d +16,5	40	16
>1.060 ... 2.000	D -60	d +20	48	18

### Installation & assembly

The piston seals can be mounted over the metallic support collar by hand or using an aid (mallet, slightly oil or grease seal). Please contact our application consultants about different housings, e. g. in old plants.

To achieve optimum running-in and operation behaviour, the U-rings should be oiled or greased slightly prior to use (initial lubrication).



## FEATURES AND BENEFITS

### Installation diagram

