

# Zurcon® U-Cup RU6



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Single-acting U-Cup

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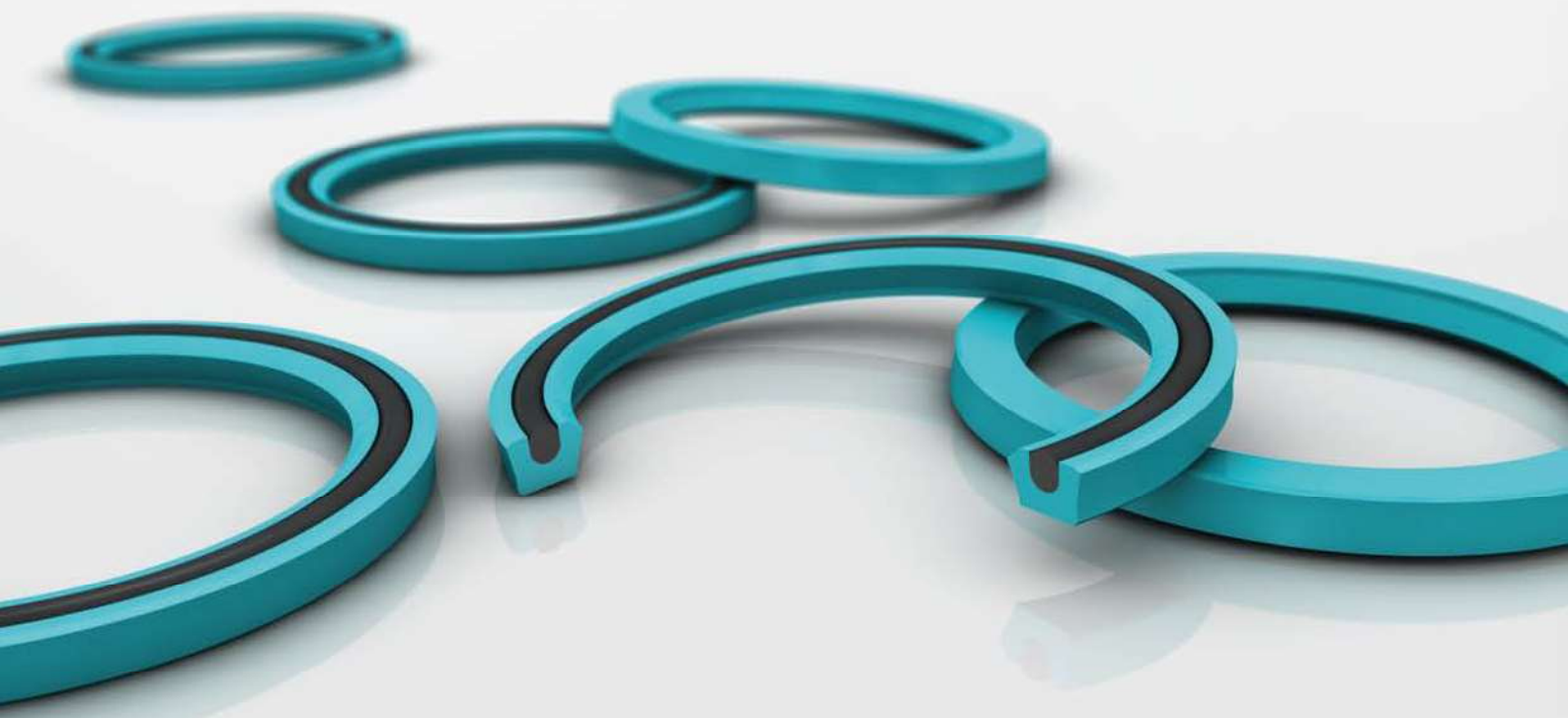
Rubber Energized

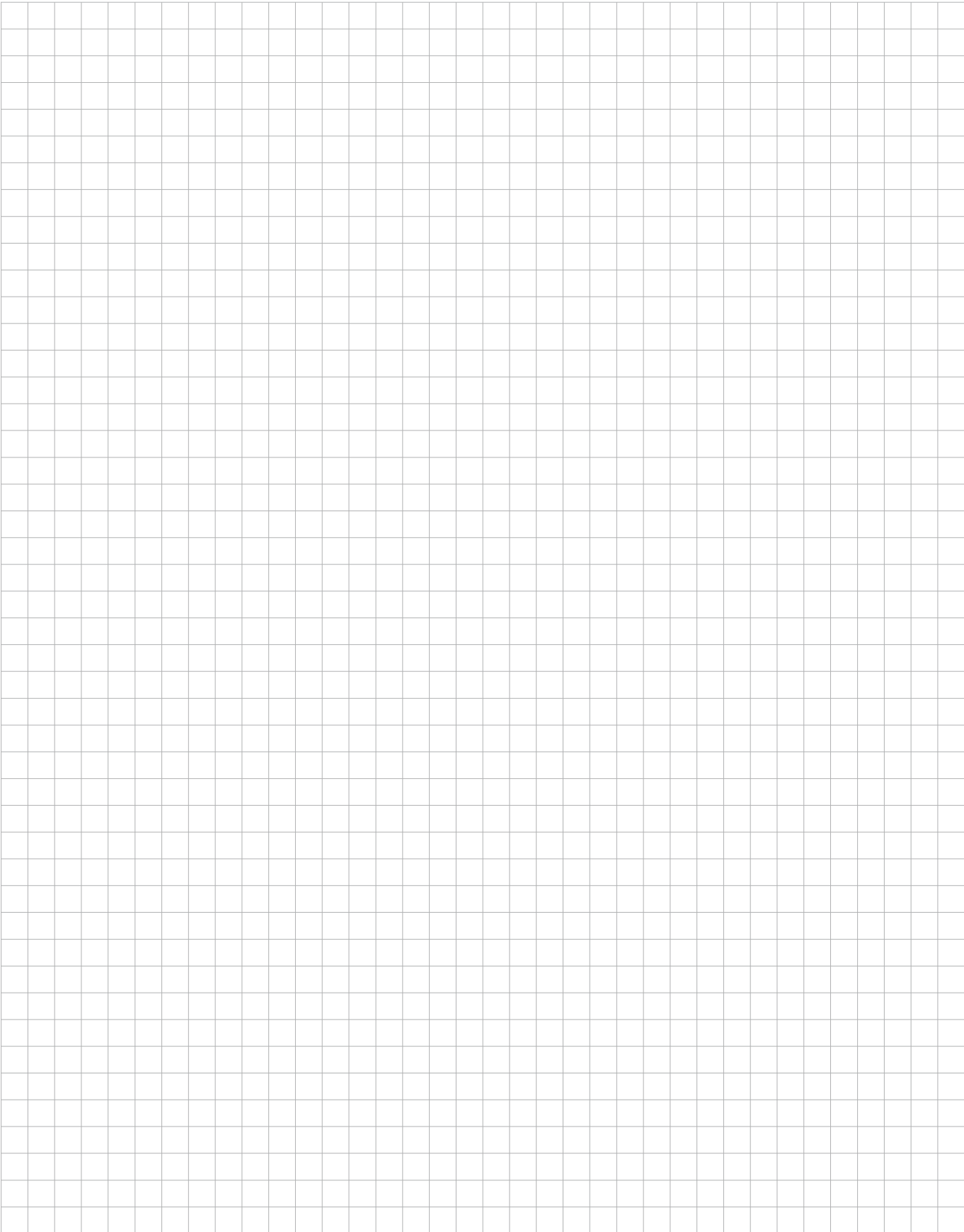
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**Material:**

Zurcon® + NBR

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## ■ U-Cup RU6



### ■ Description

Additional to the machined seals Stepseal® 2K and Rimseal for housings to ISO 7425/2 (rubber energised plastic seals) the U-Cup type RU6 has been developed as an injection molded seal of polyurethane material to fit in the same ISO housings. The integrated NBR O-Ring (only available for series RU62 - RU64) improves the performance at low pressure and low temperature applications. Polyurethane (Zurcon® Z20) is a proven material for U-cups due to their good mechanical properties.

### TYPE RU6

The U-Cup type RU6 can be installed as a single seal for low to medium duty applications; for sealing systems, the U-Cup RU6 shall be installed mainly as a secondary seal together with the Turcon® Stepseal® 2K as primary seals.

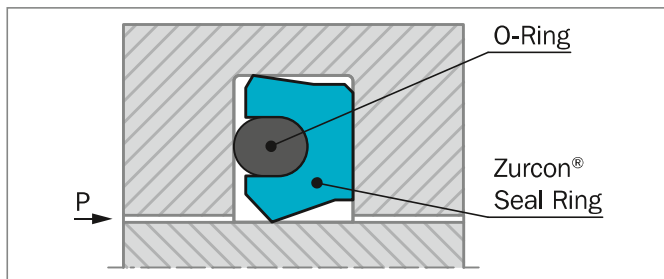


Figure 47: U-Cup, type RU6

### METHOD OF OPERATION

The sealing effect of the U-Cup RU6 comes from the intrinsic preload of the seal body and from the compression of the seal lip and the O-Ring during installation. In operation conditions, the radial contact forces are superimposed by the system pressure.

Due to the special design and the integrated O-Ring the RU6 U-Cups have an excellent sealing behavior with and without pressure activation. The short sealing lip gives better friction values compared to common U-Cups.

### ADVANTAGES

- Very good low pressure sealability
- Simple installation
- Lower friction compared with common U-Cups
- Installation in ISO 7475/2 grooves
- Very low compression set due to O-Ring

### APPLICATION EXAMPLES

- General hydraulic cylinders
- Injection molding machines
- Lift trucks
- Agricultural machines

### OPERATING CONDITIONS

<b>Pressure:</b>	Max. 25 MPa (as single element)
<b>Speed:</b>	Up to 0.5 m/s
<b>Temperature:</b>	Use in mineral oils: -35 °C to +110 °C
<b>Media:</b>	Mineral oil-based hydraulic fluids.

### 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 depends on media.

### CLEARANCE

Table 35: Radial Clearance U-Cup RU6

Operating Pressure MPa max.	Radial Clearance $S_{max}$
16	0.60
25	0.50

The values for  $S_{max}$  given in this table apply to all types for the low-pressure side of the U-Cup. They are designed for an operating temperature of 60 °C. (for harsh conditions and high side loads the gap must be reduced by 50%)

### MATERIAL

The thermoplastic polyurethane material Zurcon® Z20 has a high abrasion resistance, a low compression set and exhibits a high resistance to clearance extrusion. The integrated O-Ring is an NBR with 70 shore A and a very low compression set.

U-Cup: polyurethane 93 shore A  
material code Z20

O-Ring: NBR 70 Shore A  
material code N

Set code: Z20N

**Table 36: Materials**

Material Code	Material Description	Temp. Range	Application
Zurcon® Z20	High performance Polyurethane 94 Shore A; standard grade for hydraulic	-35 °C to +110 °C	Excellent abrasion and extrusion resistance, minimal swelling in mineral oil, acceptable hydrolysis resistance.



## ■ Installation Recommendation

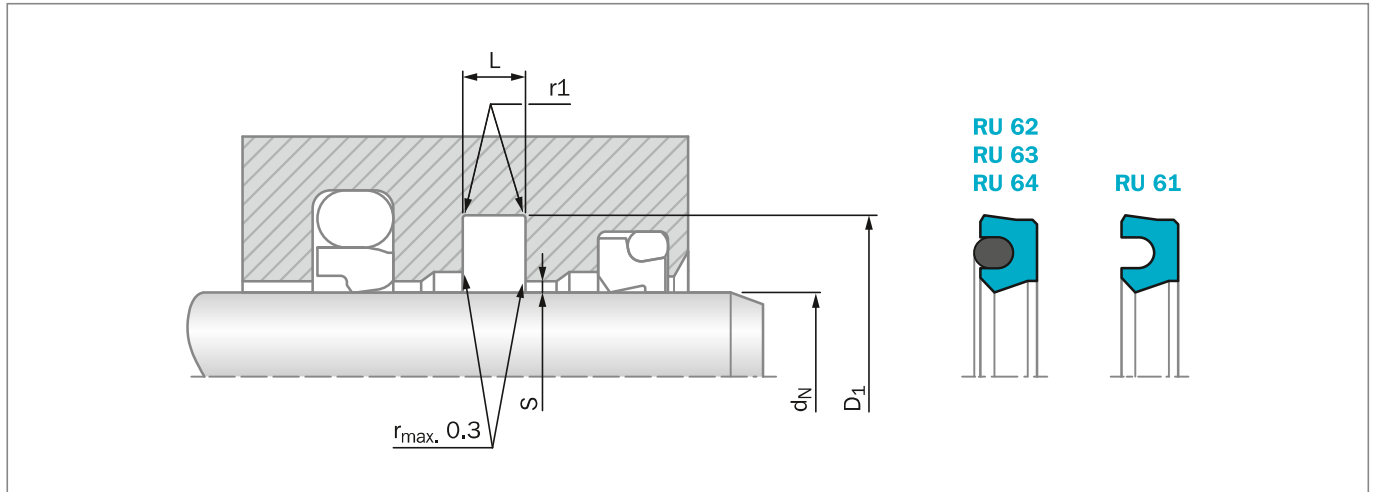


Figure 48: Installation Drawing

### ORDERING EXAMPLE

U-Cup Type RU6

<b>Rod Diameter:</b>	$d_N = 70.0 \text{ mm}$
<b>Groove Diameter:</b>	$D_1 = 85.5 \text{ mm}$
<b>Groove Width:</b>	$L = 6.3 \text{ mm}$
<b>TSS Part No.:</b>	RU6300700 -
<b>Compound code seal:</b>	Z20 turquoise
<b>Compound code O-Ring:</b>	N
<b>Material set code:</b>	Z20N

#### TSS Article No.

	<b>RU63</b>	<b>0</b>	<b>0700</b>	<b>- Z20N</b>
TSS Series No.				
Type (Standard)				
Rod Diameter x 10				
Quality Index (Standard)				
Material Set Code				

Table 37: Installation Dimensions / TSS Part No.

Rod Diameter	Groove Diameter	Groove Width	Radius	TSS Part No.	O-Ring Size
$d_N$ f8/h9	$D_1$ H10	L +0.2	r1		
12.0	19.5	3.2	0.5	RU6100120	-
14.0	21.5	3.2	0.5	RU6100140	-
16.0	23.5	3.2	0.5	RU6100160	-
18.0	25.5	3.2	0.5	RU6100180	-
25.0	32.5	3.2	0.5	RU6100250	-
*28.0	39.0	4.2	0.5	RU6200280	31.42 x 2.62
36.0	47.0	4.2	0.5	RU6200360	39.34 x 2.62
*40.0	51.0	4.2	0.5	RU6200400	44.12 x 2.62
*45.0	56.0	4.2	0.5	RU6200450	48.90 x 2.62
50.0	61.0	4.2	0.5	RU6200500	53.64 x 2.62
55.0	66.0	4.2	0.5	RU6200550	58.42 x 2.62
56.0	71.5	6.3	0.9	RU6300560	59.92 x 3.53



Rod Diameter	Groove Diameter	Groove Width	Radius	TSS Part No.	O-Ring Size
$d_N$ f8/h9	$D_1$ H10	L +0.2	r1		
<b>63.0</b>	<b>74.0</b>	<b>4.2</b>	<b>0.5</b>	<b>RU6200630</b>	<b>66.34 x 2.62</b>
<b>63.0</b>	<b>78.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6300630</b>	<b>66.27 x 3.53</b>
<b>70.0</b>	<b>85.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6300700</b>	<b>75.79 x 3.53</b>
<b>80.0</b>	<b>95.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6300800</b>	<b>85.32 x 3.53</b>
<b>90.0</b>	<b>105.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6300900</b>	<b>94.84 x 3.53</b>
<b>100.0</b>	<b>115.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6301000</b>	<b>104.37 x 3.53</b>
<b>110.0</b>	<b>125.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6301100</b>	<b>113.89 x 3.53</b>
120.0	135.5	6.3	0.9	RU6301200	126.59 x 3.53
150.0	165.5	6.3	0.9	RU6301500	158.34 x 3.53
<b>160.0</b>	<b>175.5</b>	<b>6.3</b>	<b>0.9</b>	<b>RU6301600</b>	<b>164.69 x 3.53</b>
190.0	205.5	6.3	0.9	RU6301900	196.44 x 3.53
<b>200.0</b>	<b>221.0</b>	<b>8.1</b>	<b>0.9</b>	<b>RU6402000</b>	<b>208.92 x 5.33</b>
210.0	231.0	8.1	0.9	RU6402100	221.62 x 5.33
260.0	281.0	8.1	0.9	RU6402600	266.07 x 5.33
300.0	321.0	8.1	0.9	RU6403000	329.57 x 5.33
350.0	371.0	8.1	0.9	RU6403500	354.97 x 5.33

Dimensions in **bold** according to ISO/DIN 7425/2. Is also suitable for Stepseal® groove. \* Split groove