

Zurcon® Buffer Seal LM

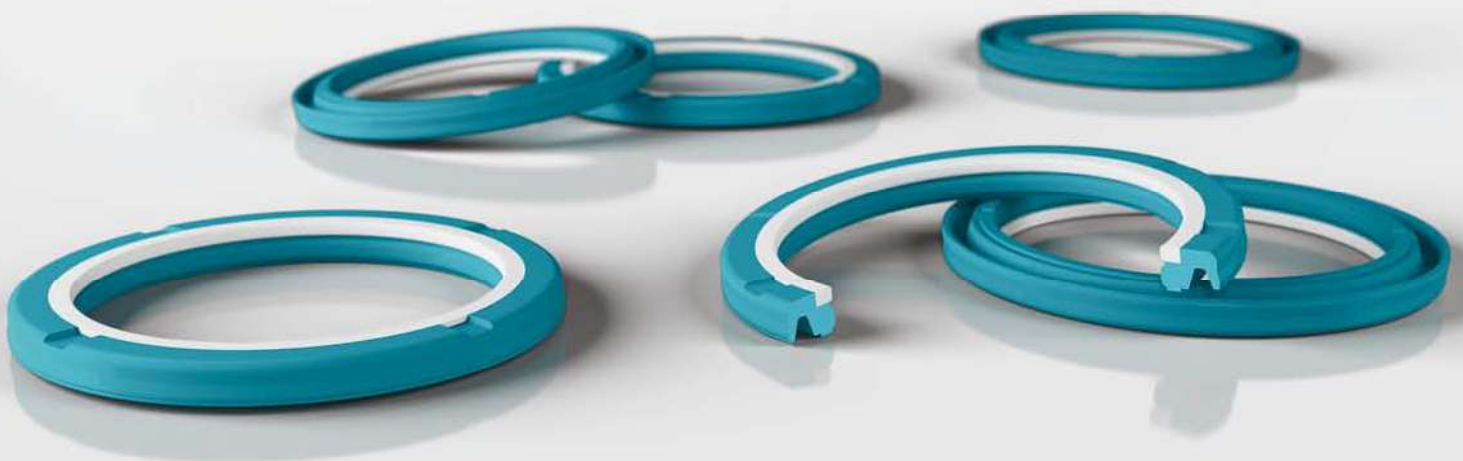


Single-acting

Designed for Lubrication Management
Technology

Integrated Back-Up Ring

Material:
Zurcon®





Zurcon® Buffer Seal LM



Introduction

In heavy-duty applications, leak-free performance and long service life cannot be assured by a single sealing element; therefore, specially developed system seals are arranged in series, building a tandem configuration.

Each sealing element in a system has its specific function, and their interaction needs to be secured to incorporate redundancy into the sealing system. The primary seal, manufactured from Zurcon® material, has excellent wear and extrusion resistance under extreme working conditions. It allows an optimized lubrication film to pass this first barrier, ensuring the necessary lubrication of the secondary sealing element for long service life.

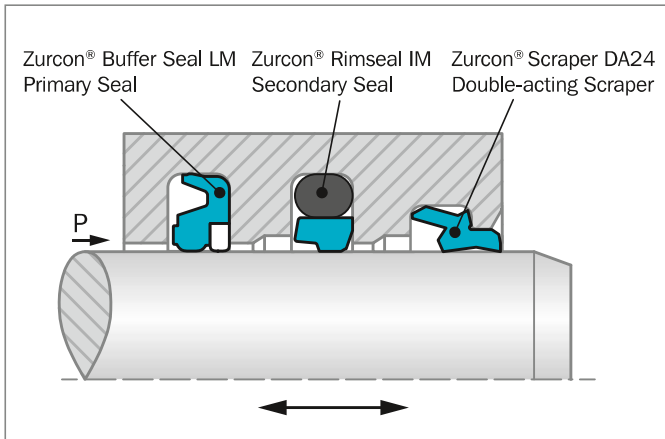


Figure 57: Zurcon® Buffer Seal LM in tandem configuration

In order to further optimize the performance, friction and service life of sealing systems using a tandem sealing configuration, Trelleborg Sealing Solutions developed the already known and appreciated capabilities of Zurcon® Buffer Seal into a new design called Zurcon® Buffer Seal LM.

DESCRIPTION

The single-acting Zurcon® Buffer Seal LM is designed as a heavy-duty primary rod seal. The design of the product incorporates a combination of a Zurcon® sealing ring with a Back-up Ring. By utilizing two materials, the performance of the product is enhanced and life is extended.

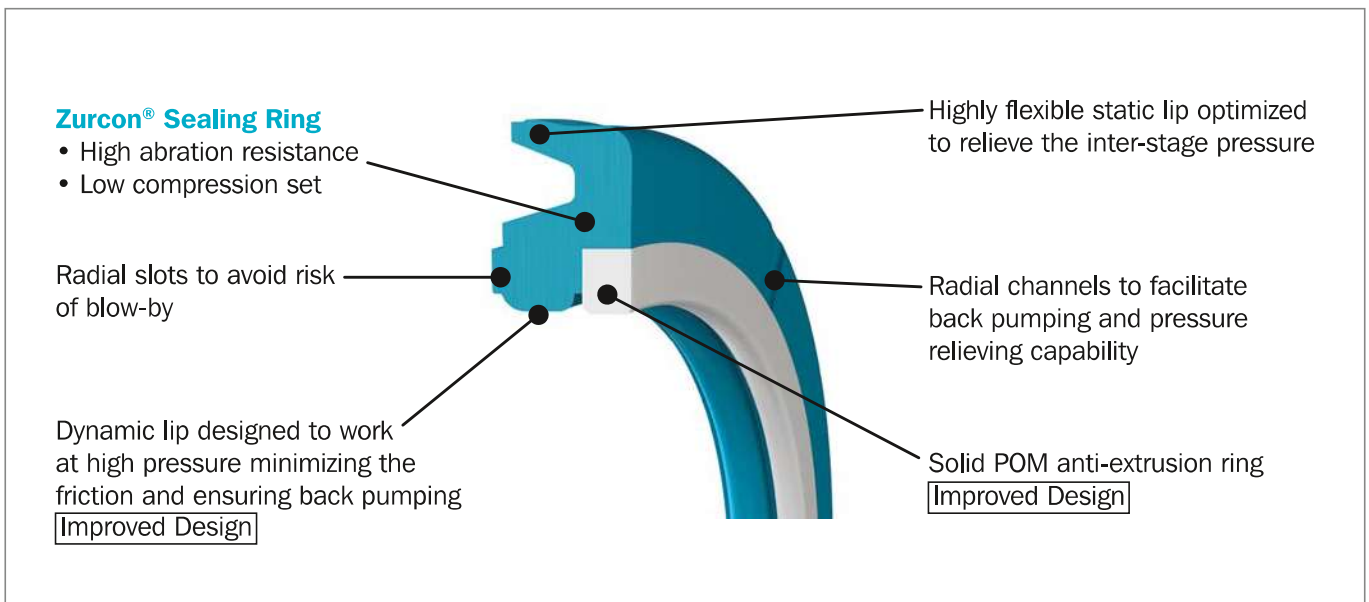


Figure 58: Zurcon® Buffer Seal LM design features



LUBRICATION MANAGEMENT FEATURE

This innovative design incorporates large radius rounded edges on both seal ring and Back-up Ring that lower the contact pressure, allowing a thicker amount of fluid to lubricate and better activate the secondary seal.

By means of this, friction and wear on the lips are reduced significantly, therefore increasing life time and reliability, as well as rod wear.

This engineered wet running creates the right environment to enhance the Zurcon® PU sealing system. New generation secondary seals like RU9, L-Cup and Rimseal IM can manage the larger oil film in the best way, compensating for pressure from oil accumulation, as well as returning oil to the main pressure chamber due to excellent back pumping behavior under all pressure ranges.

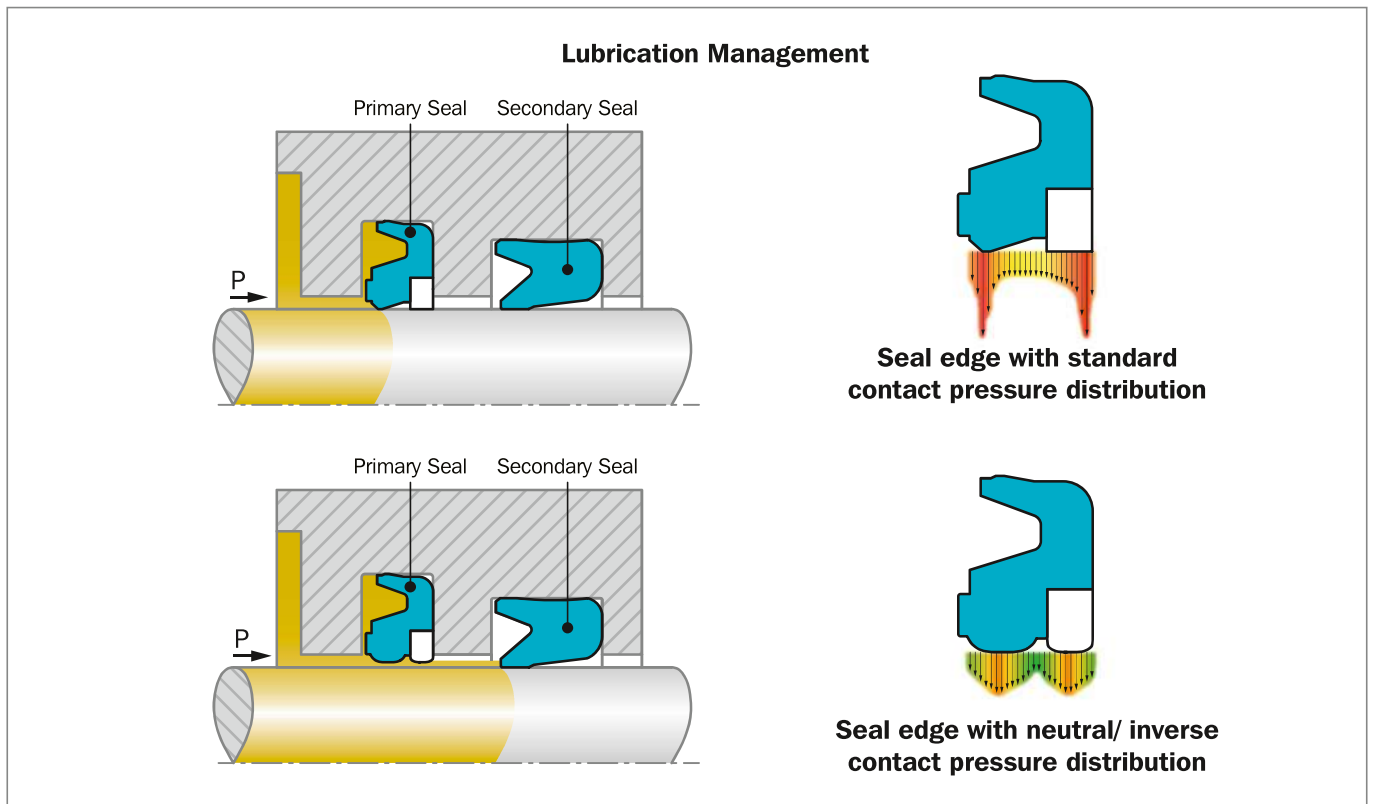


Figure 59: Pressure distribution and function of a standard (top) and a LM (bottom) sealing system



PRESSURE RELIEF

The relief mechanism is activated by the special seal design, through its thin, short and flexible static lip. The radial channels on the back side offer the fluid a direct stream up to both lips. A minimum difference between the pressure trapped and the pressure in the chamber is able to deflect the seal and recover the same pressure level.

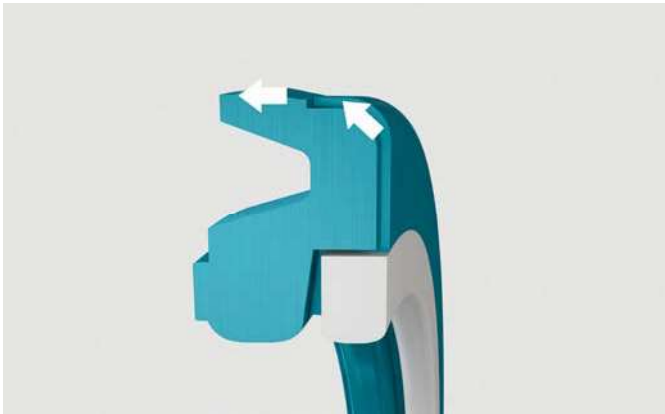


Figure 60: Venting path

Zurcon® Buffer Seal LM is able to guarantee an optimal pressure distribution and sufficient rod lubrication across the entire pressure range.

In unpressurized conditions, head-on slots on the dynamic lip assure correct positioning and avoid any risk of blow-by. When installed, Zurcon® Buffer Seal LM is ready for fast activation, protecting the secondary seal from peaks in pressure.

ADVANTAGES

- Resistance to very high pressure peaks due to an integrated Back-up Ring that closes the radial gap
- Outstanding pressure relief
- Excellent back-pumping guaranteed over the entire pressure range
- Suitable to use both in ISO 7425/2 standard grooves and in Stepseal® grooves
- High performance Zurcon® material with an excellent abrasion resistance and low compression set

APPLICATION EXAMPLES

Medium and heavy-duty applications:

- Construction machinery
- Earth moving equipment
- Mobile hydraulics
- Fork lifts

MATERIALS - STANDARD APPLICATION

For hydraulic components in mineral oils or media with good lubricating performance.

Seal Ring: Zurcon® Z20

Back-up Ring: Polyacetal resin (POM)

Set reference: Z2054

Zurcon® polyurethane has high abrasion resistance, a low compression set, high extrusion resistance and a wide temperature range.

OPERATING CONDITIONS

Pressure:	Up to 40 MPa Up to 60 MPa peak
Velocity:	Up to 1 m/s
Temperature:	-35 °C to +110 °C*
Media:	
Mineral oil:	Up to 110 °C
Synthetic and natural esters HEES, HETG:	Up to +60 °C
Flame retardant fluids HFA/HFB:	Up to +40 °C

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.

* in the case of unpressurized applications in temperatures below 0 °C please contact your local Customer Solution Center for more information!



■ Installation Recommendation

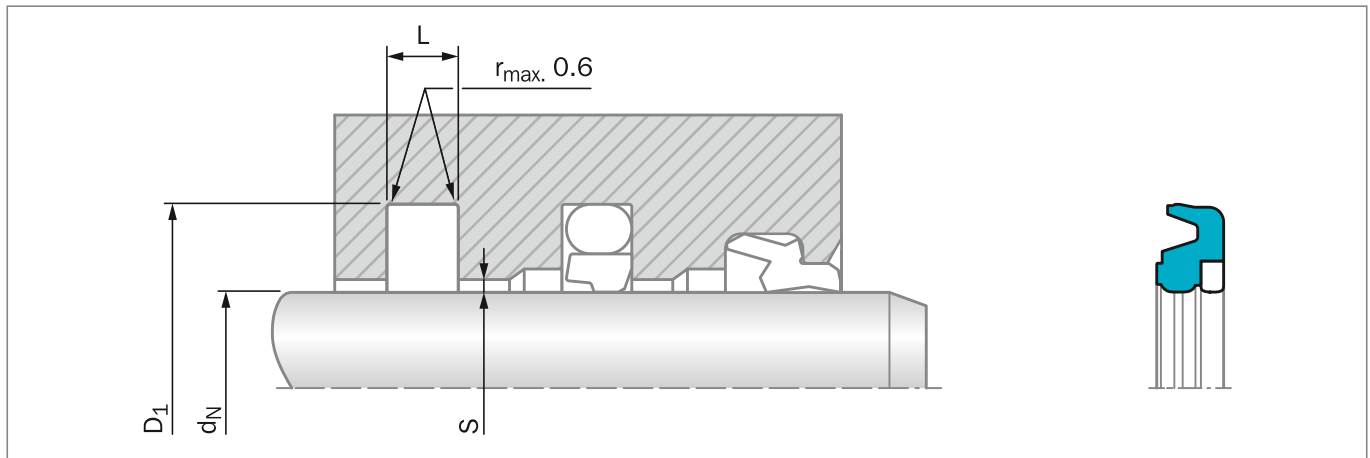


Figure 61: Installation Drawing

ORDERING EXAMPLE

Zurcon® Buffer Seal LM Type RUKC

Rod Diameter:	$d_N = 63.0 \text{ mm}$
Groove Diameter:	$D_1 = 78.5 \text{ mm}$
Groove Width:	$L = 6.3 \text{ mm}$
TSS Part No.:	RUKCB0630 -

TSS Article No.	RUKC	B	0630	-	Z2054
TSS Series No.					
Type (Standard)					
Rod diameter x 10					
Quality Index (Standard)					
Material Code (Seal Ring)					

Table 40: Installation Dimensions / TSS Article No.

Rod Diameter	Groove Diameter	Groove Width	Radial Clearance	TSS Article No.
d_N f8/h9	D_1 H9	L +0.25	S_{max}	
50.0	65.5	6.3	0.4	RUKCB0500-Z2054
60.0	75.5	6.3	0.4	RUKCB0600-Z2054
65.0	80.5	6.3	0.4	RUKCB0650-Z2054
70.0	85.5	6.3	0.4	RUKCB0700-Z2054
75.0	90.5	6.3	0.4	RUKCB0750-Z2054
80.0	95.5	6.3	0.4	RUKCB0800-Z2054
85.0	100.5	6.3	0.4	RUKCB0850-Z2054
90.0	105.5	6.3	0.4	RUKCB0900-Z2054
95.0	110.5	6.3	0.4	RUKCB0950-Z2054
100.0	115.5	6.3	0.4	RUKCB1000-Z2054
105.0	120.5	6.3	0.4	RUKCB1050-Z2054
110.0	125.5	6.3	0.4	RUKCB1100-Z2054
115.0	130.5	6.3	0.4	RUKCB1150-Z2054
120.0	135.5	6.3	0.4	RUKCB1200-Z2054
125.0	140.5	6.3	0.4	RUKCB1250-Z2054
140.0	155.5	6.3	0.4	RUKCB1400-Z2054
150.0	165.5	6.3	0.4	RUKCB1500-Z2054

All dimensions in **bold** type are in accordance with the recommendation of ISO 7425/2. Suitable also in Stepseal groove.