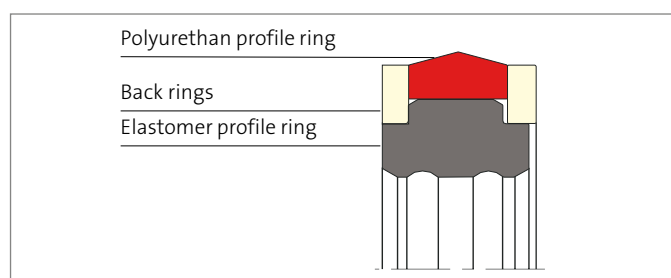


# MERKEL COMPACT SEAL T 42



Merkel Kompaktdichtung T 42 is a double-acting piston seal with a sealing element made of polyurethane, an elastomer activating element and two back rings.



## Application

The T 42 compact seal is predominantly used in mining applications. The seal can be pressurised on both sides in plungers, pushers, stamping and ancillary cylinders in self-advancing support system.

## Material

### Polyurethan profile ring

| Material    | Designation | color |
|-------------|-------------|-------|
| Polyurethan | 93 AU V167  | red   |

### Back rings

| Material   | Designation |
|------------|-------------|
| Polyacetal | POM PO202   |

### Elastomer profile ring

| Material       | Designation |
|----------------|-------------|
| Nitrile rubber | NBR         |

## VALUE TO THE CUSTOMER

- Very good protection against extrusion even with pressure peaks
- High resistance to abrasion
- High contact pressure due to rubber profile ring
- Good media resistance, particularly with regard to aqueous solutions

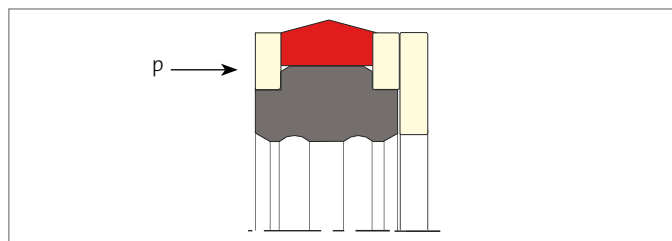


## FEATURES AND BENEFITS

### Operating conditions

| Material      | 93 AU V167/NBR/POM |
|---------------|--------------------|
| HFA-fluids    | +5 ... +60 °C      |
| HFD-fluids    | +5 ... +60 °C      |
| Pressure      | 50 MPa*            |
| sliding speed | 0,1 m/s            |

\* Wird ein ganzflächiger Backring auf der dem Hochdruck abgewandten Seite verwendet, ist der Einsatz bis 150 MPa möglich. Die Höhe des Backringes sollte 5 mm betragen.



### 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  $M_v$  > 50 % to max. 90 %, with cut depth  $c = R_z/2$  and reference line  $Cr_{ef} = 0\%$

### Design notes

Please note the general design remarks in our Technical Manual.

### Gap dimension X2

The largest gap dimension occurring on the non-pressurised side of the seal in operation is of vital importance for the function of the seal.

Please consult our Technical Manual.

### Tolerance recommendation

| $\varnothing d$<br>[mm] | Profile [mm]               | 16 MPa |    |       |       |     | 26 MPa |    |       |       |     |
|-------------------------|----------------------------|--------|----|-------|-------|-----|--------|----|-------|-------|-----|
|                         |                            | D      | d  | $d_2$ | $d_f$ | X2  | D      | d  | $d_2$ | $d_f$ | X2  |
| ... 140                 | $\leq 7,5$ (BR 4,0 x 3,0)  | H8     | h9 | h9    | h8    | 0,8 | H8     | h9 | h9    | h8    | 0,6 |
| ... 160                 | $> 7,5$ ... 8,5 (BR 4,5)   | H8     | h9 | h9    | h8    | 0,8 | H8     | h9 | h9    | h8    | 0,6 |
| ... 230                 | $> 7,5$ ... 10,0 (BR 5,0)  | H8     | h9 | h9    | h8    | 1,1 | H8     | h9 | h9    | h8    | 0,8 |
| ... 300                 | $> 10,0$ ... 12,5 (BR 6,0) | H8     | h9 | h9    | h8    | 1,6 | H8     | h9 | h9    | h8    | 1,2 |
| ... 380                 | $> 12,5$ (BR 7,5 x 5,0)    | H8     | h9 | h9    | h8    | 1,6 | H8     | h9 | h9    | h8    | 1,2 |

| $\varnothing d$<br>[mm] | Profile [mm]               | 32 MPa |    |       |       |     | 40 MPa |    |       |       |     |
|-------------------------|----------------------------|--------|----|-------|-------|-----|--------|----|-------|-------|-----|
|                         |                            | D      | d  | $d_2$ | $d_f$ | X2  | D      | d  | $d_2$ | $d_f$ | X2  |
| ... 140                 | $\leq 7,5$ (BR 4,0 x 3,0)  | H8     | h9 | h9    | h8    | 0,5 | H8     | h9 | h9    | h8    | 0,4 |
| ... 160                 | $> 7,5$ ... 8,5 (BR 4,5)   | H8     | h9 | h9    | h8    | 0,5 | H8     | h9 | h9    | h8    | 0,4 |
| ... 230                 | $> 7,5$ ... 10,0 (BR 5,0)  | H8     | h9 | h9    | h8    | 0,6 | H8     | h9 | h9    | h8    | 0,5 |
| ... 300                 | $> 10,0$ ... 12,5 (BR 6,0) | H8     | h9 | h9    | h8    | 0,9 | H8     | h9 | h9    | h8    | 0,7 |
| ... 380                 | $> 12,5$ (BR 7,5 x 5,0)    | H8     | h9 | h9    | h8    | 0,9 | H8     | h9 | h9    | h8    | 0,7 |



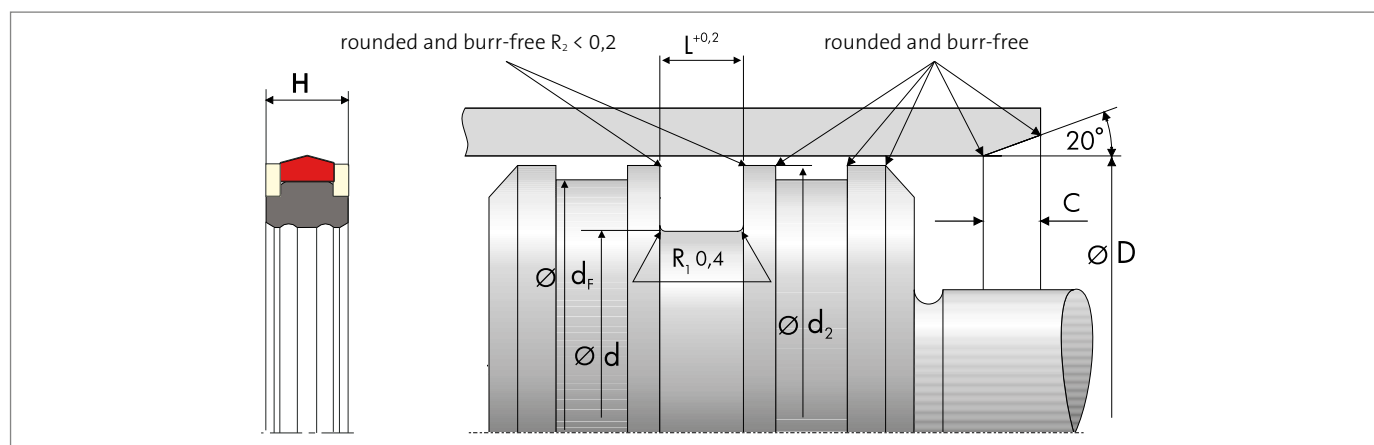
## FEATURES AND BENEFITS

| Ø d<br>[mm] | Profile [mm]                     | 70 MPa |    |                |                |     |
|-------------|----------------------------------|--------|----|----------------|----------------|-----|
|             |                                  | D      | d  | d <sub>2</sub> | d <sub>1</sub> | X2  |
| ... 230     | >7,5 ... 10,0<br>(BR 5,0 x 3,5)  | H8     | h9 | h7             | h7             | 0,4 |
| ... 300     | >10,0 ... 12,5<br>(BR 6,5 x 3,5) | H8     | h9 | h7             | h7             | 0,5 |
| ... 400     | >12,5<br>(BR 7,5 x 5,0)          | H8     | h9 | h7             | h7             | 0,6 |

### Tolerance recommendation and dimension d<sub>2</sub>

When designing d<sub>2</sub> the admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account. Please consult our Technical Manual.

### Installation diagram



### Profile recommendation

| D [mm]       | S [mm] | L [mm] |
|--------------|--------|--------|
| <150         | 7,5    | 16     |
| 150 ... 200  | 10     | 20     |
| >200 ... 400 | 12,5   | 20     |
| >400         | 15     | 25     |

### Installation & assembly

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