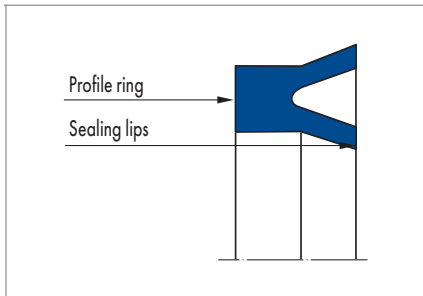


MERKEL U-RING N 1, AUN 1



PRODUCT DESCRIPTION

Merkel U-ring with symmetrical profile for rods/pistons.

PRODUCT ADVANTAGES

Single-acting piston or rod seal, preferably for spare parts requirements.

APPLICATION

- Loading platforms
- Agricultural machinery
- Cranes
- Injection moulding machines
- Standard cylinders
- Special cylinders

MATERIAL

N1

| Material | Code | Hardness |
|----------------|------------|------------|
| Nitrile rubber | 90 NBR 109 | 90 Shore A |

AUN1

| Material | Code | Hardness |
|--------------|-----------|------------|
| Polyurethane | 94 AU 925 | 94 Shore A |

OPERATING CONDITIONS

| | |
|------------------|--------|
| Pressure p (NBR) | 10 MPa |
|------------------|--------|

| | |
|-----------------|--------|
| Pressure p (AU) | 20 MPa |
|-----------------|--------|

| | |
|-----------------|---------|
| Running speed v | 0,5 m/s |
|-----------------|---------|

| Medium/ Temperature | 90 NBR 109 | 94 AU 925 |
|------------------------|--------------------|--------------------|
| Hydraulic oils HL, HLP | -30 °C ... +100 °C | -30 °C ... +110 °C |
| HFA fluids | +5 °C ... +60 °C | +5 °C ... +50 °C |
| HFB fluids | +5 °C ... +60 °C | +5 °C ... +50 °C |

| Medium/ Temperature | 90 NBR 109 | 94 AU 925 |
|------------------------|--------------------|--------------------|
| HFC fluids | -30 °C ... +60 °C | -30 °C ... +40 °C |
| HFD fluids | - | - |
| Water | +5 °C ... +90 °C | +5 °C ... +40 °C |
| HETG (rapeseed oil) | -30 °C ... +80 °C | -30 °C ... +60 °C |
| HEES (synthetic ester) | - | -30 °C ... +60 °C |
| HEPG (glycol) | -30 °C ... +60 °C | -30 °C ... +40 °C |
| Mineral greases | -30 °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 _a | R _{max} |
|------------------------|-----------------|------------------|
| 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_r >50% to max. 90% at cutting depth c = Rz/2 and reference line C_{ref} = 0%.

Admissible gap dimension

The decisive factor for the function of the seal is the largest gap dimension occurring during operation on the non-pressurised side of the seal. → Technical Manual.

N 1 (material 90 NBR 109)

| Profile dimension | 2,5 MPa | 5 MPa | 7,5 MPa | 10 MPa |
|-------------------|---------|---------|---------|---------|
| ≤5 mm | 0,45 mm | 0,35 mm | 0,30 mm | 0,25 mm |
| >5 mm | 0,50 mm | 0,40 mm | 0,35 mm | 0,30 mm |

AUN 1 (material 94 AU 925)

| Profile dimension | 5 MPa | 10 MPa | 20 MPa |
|-------------------|---------|---------|---------|
| ≤5 mm | 0,55 mm | 0,40 mm | 0,35 mm |
| >5 mm | 0,66 mm | 0,45 mm | 0,40 mm |

Tolerances

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account when designing D2 (rod seal) or d2 (piston seal). → Technical Manual.

FITTING & INSTALLATION

Careful fitting is a prerequisite for the correct function of the seal. → Technical Manual. Note: the use of male adaptors increases the reliability. Further information is available on enquiry.