



■ Balsele



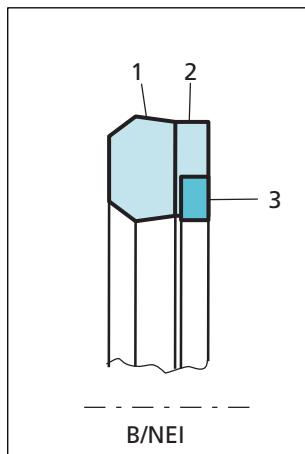
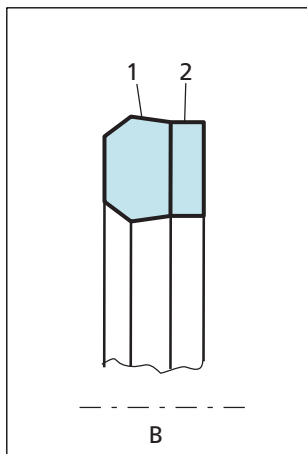
Description

The Balsele is a compact rod seal consisting of an elastomeric sealing element and an integrated fabric reinforced base.

Due to the radial pre-load an excellent sealing performance will be achieved even at low pressures. The fabric reinforced base prevents the seal from extrusion. Where extrusion gaps are greater than those specified or for higher pressure conditions the serie B/NEI with incorporated anti-extrusion ring shall be selected.

Design

- 1) Sealing element manufactured from a specially developed nitrile compound particularly resistant to compression set. The sealing lips are produced to give optimum efficiency and wear resistance.
- 2) The reinforced base of the seal element is of cotton fabric impregnated with nitrile elastomer and vulcanised with the sealing element 1, thus forming an integral component.
- 3) Guide rings or antiextrusion rings are made from acetal resin. As previously described these rings maintain the seal in the optimum position for maximum performance, and minimise all possible extrusion gaps.



Advantages

- Small cross sections
- Good chemical resistance
- Large size range
- No hydrolyses problems
- Wide temperature range

Application Examples

- Standard hydraulic cylinders (low to medium duty)
- Mobile hydraulic
- Water based fluids equipment
- After market
- Presses

Technical Data

Operating conditions

Pressure:	Up to 25 MPa (Type B) Up to 40 MPa (Type B/NEI)
Velocity:	Up to 0.5 m/s
Temperature:	- 30 °C to +130 °C
Media:	Mineral oil, water, air

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

For type B:
NBR + cotton fabric
Material code N8C0

for type B/NEI:
NBR + cotton fabric
Back-up Ring material POM
Material code N8C0



Design Instructions

Lead in chamfers

In order to avoid damage to the Balsele during installation, lead in chamfers of min. $5 \times 20^\circ$ must be provided on the rods.

Rod Diameter	Lead in Chamfer
0 - 100	$5 \times 20^\circ$
101 - 200	$7 \times 20^\circ$
201 - 400	$10 \times 20^\circ$

Surface roughness

Parameter	Mating Surface μm	Groove Surface μm
R_{max}	0.63 - 2.50	< 16.0
$R_{z \text{ DIN}}$	0.40 - 1.60	< 10.0
R_a	0.05 - 0.20	< 1.6

The material contact area R_{mr} should be approx. 50 to 70%, determined at a cut depth $c = 0.25 \times R_z$, relative to a reference line of C_{ref} . 5%.

Clearance

Operating max. Pressure MPa	Radial Clearance S max.
16	0.20
25	0.10

For Type B/NEI (with Back-up Ring) the values can be double and with similar gap measure $S_{\text{max.}} = 0.10$ a pressure of 40 MPa can be tightened.



■ Installation Recommendation

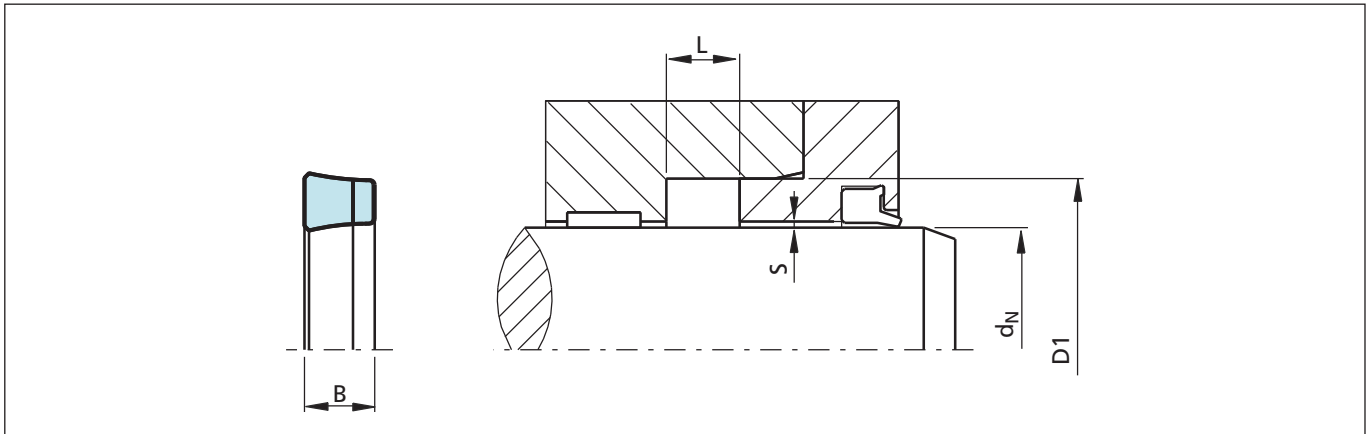


Figure 36 Installation drawing

Ordering example

Balsele Type B
 Rod diameter: $d_N = 6.0 \text{ mm}$
 Groove diameter: $D_1 = 10.0 \text{ mm}$
 Groove width: $L = 5.0 \text{ mm}$
 TSS Part No.: RUM000060 -
 Compound: N8C0 (NBR + cotton fabric)

TSS Article No.	RUM	0	0	0060	-	N8C0
TSS Series No.						
Design code						
Execution Mark						
Rod diameter x 10						
Quality Index (Standard)						
Material code (Seal ring)						
Polypac Ref. No.: B 039023						

Table XXIX Installation dimensions / TSS Article No.

Note	Rod Diameter	Groove Diameter	Groove Width	Seal Width	TSS Article No.	Description
	d_N h11	D_1 H11	$L + 0.1$	B		
*	4.76	12.70	6.40	5.75	RUM000047-N8C0	B 050018
*	6.00	10.00	5.00	4.00	RUM000060-N8C0	B 039023
*	6.00	14.00	6.40	5.90	RUM100060-N8C0	B 055024
*	6.35	14.28	6.85	6.30	RUM000063-N8C0	B 056025
*	8.00	15.00	6.40	5.90	RUM000080-N8C0	B 059031
*	10.00	17.00	6.40	5.90	RUM100100-N8C0	B 066039
*	11.11	20.63	7.65	7.00	RUM000111-N8C0	B 081043
*	12.00	18.00	7.50	7.00	RUM000120-N8C0	B 070047
*	12.00	19.00	6.30	5.80	RUM100120-N8C0	B 075047

Dimensions printed in **bold** type correspond to ISO/DIN 5597 and ISO 5597/1. Additional dimensions can be delivered on request.

* Split groove



POLYPAC® - Balsele

Note	Rod Diameter	Groove Diameter	Groove Width	Seal Width	TSS Article No.	Description
	d_N h11	D₁ H11	L +0.1	B		
*	12.00	20.00	6.40	5.80	RUM200120-N8C0	B 078047
*	12.70	19.05	5.25	4.80	RUM000127-N8C0	B 075050
*	12.70	20.63	6.85	6.30	RUM100127-N8C0	B 081050
*	12.70	22.22	7.65	7.00	RUM200127-N8C0	B 087050
*	14.00	22.00	6.50	5.90	RUM000140-N8C0	B 086055
*	14.28	23.81	7.65	7.00	RUM000142-N8C0	B 093056
*	15.00	23.00	6.40	5.80	RUM000150-N8C0	B 090059
*	15.87	22.22	5.25	4.80	RUM000158-N8C0	B 087062
*	15.87	25.40	7.65	7.00	RUM100158-N8C0	B 100062
*	16.00	24.00	6.40	5.90	RUM000160-N8C0	B 094063/1
*	16.00	24.00	7.00	6.50	RUM100160-N8C0	B 094063
*	17.46	30.16	10.00	9.20	RUM000174-N8C0	B 118068
*	18.00	25.00	8.00	7.30	RUM100180-N8C0	B 098070
*	18.00	26.00	6.40	5.80	RUM200180-N8C0	B 102070/1
*	18.00	26.00	7.00	6.50	RUM300180-N8C0	B 102070
*	18.00	28.00	6.30	5.70	RUM400180-N8C0	B 110070
*	19.05	28.58	9.00	8.00	RUM100190-N8C0	B 112075
*	19.05	31.75	8.50	7.70	RUM000190-N8C0	B 125075/1
*	20.00	27.00	6.50	5.90	RUM000200-N8C0	B 106078
*	20.00	28.00	6.30	5.70	RUM200200-N8C0	B 110078/1
*	20.00	28.00	7.00	6.50	RUM100200-N8C0	B 110078
*	20.00	30.00	8.50	7.60	RUM300200-N8C0	B 118078
*	20.00	35.00	11.50	10.60	RUM400200-N8C0	B 137078
*	20.63	33.33	10.00	9.20	RUM000206-N8C0	B 131081
*	22.00	30.00	6.50	5.90	RUM000220-N8C0	B 118086/1
*	22.00	30.00	7.00	6.50	RUM100220-N8C0	B 118086
*	22.00	35.00	10.00	9.20	RUM400220-N8C0	B 137086
*	22.22	31.75	9.20	8.60	RUM000222-N8C0	B 125087
*	23.81	36.51	10.00	9.20	RUM000238-N8C0	B 143093
*	24.00	32.00	7.50	6.90	RUM000240-N8C0	B 125094
*	24.00	34.00	6.50	5.90	RUM100240-N8C0	B 134094
*	25.00	33.00	6.40	5.80	RUM000250-N8C0	B 129098/1
*	25.00	35.00	9.00	8.40	RUM100250-N8C0	B 137098
*	25.00	38.00	10.00	9.15	RUM200250-N8C0	B 149098
*	25.00	44.00	12.50	11.40	RUM300250-N8C0	B 173098
*	25.40	31.75	5.25	4.70	RUM000254-N8C0	B 125100

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* Split groove



Note	Rod Diameter	Groove Diameter	Groove Width	Seal Width	TSS Article No.	Description
	d_N h11	D_1 H11	L +0.1	B		
*	25.40	34.92	6.85	6.20	RUM100254-N8C0	B 137100
*	25.40	38.10	10.00	9.20	RUM200254-N8C0	B 150100
*	25.40	41.27	11.60	10.70	RUM300254-N8C0	B 162100
*	26.00	40.00	10.00	9.20	RUM000260-N8C0	B 157102/1
*	27.00	35.00	6.50	5.90	RUM000270-N8C0	B 137106
	28.00	36.00	6.40	5.80	RUM000280-N8C0	B 141110
*	28.19	39.68	8.00	7.30	RUM000281-N8C0	B 156111
*	28.57	41.27	10.00	9.20	RUM100285-N8C0	B 162112
*	28.57	44.45	11.60	10.70	RUM200285-N8C0	B 175112
	30.00	37.50	6.50	6.00	RUM100300-N8C0	B 147118
	30.00	38.00	6.40	5.80	RUM000300-N8C0	B 149118
*	30.00	40.00	7.50	6.80	RUM300300-N8C0	B 157118
*	30.00	41.60	8.00	7.20	RUM500300-N8C0	B 164118
*	30.00	45.00	9.00	8.50	RUM600300-N8C0	B 177118/1
*	30.00	50.00	14.50	13.50	RUM700300-N8C0	B 196118
*	31.75	47.62	11.60	10.60	RUM200317-N8C0	B 187125
	32.00	40.00	6.30	5.80	RUM000320-N8C0	B 157125/1
*	32.00	40.00	9.00	8.50	RUM100320-N8C0	B 157125
*	34.92	50.80	10.00	9.10	RUM100349-N8C0	B 200137/1
*	34.92	50.80	11.60	10.60	RUM200349-N8C0	B 200137/2
	35.00	43.00	6.50	6.00	RUM000350-N8C0	B 169137
*	35.00	45.00	8.00	7.20	RUM100350-N8C0	B 177137/5
*	35.00	45.00	13.50	12.80	RUM300350-N8C0	B 177137/2
*	35.00	50.00	11.50	10.60	RUM400350-N8C0	B 196137
	36.00	43.00	6.50	6.00	RUM000360-N8C0	B 169141
	36.00	44.00	6.40	5.90	RUM100360-N8C0	B 173141
*	37.72	50.80	9.00	8.20	RUM000377-N8C0	B 200148
*	38.00	50.00	9.50	8.80	RUM000380-N8C0	B 196149
*	38.10	50.80	12.40	11.90	RUM100381-N8C0	B 200150/1
*	38.10	53.97	11.50	10.50	RUM400381-N8C0	B 212150/1
*	38.10	53.97	12.83	12.00	RUM500381-N8C0	B 212150/2
	40.00	48.00	6.50	6.00	RUM000400-N8C0	B 188157
	40.00	50.00	8.00	7.40	RUM100400-N8C0	B 196157/3
*	40.00	50.00	11.00	10.30	RUM300400-N8C0	B 196157
*	40.00	50.00	13.50	12.80	RUM400400-N8C0	B 196157/2
*	40.00	60.00	14.50	13.30	RUM700400-N8C0	B 236157

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* Split groove