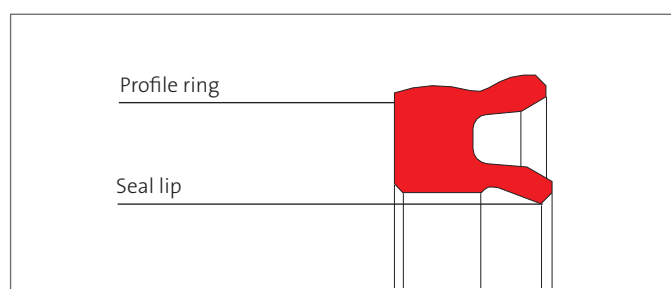


# MERKEL® U-RING TMP21



Merkel® U-ring TMP21 is a single-acting piston seal made of polyurethane.



## VALUE TO THE CUSTOMER

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

### Applications

Merkel® U-ring TMP21 is mainly used in pneumatic cylinders in heavy-duty machinery. Designed to face pressure from one side only.

### Material

Material	Designation	Color
Polyurethane	93 AU V167	red

### Operating Conditions

Material	93 AU V167
Pneumatic – Dry or Lubricated Air	–10 ... +80 °C
Pressure	2 MPa
Sliding speed	1,5 m/s



## TECHNICAL PROPERTIES

### 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	$\leq 1,6 \mu\text{m}$	$\leq 6,3 \mu\text{m}$
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

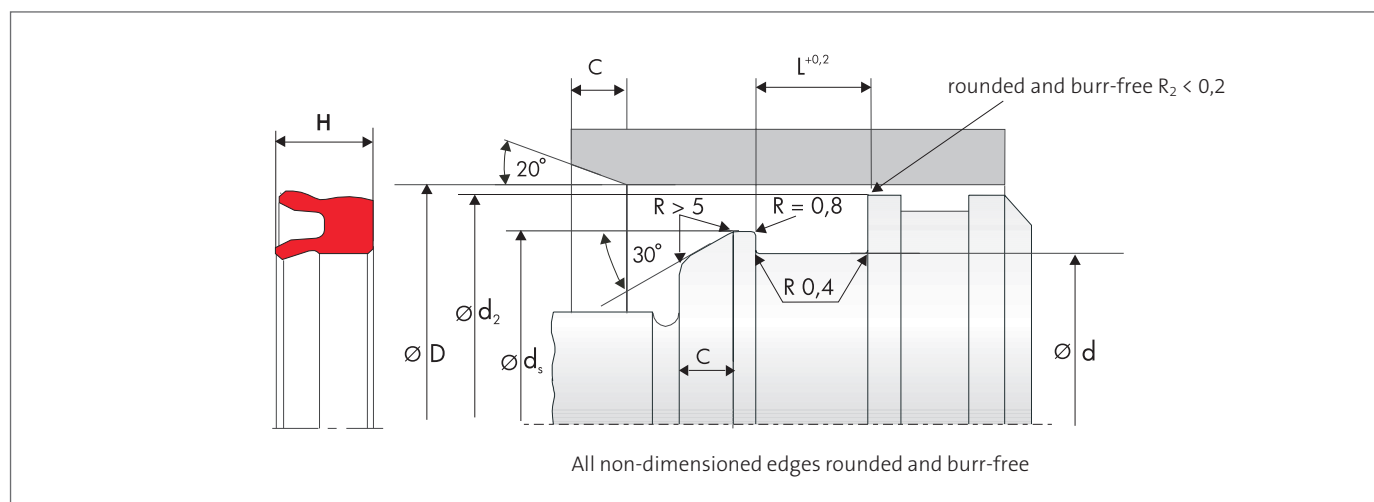
d [mm]	D [mm]	$d_s$ [mm]	L [mm]	C [mm]
>70 ... 220	D -20	d +6,5	16	8,5
>125 ... 345	D -25	d +8,5	20	10
>180 ... 660	D -30	d +10	24	11,5
>440 ... 840	D -40	d +13,5	32	12,5
>850 ... 1.250	D -50	d +16,5	40	16
>1.060 ... 2.000	D -60	d +20	48	18

### Installation

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).

### Installation Diagram



The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.