
Zurcon[®] U-Cup PUA



Single Acting

Asymmetric, Single Lip

Material:
Zurcon[®]



■ Piston U-Cup PUA



Description

The U-Cup is a single acting piston seal out of injection moulded polyurethane. It is provided with a robust dynamic sealing lip and a wide contact area of the static lip, which guaranties an effective positioning in the groove.

The profile is suitable for pressures up to 40 MPa provided that the extrusion gap is adapted to the pressure level.

Thanks to the elasticity of the polyurethane material the U Cup can easily be installed in closed grooves.

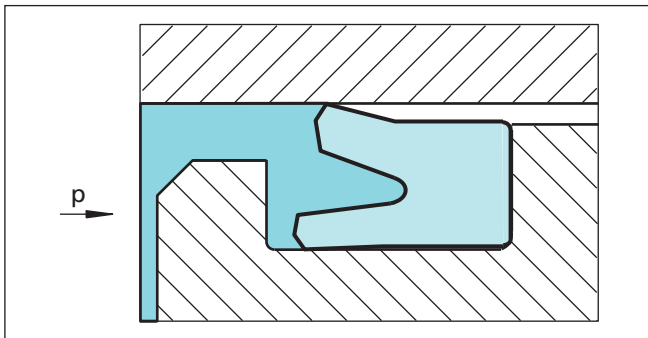


Figure 41 Piston U-Cup Type PUA

Advantages

- Simple groove design
- High abrasion resistance
- Long service life
- Effective sealing effect even with non excellent mating surface finish

Application Examples

The U-Cup is the recommended sealing element for single acting pistons of hydraulic components such as:

- Presses
- Lift platforms
- Aftermarket

Technical Data

Operating conditions

Pressure: Up to 40 MPa

Speed: Up to 0.5 m/s

Temperature: from -35 °C to + 110 °C

Media: Mineral oil based hydraulic fluids

Clearance: From Table XLVI the maximum value of the radial clearance S_{max} can be selected for dimensioning the piston.
The values indicated in this table must be reduced by 30% when temperature exceeds 80 °C.

Table XLVI Clearance

| Operating Pressure MPa | Radial Clearance S max. | |
|------------------------|-------------------------|---------------|
| | $d_N < 60$ mm | $d_N > 60$ mm |
| 5 | 0.40 | 0.50 |
| 10 | 0.30 | 0.40 |
| 20 | 0.20 | 0.30 |
| 30 | 0.15 | 0.20 |
| 40 | 0.10 | 0.15 |

Important Note:

The above data are maximum values and cannot be used at the same time. e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. Temperature range also dependent on medium.

Materials

Standard Material:

- For hydraulic components in mineral oils or medium with good lubricating performance, polyurethane 93 Shore A

Zurcon® Z20

Colour: turquoise



■ Installation Recommendation

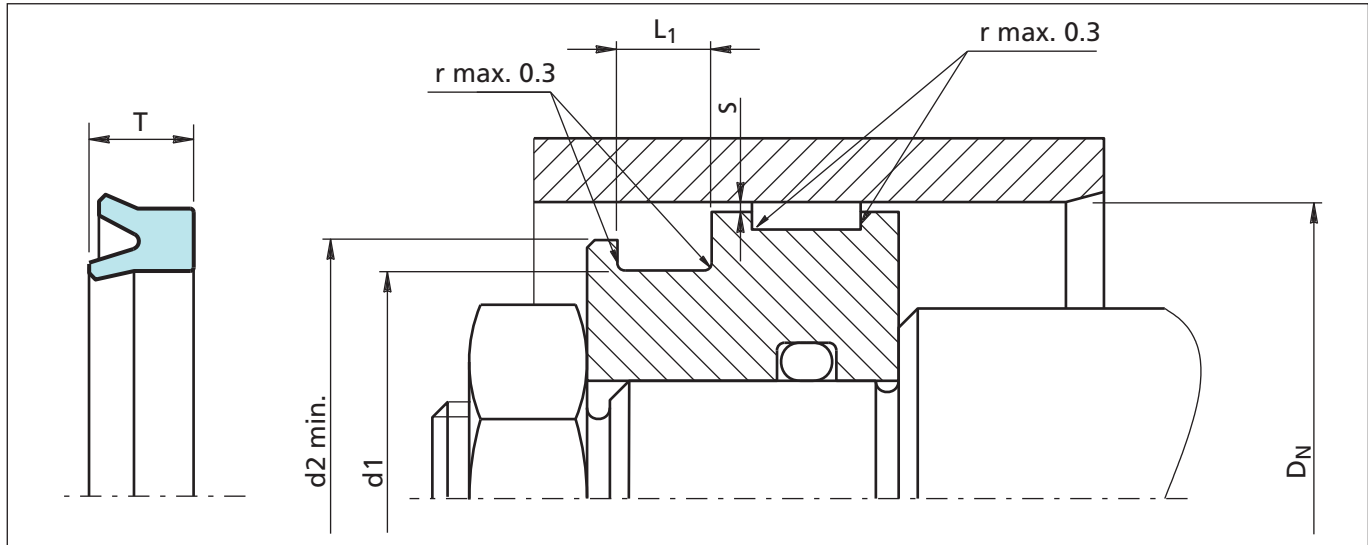


Figure 42 Installation drawing
* Dimensions "S" see Table XLVI

Ordering Example

Bore diameter: $D_N = 80 \text{ mm}$
 Groove diameter: $d_1 = 60 \text{ mm}$
 Groove width: $L_1 = 13 \text{ mm}$
 TSS Part No.: PUA000800 (Table XLVII)
 Material code: Z20

| | | | | | |
|--------------------------|-----|---|-------|---|-----|
| TSS Article No. | PUA | 0 | 00800 | - | Z20 |
| TSS Series No. | | | | | |
| Execution code | | | | | |
| Bore diameter x 10 | | | | | |
| Quality Index (standard) | | | | | |
| Material code | | | | | |

Table XLVII Installation dimensions / TSS Part No.

| Bore Dia. | Groove Dia. | Seal Width | Groove Width | Fitting Dia. | TSS Part No. |
|------------------|------------------|------------|--------------|-------------------|--------------|
| $D_N \text{ H9}$ | $d_1 \text{ h9}$ | T | $L_1 +0.2$ | $d_2 \text{ min}$ | |
| 14.0 | 8.0 | 6.3 | 6.8 | 11.0 | PUA000140 |
| 16.0 | 8.0 | 6.0 | 5.5 | 13.0 | PUA300160 |
| 20.0 | 12.0 | 6.5 | 7.5 | 15.0 | PUA000200 |
| 22.0 | 12.0 | 8.0 | 9.0 | 16.0 | PUA000220 |
| 25.0 | 15.0 | 8.0 | 9.0 | 19.0 | PUA000250 |
| 30.0 | 20.0 | 8.0 | 9.0 | 24.0 | PUA100300 |
| 30.0 | 22.0 | 6.5 | 7.0 | 26.0 | PUA400300 |
| 32.0 | 22.0 | 8.0 | 9.0 | 26.0 | PUA000320 |
| 32.0 | 26.0 | 5.0 | 6.0 | 28.0 | PUA200320 |
| 35.0 | 25.0 | 8.0 | 9.0 | 29.0 | PUA100350 |
| 40.0 | 30.0 | 6.5 | 7.5 | 34.0 | PUA200400 |
| 40.0 | 30.0 | 10.0 | 11.0 | 34.0 | PUA500400 |



| Bore Dia. | Groove Dia. | Seal Width | Groove Width | Fitting Dia. | TSS Part No. |
|-------------------|-------------------|------------|--------------|--------------------|--------------|
| D _N H9 | d ₁ h9 | T | L1 +0.2 | d ₂ min | |
| 40.0 | 32.0 | 5.5 | 6.5 | 36.0 | PUA300400 |
| 45.0 | 30.0 | 10.0 | 11.0 | 35.0 | PUA100450 |
| 50.0 | 40.0 | 10.0 | 11.0 | 44.0 | PUA400500 |
| 50.0 | 42.0 | 5.5 | 6.0 | 45.0 | PUA900500 |
| 52.0 | 42.0 | 5.7 | 6.5 | 46.0 | PUA000520 |
| 55.0 | 40.0 | 10.0 | 11.0 | 45.0 | PUA000550 |
| 60.0 | 50.0 | 7.0 | 8.0 | 54.0 | PUA000600 |
| 60.0 | 50.0 | 10.0 | 11.0 | 54.0 | PUA600600 |
| 63.0 | 48.0 | 12.0 | 13.0 | 53.0 | PUA000630 |
| 63.0 | 53.0 | 7.0 | 8.0 | 57.0 | PUA200630 |
| 65.0 | 50.0 | 10.0 | 11.0 | 55.0 | PUA100650 |
| 65.0 | 55.0 | 10.0 | 11.0 | 59.0 | PUA400650 |
| 70.0 | 60.0 | 7.0 | 8.0 | 64.0 | PUA100700 |
| 70.0 | 60.0 | 12.0 | 13.0 | 64.0 | PUA700700 |
| 75.0 | 65.0 | 7.0 | 8.0 | 69.0 | PUA500750 |
| 75.0 | 65.0 | 10.0 | 11.0 | 69.0 | PUA400750 |
| 80.0 | 60.0 | 12.0 | 13.0 | 65.0 | PUA000800 |
| 80.0 | 68.0 | 8.5 | 9.5 | 72.0 | PUA300800 |
| 80.0 | 70.0 | 12.0 | 13.0 | 74.0 | PUA700800 |
| 85.0 | 70.0 | 12.0 | 13.0 | 75.0 | PUA300850 |
| 90.0 | 75.0 | 12.0 | 13.0 | 80.0 | PUA300900 |
| 90.0 | 80.0 | 10.0 | 11.0 | 84.0 | PUA000900 |
| 95.0 | 75.0 | 13.5 | 14.5 | 80.0 | PUA100950 |
| 100.0 | 80.0 | 12.0 | 13.0 | 85.0 | PUA001000 |
| 100.0 | 85.0 | 12.0 | 13.0 | 90.0 | PUA401000 |
| 110.0 | 95.0 | 12.0 | 13.0 | 100.0 | PUA101100 |
| 110.0 | 100.0 | 7.0 | 8.0 | 104.0 | PUA201100 |
| 115.0 | 100.0 | 12.0 | 13.0 | 105.0 | PUA001150 |
| 120.0 | 100.0 | 12.0 | 13.0 | 105.0 | PUA001200 |
| 125.0 | 100.0 | 15.0 | 16.0 | 105.0 | PUA201250 |
| 125.0 | 105.0 | 12.0 | 13.0 | 110.0 | PUA301250 |
| 125.0 | 110.0 | 10.0 | 11.0 | 115.0 | PUA101250 |
| 130.0 | 110.0 | 15.0 | 16.0 | 115.0 | PUA001300 |
| 140.0 | 120.0 | 12.0 | 13.0 | 125.0 | PUA001400 |
| 150.0 | 130.0 | 15.0 | 16.0 | 135.0 | PUA101500 |
| 160.0 | 140.0 | 11.5 | 12.5 | 145.0 | PUA001600 |
| 180.0 | 160.0 | 11.5 | 12.5 | 165.0 | PUA201800 |
| 200.0 | 175.0 | 15.0 | 16.0 | 180.0 | PUA102000 |
| 250.0 | 225.0 | 15.0 | 16.0 | 230.0 | PUA102500 |



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