

# Rod and buffer seals

<b>Profile overview .....</b>	<b>112</b>	<b>Profile data</b>	
<b>Basics .....</b>	<b>114</b>	<b>3.1 S1S.....</b>	<b>122</b>
Rod sealing systems .....	114	Metric sizes .....	123
Materials .....	114	ZBR .....	126
Anti-extrusion rings .....	115	Metric sizes .....	127
Rod guidance .....	115	Inch sizes .....	131
<b>Rod seals .....</b>	<b>116</b>	<b>3.3 SIL .....</b>	<b>134</b>
Polyurethane U-cup rod seals .....	116	Metric sizes .....	135
S1S profiles .....	116	<b>3.4 PTB .....</b>	<b>138</b>
ZBR profiles .....	116	Metric sizes .....	139
SIL profiles .....	117	Inch sizes .....	149
Energized U-cup rod seals .....	117	<b>3.5 STD .....</b>	<b>164</b>
PTB profiles .....	117	Inch sizes .....	165
STD profiles .....	118	<b>3.6 DZ .....</b>	<b>178</b>
Hybrid rod seals .....	118	Metric sizes .....	179
DZ profiles .....	118	Inch sizes .....	180
DZR profiles .....	119	<b>3.7 DZR .....</b>	<b>184</b>
Metric sizes .....		Metric sizes .....	185
Inch sizes .....		Inch sizes .....	186
<b>Buffer seals .....</b>	<b>120</b>	<b>3.8 RBB .....</b>	<b>188</b>
Polyurethane U-cup buffer seals .....	120	Metric sizes .....	189
RBB profiles .....	120	Inch sizes .....	191
Buffer seals incorporating slide rings ..	120	<b>3.9 S9B .....</b>	<b>192</b>
S9B profiles .....	120	Metric sizes .....	193
RSB profiles .....	121	Inch sizes .....	196
<b>More rod and buffer seals .....</b>	<b>202</b>	<b>3.10 RSB .....</b>	<b>198</b>
Rod locking T-seals .....		Inch sizes .....	199
TEFLATHANE seals .....		<b>Rod locking T-seals .....</b>	<b>202</b>
Chevron V-packing sets .....		TEFLATHANE seals .....	202
SPECTRASEAL .....		Chevron V-packing sets .....	202
Customized machined seal profiles ....		SPECTRASEAL .....	203
		Customized machined seal profiles ....	204

## Rod and buffer seals

## Profile overview

Profile	Description	Additional information → page	Profile data → page
<b>S1S</b> 	Single-lip U-cup profile made of polyurethane; suitable for medium to heavy duty applications	<b>116</b>	<b>122</b> (metric)
<b>ZBR</b> 	Double-lip U-cup profile made of polyurethane; suitable for medium to heavy duty applications	<b>116</b>	<b>126</b> (metric and inch)
<b>SIL</b> 	Double-lip U-cup profile made of polyurethane; suitable for low temperatures and light to medium duty applications	<b>117</b>	<b>134</b> (metric)
<b>PTB</b> 	Polyurethane U-cup profile with incorporated nitrile rubber X-ring, which provides good performance even at low pressure and temperature; suitable for medium duty applications	<b>117</b>	<b>138</b> (metric and inch)
<b>STD</b> 	Polyurethane U-cup profile with incorporated nitrile rubber X-ring, which provides good performance even at low pressure and temperature; fits narrow housings; suitable for medium duty applications	<b>118</b>	<b>164</b> (inch)
<b>DZ</b> 	Nitrile rubber primary sealing ring, polyurethane secondary sealing ring; low friction; suitable for medium to heavy duty applications	<b>118</b>	<b>178</b> (metric and inch)
<b>DZR</b> 	Nitrile rubber primary sealing ring, polyurethane secondary sealing ring, integrated triangular polyamide anti-extrusion ring; improved gap extrusion resistance; suitable for heavy duty applications and extreme pressures	<b>119</b>	<b>184</b> (metric and inch)

## Profile overview

Profile	Description	Additional information → page	Profile data → page
RBB	Buffer seal with polyurethane sealing ring, integrated polyacetal or polyamide anti-extrusion ring; designed to vent pressure back to system side; improved gap extrusion resistance at abrupt pressure peaks; fits narrow housings; suitable for heavy duty applications	120	188 (metric and inch)
S9B	Buffer seal with nitrile rubber O-ring energizer, PTFE slide ring; also available with polyurethane slide ring to improve wear resistance and ease installation; suitable for medium to heavy duty applications	120	192 (metric and inch)
RSB	Buffer seal with PTFE slide ring, nitrile rubber energizer; patented and improved design to reduce pressure peaks acting on the rod seal and vent pressure back to system side; improved gap extrusion resistance at abrupt pressure peaks; suitable for medium to heavy duty applications	121	198 (inch)

## Rod and buffer seals

# Basics

### Rod sealing systems

Rod and buffer seals maintain sealing contact in sliding motion between the cylinder head and the piston rod. Depending on the application, a rod sealing system can consist of a rod seal and a buffer seal (→ fig. 1) or a rod seal only (→ fig. 2). Rod sealing systems for heavy duty applications typically consist of a combination of both seal types, whereas the buffer seal is arranged between the rod seal and the piston in the cylinder head. Rod seals determine the tolerance for the rod diameter  $d$ .

In addition to the sealing function, rod seals also provide a thin lubrication film on the piston rod that lubricates themselves and the wiper seals. The lubricant also inhibits corrosion of the piston rod surface. However, the lubrication film must be thin enough so that it returns to the cylinder during the return stroke.

Selecting profiles and materials for a rod sealing system is a complex task, considering all possible cylinder designs and application criteria. SKF supplies rod and buffer seals in many different profiles and in a wide range of materials, series and sizes, which make them appropriate for a wide variety of operating conditions and applications.

### Materials

Depending on the profile and the required characteristics of its components, rod and

Fig. 1

Typical rod seal arrangement for heavy duty hydraulic applications

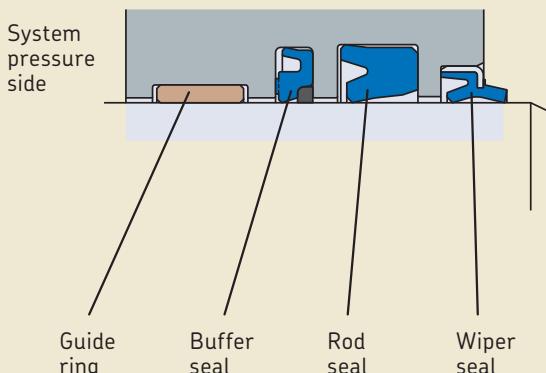
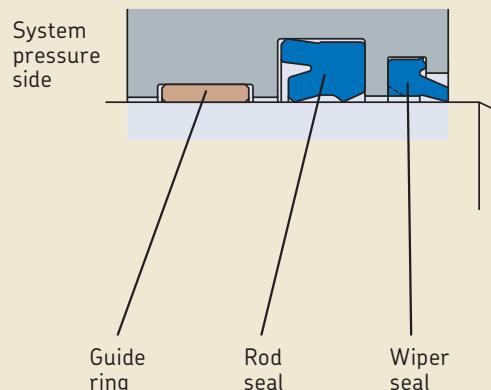


Fig. 2

Typical rod seal arrangement for light to medium duty hydraulic applications



### More information

Counter-surface finish properties .....	22
Materials .....	26
Hydraulic fluids .....	31
Gap extrusion .....	34
Storage .....	36
Installation and assembly .....	38

buffer seals can consist of one or several materials. Common materials used for the sealing and energizing elements of rod and buffer seals are thermoplastic polyurethane (TPU), polytetrafluoroethylene (PTFE) or nitrile rubber (NBR). Common materials used for rod seal anti-extrusion rings are polyamide (PA), polyacetal (POM) or PTFE. The materials used for a specific profile are provided in the *Profile overview* (→ page 112) and in the relevant profile sections below.

For additional information, refer to *Materials* (→ page 26).

## Anti-extrusion rings

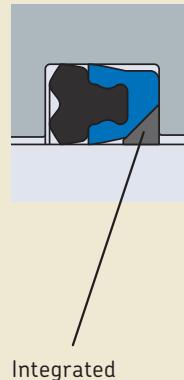
External forces acting on the rod can cause pressure peaks. They can be far in excess of the system operating pressure and may press a rod seal into the gap between the piston rod and the cylinder head. This risk of gap extrusion can be avoided for rod and buffer seals by using anti-extrusion rings. These hard and temperature-resistant rings can be integrated in the seal or a separate full-face anti-extrusion ring can be used. This ring can be added to a rod seal by simply extending the housing length (→ **fig. 3**). Integrated anti-extrusion rings fit into a notch in the rod or buffer seal and do not need an extended housing length.

DZR (→ **fig. 10, page 119**) profile rod seals and RBB (→ **fig. 11, page 120**) profile buffer seals incorporate an anti-extrusion ring. Other U-cup and energized U-cup rod seals with an integrated anti-extrusion ring are available on request. For seals without an integrated anti-extrusion ring, SKF provides full-face anti-extrusion rings on request. For additional information, contact SKF.

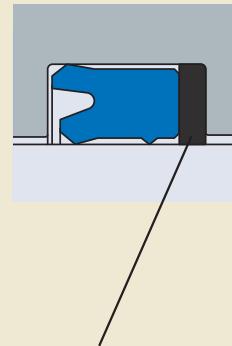
## Rod guidance

Although rod sealing systems are designed to accommodate minor radial motion between the piston rod and cylinder head, effective rod guidance is important to ensure best rod seal performance. Guide rings accurately center the rod within the head, which reduces radial deflection and motion acting on the seals. Guide rings also accommodate the radial loads acting on the cylinder assembly and avoid direct metal-to-metal contact between the piston rod and cylinder head. For additional information about rod guidance, refer to *Guide rings and guide strips* (→ **page 249**).

**Integrated and full-face anti-extrusion rings**



Integrated  
anti-extrusion ring



Full-face  
anti-extrusion ring

**Fig. 3**

## Rod and buffer seals

### Rod seals

Rod seals are typically single-acting seals, which means that fluid pressure acts from inside the cylinder on one seal side only. Pressures acting on the rod side of the piston can be in excess of 400 bar (5 800 psi), pressure peaks can be even higher. The pressure acting on the rod seal increases contact forces between the rod seal and rod surfaces. Therefore, rod seal materials should be wear resistant and the rod surface needs to be manufactured to the recommended specifications (→ *Counter-surface finish properties, page 22*).

### Polyurethane U-cup rod seals

U-cup seals, as their name implies, have a U-shaped profile, including an outside static sealing lip and an inside dynamic sealing lip. The unique combination of resilience and its resistance to gap extrusion and wear makes thermoplastic polyurethane (TPU) the most common material used for U-cup seals in hydraulic applications.

They are available with a single- or double-lip design.

### S1S profiles

S1S profiles (→ fig. 4) are made of ECOPUR (TPU) and have a single-lip design. The geometry has been optimized using FEA (Finite Element Analysis) to provide the longest possible maintenance-free service. They are suitable for pressures up to 400 bar (5 800 psi) in medium to heavy duty applications and are available in metric sizes. Some fit seal housings in accordance with ISO 5597.

### ZBR profiles

ZBR profiles (→ fig. 5) are made of LUBRITHANE (TPU) and have a double-lip design. They are suitable for pressures up to 400 bar (5 800 psi) in medium to heavy duty applications and are available in metric and inch sizes. Some metric sizes fit seal housings in accordance with ISO 5597.

Fig. 4

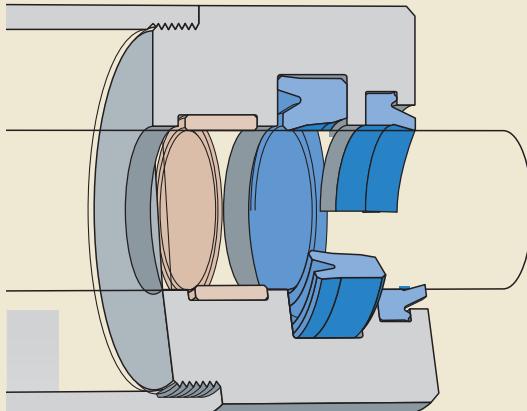
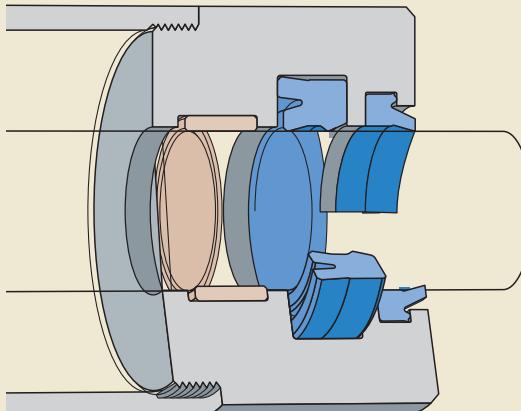


Fig. 5



## Rod seals

**SIL profiles**

SIL profiles (→ fig. 6) are made of ether-based TPU. They have a double-lip design and a secondary dynamic sealing lip. These seals provide good resistance to hydrolysis (attack from moisture) and good low temperature resilience. SIL profiles are suitable for pressures up to 350 bar (5 075 psi) in light to medium duty applications and are available in metric sizes. Some fit seal housings in accordance with ISO 5597.

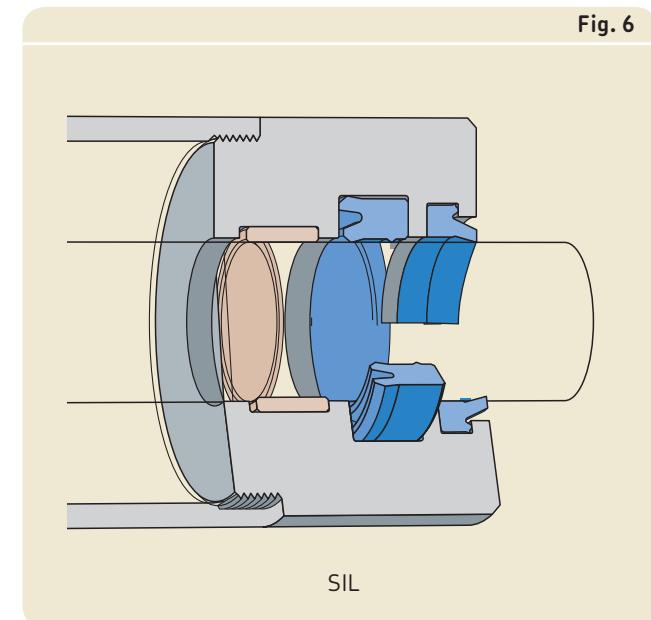
**Energized U-cup rod seals**

Energized U-cup rod seals incorporate a nitrile rubber (NBR) X-ring in their thermoplastic polyurethane (TPU) U-cup. The X-ring serves as energizer, provides additional sealing force and improves the long-term resilience of the sealing lips. This can be beneficial in applications with low operating pressure or low temperatures.

**PTB profiles**

PTB profiles (→ fig. 7) are made of LUBRITHANE (TPU). They are suitable for pressures up to 400 bar (5 800 psi) in medium duty applications and are available in metric and inch sizes. Some metric sizes fit seal housings in accordance with ISO 5597.

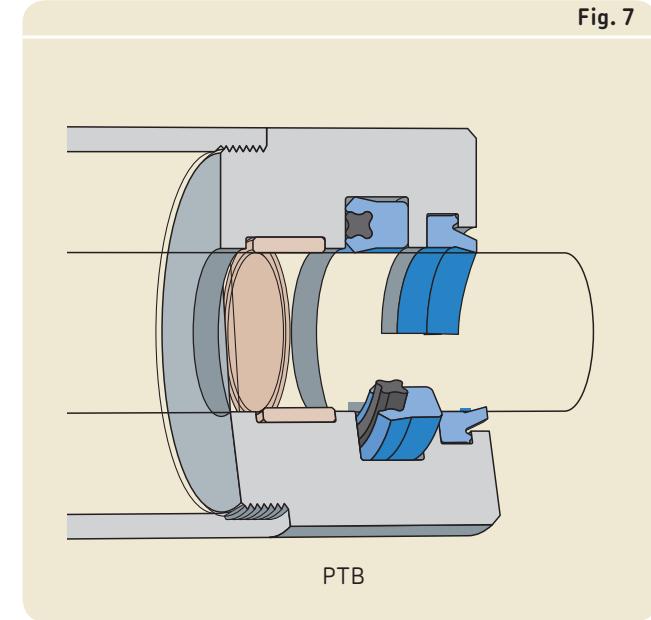
Fig. 6



SIL

3

Fig. 7



PTB

## Rod and buffer seals

### STD profiles

STD profiles (→ fig. 8) are made of LUBRITHANE (TPU). They are suitable for pressures up to 400 bar (5 800 psi) in medium duty applications and can also be used as a heavy duty static seal or a snap-in wiper seal. These profiles are available in inch sizes where narrower seal housings are used. Metric sizes are available on request.

### Hybrid rod seals

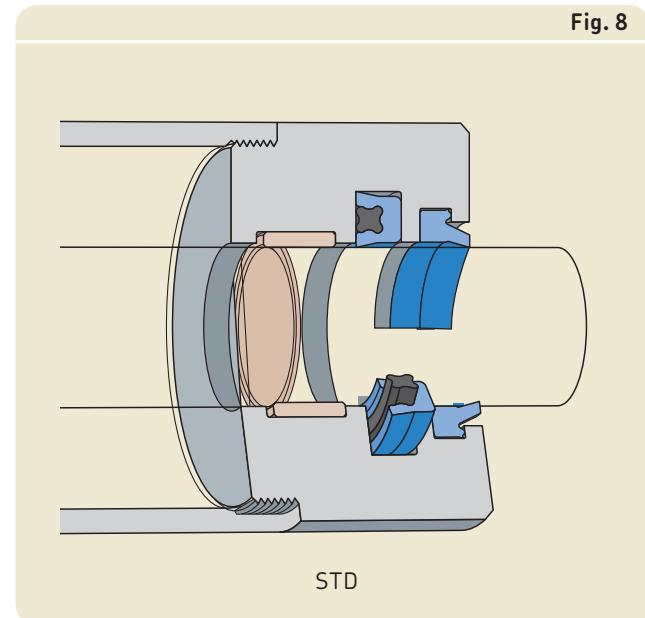
Hybrid rod seals incorporate dynamic sealing lips of different materials. These material combinations provide a hybrid with the functional benefit of each material and, therefore, a robust rod seal. An example is the sealing ability and resilience of nitrile rubber (NBR) combined with the extrusion and wear resistance of polyurethane (TPU).

### DZ profiles

DZ profiles (→ fig. 9) combine an NBR primary sealing ring with a LUBRITHANE (TPU) secondary sealing ring into one seal. This combination provides a good low temperature resilience and is suitable for pressures up to 400 bar (5 800 psi) in medium to heavy duty applications. DZ profiles are available in metric and inch sizes. They are also available with an elastomer (FLUOROTREL/TPC) secondary sealing ring on request.

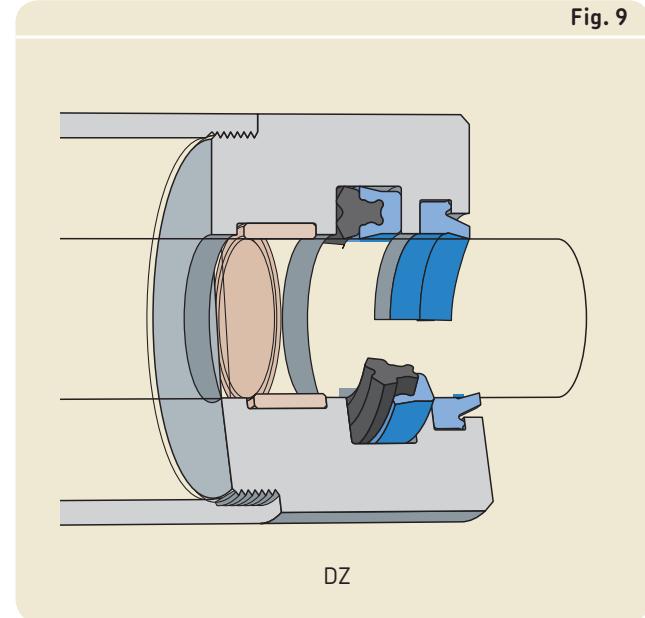
These SKF hybrid rod seals have been proven successful in low temperature applications. The NBR primary lips also provide improved long term sealing performance and a greater capability to track larger radial deflections between the rod and the head.

Fig. 8



STD

Fig. 9



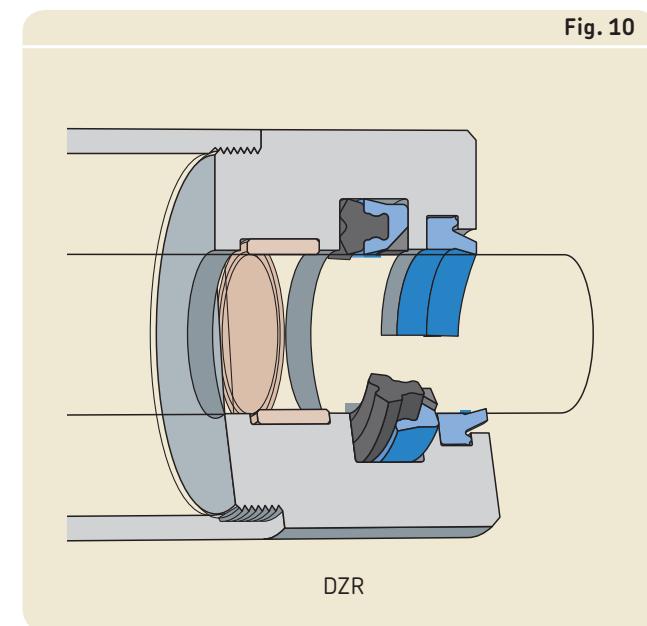
DZ

## Rod seals

**DZR profiles**

DZR profiles (→ **fig. 10**) combine an NBR primary sealing ring, a LUBRITHANE (TPU) secondary sealing ring and a triangular polyamide (PA) anti-extrusion ring (→ *Anti-extrusion rings, page 115*) into one seal. These combinations provide good low temperature resilience, and improved resistance to deformation, wear, and gap extrusion. They are suitable for extreme pressures up to 690 bar (10 000 psi) in heavy duty applications. DZR profiles are available in metric and inch sizes.

Fig. 10



## Rod and buffer seals

### Buffer seals

Buffer seals protect the rod seals by reducing the magnitude of pressure peaks. Abrupt pressure peaks can occur by external forces acting on the piston rod, initiated by the fluid inside the cylinder. These pressure peaks can be far in excess of the system operating pressure. Buffer seals in combination with rod seals provide an effective rod sealing system for cylinders in heavy duty applications at high temperature and pressure.

#### Polyurethane U-cup buffer seals

##### RBB profiles

RBB profiles (→ fig. 11) have a LUBRITHANE (TPU) sealing ring that incorporates a polyamide (PA) or polyacetal (POM) anti-extrusion ring. The flexible outside static sealing lip and notches in the front face ensure that pressure can return to the system side of the buffer and prevent build-up of pressure between the rod and buffer seals. These profiles are suitable for extreme pressure peaks and demanding workloads in heavy duty applications up to 690 bar (10 000 psi). They are available in metric and inch sizes, some metric sizes fit seal housings in accordance with ISO 7425-2.

#### Buffer seals incorporating slide rings

##### S9B profiles

S9B profiles (→ fig. 12) have a nitrile rubber (NBR) O-ring energizer and a PTFE slide ring as standard. Depending on the application, SKF can manufacture the slide rings from a variety of PTFE materials. On request, SKF can supply these profiles also with X-ECOPUR polyurethane (TPU) slide rings for improved wear resistance and ease of installation compared to PTFE. S9B profiles with a PTFE slide ring are suitable for pressures up to 400 bar (5 800 psi), those with an X-ECOPUR slide ring up to 600 bar (8 700 psi). These profiles are suitable for medium to heavy duty applications. Both material combinations are available in metric and inch sizes, some metric sizes fit seal housings in accordance with ISO 7425-2 or ISO 3320.

Fig. 11

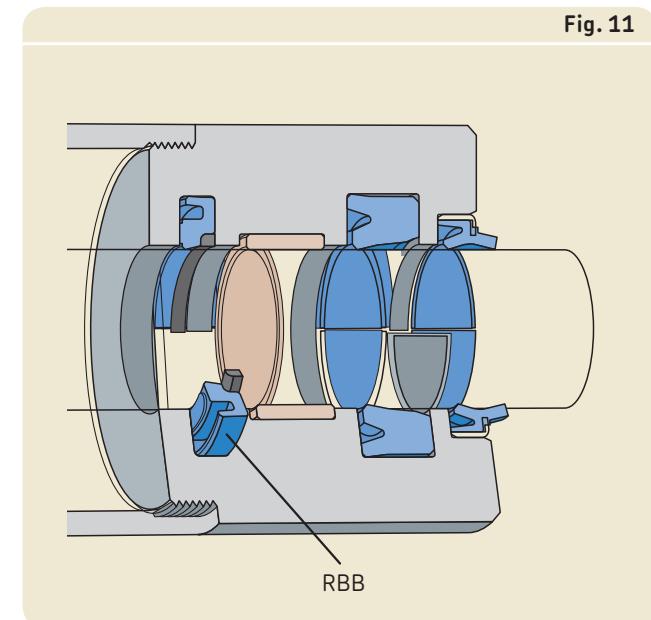
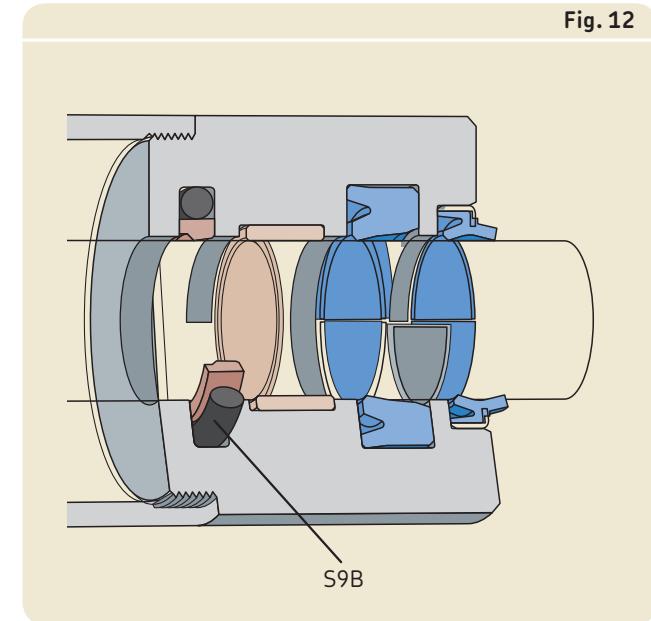


Fig. 12



## Buffer seals

**RSB profiles**

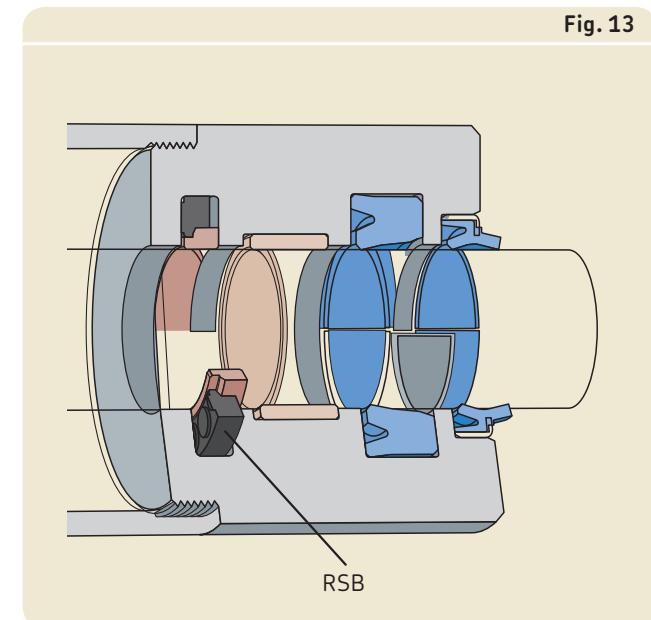
RSB profiles (→ **fig. 13**) have a nitrile rubber (NBR) energizer and a PTFE slide ring.

The energizer is designed to hold the slide ring in the proper and permanent sealing position against the rod seal side of the housing. Conventional buffer seal designs can shift axially within the groove and push fluid into the rod seal groove when subjected to abrupt pressure peaks. This ultimately causes rod seal failure. However, the patented design of RSB profiles prevents any axial shifting of the slide ring. Therefore, these profiles protect the rod seal in applications where conventional buffers are not sufficient. In combination with grooves in the energizer outside diameter and notches in the front face of the slide ring (→ **fig. 14**), the protrusions also ensure that pressure can return to the system side.

RSB profiles are suitable for pressures up to 400 bar (5 800 psi) in medium to heavy duty applications and are available in inch sizes.

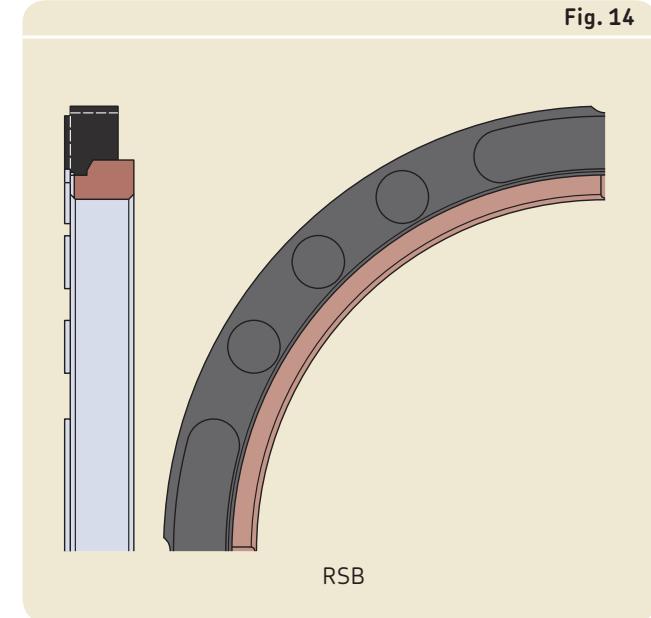
On request, for the most demanding applications of large equipment, SKF can manufacture these profiles with polyamide (PA) slide rings for additional extrusion and wear resistance.

Fig. 13



3

Fig. 14



### 3.1 S1S profile

#### S1S profile data

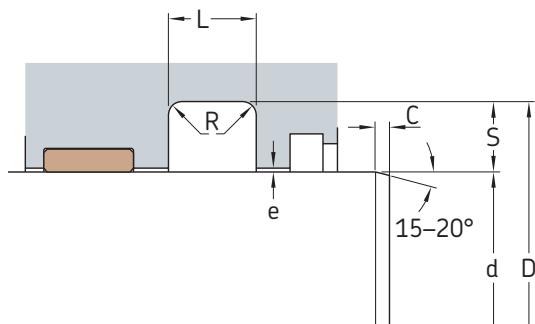
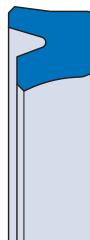


<b>Material code</b>	ECOPUR For additional information → page 26
<b>Pressure</b>	Up to 400 bar (5 800 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex-grow: 1; text-align: center;"> <div style="display: flex; align-items: center; justify-content: space-around;"> <span>-60</span> <span>-40</span> <span>-30</span> </div> <div style="display: flex; align-items: center; justify-content: space-around;"> <span>110</span> <span>120</span> <span>130 [°C]</span> </div> </div> <div style="text-align: right; margin-top: 10px;"> <span>-75</span> <span>-40</span> <span>-20</span> <span>230</span> <span>250</span> <span>265 [°F]</span> </div> </div>
	<ul style="list-style-type: none"> <li><span style="color: blue;">█</span> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li><span style="color: grey;">█</span> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: green;">█</span> <b>Recommended operating temperature range for this profile and material</b></li> <li><span style="color: yellow;">█</span> Temperatures above the recommended operating range: acceptable only with reduced pressure, speed, e-gap and/or with the use of a full-face anti-extrusion ring</li> <li><span style="color: red;">█</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Dimension standards</b>	Some sizes fit seal housings in accordance with ISO 5597.
<b>Counter-surface</b>	→ page 22

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.1 S1S profile rod seals, metric sizes

d 18 – 110 mm



#### Maximum extrusion gap e

Radial depth S	e <sub>max</sub> at 80 °C (175 °F) for pressures	160 bar	250 bar	400 bar
mm	mm			
4	0,4	0,3	0,15	
5	0,5	0,4	0,2	
7,5	0,55	0,45	0,25	
10	0,6	0,5	0,3	

For additional information → page 34

3.1

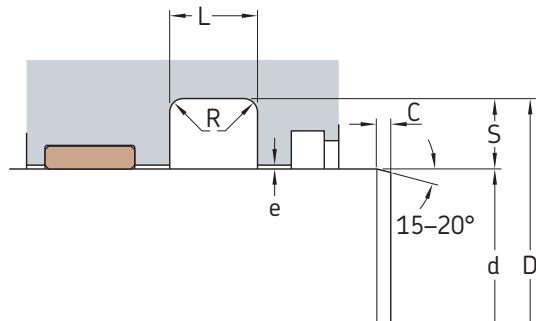
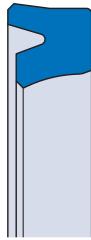
#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	–	Designation
18	26	6,3	4	0,4	3,5	–	• S1S-18x26x6.3
20	28	6,3	4	0,4	3,5	–	S1S-20x28x6.3
25	33	6	4	0,4	3,5	–	S1S-25x33x6
	35	8	5	0,4	4	–	• S1S-25x35x8
28	38	8	5	0,4	4	–	• S1S-28x38x8
30	40	7	5	0,4	4	–	S1S-30x40x7
32	42	8	5	0,4	4	–	• S1S-32x42x8
35	45	7	5	0,4	4	–	S1S-35x45x7
36	46	8	5	0,4	4	–	• S1S-36x46x8
40	50	8	5	0,4	4	–	• S1S-40x50x8
45	55	8	5	0,4	4	–	• S1S-45x55x8
50	60	8	5	0,4	4	–	S1S-50x60x8
	65	10	7,5	0,4	5	–	• S1S-50x65x10
55	65	10	5	0,4	4	–	S1S-55x65x10
	70	10	7,5	0,4	5	–	S1S-55x70x10
63	78	10	7,5	0,4	5	–	• S1S-63x78x10
75	85	12,4	5	0,4	4	–	S1S-75x85x12.4
80	95	10	7,5	0,4	5	–	• S1S-80x95x10
	95	12,4	7,5	0,4	5	–	S1S-80x95x12.4
90	105	10	7,5	0,4	5	–	• S1S-90x105x10
100	115	10	7,5	0,4	5	–	• S1S-100x115x10
110	125	10	7,5	0,4	5	–	• S1S-110x125x10

• Dimensions in accordance with ISO 5597

### 3.1 S1S profile rod seals, metric sizes d 125 – 240 mm



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 80 °C (175 °F) for pressures		
	160 bar	250 bar	400 bar
mm	mm	mm	mm
4	0,4	0,3	0,15
5	0,5	0,4	0,2
7,5	0,55	0,45	0,25
10	0,6	0,5	0,3

For additional information → page 34

#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
125	145	16	10	0,4	6	S1S-125x145x16
140	155	10	7,5	0,4	5	• S1S-140x155x10
160	180	16	10	0,4	6	S1S-160x180x16
180	200	14	10	0,4	6	• S1S-180x200x14
200	220	14	10	0,4	6	• S1S-200x220x14
240	260	16	10	0,4	6	S1S-240x260x16

Other sizes are available on request

- Dimensions in accordance with ISO 5597

3.1

### 3.2 ZBR profile

#### ZBR profile data

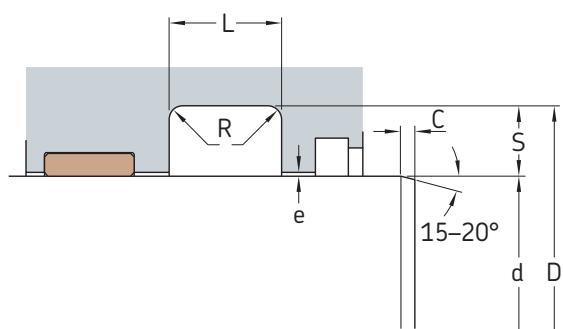
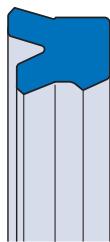


<b>Material code</b>	U-1029 For additional information → page 26
<b>Pressure</b>	Up to 400 bar (5 800 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex-grow: 1;"> <div style="display: flex; align-items: center; gap: 10px;"> <span>-60</span> <span>-40</span> <span>-30</span> <span>110</span> <span>120</span> <span>130 [°C]</span> </div> <div style="display: flex; align-items: center; gap: 10px;"> <span>-75</span> <span>-40</span> <span>-20</span> <span>230</span> <span>250</span> <span>265 [°F]</span> </div> </div> </div>
	<ul style="list-style-type: none"> <li><span style="color: blue;">█</span> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li><span style="color: grey;">█</span> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: green;">█</span> <b>Recommended operating temperature range for this profile and material</b></li> <li><span style="color: yellow;">█</span> Temperatures above the recommended operating range: acceptable only with reduced pressure, speed, e-gap and/or with the use of a full-face anti-extrusion ring</li> <li><span style="color: red;">█</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Dimension standards</b>	Some metric sizes fit seal housings in accordance with ISO 5597.
<b>Counter-surface</b>	→ page 22

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.2 ZBR profile rod seals, metric sizes

d 14 – 45 mm



#### Maximum extrusion gap e

Radial depth S mm	$e_{\max}$ at 80 °C (175 °F) for pressures		
	160 bar	250 bar	400 bar
3,5 to 4	0,35	0,2	–
5 to 6,5	0,45	0,25	0,1
7 to 7,5	0,5	0,3	0,15
10	0,55	0,3	0,15
12,5	0,6	0,3	0,2

For additional information → page 34

3.2

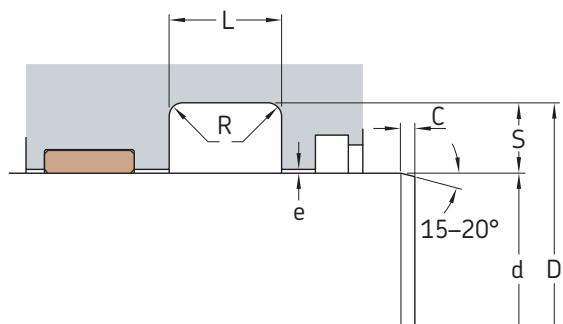
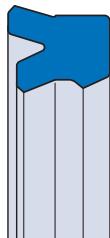
#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
14	22	5,7	4	0,2	6	ZBR-14x22x5.7-E6W
16	24	5,7	4	0,2	6	ZBR-16x24x5.7-E6W
18	26	5,7	4	0,2	6	ZBR-18x26x5.7-E6W
20	28	5,7	4	0,2	6	ZBR-20x28x5.7-E6W
22	30	5,7	4	0,2	6	ZBR-22x30x5.7-E6W
22,4	30	5,7	3,8	0,2	6	ZBR-22.4x30x5.7-E6W
25	33	5,7	4	0,2	6	ZBR-25x33x5.7-E6W
	33	8	4	0,2	6	ZBR-25x33x8-E6W
28	35	5,7	3,5	0,2	6	ZBR-28x35.5x5.7-E6W
	36	6,4	4	0,2	6	ZBR-28x36x6.4-E6W
30	38	7,8	4	0,2	6	ZBR-30x38x7.8-E6W
	40	7	5	0,2	6	ZBR-30x40x7-E6W
32	40	6,4	4	0,2	6	ZBR-32x40x6.4-E6W
	42	8,3	5	0,2	6	ZBR-32x42x8.3-E6W
35	43	7,8	4	0,2	6	ZBR-35x43x7.8-E6W
	45	7	5	0,2	6	ZBR-35x45x7-E6W
	45	11	5	0,2	6	ZBR-35x45x11-E6W
40	50	7	5	0,2	6	ZBR-40x50x7-E6W
	50	7	5	0,2	6	ZBR-40x50x7-E6W
	50	11	5	0,2	6	ZBR-40x50x11-E6W
	55	11	7,5	0,5	8,5	ZBR-40x55x11-E6W
	55	12	7,5	0,5	8,5	ZBR-40x55x12-E6W
45	55	7	5	0,2	6	ZBR-45x55x7-E6W
	55	8,3	5	0,2	6	ZBR-45x55x8.3-E6W
	55	11	5	0,2	6	ZBR-45x55x11-E6W
	60	11	7,5	0,5	8,5	ZBR-45x60x11-E6W
	60	12	7,5	0,5	8,5	ZBR-45x60x12-E6W
	60	12,5	7,5	0,2	8,5	• ZBR-45x60x12.5-E6W

• Dimensions in accordance with ISO 5597

### 3.2 ZBR profile rod seals, metric sizes d 50 – 150 mm



#### Maximum extrusion gap e

Radial depth S mm	$e_{\max}$ at 80 °C (175 °F) for pressures		
	160 bar	250 bar	400 bar
3,5 to 4	0,35	0,2	–
5 to 6,5	0,45	0,25	0,1
7 to 7,5	0,5	0,3	0,15
10	0,55	0,3	0,15
12,5	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
50	60	7	5	0,2	6	ZBR-50x60x7-E6W
	60	8,3	5	0,2	6	ZBR-50x60x8,3-E6W
	60	8,5	5	0,2	6	ZBR-50x60x8,5-E6W
	65	11	7,5	0,5	8,5	ZBR-50x65x11-E6W
	65	12,4	7,5	0,5	8,5	ZBR-50x65x12,4-E6W
53	63	7	5	0,2	6	ZBR-53x63x7-E6W
55	65	7	5	0,2	6	ZBR-55x65x7-E6W
	65	9	5	0,2	6	ZBR-55x65x9-E6W
	65	11	5	0,2	6	ZBR-55x65x11-E6W
	68	11	6,5	0,2	7,5	ZBR-55x68x11-E6W
	70	10	7,5	0,5	8,5	ZBR-55x70x10-E6W
	70	11	7,5	0,5	8,5	ZBR-55x70x11-E6W
	70	12,4	7,5	0,2	8,5	ZBR-55x70x12,4-E6W
	75	13	10	0,8	6	ZBR-55x75x13-E6W
56	71	12,4	7,5	0,5	8,5	• ZBR-56x71x12,4-E6W
60	68	9	4	0,2	6	ZBR-60x68x9-E6W
	70	7	5	0,2	6	ZBR-60x70x7-E6W
	70	11	5	0,2	6	ZBR-60x70x11-E6W
	73	11	6,5	0,2	7,5	ZBR-60x73x11-E6W
	75	10	7,5	0,5	8,5	ZBR-60x75x10-E6W
	80	13	10	0,8	11	ZBR-60x80x13-E6W
63	73	7	5	0,2	6	ZBR-63x73x7-E6W
	78	12,4	7,5	0,5	8,5	ZBR-63x78x12,4-E6W
	78	13,5	7,5	0,5	6	ZBR-63x78x13,5-E6W
65	75	7	5	0,2	6	ZBR-65x75x7-E6W
	78	11	6,5	0,2	7,5	ZBR-65x78x11-E6W
	80	10	7,5	0,5	8,5	ZBR-65x80x10-E6W
	80	13	7,5	0,5	8,5	ZBR-65x80x13-E6W
	85	13	10	0,8	11	ZBR-65x85x13-E6W

- Dimensions in accordance with ISO 5597

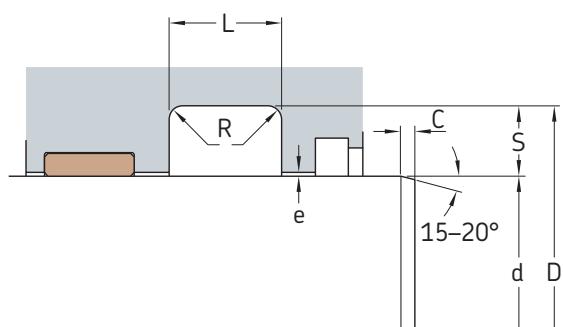
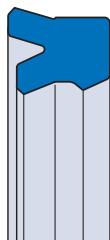
**Dimensions****Designation**

d f8 or h9	D H10	L +0,2	S	R max.	C min.	
mm						-
<b>70</b>	80	7	5	0,2	6	ZBR-70x80x7-E6W
	83	11	6,5	0,2	7,5	ZBR-70x83x11-E6W
	85	10	7,5	0,5	8,5	ZBR-70x85x10-E6W
	85	11	7,5	0,5	8,5	ZBR-70x85x11-E6W
	85	12,4	7,5	0,5	8,5	• ZBR-70x85x12.4-E6W
	90	13	10	0,8	11	ZBR-70x90x13-E6W
<b>75</b>	85	7	5	0,2	6	ZBR-75x85x7-E6W
	88	11	6,5	0,2	7,5	ZBR-75x88x11-E6W
	90	10	7,5	0,5	8,5	ZBR-75x90x10-E6W
	90	11	7,5	0,5	8,5	ZBR-75x90x11-E6W
	95	13	10	0,8	11	ZBR-75x95x13-E6W
<b>80</b>	90	7	5	0,2	6	ZBR-80x90x7-E6W
	93	11	6,5	0,2	7,5	ZBR-80x93x11-E6W
	95	10	7,5	0,5	8,5	ZBR-80x95x10-E6W
	95	12,4	7,5	0,5	8,5	• ZBR-80x95x12.4-E6W
	100	13	10	0,8	11	ZBR-80x100x13-E6W
<b>85</b>	100	10	7,5	0,5	8,5	ZBR-85x100x10-E6W
	100	11	7,5	0,5	8,5	ZBR-85x100x11-E6W
	100	13	7,5	0,5	8,5	ZBR-85x100x13-E6W
	105	13	10	0,8	11	ZBR-85x105x13-E6W
<b>90</b>	105	11	7,5	0,5	8,5	• ZBR-90x105x11-E6W
	105	12,4	7,5	0,5	8,5	• ZBR-90x105x12.4-E6W
	110	13	10	0,8	11	ZBR-90x110x13-E6W
<b>95</b>	110	10	7,5	0,5	8,5	ZBR-95x110x10-E6W
	110	11	7,5	0,5	8,5	ZBR-95x110x11-E6W
	115	13	10	0,8	11	ZBR-95x115x13-E6W
<b>100</b>	112	15	6	0,2	7	ZBR-100x112x15-E6W
	115	10	7,5	0,5	8,5	ZBR-100x115x10-E6W
	115	11	7,5	0,5	8,5	ZBR-100x115x11-E6W
	115	12,5	7,5	0,5	8,5	ZBR-100x115x12.5-E6W
	120	13	10	0,8	11	ZBR-100x120x13-E6W
	120	15,5	10	0,8	11	ZBR-100x120x15.5-E6W
<b>105</b>	120	10	7,5	0,5	8,5	ZBR-105x120x10-E6W
	125	16,5	10	0,8	11	ZBR-105x125x16.5-E6W
<b>110</b>	125	11	7,5	0,5	8,5	ZBR-110x125x11-E6W
	130	16,5	10	0,8	11	ZBR-110x130x16.5-E6W
<b>112</b>	125	10	6,5	0,2	7,5	ZBR-112x125x10-E6W
<b>118</b>	133	10	7,5	0,5	8,5	ZBR-118x133x10-E6W
<b>120</b>	140	16,5	10	0,8	11	ZBR-120x140x16.5-E6W
<b>125</b>	140	10	7,5	0,5	8,5	ZBR-125x140x10-E6W
	145	16,5	10	0,8	11	ZBR-125x145x16.5-E6W
<b>130</b>	145	12	7,5	0,5	8,5	ZBR-130x145x12-E6W
	150	16,5	10	0,2	11	ZBR-130x150x16.5-E6W
<b>136</b>	150	10	7	0,5	8,5	ZBR-136x150x10-E6W
<b>140</b>	155	10	7,5	0,5	8,5	ZBR-140x155x10-E6W
	160	16,5	10	0,8	11	ZBR-140x160x16.5-E6W
<b>145</b>	160	10	7,5	0,5	8,5	ZBR-145x160x10-E6W
<b>150</b>	170	16,5	10	0,8	11	ZBR-150x170x16.5-E6W

• Dimensions in accordance with ISO 5597

3.2

### 3.2 ZBR profile rod seals, metric sizes d 160 – 255 mm



#### Maximum extrusion gap e

Radial depth S mm	$e_{\max}$ at 80 °C (175 °F) for pressures		
	160 bar	250 bar	350 bar
3,5 to 4	0,35	0,2	–
5 to 6,5	0,45	0,25	0,1
7 to 7,5	0,5	0,3	0,15
10	0,55	0,3	0,15
12,5	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

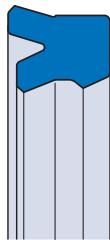
#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
160	180	16,5	10	0,8	11	ZBR-160x180x16.5-E6W
	185	19,7	12,5	0,8	13	ZBR-160x185x19.7-E6W
180	200	13,5	10	0,8	11	ZBR-180x200x13.5-E6W
200	220	13,5	10	0,8	11	ZBR-200x220x13.5-E6W
230	250	13,5	10	0,8	11	ZBR-230x250x13.5-E6W
240	260	16,5	10	0,8	11	ZBR-240x260x16.5-E6W
255	280	20,5	12,5	0,8	13	ZBR-255x280x20.5-E6W

Other sizes are available on request

### 3.2 ZBR profile rod seals, inch sizes

d 0.75 – 3 in.



#### Maximum extrusion gap e

Radial depth S	e <sub>max</sub> at 80 °C (175 °F) for pressures	2 300 psi	3 600 psi	5 800 psi
in.	in.			
0.125	0.008	0.004	–	–
0.187	0.014	0.008	–	–
0.250	0.018	0.01	0.004	–
0.312	0.020	0.012	0.006	–
0.375	0.020	0.012	0.006	–
0.5	0.024	0.012	0.008	–

For additional information → page 34

3.2

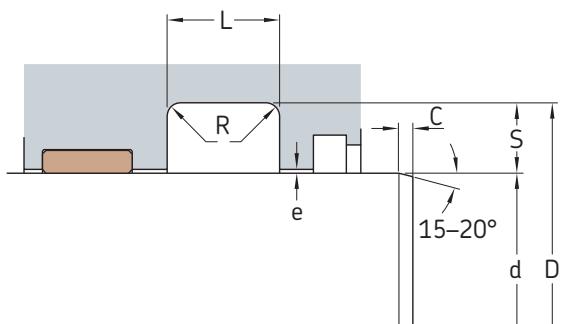
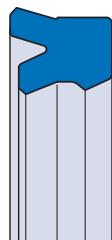
#### Dimensions

#### Designation

d Tolerance in.	D Tolerance in.	L +0.010	S	R max.	C min.	–	Designation	
0.75	-0.001	1	+0.002	0.275	0.125	0.015	0.25	ZBR125-750-250-E6W
1	-0.001	1.25	+0.002	0.275	0.125	0.015	0.25	ZBR125-1000-250-E6W
1.125	-0.001	1.375	+0.002	0.213	0.125	0.015	0.25	ZBR125-1125-187-E6W
	-0.001	1.375	+0.002	0.275	0.125	0.015	0.25	ZBR125-1125-250-E6W
	-0.002	1.5	+0.002	0.343	0.187	0.015	0.25	ZBR187-1125-312-E6W
1.25	-0.001	1.5	+0.002	0.213	0.125	0.015	0.25	ZBR125-1250-187-E6W
	-0.001	1.5	+0.002	0.223	0.125	0.015	0.25	ZBR125-1250-197-E6W
	-0.001	1.5	+0.002	0.275	0.125	0.015	0.25	ZBR125-1250-250-E6W
	-0.002	1.625	+0.002	0.275	0.187	0.015	0.25	ZBR187-1250-250-E6W
	-0.002	1.625	+0.002	0.343	0.187	0.015	0.25	ZBR187-1250-312-E6W
1.375	-0.001	1.625	+0.002	0.275	0.125	0.015	0.25	ZBR125-1375-250-E6W
1.5	-0.001	1.75	+0.002	0.275	0.125	0.015	0.25	ZBR125-1500-250-E6W
	-0.002	1.875	+0.002	0.343	0.187	0.015	0.25	ZBR187-1500-312-E6W
	-0.002	1.875	+0.002	0.413	0.187	0.015	0.25	ZBR187-1500-375-E6W
	-0.002	2	+0.003	0.413	0.250	0.02	0.312	ZBR250-1500-375-E6W
1.75	-0.002	2.125	+0.002	0.343	0.187	0.015	0.25	ZBR187-1750-312-E6W
	-0.002	2.125	+0.002	0.413	0.187	0.015	0.25	ZBR187-1750-375-E6W
	-0.002	2.25	+0.003	0.413	0.250	0.02	0.312	ZBR250-1750-375-E6W
1.875	-0.002	2.375	+0.003	0.413	0.250	0.02	0.312	ZBR250-1875-375-E6W
2	-0.002	2.375	+0.002	0.343	0.187	0.015	0.25	ZBR187-2000-312-E6W
	-0.002	2.375	+0.002	0.413	0.187	0.015	0.25	ZBR187-2000-375-E6W
	-0.002	2.5	+0.003	0.413	0.250	0.02	0.312	ZBR250-2000-375-E6W
2.25	-0.002	2.625	+0.002	0.3685	0.187	0.015	0.25	ZBR187-2250-335-E6W
	-0.002	2.75	+0.003	0.413	0.250	0.02	0.312	ZBR250-2250-375-E6W
2.5	-0.002	3	+0.003	0.413	0.250	0.02	0.312	ZBR250-2500-375-E6W
2.625	-0.002	3.125	+0.003	0.413	0.250	0.02	0.312	ZBR250-2625-375-E6W
2.875	-0.002	3.375	+0.003	0.413	0.250	0.02	0.312	ZBR250-2875-375-E6W
3	-0.002	3.5	+0.003	0.413	0.250	0.02	0.312	ZBR250-3000-375-E6W

### 3.2 ZBR profile rod seals, inch sizes

d 3.25 – 8 in.



#### Maximum extrusion gap e

Radial depth S in.	$e_{max}$ at 80 °C (175 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.187	0.014	0.008	–
0.250	0.018	0.01	0.004
0.312	0.02	0.012	0.006
0.375	0.02	0.012	0.006
0.5	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d in.	Tolerance	D	Tolerance	L +0.010	S	R max.	C min.	Designation
3.25	-0.002	3.75	+0.003	0.413	0.250	0.02	0.312	ZBR250-3250-375-E6W
3.5	-0.002	4	+0.003	0.413	0.250	0.02	0.312	ZBR250-3500-375-E6W
3.75	-0.002	4.375	+0.004	0.55	0.312	0.02	0.375	ZBR312-3750-500-E6W
4	-0.002	4.5	+0.003	0.413	0.250	0.02	0.312	ZBR250-4000-375-E6W
4.75	-0.002	5.25	+0.003	0.688	0.250	0.02	0.312	ZBR250-4750-625-E6W
5	-0.002	5.5	+0.003	0.413	0.250	0.02	0.312	ZBR250-5000-375-E6W
	-0.002	5.5	+0.003	0.618	0.250	0.02	0.312	ZBR250-5000-562-E6W
5.25	-0.002	5.75	+0.003	0.618	0.250	0.02	0.312	ZBR250-5250-562-E6W
5.5	-0.002	6	+0.003	0.618	0.250	0.02	0.312	ZBR250-5500-562-E6W
	-0.002	6.25	+0.005	0.688	0.375	0.035	0.5	ZBR375-5500-625-E6W
6.5	-0.002	7.25	+0.005	0.688	0.375	0.035	0.5	ZBR375-6500-625-E6W
	-0.003	7.5	+0.007	0.825	0.500	0.035	0.625	ZBR500-6500-750E6W
7	-0.003	8	+0.007	0.825	0.500	0.035	0.625	ZBR500-7000-750E6W
7.75	-0.002	8.5	+0.005	0.688	0.375	0.035	0.5	ZBR375-7750-625-E6W
8	-0.002	8.75	+0.005	0.688	0.375	0.035	0.5	ZBR375-8000-625-E6W

Other sizes are available on request

3.2

### 3.3 SIL profile

#### SIL profile data

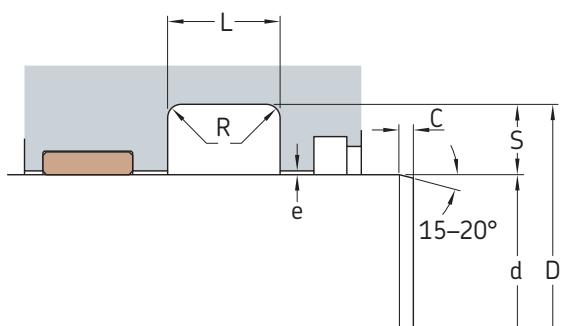
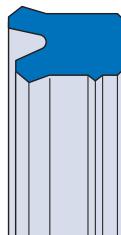


<b>Material code</b>	B93 For additional information → page 26
<b>Pressure</b>	Up to 350 bar (5 075 psi)
<b>Speed</b>	Up to 0,5 m/s (1.6 ft/s)
<b>Temperature range</b>	<p>   -60    -50    -40    100    110 [°C]  -75    -60    -40    210    230 [°F] </p> <ul style="list-style-type: none"> <li> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li> <b>Recommended operating temperature range for this profile and material</b></li> <li> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Dimension standards</b>	Some sizes fit seal grooves in accordance with ISO 5597.
<b>Counter-surface</b>	→ page 22

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.3 SIL profile rod seals, metric sizes

d 10 – 30 mm



#### Maximum extrusion gap e

Radial depth S mm	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	160 bar	250 bar	350 bar
3	0,2	0,1	–
4	0,35	0,2	–
5	0,45	0,25	0,1
7,5	0,5	0,3	0,15
10	0,55	0,3	0,15

For additional information → page 34

3.3

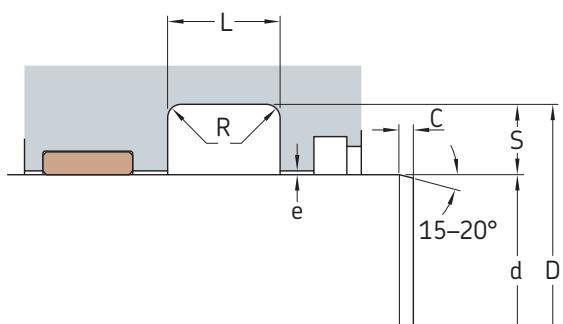
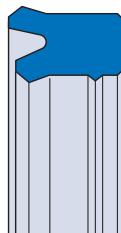
#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
10	18	6,3	4	0,3	2	• SIL 10x18x6.3
12	20	6,3	4	0,3	2	• SIL 12x20x6.3
	22	8	5	0,3	2,5	• SIL 12x22x8
14	22	6,3	4	0,3	2	• SIL 14x22x6.3
	24	8	5	0,3	2,5	• SIL 14x24x8
16	22	6	3	0,3	2	SIL 16x22x6
	24	6,3	4	0,3	2	• SIL 16x24x6.3
	24	7	4	0,3	2	SIL 16x24x7
18	24	5,2	3	0,3	2	SIL 18x24x5.2
	26	6,3	4	0,3	2	• SIL 18x26x6.3
20	26	5,5	3	0,3	2	SIL 20x26x5.5
	28	6,3	4	0,3	2	• SIL 20x28x6.3
	30	8	5	0,3	2,5	• SIL 20x30x8
	30	9	5	0,3	2,5	SIL 20x30x9
22	30	6,3	4	0,3	2	• SIL 22x30x6.3
	32	8	5	0,3	2,5	• SIL 22x32x8
25	33	6,3	4	0,3	2	• SIL 25x33x6.3
	33	7	4	0,3	2	SIL 25x33x7
	33	11	4	0,3	2	SIL 25x33x11
	35	8	5	0,3	2,5	• SIL 25x35x8
	35	9	5	0,3	2,5	SIL 25x35x9
	35	11	5	0,3	2,5	SIL 25x35x11
28	38	8	5	0,3	2,5	• SIL 28x38x8
	38	9	5	0,3	2,5	SIL 28x38x9
	43	12,5	7,5	0,4	4	• SIL 28x43x12.5
30	38	6,3	4	0,3	2	SIL 30x38x6.3
	40	8	5	0,3	2,5	SIL 30x40x8
	40	11	5	0,3	2,5	SIL 30x40x11
	45	11	7,5	0,4	4	SIL 30x45x11

- Dimensions in accordance with ISO 5597

### 3.3 SIL profile rod seals, metric sizes d 32 – 150 mm



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	160 bar	250 bar	350 bar
mm	mm		
3	0,2	0,1	–
4	0,35	0,2	–
5	0,45	0,25	0,1
7,5	0,5	0,3	0,15
10	0,55	0,3	0,15

For additional information → page 34

#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
mm					–	
32	40	6,3	4	0,3	2	SIL 32x40x6,3
	40	9	4	0,3	2	SIL 32x40x9
	42	8	5	0,3	2,5	• SIL 32x42x8
	42	11	5	0,3	2,5	SIL 32x42x11
	47	12,5	7,5	0,4	4	• SIL 32x47x12,5
33	43	11	5	0,3	2,5	SIL 33x43x11
35	43	6,3	4	0,3	2	SIL 35x43x6,3
	45	8	5	0,3	2,5	SIL 35x45x8
	45	11	5	0,3	2,5	SIL 35x45x11
	50	11	7,5	0,4	4	SIL 35x50x11
36	46	8	5	0,3	2,5	• SIL 36x46x8
	51	12,5	7,5	0,4	4	• SIL 36x51x12,5
40	50	8	5	0,3	2,5	• SIL 40x50x8
	50	11	5	0,3	2,5	SIL 40x50x11
	55	11	7,5	0,4	4	SIL 40x55x11
	55	12,5	7,5	0,4	4	• SIL 40x55x12,5
	60	13	5	0,6	5	SIL 40x60x13
42	52	11	5	0,3	2,5	SIL 42x52x11
45	55	8	5	0,3	2,5	• SIL 45x55x8
	55	11	5	0,3	2,5	SIL 45x55x11
	60	11	7,5	0,4	4	SIL 45x60x11
	60	12,5	7,5	0,4	4	• SIL 45x60x12,5
46	56	11	5	0,3	2,5	SIL 46x56x11
50	60	8	5	0,3	2,5	• SIL 50x60x8
	60	11	5	0,3	2,5	SIL 50x60x11
	65	11	7,5	0,4	4	SIL 50x65x11
	65	12,5	7,5	0,4	4	• SIL 50x65x12,5
55	65	11	5	0,3	2,5	SIL 55x65x11
	70	12,5	7,5	0,4	4	SIL 55x70x12,5

- Dimensions in accordance with ISO 5597

**Dimensions**

**Designation**

d f8 or h9	D H10	L +0,2	S	R max.	C min.	
mm						-
<b>56</b>	66 71 71 76	11 11 12,5 16	5 7,5 7,5 10	0,3 0,4 0,4 0,6	2,5 4 4 5	<b>SIL 56x66x11</b> <b>SIL 56x71x11</b> • <b>SIL 56x71x12,5</b> • <b>SIL 56x76x16</b>
<b>60</b>	70 70 75 75	11 13 11 13	5 5 7,5 7,5	0,3 0,3 0,4 0,4	2,5 2,5 4 4	<b>SIL 60x70x11</b> <b>SIL 60x70x13</b> <b>SIL 60x75x11</b> <b>SIL 60x75x13</b>
<b>63</b>	73 78 78 83 83	13 11 12,5 13 16	5 7,5 7,5 10 10	0,3 0,4 0,4 0,6 0,6	2,5 4 4 5 5	<b>SIL 63x73x13</b> <b>SIL 63x78x11</b> • <b>SIL 63x78x12,5</b> <b>SIL 63x83x13</b> • <b>SIL 63x83x16</b>
<b>65</b>	75	13	5	0,3	2,5	<b>SIL 65x75x13</b>
<b>70</b>	80 80 85 85 90 90	9 12,5 11 12,5 13 16	5 5 7,5 7,5 10 10	0,3 0,3 0,4 0,4 0,6 0,6	2,5 2,5 4 4 5 5	<b>SIL 70x80x9</b> <b>SIL 70x80x12,5</b> <b>SIL 70x85x11</b> • <b>SIL 70x85x12,5</b> <b>SIL 70x90x13</b> • <b>SIL 70x90x16</b>
<b>75</b>	85 90	12,5 12,5	5 7,5	0,3 0,4	2,5 4	<b>SIL 75x85x12,5</b> <b>SIL 75x90x12,5</b>
<b>80</b>	90 90 95 95 100 100	11 13 11 12,5 13 16	5 5 7,5 7,5 10 10	0,3 0,3 0,4 0,4 0,6 0,6	2,5 2,5 4 4 5 5	<b>SIL 80x90x11</b> <b>SIL 80x90x13</b> <b>SIL 80x95x11</b> • <b>SIL 80x95x12,5</b> <b>SIL 80x100x13</b> • <b>SIL 80x100x16</b>
<b>85</b>	100 105	12,5 13	7,5 10	0,4 0,6	4 5	<b>SIL 85x100x12,5</b> <b>SIL 85x105x13</b>
<b>90</b>	105 110 110	12,5 13 16	7,5 10 10	0,4 0,6 0,6	4 5 5	• <b>SIL 90x105x12,5</b> <b>SIL 90x110x13</b> • <b>SIL 90x110x16</b>
<b>95</b>	110 115	12,5 13	7,5 10	0,4 0,6	4 5	<b>SIL 95x110x12,5</b> <b>SIL 95x115x13</b>
<b>100</b>	115 120 120	13 13 16	7,5 10 10	0,4 0,6 0,6	4 5 5	<b>SIL 100x115x13</b> <b>SIL 100x120x13</b> • <b>SIL 100x120x16</b>
<b>105</b>	115 125	11 13	5 10	0,3 0,6	2,5 5	<b>SIL 105x115x11</b> <b>SIL 105x125x13</b>
<b>110</b>	130	16	10	0,6	5	• <b>SIL 110x130x16</b>
<b>120</b>	140 140	13 16	10 10	0,6 0,6	5 5	<b>SIL 120x140x13</b> <b>SIL 120x140x16</b>
<b>125</b>	145 145	13 16	10 10	0,6 0,6	5 5	• <b>SIL 125x145x13</b> • <b>SIL 125x145x16</b>
<b>130</b>	150	16	10	0,6	5	<b>SIL 130x150x16</b>
<b>140</b>	160	16	10	0,6	5	• <b>SIL 140x160x16</b>
<b>150</b>	170 170	13 16	10 10	0,6 0,6	5 5	<b>SIL 150x170x13</b> <b>SIL 150x170x16</b>

Other sizes are available on request

- Dimensions in accordance with ISO 5597

### 3.4 PTB profile

#### PTB profile data

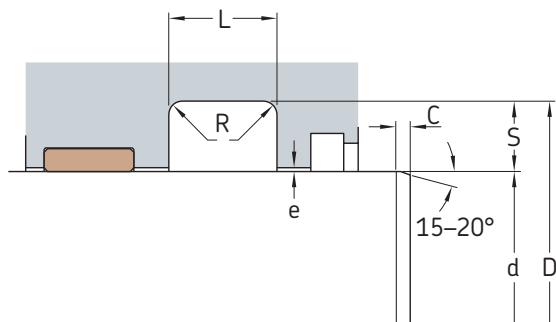
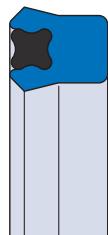


<b>Material codes</b>	Sealing ring: U-1003 X-ring: A-8501 For additional information → page 26
<b>Pressure</b>	Up to 400 bar (5 800 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<p>   -50    -40    -30    100    110    120 [°C]  -60    -40    -20    210    230    250 [°F] </p> <ul style="list-style-type: none"> <li><span style="color: blue;">█</span> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li><span style="color: grey;">█</span> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: green;">█</span> <b>Recommended operating temperature range for this profile and material</b></li> <li><span style="color: yellow;">█</span> Temperatures above the recommended operating range: acceptable only with reduced pressure, speed, e-gap and/or with the use of a full-face anti-extrusion ring</li> <li><span style="color: red;">█</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Dimension standards</b>	Some metric sizes fit seal housings in accordance with ISO 5597.
<b>Counter-surface</b>	→ page 22

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.4 PTB profile rod seals, metric sizes

d 8–17 mm



#### Maximum extrusion gap e

Radial depth S mm	$e_{\max}$ at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
3	0,2	0,1	–
3,5 to 4	0,35	0,2	–
4,5 to 6,5	0,45	0,25	0,1
7 to 8	0,5	0,3	0,15
9 to 11,5	0,55	0,3	0,15
12,5	0,6	0,3	0,2
15	0,6	0,3	0,2

For additional information → page 34

3.4

#### Dimensions

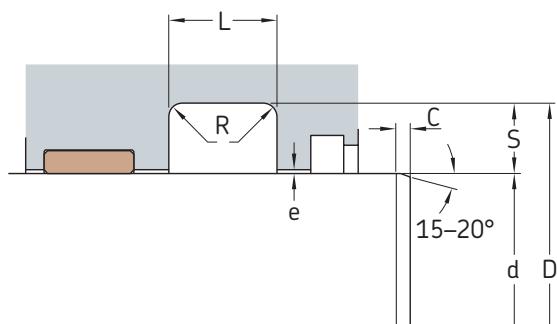
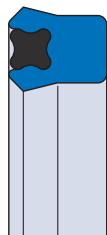
#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
8	16	6,3	4	0,2	6	• PTB-8x16x6.3-J1S
9	17	6,3	4	0,2	6	PTB-9x17x6.3-J1S
	19	8,8	5	0,2	6	PTB-9x19x8.8-J1S
10	16	6,6	3	0,2	6	PTB-10x16x6.6-J1S
	18	6,3	4	0,2	6	PTB-10x18x6.3-J1S
	18	8,8	4	0,2	6	PTB-10x18x8.8-J1S
	20	8,3	5	0,2	6	PTB-10x20x8.3-J1S
	20	8,8	5	0,2	6	PTB-10x20x8.8-J1S
11,2	19,2	5,5	4	0,2	6	PTB-11,2x19,2x5.5-J1S
12	18	6,6	3	0,2	6	PTB-12x18x6.6-J1S
	19	5,1	3,5	0,2	6	PTB-12x19x5.1-J1S
	20	5,5	4	0,2	6	PTB-12x20x5.5-J1S
	20	7	4	0,2	6	PTB-12x20x7-J1S
	22	6,6	5	0,2	6	PTB-12x22x6.6-J1S
	22	8	5	0,2	6	• PTB-12x22x8-J1S
	22	8,8	5	0,2	6	PTB-12x22x8.8-J1S
12,5	22,5	8,8	5	0,2	6	PTB-12,5x22,5x8.8-J1S
13	19	4,4	3	0,2	6	PTB-13x19x4.4-J1S
14	21	5,1	3,5	0,2	6	PTB-14x21x5.1-J1S
	22	5,5	4	0,2	6	PTB-14x22x5.5-J1S
	24	6,1	5	0,2	6	PTB-14x24x6.1-J1S
	24	8,8	5	0,2	6	PTB-14x24x8.8-J1S
15	22	5,5	3,5	0,2	6	PTB-15x22x5.5-J1S
	25	8,8	5	0,2	6	PTB-15x25x8.8-J1S
16	22	4,4	3	0,2	6	PTB-16x22x4.4-J1S
	24	5,5	4	0,2	6	PTB-16x24x5.5-J1S
	26	8,8	5	0,2	6	PTB-16x26x8.8-J1S
17	25	11	4	0,2	6	PTB-17x25x11-J1S

• Dimensions in accordance with ISO 5597

### 3.4 PTB profile rod seals, metric sizes

d 18 – 35 mm



#### Maximum extrusion gap e

Radial depth S mm	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
3	0,2	0,1	–
3,5 to 4	0,35	0,2	–
4,5 to 6,5	0,45	0,25	0,1
7 to 8	0,5	0,3	0,15
9 to 11,5	0,55	0,3	0,15
12,5	0,6	0,3	0,2
15	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
18	25	5,1	3,5	0,2	6	PTB-18x25x5.1-J1S
	26	5,5	4	0,2	6	PTB-18x26x5.5-J1S
	28	8,8	5	0,2	6	PTB-18x28x8.8-J1S
20	26	5,5	3	0,2	6	PTB-20x26x5.5-J1S
	27	6,6	3,5	0,2	6	PTB-20x27x6.6-J1S
	28	5,5	4	0,2	6	PTB-20x28x5.5-J1S
	28	6,3	4	0,2	6	• PTB-20x28x6.3-J1S
	28	7,9	4	0,2	6	PTB-20x28x7.9-J1S
	30	6,6	5	0,2	6	PTB-20x30x6.6-J1S
	30	7,9	5	0,2	6	PTB-20x30x7.9-J1S
	30	8,8	5	0,2	6	PTB-20x30x8.8-J1S
	32	6,6	6	0,2	7	PTB-20x32x6.6-J1S
	32	8,8	6	0,2	7	PTB-20x32x8.8-J1S
	35	11	7,5	0,5	8,5	PTB-20x35x11-J1S
	35	3,2	7,5	0,5	8,5	PTB-20x35x13.2-J1S
	40	3,2	10	0,8	11	PTB-20x40x13.2-J1S
22	29	5,1	3,5	0,2	6	PTB-22x29x5.1-J1S
	30	5,5	4	0,2	6	PTB-22x30x5.5-J1S
	30	6,3	4	0,2	6	• PTB-22x30x6.3-J1S
	30	6,6	4	0,2	6	PTB-22x30x6.6-J1S
	30	7,7	4	0,2	6	PTB-22x30x7.7-J1S
	30	8,8	4	0,2	6	PTB-22x30x8.8-J1S
	32	6,6	5	0,2	6	PTB-22x32x6.6-J1S
	32	8	5	0,2	6	• PTB-22x32x8-J1S
	32	8,8	5	0,2	6	PTB-22x32x8.8-J1S
	35	8,8	6,5	0,2	7,5	PTB-22x35x8.8-J1S
	35	11	6,5	0,2	7,5	PTB-22x35x11-J1S
	40	3,2	9	0,8	11	PTB-22x40x13.2-J1S
22,4	30	5,5	3,8	0,2	6	PTB-22,4x30x5.5-J1S
	32,4	8,8	5	0,2	6	PTB-22,4x32,4x8.8-J1S
23,5	31,5	5,5	4	0,2	6	PTB-23,5x31,5x5.5-J1S

• Dimensions in accordance with ISO 5597

## Dimensions

## Designation

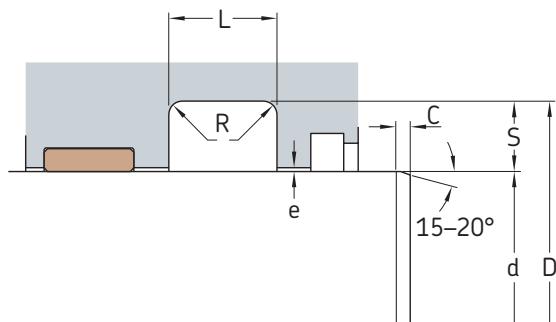
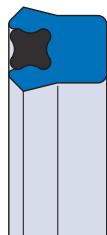
d f8 or h9	D H10	L +0,2	S	R max.	C min.	
mm						-
<b>25</b>	33	5,5	4	0,2	6	<b>PTB-25x33x5.5-J1S</b>
	33	6,1	4	0,2	6	<b>PTB-25x33x6.1-J1S</b>
	33	6,3	4	0,2	6	<b>PTB-25x33x6.3-J1S</b>
	33	8,8	4	0,2	6	<b>PTB-25x33x8.8-J1S</b>
	33	11	4	0,2	6	<b>PTB-25x33x11-J1S</b>
	35	8	5	0,2	6	• <b>PTB-25x35x8-J1S</b>
	35	8,8	5	0,2	6	<b>PTB-25x35x8.8-J1S</b>
	35	11	5	0,2	6	<b>PTB-25x35x11-J1S</b>
	38	8,8	6,5	0,2	7,5	<b>PTB-25x38x8.8-J1S</b>
	38	11	6,5	0,2	7,5	<b>PTB-25x38x11-J1S</b>
	40	11	7,5	0,5	8,5	<b>PTB-25x40x11-J1S</b>
<b>28</b>	35	5,5	3,5	0,2	6	<b>PTB-28x35.5x5.5-J1S</b>
	36	5,8	4	0,2	6	<b>PTB-28x36x5.8-J1S</b>
	36	8,8	4	0,2	6	<b>PTB-28x36x8.8-J1S</b>
	37	8,6	4,5	0,2	6	<b>PTB-28x37.5x8.6-J1S</b>
	38	8	5	0,2	6	• <b>PTB-28x38x8-J1S</b>
	38	8,8	5	0,2	6	<b>PTB-28x38x8.8-J1S</b>
	38	11	5	0,2	6	<b>PTB-28x38x11-J1S</b>
	40	6,6	6	0,2	7	<b>PTB-28x40x6.6-J1S</b>
	40	11	6	0,2	7	<b>PTB-28x40x11-J1S</b>
	43	11,2	7,5	0,5	8,5	<b>PTB-28x43x11.2-J1S</b>
	48	13,2	10	0,8	11	<b>PTB-28x48x13.2-J1S</b>
<b>30</b>	37	6,6	3,5	0,2	6	<b>PTB-30x37x6.6-J1S</b>
	38	6,3	4	0,2	6	<b>PTB-30x38x6.3-J1S</b>
	38	6,9	4	0,2	6	<b>PTB-30x38x6.9-J1S</b>
	38	8,8	4	0,2	6	<b>PTB-30x38x8.8-J1S</b>
	40	6,6	5	0,2	6	<b>PTB-30x40x6.6-J1S</b>
	40	7,2	5	0,2	6	<b>PTB-30x40x7.2-J1S</b>
	40	8	5	0,2	6	<b>PTB-30x40x8-J1S</b>
	40	11	5	0,2	6	<b>PTB-30x40x11-J1S</b>
	42	9,9	6	0,2	7	<b>PTB-30x42x9.9-J1S</b>
	42	11	6	0,2	7	<b>PTB-30x42x11-J1S</b>
	45	9,9	7,5	0,5	8,5	<b>PTB-30x45x9.9-J1S</b>
	45	11	7,5	0,5	8,5	<b>PTB-30x45x11-J1S</b>
	50	11	10	0,8	11	<b>PTB-30x50x11-J1S</b>
<b>31,5</b>	41,5	6,6	5	0,2	6	<b>PTB-31.5x41.5x6.6-J1S</b>
<b>32</b>	40	6,3	4	0,2	6	<b>PTB-32x40x6.3-J1S</b>
	40	8,3	4	0,2	6	<b>PTB-32x40x8.3-J1S</b>
	40	8,8	4	0,2	6	<b>PTB-32x40x8.8-J1S</b>
	42	8	5	0,2	6	• <b>PTB-32x42x8-J1S</b>
	42	11	5	0,2	6	<b>PTB-32x42x11-J1S</b>
	44	6,1	6	0,2	7	<b>PTB-32x44x6.1-J1S</b>
	44	6,9	6	0,2	7	<b>PTB-32x44x6.9-J1S</b>
	45	11	6,5	0,2	7,5	<b>PTB-32x45x11-J1S</b>
	47	11	7,5	0,5	8,5	<b>PTB-32x47x11-J1S</b>
	48	11	8	0,5	8,5	<b>PTB-32x48x11-J1S</b>
<b>33</b>	40	8,8	3,5	0,2	6	<b>PTB-33x40x8.8-J1S</b>
	43	11	5	0,2	6	<b>PTB-33x43x11-J1S</b>
<b>35</b>	43	7	4	0,2	6	<b>PTB-35x43x7-J1S</b>
	43	8,8	4	0,2	6	<b>PTB-35x43x8.8-J1S</b>
	45	6,6	5	0,2	6	<b>PTB-35x45x6.6-J1S</b>
	45	8	5	0,2	6	<b>PTB-35x45x8-J1S</b>
	45	8,8	5	0,2	6	<b>PTB-35x45x8.8-J1S</b>
	45	11	5	0,2	6	<b>PTB-35x45x11-J1S</b>

• Dimensions in accordance with ISO 5597

3.4

### 3.4 PTB profile rod seals, metric sizes

d 35 – 60 mm



#### Maximum extrusion gap e

Radial depth S mm	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
3	0,2	0,1	–
3,5 to 4	0,35	0,2	–
4,5 to 6,5	0,45	0,25	0,1
7 to 8	0,5	0,3	0,15
9 to 11,5	0,55	0,3	0,15
12,5	0,6	0,3	0,2
15	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
mm					–	
35	50	9,9	7,5	0,5	8,5	PTB-35x50x9.9-J1S
cont.	50	11	7,5	0,5	8,5	PTB-35x50x11-J1S
	50	2,5	7,5	0,5	8,5	PTB-35x50x12.5-J1S
	51	11	8	0,5	8,5	PTB-35x51x11-J1S
	55	11	10	0,8	11	PTB-35x55x11-J1S
35,5	45	6,6	4,75	0,2	6	PTB-35.5x45x6.6-J1S
36	44	5,8	4	0,2	6	PTB-36x44x5.8-J1S
	44	6,6	4	0,2	6	PTB-36x44x6.6-J1S
	44	8,8	4	0,2	6	PTB-36x44x8.8-J1S
	46	8,8	5	0,2	6	PTB-36x46x8-J1S
	46	11	5	0,2	6	PTB-36x46x11-J1S
	52	11	8	0,5	8,5	PTB-36x52x11-J1S
37	47	8,8	5	0,2	6	PTB-37x47x8.8-J1S
	47	5,5	5	0,2	6	PTB-37x47x5.5-J1S
40	48	5,5	4	0,2	6	PTB-40x48x5.5-J1S
	48	6,6	4	0,2	6	PTB-40x48x6.6-J1S
	48	8,8	4	0,2	6	PTB-40x48x8.8-J1S
	50	6,6	5	0,2	6	PTB-40x50x6.6-J1S
	50	7,2	5	0,2	6	PTB-40x50x7.2-J1S
	50	8	5	0,2	6	• PTB-40x50x8-J1S
	50	8,8	5	0,2	6	PTB-40x50x8.8-J1S
	50	11	5	0,2	6	PTB-40x50x11-J1S
	53	8,8	6,5	0,2	7,5	PTB-40x53x8.8-J1S
	55	9,9	7,5	0,5	8,5	PTB-40x55x9.9-J1S
	55	11	7,5	0,5	8,5	PTB-40x55x11-J1S
	56	11	8	0,5	8,5	PTB-40x56x11-J1S
	60	13,2	10	0,8	11	PTB-40x60x13.2-J1S
41,7	50,7	7,8	4,5	0,2	6	PTB-41.7x50.7x7.8-J1S
42	55	7,7	6,5	0,2	7,5	PTB-42x55x7.7-J1S

- Dimensions in accordance with ISO 5597

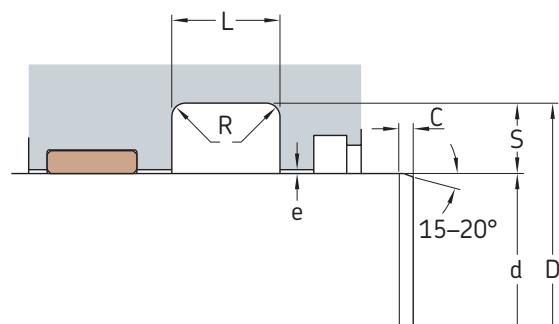
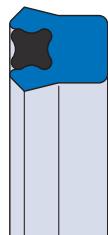
**Dimensions****Designation**

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
mm					—	
<b>45</b>	53	5,8	4	0,2	6	<b>PTB-45x53x5.8-J1S</b>
	53	8,8	4	0,2	6	<b>PTB-45x53x8.8-J1S</b>
	55	6,6	5	0,2	6	<b>PTB-45x55x6.6-J1S</b>
	55	8	5	0,2	6	• <b>PTB-45x55x8-J1S</b>
	55	11	5	0,2	6	<b>PTB-45x55x11-J1S</b>
	56	7,7	5,5	0,2	7	<b>PTB-45x56x7.7-J1S</b>
	60	9,9	7,5	0,5	8,5	<b>PTB-45x60x9.9-J1S</b>
	60	11	7,5	0,5	8,5	<b>PTB-45x60x11-J1S</b>
	60	12,7	7,5	0,5	8,5	<b>PTB-45x60x12.7-J1S</b>
	63	13,2	9	0,8	11	<b>PTB-45x63x13.2-J1S</b>
	65	13,2	10	0,8	11	<b>PTB-45x65x13.2-J1S</b>
	70	16,5	12,5	0,8	13	<b>PTB-45x70x16.5-J1S</b>
<b>48</b>	63	11,2	7,5	0,5	8,5	<b>PTB-48x63x11.2-J1S</b>
	68	13,2	10	0,8	11	<b>PTB-48x68x13.2-J1S</b>
<b>50</b>	58	8,8	4	0,2	6	<b>PTB-50x58x8.8-J1S</b>
	60	6,6	5	0,2	6	<b>PTB-50x60x6.6-J1S</b>
	60	8	5	0,2	6	• <b>PTB-50x60x8-J1S</b>
	60	8,8	5	0,2	6	<b>PTB-50x60x8.8-J1S</b>
	60	11	5	0,2	6	<b>PTB-50x60x11-J1S</b>
	60	13,2	5	0,2	6	<b>PTB-50x60x13.2-J1S</b>
	63	8,8	6,5	0,2	7,5	<b>PTB-50x63x8.8-J1S</b>
	63	11	6,5	0,2	7,5	<b>PTB-50x63x11-J1S</b>
	65	9,9	7,5	0,5	8,5	<b>PTB-50x65x9.9-J1S</b>
	65	11	7,5	0,5	8,5	<b>PTB-50x65x11-J1S</b>
	65	12,5	7,5	0,5	8,5	<b>PTB-50x65x12.5-J1S</b>
	70	11	10	0,8	11	<b>PTB-50x70x11-J1S</b>
	70	13,2	10	0,8	11	<b>PTB-50x70x13.2-J1S</b>
<b>53</b>	63	6,6	5	0,2	6	<b>PTB-53x63x6.6-J1S</b>
	63	11	5	0,2	6	<b>PTB-53x63x11-J1S</b>
<b>55</b>	65	6,6	5	0,2	6	<b>PTB-55x65x6.6-J1S</b>
	65	11	5	0,2	6	<b>PTB-55x65x11-J1S</b>
	65	13,2	5	0,2	6	<b>PTB-55x65x13.2-J1S</b>
	68	11	6,5	0,2	7,5	<b>PTB-55x68x11-J1S</b>
	70	9,9	7,5	0,5	8,5	<b>PTB-55x70x9.9-J1S</b>
	70	13,2	7,5	0,5	8,5	<b>PTB-55x70x13.2-J1S</b>
	75	13,2	10	0,8	11	<b>PTB-55x75x13.2-J1S</b>
	80	6,5	12,5	0,8	13	<b>PTB-55x80x16.5-J1S</b>
<b>56</b>	64	8,8	4	0,2	6	<b>PTB-56x64x8.8-J1S</b>
	66	6,6	5	0,2	6	<b>PTB-56x66x6.6-J1S</b>
	66	11	5	0,2	6	<b>PTB-56x66x11-J1S</b>
	71	2,5	7,5	0,5	8,5	<b>PTB-56x71x12.5-J1S</b>
<b>57</b>	70	9,9	6,5	0,2	7,5	<b>PTB-57x70x9.9-J1S</b>
<b>60</b>	68	8,8	4	0,2	6	<b>PTB-60x68x8.8-J1S</b>
	70	6,6	5	0,2	6	<b>PTB-60x70x6.6-J1S</b>
	70	8,8	5	0,2	6	<b>PTB-60x70x8.8-J1S</b>
	70	9,9	5	0,2	6	<b>PTB-60x70x9.9-J1S</b>
	70	11	5	0,2	6	<b>PTB-60x70x11-J1S</b>
	70	13,2	5	0,2	6	<b>PTB-60x70x13.2-J1S</b>

• Dimensions in accordance with ISO 5597

3.4

### 3.4 PTB profile rod seals, metric sizes d 60 – 85 mm



#### Maximum extrusion gap e

Radial depth S mm	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
3	0,2	0,1	–
3,5 to 4	0,35	0,2	–
4,5 to 6,5	0,45	0,25	0,1
7 to 8	0,5	0,3	0,15
9 to 11,5	0,55	0,3	0,15
12,5	0,6	0,3	0,2
15	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
60	71	7,7	5,5	0,2	7	PTB-60x71x7.7-J1S
cont.	73	11	6,5	0,2	7,5	PTB-60x73x11-J1S
	75	9,9	7,5	0,5	8,5	PTB-60x75x9.9-J1S
	75	11	7,5	0,5	8,5	PTB-60x75x11-J1S
	75	12,1	7,5	0,5	8,5	PTB-60x75x12.1-J1S
	80	13,2	10	0,8	11	PTB-60x80x13.2-J1S
	80	16	10	0,8	11	PTB-60x80x16-J1S
62	72	13,2	5	0,2	6	PTB-62x72x13.2-J1S
63	71	8,8	4	0,2	6	PTB-63x71x8.8-J1S
	73	6,6	5	0,2	6	PTB-63x73x6.6-J1S
	73	13,2	5	0,2	6	PTB-63x73x13.2-J1S
	75	9,6	6	0,2	7	PTB-63x75x9.6-J1S
	78	9,9	7,5	0,5	8,5	PTB-63x78x9.9-J1S
	78	11	7,5	0,5	8,5	PTB-63x78x11-J1S
	78	11,7	7,5	0,5	8,5	PTB-63x78x11.7-J1S
	83	13,2	10	0,8	11	PTB-63x83x13.2-J1S
	83	16,5	10	0,8	11	PTB-63x83x16.5-J1S
64	80	13,2	8	0,5	8,5	PTB-64x80x13.2-J1S
65	73	8,8	4	0,2	6	PTB-65x73x8.8-J1S
	75	6,6	5	0,2	6	PTB-65x75x6.6-J1S
	75	8,8	5	0,2	6	PTB-65x75x8.8-J1S
	75	11	5	0,2	6	PTB-65x75x11-J1S
	75	13,2	5	0,2	6	PTB-65x75x13.2-J1S
	78	11	6,5	0,2	7,5	PTB-65x78x11-J1S
	80	9,9	7,5	0,5	8,5	PTB-65x80x9.9-J1S
	80	11	7,5	0,5	8,5	PTB-65x80x11-J1S
	80	13,2	7,5	0,5	8,5	PTB-65x80x13.2-J1S
	85	13,2	10	0,8	11	PTB-65x85x13.2-J1S
67	77	6,6	5	0,2	6	PTB-67x77x6.6-J1S

**Dimensions****Designation**

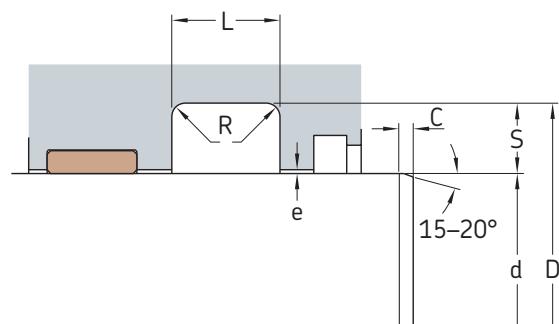
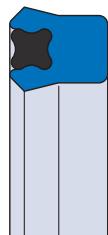
d f8 or h9	D H10	L +0,2	S	R max.	C min.	mm	-
<b>70</b>	78	8,8	4	0,2	6	<b>PTB-70x78x8.8-J1S</b>	
	80	6,6	5	0,2	6	<b>PTB-70x80x6.6-J1S</b>	
	80	11	5	0,2	6	<b>PTB-70x80x11-J1S</b>	
	80	13,2	5	0,2	6	<b>PTB-70x80x13.2-J1S</b>	
	83	11	6,5	0,2	7,5	<b>PTB-70x83x11-J1S</b>	
	85	9,9	7,5	0,5	8,5	<b>PTB-70x85x9.9-J1S</b>	
	85	11	7,5	0,5	8,5	<b>PTB-70x85x11-J1S</b>	
	85	12,5	7,5	0,5	8,5	• <b>PTB-70x85x12.5-J1S</b>	
	85	13,2	7,5	0,5	8,5	<b>PTB-70x85x13.2-J1S</b>	
	90	13,2	10	0,8	11	<b>PTB-70x90x13.2-J1S</b>	
	90	16,5	10	0,8	11	<b>PTB-70x90x16.5-J1S</b>	
<b>71</b>	80	6,6	4,5	0,2	6	<b>PTB-71x80x6.6-J1S</b>	
	80	7,2	4,5	0,2	6	<b>PTB-71x80x7.2-J1S</b>	
<b>72</b>	82	8,8	5	0,2	6	<b>PTB-72x82x8.8-J1S</b>	
	87	9,9	7,5	0,5	8,5	<b>PTB-72x87x9.9-J1S</b>	
<b>75</b>	83	6,6	4	0,2	6	<b>PTB-75x83x6.6-J1S</b>	
	85	6,6	5	0,2	6	<b>PTB-75x85x6.6-J1S</b>	
	85	8,8	5	0,2	6	<b>PTB-75x85x8.8-J1S</b>	
	85	11	5	0,2	6	<b>PTB-75x85x11-J1S</b>	
	85	13,2	5	0,2	6	<b>PTB-75x85x13.2-J1S</b>	
	88	11	6,5	0,2	7,5	<b>PTB-75x88x11-J1S</b>	
	90	6,6	7,5	0,5	8,5	<b>PTB-75x90x6.6-J1S</b>	
	90	9,9	7,5	0,5	8,5	<b>PTB-75x90x9.9-J1S</b>	
	90	11	7,5	0,5	8,5	<b>PTB-75x90x11-J1S</b>	
	90	12,1	7,5	0,5	8,5	<b>PTB-75x90x12.1-J1S</b>	
	90	12,5	7,5	0,5	8,5	<b>PTB-75x90x12.5-J1S</b>	
	90	13,2	7,5	0,5	8,5	<b>PTB-75x90x13.2-J1S</b>	
	95	13,2	10	0,8	11	<b>PTB-75x95x13.2-J1S</b>	
	100	16,5	12,5	0,8	13	<b>PTB-75x100x16.5-J1S</b>	
<b>78</b>	90	12,1	6	0,2	7	<b>PTB-78x90x12.1-J1S</b>	
<b>80</b>	88	8,8	4	0,2	6	<b>PTB-80x88x8.8-J1S</b>	
	90	6,6	5	0,2	6	<b>PTB-80x90x6.6-J1S</b>	
	90	8,8	5	0,2	6	<b>PTB-80x90x8.8-J1S</b>	
	90	11	5	0,2	6	<b>PTB-80x90x11-J1S</b>	
	90	13,2	5	0,2	6	<b>PTB-80x90x13.2-J1S</b>	
	92	10,5	6	0,2	7	<b>PTB-80x92x10.5-J1S</b>	
	93	11	6,5	0,2	7,5	<b>PTB-80x93x11-J1S</b>	
	95	9,9	7,5	0,5	8,5	<b>PTB-80x95x9.9-J1S</b>	
	95	11	7,5	0,5	8,5	<b>PTB-80x95x11-J1S</b>	
	95	12,1	7,5	0,5	8,5	<b>PTB-80x95x12.1-J1S</b>	
	95	12,5	7,5	0,5	8,5	• <b>PTB-80x95x12.5-J1S</b>	
	100	13,2	10	0,8	11	<b>PTB-80x100x13.2-J1S</b>	
	100	16	10	0,8	11	• <b>PTB-80x100x16-J1S</b>	
	100	16,5	10	0,8	11	<b>PTB-80x100x16.5-J1S</b>	
<b>82</b>	92	11	5	0,2	6	<b>PTB-82x92x11-J1S</b>	
<b>84</b>	98	13,2	7	0,5	8,5	<b>PTB-84x98x13.2-J1S</b>	
<b>85</b>	95	6,6	5	0,2	6	<b>PTB-85x95x6.6-J1S</b>	
	100	9,9	7,5	0,5	8,5	<b>PTB-85x100x9.9-J1S</b>	
	100	11	7,5	0,5	8,5	<b>PTB-85x100x11-J1S</b>	
	100	13,2	7,5	0,5	8,5	<b>PTB-85x100x13.2-J1S</b>	
	105	13,2	10	0,8	11	<b>PTB-85x105x13.2-J1S</b>	

• Dimensions in accordance with ISO 5597

3.4

### 3.4 PTB profile rod seals, metric sizes

d 87 – 150 mm



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
3	0,2	0,1	–
3,5 to 4	0,35	0,2	–
4,5 to 6,5	0,45	0,25	0,1
7 to 8	0,5	0,3	0,15
9 to 11,5	0,55	0,3	0,15
12,5	0,6	0,3	0,2
15	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

#### Designation

d f8 to h9	D H10	L +0,2	S	R max.	C min.	Designation
87	110	11	11,5	0,8	13	PTB-87x110x11-J1S
88	102	11,6	7	0,5	8,5	PTB-88x102x11.6-J1S
90	98	8,8	4	0,2	6	PTB-90x98x8.8-J1S
	100	6,6	5	0,2	6	PTB-90x100x6.6-J1S
	100	7,7	5	0,2	6	PTB-90x100x7.7-J1S
	105	9,9	7,5	0,5	8,5	PTB-90x105x9.9-J1S
	105	11	7,5	0,5	8,5	PTB-90x105x11-J1S
	105	12,5	7,5	0,5	8,5	• PTB-90x105x12.5-J1S
	105	13,2	7,5	0,5	8,5	PTB-90x105x13.2-J1S
	110	13,2	10	0,8	11	PTB-90x110x13.2-J1S
	110	16	10	0,8	11	• PTB-90x110x16-J1S
92	102	11	5	0,2	6	PTB-92x102x11-J1S
95	105	6,6	5	0,2	6	PTB-95x105x6.6-J1S
	110	9,9	7,5	0,5	8,5	PTB-95x110x9.9-J1S
	110	11	7,5	0,5	8,5	PTB-95x110x11-J1S
	110	13,2	7,5	0,5	8,5	PTB-95x110x13.2-J1S
	115	13,2	10	0,8	11	PTB-95x115x13.2-J1S
97	105	14,3	4	0,2	6	PTB-97x105x14.3-J1S
98	110	17,6	6	0,2	7	PTB-98x110x17.6-J1S
100	108	8,8	4	0,2	6	PTB-100x108x8.8-J1S
	115	9,9	7,5	0,5	8,5	PTB-100x115x9.9-J1S
	115	11	7,5	0,5	8,5	PTB-100x115x11-J1S
	115	13,2	7,5	0,5	8,5	PTB-100x115x13.2-J1S
	120	13,2	10	0,8	11	PTB-100x120x13.2-J1S
	120	16	10	0,8	11	• PTB-100x120x16-J1S
	125	13,6	12,5	0,8	13	PTB-100x125x13.6-J1S
	125	16,5	12,5	0,8	13	PTB-100x125x16.5-J1S
105	120	9,9	7,5	0,5	8,5	PTB-105x120x9.9-J1S

• Dimensions in accordance with ISO 5597

**Dimensions****Designation**

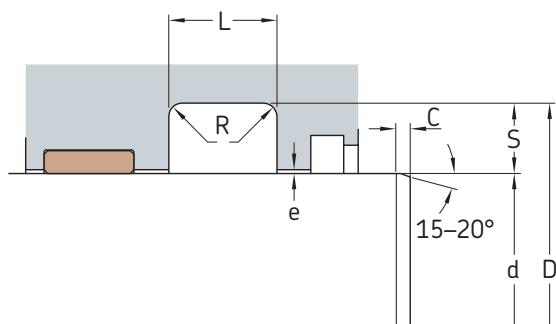
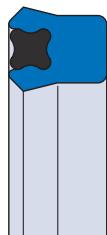
d f8 to h9	D H10	L +0,2	S	R max.	C min.	
mm						-
<b>105</b>	120	11	7,5	0,5	8,5	<b>PTB-105x120x11-J1S</b>
cont.	125	12,5	10	0,8	11	<b>PTB-105x125x12.5-J1S</b>
	125	13,2	10	0,8	11	<b>PTB-105x125x13.2-J1S</b>
	125	16,5	10	0,8	11	<b>PTB-105x125x16.5-J1S</b>
<b>109</b>	125	11,6	8	0,5	8,5	<b>PTB-109x125x11.6-J1S</b>
<b>110</b>	125	9,9	7,5	0,5	8,5	<b>PTB-110x125x9.9-J1S</b>
	125	10,1	7,5	0,5	8,5	<b>PTB-110x125x10.1-J1S</b>
	125	11	7,5	0,5	8,5	<b>PTB-110x125x11-J1S</b>
	125	13,2	7,5	0,5	8,5	<b>PTB-110x125x13.2-J1S</b>
	130	11	10	0,8	11	<b>PTB-110x130x11-J1S</b>
	130	13,2	10	0,8	11	<b>PTB-110x130x13.2-J1S</b>
	130	16	10	0,8	11	• <b>PTB-110x130x16-J1S</b>
	130	16,5	10	0,8	11	<b>PTB-110x130x16.5-J1S</b>
	135	19,8	12,5	0,8	13	• <b>PTB-110x135x19.8-J1S</b>
<b>112</b>	125	7,7	6,5	0,2	7,5	<b>PTB-112x125x7.7-J1S</b>
<b>115</b>	130	9,4	7,5	0,5	8,5	<b>PTB-115x130x9.4-J1S</b>
	130	9,9	7,5	0,5	8,5	<b>PTB-115x130x9.9-J1S</b>
	135	13,2	10	0,8	11	<b>PTB-115x135x13.2-J1S</b>
	140	19,8	12,5	0,8	13	<b>PTB-115x140x19.8-J1S</b>
<b>118</b>	133	9,9	7,5	0,5	8,5	<b>PTB-118x133x9.9-J1S</b>
<b>120</b>	130	16,5	5	0,2	6	<b>PTB-120x130x16.5-J1S</b>
	135	9,9	7,5	0,5	8,5	<b>PTB-120x135x9.9-J1S</b>
	140	11	10	0,8	11	<b>PTB-120x140x11-J1S</b>
	140	13,2	10	0,8	11	<b>PTB-120x140x13.2-J1S</b>
	140	16	10	0,8	11	<b>PTB-120x140x16-J1S</b>
	140	16,5	10	0,8	11	<b>PTB-120x140x16.5-J1S</b>
<b>125</b>	140	9,9	7,5	0,5	8,5	<b>PTB-125x140x9.9-J1S</b>
	140	16,5	7,5	0,5	8,5	<b>PTB-125x140x16.5-J1S</b>
	145	16	10	0,8	11	• <b>PTB-125x145x16-J1S</b>
	145	16,5	10	0,8	11	<b>PTB-125x145x16.5-J1S</b>
	150	19,8	12,5	0,8	13	• <b>PTB-125x150x19.8-J1S</b>
<b>130</b>	145	9,9	7,5	0,5	8,5	<b>PTB-130x145x9.9-J1S</b>
	150	13,2	10	0,8	11	<b>PTB-130x150x13.2-J1S</b>
	150	14,3	10	0,8	11	<b>PTB-130x150x14.3-J1S</b>
	150	16,5	10	0,8	11	<b>PTB-130x150x16.5-J1S</b>
	150	17,6	10	0,8	11	<b>PTB-130x150x17.6-J1S</b>
	160	18,7	15	0,8	14	<b>PTB-130x160x18.7-J1S</b>
<b>135</b>	150	9,9	7,5	0,5	8,5	<b>PTB-135x150x9.9-J1S</b>
	155	16,5	10	0,8	11	<b>PTB-135x155x16.5-J1S</b>
<b>136</b>	150	9,9	7	0,5	8,5	<b>PTB-136x150x9.9-J1S</b>
<b>140</b>	155	9,9	7,5	0,5	8,5	<b>PTB-140x155x9.9-J1S</b>
	160	13,2	10	0,8	11	<b>PTB-140x160x13.2-J1S</b>
	160	15,4	10	0,8	11	<b>PTB-140x160x15.4-J1S</b>
	160	16	10	0,8	11	• <b>PTB-140x160x16-J1S</b>
	160	16,5	10	0,8	11	<b>PTB-140x160x16.5-J1S</b>
<b>145</b>	160	7,7	7,5	0,5	8,5	<b>PTB-145x160x7.7-J1S</b>
	160	9,9	7,5	0,5	8,5	<b>PTB-145x160x9.9-J1S</b>
<b>150</b>	160	8,8	5	0,2	6	<b>PTB-150x160x8.8-J1S</b>
	165	9,9	7,5	0,5	8,5	<b>PTB-150x165x9.9-J1S</b>
	170	16,5	10	0,8	11	<b>PTB-150x170x16.5-J1S</b>
	170	17,6	10	0,8	11	<b>PTB-150x170x17.6-J1S</b>
	180	19,8	15	0,8	14	<b>PTB-150x180x19.8-J1S</b>

• Dimensions in accordance with ISO 5597

3.4

### 3.4 PTB profile rod seals, metric sizes

d 155 – 205 mm



#### Maximum extrusion gap e

Radial depth S mm	$e_{\max}$ at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
3	0,2	0,1	–
3,5 to 4	0,35	0,2	–
4,5 to 6,5	0,45	0,25	0,1
7 to 8	0,5	0,3	0,15
9 to 11,5	0,55	0,3	0,15
12,5	0,6	0,3	0,2
15	0,6	0,3	0,2

For additional information → page 34

#### Dimensions

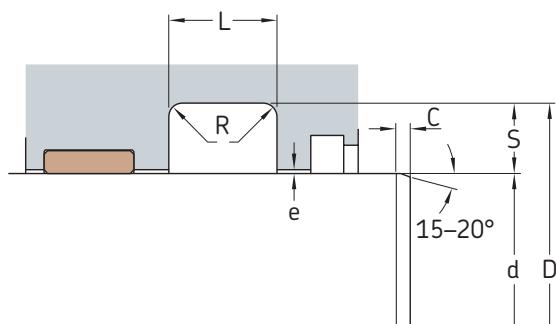
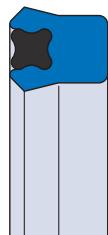
#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	Designation
155	180	16,5	12,5	0,8	13	PTB-155x180x16.5-J1S
	180	17,6	12,5	0,8	13	PTB-155x180x17.6-J1S
160	175	9,9	7,5	0,5	8,5	PTB-160x175x9.9-J1S
	180	16,5	10	0,8	11	PTB-160x180x16.5-J1S
	185	17,6	12,5	0,8	13	PTB-160x185x17.6-J1S
	185	19,8	12,5	0,8	13	PTB-160x185x19.8-J1S
	190	25	15	0,8	14	PTB-160x190x25-J1S
165	180	10,5	7,5	0,5	8,5	PTB-165x180x10.5-J1S
	190	17,6	12,5	0,8	13	PTB-165x190x17.6-J1S
170	190	16,5	10	0,8	11	PTB-170x190x16.5-J1S
	195	17,6	12,5	0,8	13	PTB-170x195x17.6-J1S
	200	16,5	15	0,8	14	PTB-170x200x16.5-J1S
175	185	12,5	5	0,2	6	PTB-175x185x12.5-J1S
	200	16,5	12,5	0,8	13	PTB-175x200x16.5-J1S
	200	19,8	12,5	0,8	13	PTB-175x200x19.8-J1S
180	200	13,8	10	0,8	11	PTB-180x200x13.8-J1S
	205	16,5	12,5	0,8	13	PTB-180x205x16.5-J1S
	205	17,6	12,5	0,8	13	PTB-180x205x17.6-J1S
190	210	13,2	10	0,8	11	PTB-190x210x13.2-J1S
	210	16,5	10	0,8	11	PTB-190x210x16.5-J1S
	215	16,5	12,5	0,8	13	PTB-190x215x16.5-J1S
	215	17,6	12,5	0,8	13	PTB-190x215x17.6-J1S
199	224	17,6	12,5	0,8	13	PTB-199x224x17.6-J1S
200	220	13,8	10	0,8	11	PTB-200x220x13.8-J1S
	220	16,5	10	0,8	11	PTB-200x220x16.5-J1S
	225	16,5	12,5	0,8	13	PTB-200x225x16.5-J1S
	225	17,6	12,5	0,8	13	PTB-200x225x17.6-J1S
205	235	19,8	15	0,8	14	PTB-205x235x19.8-J1S

Other sizes are available on request

### 3.4 PTB profile rod seals, inch sizes

d 0.125 – 0.688 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.			in.
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.010	0.004
0.281 to 0.437	0.020	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

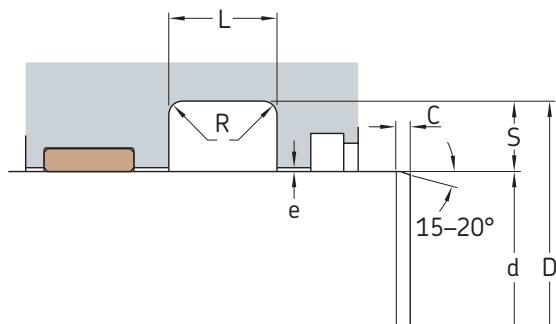
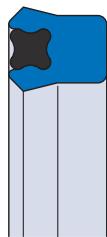
3.4

#### Dimensions

#### Designation

d Tolerance	D Tolerance	L +0.01	S	R max.	C min.	Designation		
in.					–			
0.125	-0.001	0.375	0.002	0.275	0.125	0.015	0.25	PTB125-125-250-J1S
0.187	-0.001	0.437	0.002	0.206	0.125	0.015	0.25	PTB125-187-187-J1S
	-0.001	0.437	0.002	0.275	0.125	0.015	0.25	PTB125-187-250-J1S
0.25	-0.001	0.5	0.002	0.275	0.125	0.015	0.25	PTB125-250-250-J1S
0.282	-0.001	0.532	0.002	0.275	0.125	0.015	0.25	PTB125-282-250-J1S
0.312	-0.001	0.562	0.002	0.275	0.125	0.015	0.25	PTB125-312-250-J1S
	-0.001	0.687	0.002	0.343	0.187	0.015	0.25	PTB187-312-312-J1S
0.375	-0.001	0.625	0.002	0.275	0.125	0.015	0.25	PTB125-375-250-J1S
	-0.001	0.75	0.002	0.343	0.187	0.015	0.25	PTB187-375-312-J1S
0.437	-0.001	0.687	0.002	0.275	0.125	0.015	0.25	PTB125-437-250-J1S
	-0.001	0.687	0.002	0.413	0.125	0.015	0.25	PTB125-437-375-J1S
	-0.002	0.937	0.003	0.413	0.25	0.02	0.312	PTB250-437-375-J1S
0.5	-0.001	0.75	0.002	0.193	0.125	0.015	0.25	PTB125-500-175-J1S
	-0.001	0.75	0.002	0.275	0.125	0.015	0.25	PTB125-500-250-J1S
	-0.001	0.875	0.002	0.343	0.187	0.015	0.25	PTB187-500-312-J1S
	-0.002	1	0.003	0.413	0.25	0.02	0.312	PTB250-500-375-J1S
0.54	-0.001	0.915	0.002	0.343	0.187	0.015	0.25	PTB187-540-312-J1S
0.562	-0.001	0.812	0.002	0.275	0.125	0.015	0.25	PTB125-562-250-J1S
	-0.001	0.937	0.002	0.343	0.187	0.015	0.25	PTB187-562-312-J1S
0.625	-0.001	0.875	0.002	0.196	0.125	0.015	0.25	PTB125-625-178-J1S
	-0.001	0.875	0.002	0.275	0.125	0.015	0.25	PTB125-625-250-J1S
	-0.001	1	0.002	0.343	0.187	0.015	0.25	PTB187-625-312-J1S
0.687	-0.001	0.937	0.002	0.275	0.125	0.015	0.25	PTB125-687-250-J1S
	-0.001	1.062	0.002	0.343	0.187	0.015	0.25	PTB187-687-312-J1S
	-0.002	1.187	0.003	0.413	0.25	0.02	0.312	PTB250-687-375-J1S
0.688	-0.001	0.938	0.002	0.196	0.125	0.015	0.25	PTB125-688-178-J1S

### 3.4 PTB profile rod seals, inch sizes d 0.75 – 1.625 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.			in.
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>0.75</b>	-0.001	1	0.002	0.196	0.125	0.015	0.25	<b>PTB125-750-178-J1S</b>
	-0.001	1	0.002	0.206	0.125	0.015	0.25	<b>PTB125-750-187-J1S</b>
	-0.001	1	0.002	0.275	0.125	0.015	0.25	<b>PTB125-750-250-J1S</b>
	-0.001	1.125	0.002	0.343	0.187	0.015	0.25	<b>PTB187-750-312-J1S</b>
	-0.002	1.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-750-375-J1S</b>
	-0.002	1.375	0.004	0.55	0.312	0.02	0.312	<b>PTB312-750-500-J1S</b>
<b>0.812</b>	-0.001	1.062	0.002	0.275	0.125	0.015	0.25	<b>PTB125-812-250-J1S</b>
	-0.001	1.187	0.002	0.343	0.187	0.015	0.25	<b>PTB187-812-312-J1S</b>
	-0.002	1.312	0.003	0.413	0.25	0.02	0.312	<b>PTB250-812-375-J1S</b>
<b>0.875</b>	-0.001	1.125	0.002	0.275	0.125	0.015	0.25	<b>PTB125-875-250-J1S</b>
	-0.001	1.25	0.002	0.343	0.187	0.015	0.25	<b>PTB187-875-312-J1S</b>
	-0.002	1.375	0.003	0.413	0.25	0.02	0.312	<b>PTB250-875-375-J1S</b>
<b>0.937</b>	-0.001	1.187	0.002	0.275	0.125	0.015	0.25	<b>PTB125-937-250-J1S</b>
	-0.001	1.312	0.002	0.343	0.187	0.015	0.25	<b>PTB187-937-312-J1S</b>
	-0.002	1.562	0.004	0.413	0.312	0.02	0.312	<b>PTB312-937-375-J1S</b>
<b>1</b>	-0.001	1.25	0.002	0.206	0.125	0.015	0.25	<b>PTB125-1000-187-J1S</b>
	-0.001	1.25	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1000-250-J1S</b>
	-0.001	1.312	0.002	0.24	0.156	0.015	0.25	<b>PTB156-1000-218-J1S</b>
	-0.001	1.312	0.002	0.257	0.156	0.015	0.25	<b>PTB156-1000-234-J1S</b>
	-0.001	1.375	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1000-250-J1S</b>
	-0.001	1.375	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1000-266-J1S</b>
	-0.001	1.375	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1000-312-J1S</b>
	-0.001	1.375	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1000-375-J1S</b>
	-0.002	1.5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1000-375-J1S</b>
	-0.002	1.625	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1000-375-J1S</b>
	-0.002	1.625	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1000-500-J1S</b>
<b>1.062</b>	-0.001	1.312	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1062-250-J1S</b>
	-0.001	1.437	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1062-312-J1S</b>
<b>1.125</b>	-0.001	1.375	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1125-250-J1S</b>
	-0.001	1.5	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1125-250-J1S</b>
	-0.001	1.5	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1125-312-J1S</b>
	-0.001	1.5	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1125-375-J1S</b>
	-0.002	1.625	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1125-375-J1S</b>
	-0.002	1.75	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1125-375-J1S</b>

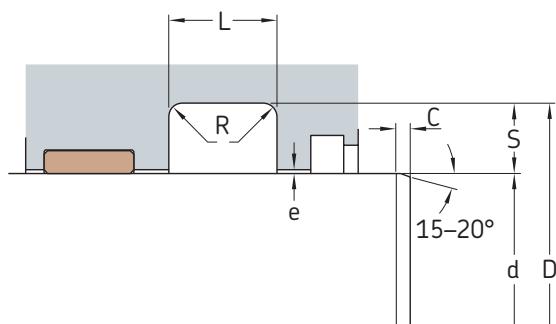
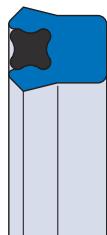
## Dimensions

## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>1.187</b>	-0.001	1.437	0.002	0.196	0.125	0.015	0.25	<b>PTB125-1187-178-J1S</b>
	-0.001	1.437	0.002	0.206	0.125	0.015	0.25	<b>PTB125-1187-187-J1S</b>
	-0.001	1.437	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1187-250-J1S</b>
	-0.001	1.562	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1187-250-J1S</b>
	-0.001	1.562	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1187-312-J1S</b>
<b>1.25</b>	-0.001	1.5	0.002	0.206	0.125	0.015	0.25	<b>PTB125-1250-187-J1S</b>
	-0.001	1.5	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1250-250-J1S</b>
	-0.001	1.625	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1250-250-J1S</b>
	-0.001	1.625	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1250-266-J1S</b>
	-0.001	1.625	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1250-312-J1S</b>
	-0.001	1.625	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1250-375-J1S</b>
	-0.002	1.75	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1250-375-J1S</b>
	-0.002	1.875	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1250-375-J1S</b>
	-0.002	1.875	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1250-500-J1S</b>
	-0.003	2.25	0.007	0.825	0.5	0.03	0.625	<b>PTB500-1250-750-J1S</b>
<b>1.312</b>	-0.001	1.562	0.002	0.206	0.125	0.015	0.25	<b>PTB125-1312-187-J1S</b>
	-0.001	1.687	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1312-312-J1S</b>
	-0.002	1.812	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1312-375-J1S</b>
<b>1.375</b>	-0.001	1.625	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1375-250-J1S</b>
	-0.001	1.687	0.002	0.24	0.156	0.015	0.25	<b>PTB156-1375-218-J1S</b>
	-0.001	1.75	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1375-250-J1S</b>
	-0.001	1.75	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1375-266-J1S</b>
	-0.001	1.75	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1375-312-J1S</b>
	-0.001	1.75	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1375-375-J1S</b>
	-0.002	1.875	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1375-375-J1S</b>
	-0.002	2	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1375-375-J1S</b>
	-0.002	2	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1375-500-J1S</b>
<b>1.437</b>	-0.001	1.687	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1437-250-J1S</b>
	-0.001	1.812	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1437-312-J1S</b>
	-0.002	1.937	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1437-375-J1S</b>
<b>1.5</b>	-0.001	1.75	0.002	0.206	0.125	0.015	0.25	<b>PTB125-1500-187-J1S</b>
	-0.001	1.75	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1500-250-J1S</b>
	-0.001	1.812	0.002	0.343	0.156	0.015	0.25	<b>PTB156-1500-312-J1S</b>
	-0.001	1.875	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1500-250-J1S</b>
	-0.001	1.875	0.002	0.286	0.187	0.015	0.25	<b>PTB187-1500-260-J1S</b>
	-0.001	1.875	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1500-266-J1S</b>
	-0.001	1.875	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1500-312-J1S</b>
	-0.001	1.875	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1500-375-J1S</b>
	-0.002	2	0.003	0.343	0.25	0.02	0.312	<b>PTB250-1500-312-J1S</b>
	-0.002	2	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1500-375-J1S</b>
	-0.002	2	0.003	0.55	0.25	0.02	0.312	<b>PTB250-1500-500-J1S</b>
	-0.002	2.125	0.004	0.481	0.312	0.02	0.312	<b>PTB312-1500-437-J1S</b>
	-0.002	2.125	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1500-500-J1S</b>
	-0.002	2.25	0.005	0.55	0.375	0.03	0.5	<b>PTB375-1500-500-J1S</b>
	-0.002	2.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-1500-625-J1S</b>
<b>1.562</b>	-0.001	1.937	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1562-375-J1S</b>
	-0.002	2	0.003	0.343	0.218	0.02	0.312	<b>PTB218-1562-312-J1S</b>
	-0.002	2.062	0.003	0.343	0.25	0.02	0.312	<b>PTB250-1562-312-J1S</b>
<b>1.625</b>	-0.001	2	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1625-250-J1S</b>
	-0.001	2	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1625-266-J1S</b>
	-0.001	2	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1625-312-J1S</b>
	-0.001	2	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1625-375-J1S</b>

3.4

### 3.4 PTB profile rod seals, inch sizes d 1.625 – 2.5 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.	in.		
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>1.625</b>	-0.002	2.125	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1625-375-J1S</b>
cont.	-0.002	2.25	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1625-375-J1S</b>
	-0.002	2.25	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1625-500-J1S</b>
	-0.002	2.375	0.005	0.688	0.375	0.03	0.5	<b>PTB375-1625-625-J1S</b>
<b>1.687</b>	-0.002	2.312	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1687-500-J1S</b>
<b>1.75</b>	-0.001	2	0.002	0.275	0.125	0.015	0.25	<b>PTB125-1750-250-J1S</b>
	-0.001	2.125	0.002	0.275	0.187	0.015	0.25	<b>PTB187-1750-250-J1S</b>
	-0.001	2.125	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1750-266-J1S</b>
	-0.001	2.125	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1750-312-J1S</b>
	-0.001	2.125	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1750-375-J1S</b>
	-0.002	2.25	0.003	0.343	0.25	0.02	0.312	<b>PTB250-1750-312-J1S</b>
	-0.002	2.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1750-375-J1S</b>
	-0.002	2.375	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1750-375-J1S</b>
	-0.002	2.375	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1750-500-J1S</b>
	-0.002	2.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-1750-625-J1S</b>
	-0.003	2.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-1750-750-J1S</b>
<b>1.875</b>	-0.001	2.25	0.002	0.293	0.187	0.015	0.25	<b>PTB187-1875-266-J1S</b>
	-0.001	2.25	0.002	0.343	0.187	0.015	0.25	<b>PTB187-1875-312-J1S</b>
	-0.001	2.25	0.002	0.413	0.187	0.015	0.25	<b>PTB187-1875-375-J1S</b>
	-0.002	2.375	0.003	0.413	0.25	0.02	0.312	<b>PTB250-1875-375-J1S</b>
	-0.002	2.5	0.004	0.413	0.312	0.02	0.312	<b>PTB312-1875-375-J1S</b>
	-0.002	2.5	0.004	0.55	0.312	0.02	0.312	<b>PTB312-1875-500-J1S</b>
	-0.003	2.875	0.007	0.688	0.5	0.03	0.625	<b>PTB500-1875-625-J1S</b>
<b>2</b>	-0.001	2.25	0.002	0.275	0.125	0.015	0.25	<b>PTB125-2000-250-J1S</b>
	-0.001	2.375	0.002	0.253	0.187	0.015	0.25	<b>PTB187-2000-230-J1S</b>
	-0.001	2.375	0.002	0.275	0.187	0.015	0.25	<b>PTB187-2000-250-J1S</b>
	-0.001	2.375	0.002	0.343	0.187	0.015	0.25	<b>PTB187-2000-312-J1S</b>
	-0.001	2.375	0.002	0.391	0.187	0.015	0.25	<b>PTB187-2000-355-J1S</b>
	-0.001	2.375	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2000-375-J1S</b>
	-0.002	2.5	0.003	0.343	0.25	0.02	0.312	<b>PTB250-2000-312-J1S</b>
	-0.002	2.5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2000-375-J1S</b>
	-0.002	2.5	0.003	0.55	0.25	0.02	0.312	<b>PTB250-2000-500-J1S</b>

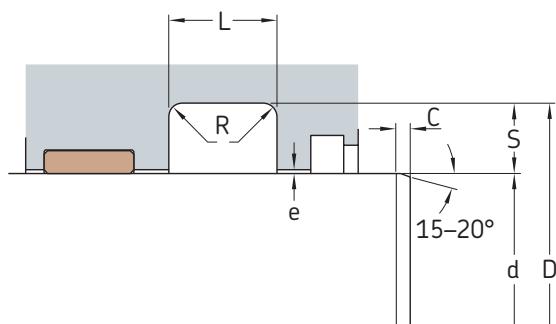
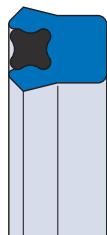
**Dimensions****Designation**

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>2</b>	-0.002	2.625	0.004	0.413	0.312	0.02	0.312	<b>PTB312-2000-375-J1S</b>
cont.	-0.002	2.625	0.004	0.481	0.312	0.02	0.312	<b>PTB312-2000-437-J1S</b>
	-0.002	2.625	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2000-500-J1S</b>
	-0.002	2.75	0.005	0.481	0.375	0.03	0.5	<b>PTB375-2000-437-J1S</b>
	-0.002	2.75	0.005	0.55	0.375	0.03	0.5	<b>PTB375-2000-500-J1S</b>
	-0.002	2.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2000-625-J1S</b>
	-0.003	3	0.007	0.825	0.5	0.03	0.625	<b>PTB500-2000-750-J1S</b>
<b>2.125</b>	-0.001	2.5	0.002	0.275	0.187	0.015	0.25	<b>PTB187-2125-250-J1S</b>
	-0.001	2.5	0.002	0.293	0.187	0.015	0.25	<b>PTB187-2125-266-J1S</b>
	-0.001	2.5	0.002	0.343	0.187	0.015	0.25	<b>PTB187-2125-312-J1S</b>
	-0.001	2.5	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2125-375-J1S</b>
	-0.002	2.625	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2125-375-J1S</b>
	-0.002	2.75	0.004	0.413	0.312	0.02	0.312	<b>PTB312-2125-375-J1S</b>
	-0.002	2.75	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2125-500-J1S</b>
	-0.002	2.875	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2125-625-J1S</b>
<b>2.187</b>	-0.001	2.562	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2187-375-J1S</b>
	-0.002	2.687	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2187-375-J1S</b>
	-0.002	2.937	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2187-625-J1S</b>
<b>2.25</b>	-0.001	2.625	0.002	0.343	0.187	0.015	0.25	<b>PTB187-2250-312-J1S</b>
	-0.001	2.625	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2250-375-J1S</b>
	-0.002	2.75	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2250-375-J1S</b>
	-0.002	2.875	0.004	0.413	0.312	0.02	0.312	<b>PTB312-2250-375-J1S</b>
	-0.002	2.875	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2250-500-J1S</b>
	-0.002	3	0.005	0.55	0.375	0.03	0.5	<b>PTB375-2250-500-J1S</b>
	-0.002	3	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2250-625-J1S</b>
<b>2.375</b>	-0.001	2.625	0.002	0.206	0.125	0.015	0.25	<b>PTB125-2375-187-J1S</b>
	-0.001	2.75	0.002	0.275	0.187	0.015	0.25	<b>PTB187-2375-250-J1S</b>
	-0.001	2.75	0.002	0.293	0.187	0.015	0.25	<b>PTB187-2375-266-J1S</b>
	-0.001	2.75	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2375-375-J1S</b>
	-0.001	2.75	0.002	0.55	0.187	0.015	0.25	<b>PTB187-2375-500-J1S</b>
	-0.002	2.875	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2375-375-J1S</b>
	-0.002	3	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2375-500-J1S</b>
	-0.002	3.125	0.005	0.55	0.375	0.03	0.5	<b>PTB375-2375-500-J1S</b>
	-0.002	3.125	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2375-625-J1S</b>
<b>2.437</b>	-0.002	3	0.003	0.413	0.281	0.02	0.312	<b>PTB281-2437-375-J1S</b>
<b>2.5</b>	-0.001	2.75	0.002	0.275	0.125	0.015	0.25	<b>PTB125-2500-250-J1S</b>
	-0.001	2.875	0.002	0.275	0.187	0.015	0.25	<b>PTB187-2500-250-J1S</b>
	-0.001	2.875	0.002	0.293	0.187	0.015	0.25	<b>PTB187-2500-266-J1S</b>
	-0.001	2.875	0.002	0.343	0.187	0.015	0.25	<b>PTB187-2500-312-J1S</b>
	-0.001	2.875	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2500-375-J1S</b>
	-0.002	2.937	0.003	0.309	0.218	0.02	0.312	<b>PTB218-2500-281-J1S</b>
	-0.002	3	0.003	0.343	0.25	0.02	0.312	<b>PTB250-2500-312-J1S</b>
	-0.002	3	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2500-375-J1S</b>
	-0.002	3	0.003	0.55	0.25	0.02	0.312	<b>PTB250-2500-500-J1S</b>
	-0.002	3.125	0.004	0.413	0.312	0.02	0.312	<b>PTB312-2500-375-J1S</b>
	-0.002	3.125	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2500-500-J1S</b>
	-0.002	3.25	0.005	0.55	0.375	0.03	0.5	<b>PTB375-2500-500-J1S</b>
	-0.002	3.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2500-625-J1S</b>
	-0.003	3.5	0.007	0.825	0.5	0.03	0.5	<b>PTB500-2500-750-J1S</b>

3.4

### 3.4 PTB profile rod seals, inch sizes

d 2.625 – 3.75 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.			in.
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>2.625</b>	-0.001	3	0.002	0.275	0.187	0.015	0.25	<b>PTB187-2625-250-J1S</b>
	-0.001	3	0.002	0.293	0.187	0.015	0.25	<b>PTB187-2625-266-J1S</b>
	-0.001	3	0.002	0.309	0.187	0.015	0.25	<b>PTB187-2625-281-J1S</b>
	-0.001	3	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2625-375-J1S</b>
	-0.002	3.125	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2625-375-J1S</b>
	-0.002	3.375	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2625-625-J1S</b>
<b>2.75</b>	-0.001	3	0.002	0.275	0.125	0.015	0.25	<b>PTB125-2750-250-J1S</b>
	-0.001	3	0.002	0.413	0.125	0.015	0.25	<b>PTB125-2750-375-J1S</b>
	-0.001	3.125	0.002	0.309	0.187	0.015	0.25	<b>PTB187-2750-281-J1S</b>
	-0.001	3.125	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2750-375-J1S</b>
	-0.002	3.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2750-375-J1S</b>
	-0.002	3.25	0.003	0.55	0.25	0.02	0.312	<b>PTB250-2750-500-J1S</b>
	-0.002	3.375	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2750-500-J1S</b>
	-0.002	3.5	0.005	0.55	0.375	0.03	0.5	<b>PTB375-2750-500-J1S</b>
	-0.002	3.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2750-625-J1S</b>
	-0.003	3.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-2750-750-J1S</b>
<b>2.875</b>	-0.001	3.25	0.002	0.275	0.187	0.015	0.25	<b>PTB187-2875-250-J1S</b>
	-0.001	3.25	0.002	0.293	0.187	0.015	0.25	<b>PTB187-2875-266-J1S</b>
	-0.001	3.25	0.002	0.413	0.187	0.015	0.25	<b>PTB187-2875-375-J1S</b>
	-0.002	3.375	0.003	0.413	0.25	0.02	0.312	<b>PTB250-2875-375-J1S</b>
	-0.002	3.5	0.004	0.55	0.312	0.02	0.312	<b>PTB312-2875-500-J1S</b>
	-0.002	3.625	0.005	0.55	0.375	0.03	0.5	<b>PTB375-2875-500-J1S</b>
	-0.002	3.625	0.005	0.688	0.375	0.03	0.5	<b>PTB375-2875-625-J1S</b>
<b>3</b>	-0.001	3.25	0.002	0.413	0.125	0.015	0.25	<b>PTB125-3000-375-J1S</b>
	-0.001	3.375	0.002	0.343	0.187	0.015	0.25	<b>PTB187-3000-312-J1S</b>
	-0.001	3.375	0.002	0.413	0.187	0.015	0.25	<b>PTB187-3000-375-J1S</b>
	-0.002	3.5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3000-375-J1S</b>
	-0.002	3.5	0.003	0.55	0.25	0.02	0.312	<b>PTB250-3000-500-J1S</b>
	-0.002	3.625	0.004	0.413	0.312	0.02	0.312	<b>PTB312-3000-375-J1S</b>
	-0.002	3.625	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3000-500-J1S</b>
	-0.002	3.75	0.005	0.55	0.375	0.03	0.5	<b>PTB375-3000-500-J1S</b>
	-0.002	3.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3000-625-J1S</b>
	-0.002	3.875	0.004	0.759	0.437	0.03	0.5	<b>PTB437-3000-690-J1S</b>

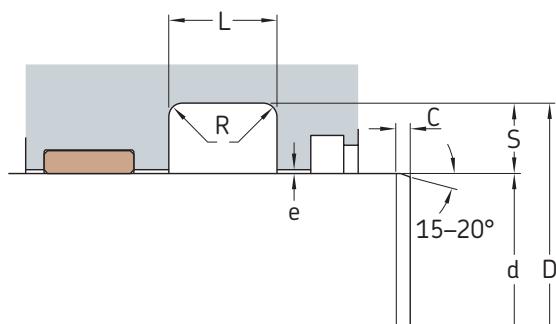
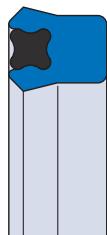
**Dimensions****Designation**

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>3</b>	-0.003	4	0.007	0.688	0.5	0.03	0.625	<b>PTB500-3000-625-J1S</b>
cont.	-0.003	4	0.007	0.825	0.5	0.03	0.625	<b>PTB500-3000-750-J1S</b>
<b>3.125</b>	-0.001	3.5	0.002	0.275	0.187	0.015	0.25	<b>PTB187-3125-250-J1S</b>
	-0.001	3.5	0.002	0.343	0.187	0.015	0.25	<b>PTB187-3125-312-J1S</b>
	-0.001	3.5	0.002	0.413	0.187	0.015	0.25	<b>PTB187-3125-375-J1S</b>
	-0.002	3.625	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3125-375-J1S</b>
	-0.002	3.75	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3125-500-J1S</b>
	-0.002	3.875	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3125-625-J1S</b>
<b>3.187</b>	-0.002	3.75	0.003	0.55	0.281	0.02	0.312	<b>PTB281-3187-500-J1S</b>
<b>3.25</b>	-0.001	3.625	0.002	0.413	0.187	0.015	0.25	<b>PTB187-3250-375-J1S</b>
	-0.002	3.75	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3250-375-J1S</b>
	-0.002	3.75	0.003	0.55	0.25	0.02	0.312	<b>PTB250-3250-500-J1S</b>
	-0.002	3.875	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3250-500-J1S</b>
	-0.002	4	0.005	0.55	0.375	0.03	0.5	<b>PTB375-3250-500-J1S</b>
	-0.002	4	0.005	0.618	0.375	0.03	0.5	<b>PTB375-3250-562-J1S</b>
	-0.002	4	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3250-625-J1S</b>
	-0.003	4.25	0.007	0.825	0.5	0.03	0.625	<b>PTB500-3250-750-J1S</b>
	-0.003	4.5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-3250-1000-J1S</b>
<b>3.375</b>	-0.001	3.75	0.002	0.275	0.187	0.015	0.25	<b>PTB187-3375-250-J1S</b>
	-0.001	3.75	0.002	0.413	0.187	0.015	0.25	<b>PTB187-3375-375-J1S</b>
	-0.002	3.875	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3375-375-J1S</b>
	-0.002	4	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3375-500-J1S</b>
	-0.002	4	0.004	0.688	0.312	0.02	0.312	<b>PTB312-3375-625-J1S</b>
	-0.002	4.125	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3375-625-J1S</b>
	-0.003	4.375	0.007	0.688	0.5	0.03	0.625	<b>PTB500-3375-625-J1S</b>
<b>3.437</b>	-0.002	4	0.003	0.55	0.281	0.02	0.312	<b>PTB281-3437-500-J1S</b>
<b>3.5</b>	-0.002	4	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3500-375-J1S</b>
	-0.002	4	0.003	0.55	0.25	0.02	0.312	<b>PTB250-3500-500-J1S</b>
	-0.002	4.125	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3500-500-J1S</b>
	-0.002	4.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3500-625-J1S</b>
	-0.003	4.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-3500-750-J1S</b>
<b>3.625</b>	-0.001	3.875	0.002	0.206	0.125	0.015	0.25	<b>PTB125-3625-187-J1S</b>
	-0.001	4	0.002	0.275	0.187	0.015	0.25	<b>PTB187-3625-250-J1S</b>
	-0.001	4	0.002	0.413	0.187	0.015	0.25	<b>PTB187-3625-375-J1S</b>
	-0.002	4.125	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3625-375-J1S</b>
	-0.002	4.25	0.004	0.413	0.312	0.02	0.312	<b>PTB312-3625-375-J1S</b>
	-0.002	4.25	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3625-500-J1S</b>
	-0.002	4.375	0.005	0.55	0.375	0.03	0.5	<b>PTB375-3625-500-J1S</b>
	-0.002	4.375	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3625-625-J1S</b>
<b>3.75</b>	-0.001	4	0.002	0.275	0.125	0.015	0.25	<b>PTB125-3750-250-J1S</b>
	-0.001	4.125	0.002	0.413	0.187	0.015	0.25	<b>PTB187-3750-375-J1S</b>
	-0.002	4.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-3750-375-J1S</b>
	-0.002	4.25	0.003	0.55	0.25	0.02	0.312	<b>PTB250-3750-500-J1S</b>
	-0.002	4.25	0.003	0.618	0.25	0.02	0.312	<b>PTB250-3750-562-J1S</b>
	-0.002	4.375	0.004	0.413	0.312	0.02	0.312	<b>PTB312-3750-375-J1S</b>
	-0.002	4.375	0.004	0.55	0.312	0.02	0.312	<b>PTB312-3750-500-J1S</b>
	-0.002	4.375	0.004	0.688	0.312	0.02	0.312	<b>PTB312-3750-625-J1S</b>
	-0.002	4.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-3750-625-J1S</b>
	-0.003	4.75	0.007	0.759	0.5	0.03	0.625	<b>PTB500-3750-690-J1S</b>
	-0.003	5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-3750-1000-J1S</b>

3.4

### 3.4 PTB profile rod seals, inch sizes

d 3.875 – 5.25 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.	in.		
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
3.875	-0.001	4.25	0.002	0.413	0.187	0.015	0.25	PTB187-3875-375-J1S
	-0.002	4.375	0.003	0.413	0.25	0.02	0.312	PTB250-3875-375-J1S
	-0.002	4.5	0.004	0.55	0.312	0.02	0.312	PTB312-3875-500-J1S
	-0.002	4.625	0.005	0.688	0.375	0.03	0.5	PTB375-3875-625-J1S
	-0.002	4.75	0.004	0.825	0.437	0.03	0.5	PTB437-3875-750-J1S
4	-0.001	4.375	0.002	0.413	0.187	0.015	0.25	PTB187-4000-375-J1S
	-0.002	4.5	0.003	0.343	0.25	0.02	0.312	PTB250-4000-312-J1S
	-0.002	4.5	0.003	0.413	0.25	0.02	0.312	PTB250-4000-375-J1S
	-0.002	4.5	0.003	0.55	0.25	0.02	0.312	PTB250-4000-500-J1S
	-0.002	4.5	0.003	0.618	0.25	0.02	0.312	PTB250-4000-562-J1S
	-0.002	4.625	0.004	0.618	0.312	0.02	0.312	PTB312-4000-562-J1S
	-0.002	4.75	0.005	0.55	0.375	0.03	0.5	PTB375-4000-500-J1S
	-0.002	4.75	0.005	0.688	0.375	0.03	0.5	PTB375-4000-625-J1S
	-0.002	4.875	0.004	0.825	0.437	0.03	0.5	PTB437-4000-750-J1S
	-0.003	5	0.007	0.688	0.5	0.03	0.625	PTB500-4000-625-J1S
	-0.003	5	0.007	0.825	0.5	0.03	0.625	PTB500-4000-750-J1S
	-0.003	5.124	0.007	0.825	0.562	0.03	0.75	PTB562-4000-750-J1S
4.125	-0.001	4.5	0.002	0.413	0.187	0.015	0.25	PTB187-4125-375-J1S
	-0.002	4.625	0.003	0.413	0.25	0.02	0.312	PTB250-4125-375-J1S
	-0.002	4.625	0.003	0.618	0.25	0.02	0.312	PTB250-4125-562-J1S
	-0.002	4.75	0.004	0.55	0.312	0.02	0.312	PTB312-4125-500-J1S
	-0.002	4.75	0.004	0.618	0.312	0.02	0.312	PTB312-4125-562-J1S
4.25	-0.001	4.625	0.002	0.413	0.187	0.015	0.25	PTB187-4250-375-J1S
	-0.002	4.75	0.003	0.413	0.25	0.02	0.312	PTB250-4250-375-J1S
	-0.002	4.75	0.003	0.618	0.25	0.02	0.312	PTB250-4250-562-J1S
	-0.002	4.875	0.004	0.481	0.312	0.02	0.312	PTB312-4250-437-J1S
	-0.002	4.875	0.004	0.618	0.312	0.02	0.312	PTB312-4250-562-J1S
	-0.002	5	0.005	0.55	0.375	0.03	0.5	PTB375-4250-500-J1S
	-0.002	5	0.005	0.688	0.375	0.03	0.5	PTB375-4250-625-J1S
	-0.003	5.25	0.007	0.825	0.5	0.03	0.625	PTB500-4250-750-J1S
	-0.003	5.5	0.009	1.1	0.625	0.045	0.875	PTB625-4250-1000-J1S
	-0.003	5.5	0.009	0.825	0.625	0.045	0.875	PTB625-4250-750-J1S

## Dimensions

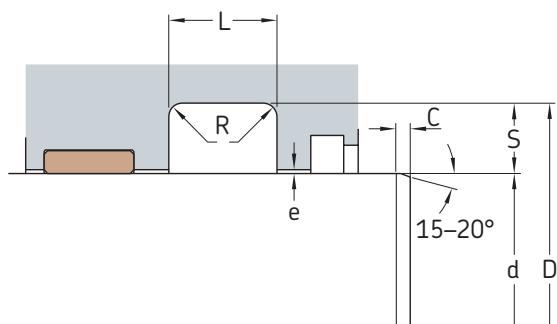
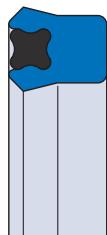
## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>4.375</b>	-0.001	4.75	0.002	0.413	0.187	0.015	0.25	<b>PTB187-4375-375-J1S</b>
	-0.002	4.875	0.003	0.618	0.25	0.02	0.312	<b>PTB250-4375-562-J1S</b>
	-0.002	5	0.004	0.55	0.312	0.02	0.312	<b>PTB312-4375-500-J1S</b>
	-0.002	5	0.004	0.618	0.312	0.02	0.312	<b>PTB312-4375-562-J1S</b>
	-0.002	5.125	0.005	0.55	0.375	0.03	0.5	<b>PTB375-4375-500-J1S</b>
	-0.002	5.125	0.005	0.688	0.375	0.03	0.5	<b>PTB375-4375-625-J1S</b>
	-0.003	5.375	0.007	0.825	0.5	0.03	0.625	<b>PTB500-4375-750-J1S</b>
<b>4.5</b>	-0.001	4.75	0.002	0.206	0.125	0.015	0.25	<b>PTB125-4500-187-J1S</b>
	-0.001	4.875	0.002	0.343	0.187	0.015	0.25	<b>PTB187-4500-312-J1S</b>
	-0.001	4.875	0.002	0.413	0.187	0.015	0.25	<b>PTB187-4500-375-J1S</b>
	-0.002	5	0.003	0.343	0.25	0.02	0.312	<b>PTB250-4500-312-J1S</b>
	-0.002	5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-4500-375-J1S</b>
	-0.002	5	0.003	0.55	0.25	0.02	0.312	<b>PTB250-4500-500-J1S</b>
	-0.002	5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-4500-562-J1S</b>
	-0.002	5	0.003	0.688	0.25	0.02	0.312	<b>PTB250-4500-625-J1S</b>
	-0.002	5.125	0.004	0.55	0.312	0.02	0.312	<b>PTB312-4500-500-J1S</b>
	-0.002	5.125	0.004	0.688	0.312	0.02	0.312	<b>PTB312-4500-625-J1S</b>
	-0.002	5.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-4500-625-J1S</b>
	-0.002	5.375	0.006	0.825	0.437	0.03	0.5	<b>PTB437-4500-750-J1S</b>
<b>4.625</b>	-0.002	5.125	0.003	0.618	0.25	0.02	0.312	<b>PTB250-4625-562-J1S</b>
	-0.002	5.25	0.004	0.688	0.312	0.02	0.312	<b>PTB312-4625-625-J1S</b>
	-0.002	5.375	0.005	0.688	0.375	0.03	0.5	<b>PTB375-4625-625-J1S</b>
<b>4.75</b>	-0.001	5	0.002	0.275	0.125	0.015	0.25	<b>PTB125-4750-250-J1S</b>
	-0.001	5.125	0.002	0.413	0.187	0.015	0.25	<b>PTB187-4750-375-J1S</b>
	-0.002	5.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-4750-375-J1S</b>
	-0.002	5.25	0.003	0.618	0.25	0.02	0.312	<b>PTB250-4750-562-J1S</b>
	-0.002	5.375	0.004	0.55	0.312	0.02	0.312	<b>PTB312-4750-500-J1S</b>
	-0.002	5.375	0.004	0.688	0.312	0.02	0.312	<b>PTB312-4750-625-J1S</b>
	-0.002	5.5	0.005	0.55	0.375	0.03	0.5	<b>PTB375-4750-500-J1S</b>
	-0.002	5.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-4750-625-J1S</b>
	-0.002	5.625	0.006	0.825	0.437	0.03	0.5	<b>PTB437-4750-750-J1S</b>
	-0.003	5.75	0.007	0.759	0.5	0.03	0.625	<b>PTB500-4750-690-J1S</b>
<b>4.875</b>	-0.002	5.375	0.003	0.618	0.25	0.02	0.312	<b>PTB250-4875-562-J1S</b>
	-0.002	5.375	0.003	0.688	0.25	0.02	0.312	<b>PTB250-4875-625-J1S</b>
	-0.002	5.625	0.005	0.688	0.375	0.03	0.5	<b>PTB375-4875-625-J1S</b>
<b>5</b>	-0.001	5.25	0.002	0.275	0.125	0.015	0.25	<b>PTB125-5000-250-J1S</b>
	-0.001	5.375	0.002	0.413	0.187	0.015	0.25	<b>PTB187-5000-375-J1S</b>
	-0.002	5.5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-5000-375-J1S</b>
	-0.002	5.5	0.003	0.55	0.25	0.02	0.312	<b>PTB250-5000-500-J1S</b>
	-0.002	5.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-5000-562-J1S</b>
	-0.002	5.625	0.004	0.688	0.312	0.02	0.312	<b>PTB312-5000-625-J1S</b>
	-0.002	5.75	0.005	0.55	0.375	0.03	0.5	<b>PTB375-5000-500-J1S</b>
	-0.002	5.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5000-625-J1S</b>
	-0.003	6	0.007	0.688	0.5	0.03	0.625	<b>PTB500-5000-625-J1S</b>
	-0.003	6	0.007	0.825	0.5	0.03	0.625	<b>PTB500-5000-750-J1S</b>
	-0.003	6.25	0.009	1.1	0.625	0.045	0.875	<b>PTB625-5000-1000-J1S</b>
<b>5.125</b>	-0.002	5.875	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5125-625-J1S</b>
<b>5.25</b>	-0.001	5.625	0.002	0.413	0.187	0.015	0.25	<b>PTB187-5250-375-J1S</b>
	-0.002	5.75	0.003	0.413	0.25	0.02	0.312	<b>PTB250-5250-375-J1S</b>
	-0.002	5.75	0.003	0.618	0.25	0.02	0.312	<b>PTB250-5250-562-J1S</b>
	-0.002	5.875	0.004	0.688	0.312	0.02	0.312	<b>PTB312-5250-625-J1S</b>

3.4

### 3.4 PTB profile rod seals, inch sizes

d 5.25 – 7.5 in.



#### Maximum extrusion gap e

Radial depth S	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
<hr/>			<hr/>
in.	in.		
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>5.25</b>	-0.002	6	0.005	0.55	0.375	0.03	0.5	<b>PTB375-5250-500-J1S</b>
cont.	-0.002	6	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5250-625-J1S</b>
	-0.003	6.25	0.007	0.825	0.5	0.03	0.625	<b>PTB500-5250-750-J1S</b>
	-0.003	6.5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-5250-1000-J1S</b>
<b>5.375</b>	-0.002	5.875	0.003	0.618	0.25	0.02	0.312	<b>PTB250-5375-562-J1S</b>
	-0.002	6	0.004	0.688	0.312	0.02	0.312	<b>PTB312-5375-625-J1S</b>
	-0.002	6.125	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5375-625-J1S</b>
	-0.003	6.375	0.007	0.825	0.5	0.03	0.625	<b>PTB500-5375-750-J1S</b>
<b>5.437</b>	-0.002	5.875	0.003	0.618	0.218	0.02	0.312	<b>PTB218-5437-562-J1S</b>
	-0.002	6	0.003	0.618	0.281	0.02	0.312	<b>PTB281-5437-562-J1S</b>
<b>5.5</b>	-0.001	5.875	0.002	0.413	0.187	0.015	0.25	<b>PTB187-5500-375-J1S</b>
	-0.002	6	0.003	0.413	0.25	0.02	0.312	<b>PTB250-5500-375-J1S</b>
	-0.002	6	0.003	0.618	0.25	0.02	0.312	<b>PTB250-5500-562-J1S</b>
	-0.002	6.125	0.004	0.413	0.312	0.02	0.312	<b>PTB312-5500-375-J1S</b>
	-0.002	6.125	0.004	0.688	0.312	0.02	0.312	<b>PTB312-5500-625-J1S</b>
	-0.002	6.25	0.005	0.55	0.375	0.03	0.5	<b>PTB375-5500-500-J1S</b>
	-0.002	6.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5500-625-J1S</b>
	-0.002	6.375	0.006	0.55	0.437	0.03	0.5	<b>PTB437-5500-500-J1S</b>
	-0.003	6.5	0.007	0.688	0.5	0.03	0.625	<b>PTB500-5500-625-J1S</b>
	-0.003	6.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-5500-750-J1S</b>
<b>5.625</b>	-0.001	6	0.002	0.413	0.187	0.015	0.25	<b>PTB187-5625-375-J1S</b>
<b>5.625</b>	-0.002	6.25	0.004	0.688	0.312	0.02	0.312	<b>PTB312-5625-625-J1S</b>
<b>5.75</b>	-0.001	6.125	0.002	0.413	0.187	0.015	0.25	<b>PTB187-5750-375-J1S</b>
	-0.002	6.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-5750-375-J1S</b>
	-0.002	6.25	0.003	0.618	0.25	0.02	0.312	<b>PTB250-5750-562-J1S</b>
	-0.002	6.375	0.004	0.688	0.312	0.02	0.312	<b>PTB312-5750-625-J1S</b>
	-0.002	6.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5750-625-J1S</b>
	-0.003	6.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-5750-750-J1S</b>
	-0.003	7	0.009	1.1	0.625	0.045	0.875	<b>PTB625-5750-1000-J1S</b>
<b>5.875</b>	-0.002	6.375	0.003	0.618	0.25	0.02	0.312	<b>PTB250-5875-562-J1S</b>
	-0.002	6.5	0.004	0.413	0.312	0.02	0.312	<b>PTB312-5875-375-J1S</b>
	-0.002	6.625	0.005	0.688	0.375	0.03	0.5	<b>PTB375-5875-625-J1S</b>
	-0.003	6.875	0.007	0.825	0.5	0.03	0.625	<b>PTB500-5875-750-J1S</b>

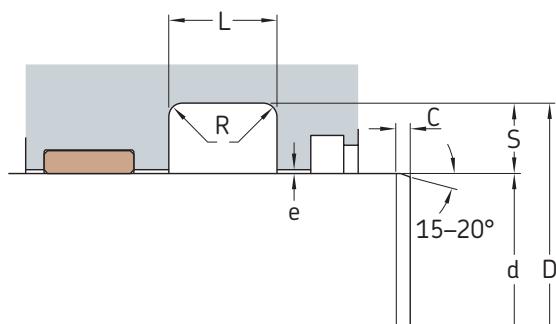
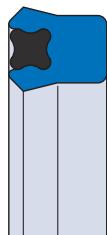
## Dimensions

## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>6</b>	-0.001	6.375	0.002	0.413	0.187	0.015	0.25	<b>PTB187-6000-375-J1S</b>
	-0.002	6.5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-6000-375-J1S</b>
	-0.002	6.5	0.003	0.481	0.25	0.02	0.312	<b>PTB250-6000-437-J1S</b>
	-0.002	6.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-6000-562-J1S</b>
	-0.002	6.625	0.004	0.688	0.312	0.02	0.312	<b>PTB312-6000-625-J1S</b>
	-0.002	6.75	0.005	0.55	0.375	0.03	0.5	<b>PTB375-6000-500-J1S</b>
	-0.002	6.75	0.005	0.618	0.375	0.03	0.5	<b>PTB375-6000-562-J1S</b>
	-0.002	6.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-6000-625-J1S</b>
	-0.003	7	0.007	0.825	0.5	0.03	0.625	<b>PTB500-6000-750-J1S</b>
<b>6.125</b>	-0.002	6.625	0.003	0.413	0.25	0.02	0.312	<b>PTB250-6125-375-J1S</b>
<b>6.25</b>	-0.001	6.625	0.002	0.343	0.187	0.015	0.25	<b>PTB187-6250-312-J1S</b>
	-0.002	6.75	0.003	0.413	0.25	0.02	0.312	<b>PTB250-6250-375-J1S</b>
	-0.002	7	0.005	0.55	0.375	0.03	0.5	<b>PTB375-6250-500-J1S</b>
	-0.002	7	0.005	0.688	0.375	0.03	0.5	<b>PTB375-6250-625-J1S</b>
	-0.003	7.25	0.007	0.825	0.5	0.03	0.625	<b>PTB500-6250-750-J1S</b>
	-0.003	7.5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-6250-1000-J1S</b>
<b>6.375</b>	-0.002	7	0.004	0.688	0.312	0.02	0.312	<b>PTB312-6375-625-J1S</b>
<b>6.5</b>	-0.002	7	0.003	0.413	0.25	0.02	0.312	<b>PTB250-6500-375-J1S</b>
	-0.002	7	0.003	0.618	0.25	0.02	0.312	<b>PTB250-6500-562-J1S</b>
	-0.002	7.125	0.004	0.688	0.312	0.02	0.312	<b>PTB312-6500-625-J1S</b>
	-0.002	7.25	0.005	0.55	0.375	0.03	0.5	<b>PTB375-6500-500-J1S</b>
	-0.002	7.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-6500-625-J1S</b>
	-0.003	7.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-6500-750-J1S</b>
<b>6.625</b>	-0.002	7.25	0.004	0.688	0.312	0.02	0.312	<b>PTB312-6625-625-J1S</b>
<b>6.75</b>	-0.002	7.25	0.003	0.413	0.25	0.02	0.312	<b>PTB250-6750-375-J1S</b>
	-0.002	7.25	0.003	0.618	0.25	0.02	0.312	<b>PTB250-6750-562-J1S</b>
	-0.002	7.5	0.005	0.55	0.375	0.03	0.5	<b>PTB375-6750-500-J1S</b>
	-0.002	7.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-6750-625-J1S</b>
	-0.003	7.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-6750-750-J1S</b>
<b>6.875</b>	-0.002	7.625	0.005	0.688	0.375	0.03	0.5	<b>PTB375-6875-625-J1S</b>
<b>7</b>	-0.002	7.5	0.003	0.413	0.25	0.02	0.312	<b>PTB250-7000-375-J1S</b>
	-0.002	7.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-7000-562-J1S</b>
	-0.002	7.625	0.004	0.688	0.312	0.02	0.312	<b>PTB312-7000-625-J1S</b>
	-0.002	7.75	0.005	0.55	0.375	0.03	0.5	<b>PTB375-7000-500-J1S</b>
	-0.002	7.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-7000-625-J1S</b>
	-0.003	8	0.007	0.825	0.5	0.03	0.625	<b>PTB500-7000-750-J1S</b>
	-0.003	8.25	0.009	1.1	0.625	0.045	0.875	<b>PTB625-7000-1000-J1S</b>
	-0.003	8.25	0.009	0.825	0.625	0.045	0.875	<b>PTB625-7000-750-J1S</b>
<b>7.125</b>	-0.002	7.625	0.003	0.618	0.25	0.02	0.312	<b>PTB250-7125-562-J1S</b>
<b>7.25</b>	-0.002	7.75	0.003	0.618	0.25	0.02	0.312	<b>PTB250-7250-562-J1S</b>
	-0.002	7.875	0.004	0.688	0.312	0.02	0.312	<b>PTB312-7250-625-J1S</b>
	-0.002	8	0.005	0.688	0.375	0.03	0.5	<b>PTB375-7250-625-J1S</b>
	-0.003	8.25	0.007	0.825	0.5	0.03	0.625	<b>PTB500-7250-750-J1S</b>
<b>7.375</b>	-0.002	8	0.004	0.688	0.312	0.02	0.312	<b>PTB312-7375-625-J1S</b>
<b>7.5</b>	-0.001	7.875	0.002	0.343	0.187	0.015	0.25	<b>PTB187-7500-312-J1S</b>
	-0.002	8	0.003	0.413	0.25	0.02	0.312	<b>PTB250-7500-375-J1S</b>
	-0.002	8	0.003	0.618	0.25	0.02	0.312	<b>PTB250-7500-562-J1S</b>
	-0.002	8.25	0.005	0.55	0.375	0.03	0.5	<b>PTB375-7500-500-J1S</b>
	-0.002	8.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-7500-625-J1S</b>
	-0.002	8.375	0.006	0.55	0.437	0.03	0.5	<b>PTB437-7500-500-J1S</b>
	-0.003	8.75	0.009	1.1	0.625	0.045	0.875	<b>PTB625-7500-1000-J1S</b>

3.4

### 3.4 PTB profile rod seals, inch sizes d 7.75 – 14.375 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.	in.		
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>7.75</b>	-0.002	8.25	0.003	0.618	0.25	0.02	0.312	<b>PTB250-7750-562-J1S</b>
	-0.002	8.5	0.005	0.55	0.375	0.03	0.5	<b>PTB375-7750-500-J1S</b>
	-0.002	8.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-7750-625-J1S</b>
	-0.003	8.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-7750-750-J1S</b>
<b>8</b>	-0.002	8.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-8000-562-J1S</b>
	-0.002	8.625	0.004	0.688	0.312	0.02	0.312	<b>PTB312-8000-625-J1S</b>
	-0.002	8.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-8000-625-J1S</b>
	-0.003	9	0.007	0.825	0.5	0.03	0.625	<b>PTB500-8000-750-J1S</b>
	-0.003	9.5	0.011	1.375	0.75	0.045	1	<b>PTB750-8000-1250-J1S</b>
<b>8.125</b>	-0.002	8.625	0.003	0.618	0.25	0.02	0.312	<b>PTB250-8125-562-J1S</b>
<b>8.25</b>	-0.002	8.75	0.003	0.618	0.25	0.02	0.312	<b>PTB250-8250-562-J1S</b>
	-0.002	9	0.005	0.688	0.375	0.03	0.5	<b>PTB375-8250-625-J1S</b>
	-0.003	9.5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-8250-1000-J1S</b>
<b>8.375</b>	-0.002	8.875	0.003	0.618	0.25	0.02	0.312	<b>PTB250-8375-562-J1S</b>
<b>8.5</b>	-0.002	9	0.003	0.618	0.25	0.02	0.312	<b>PTB250-8500-562-J1S</b>
	-0.002	9.25	0.005	0.55	0.375	0.03	0.5	<b>PTB375-8500-500-J1S</b>
	-0.002	9.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-8500-625-J1S</b>
	-0.002	9.312	0.005	0.55	0.406	0.03	0.5	<b>PTB406-8500-500-J1S</b>
	-0.003	9.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-8500-750-J1S</b>
	-0.003	9.75	0.009	1.1	0.625	0.045	0.875	<b>PTB625-8500-1000-J1S</b>
	-0.003	10	0.011	1.238	0.75	0.045	1	<b>PTB750-8500-1125-J1S</b>
<b>8.75</b>	-0.002	9.5	0.005	0.55	0.375	0.03	0.5	<b>PTB375-8750-500-J1S</b>
<b>9</b>	-0.002	9.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-9000-562-J1S</b>
	-0.002	9.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-9000-625-J1S</b>
	-0.003	10	0.007	0.825	0.5	0.03	0.625	<b>PTB500-9000-750-J1S</b>
	-0.003	10.5	0.011	1.375	0.75	0.045	1	<b>PTB750-9000-1250-J1S</b>
	-0.003	10.5	0.011	1.65	0.75	0.045	1	<b>PTB750-9000-1500-J1S</b>
<b>9.25</b>	-0.002	9.875	0.004	0.688	0.312	0.02	0.312	<b>PTB312-9250-625-J1S</b>
	-0.002	10	0.005	0.688	0.375	0.03	0.5	<b>PTB375-9250-625-J1S</b>
	-0.003	10.25	0.007	0.825	0.5	0.03	0.625	<b>PTB500-9250-750-J1S</b>

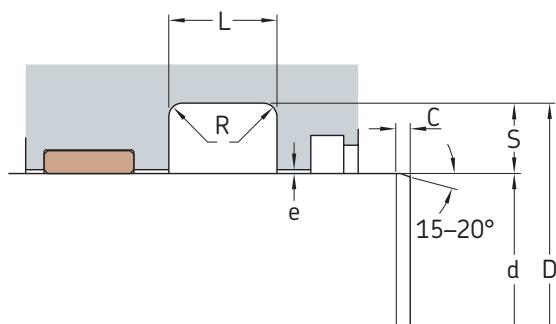
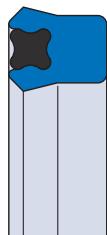
## Dimensions

## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>9.5</b>	-0.002	10	0.003	0.618	0.25	0.02	0.312	<b>PTB250-9500-562-J1S</b>
	-0.002	10.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-9500-625-J1S</b>
	-0.003	10.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-9500-750-J1S</b>
<b>9.625</b>	-0.002	10.125	0.003	0.413	0.25	0.02	0.312	<b>PTB250-9625-375-J1S</b>
<b>9.75</b>	-0.002	10.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-9750-625-J1S</b>
	-0.003	10.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-9750-750-J1S</b>
<b>10</b>	-0.002	10.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-10000-562-J1S</b>
	-0.002	10.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-10000-625-J1S</b>
	-0.003	11	0.007	0.825	0.5	0.03	0.625	<b>PTB500-10000-750-J1S</b>
	-0.003	11.25	0.009	1.1	0.625	0.045	0.875	<b>PTB625-10000-1000-J1S</b>
	-0.003	11.5	0.011	1.375	0.75	0.045	1	<b>PTB750-10000-1250-J1S</b>
<b>10.25</b>	-0.002	11	0.005	0.55	0.375	0.03	0.5	<b>PTB375-10250-500-J1S</b>
<b>10.5</b>	-0.002	11.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-10500-625-J1S</b>
	-0.003	11.5	0.007	1.1	0.5	0.03	0.625	<b>PTB500-10500-1000-J1S</b>
	-0.003	11.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-10500-750-J1S</b>
	-0.003	12	0.011	1.1	0.75	0.045	1	<b>PTB750-10500-1000-J1S</b>
<b>10.625</b>	-0.003	11.625	0.007	0.825	0.5	0.03	0.625	<b>PTB500-10625-750-J1S</b>
<b>10.75</b>	-0.002	11.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-10750-625-J1S</b>
	-0.003	11.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-10750-750-J1S</b>
<b>11</b>	-0.002	11.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-11000-625-J1S</b>
	-0.003	12	0.007	0.825	0.5	0.03	0.625	<b>PTB500-11000-750-J1S</b>
	-0.003	12.25	0.009	1.1	0.625	0.045	0.875	<b>PTB625-11000-1000-J1S</b>
<b>11.25</b>	-0.002	12	0.005	0.688	0.375	0.03	0.5	<b>PTB375-11250-625-J1S</b>
	-0.003	12.5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-11250-1000-J1S</b>
<b>11.5</b>	-0.002	12	0.003	0.584	0.25	0.02	0.312	<b>PTB250-11500-531-J1S</b>
	-0.002	12.25	0.005	0.688	0.375	0.03	0.5	<b>PTB375-11500-625-J1S</b>
	-0.003	12.75	0.009	1.1	0.625	0.045	0.875	<b>PTB625-11500-1000-J1S</b>
<b>11.75</b>	-0.003	12.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-11750-750-J1S</b>
<b>12</b>	-0.002	12.5	0.003	0.618	0.25	0.02	0.312	<b>PTB250-12000-562-J1S</b>
	-0.003	13	0.007	0.825	0.5	0.03	0.625	<b>PTB500-12000-750-J1S</b>
	-0.003	13.5	0.011	1.375	0.75	0.045	1	<b>PTB750-12000-1250-J1S</b>
<b>12.25</b>	-0.003	13.5	0.009	1.1	0.625	0.045	0.875	<b>PTB625-12250-1000-J1S</b>
<b>12.5</b>	-0.002	13	0.003	0.584	0.25	0.02	0.312	<b>PTB250-12500-531-J1S</b>
	-0.003	13.5	0.007	0.825	0.5	0.03	0.625	<b>PTB500-12500-750-J1S</b>
<b>12.75</b>	-0.002	13.25	0.003	0.618	0.25	0.02	0.312	<b>PTB250-12750-562-J1S</b>
	-0.002	13.5	0.005	0.688	0.375	0.03	0.5	<b>PTB375-12750-625-J1S</b>
	-0.003	13.75	0.007	0.825	0.5	0.03	0.625	<b>PTB500-12750-750-J1S</b>
<b>13</b>	-0.003	14	0.007	0.825	0.5	0.03	0.625	<b>PTB500-13000-750-J1S</b>
<b>13.5</b>	-0.002	14	0.003	0.584	0.25	0.02	0.312	<b>PTB250-13500-531-J1S</b>
	-0.002	14	0.003	0.618	0.25	0.02	0.312	<b>PTB250-13500-562-J1S</b>
	-0.003	14.75	0.009	0.963	0.625	0.045	0.875	<b>PTB625-13500-875-J1S</b>
<b>13.625</b>	-0.002	14.375	0.005	0.688	0.375	0.03	0.5	<b>PTB375-13625-625-J1S</b>
<b>14</b>	-0.003	15	0.007	0.825	0.5	0.03	0.625	<b>PTB500-14000-750-J1S</b>
	-0.003	15.5	0.011	1.375	0.75	0.045	1	<b>PTB750-14000-1250-J1S</b>
<b>14.25</b>	-0.002	15	0.005	0.688	0.375	0.03	0.5	<b>PTB375-14250-625-J1S</b>
	-0.003	15.75	0.011	1.375	0.75	0.045	1	<b>PTB750-14250-1250-J1S</b>
<b>14.375</b>	-0.002	15.125	0.005	0.688	0.375	0.03	0.5	<b>PTB375-14375-625-J1S</b>

3.4

### 3.4 PTB profile rod seals, inch sizes d 14.5 – 35 in.



#### Maximum extrusion gap e

Radial depth S in.	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d in.	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	–	Designation
14.5	-0.003	16	0.011	1.238	0.75	0.045	1	–	PTB750-14500-1125-J1S
14.75	-0.002 -0.003	15.5 16	0.005 0.009	0.688 1.1	0.375 0.625	0.03 0.045	0.5 0.875	–	PTB375-14750-625-J1S PTB625-14750-1000-J1S
15	-0.003	16	0.007	0.825	0.5	0.03	0.625	–	PTB500-15000-750-J1S
15.25	-0.002	16	0.005	0.688	0.375	0.03	0.5	–	PTB375-15250-625-J1S
15.5	-0.003	16.75	0.009	1.1	0.625	0.045	0.875	–	PTB625-15500-1000-J1S
15.75	-0.003	16.75	0.007	0.825	0.5	0.03	0.625	–	PTB500-15750-750-J1S
16	-0.003 -0.003 -0.003	17 17.25 17.5	0.007 0.009 0.011	0.825 1.238 1.375	0.5 0.625 0.75	0.03 0.045 0.045	0.625 0.875 1	–	PTB500-16000-750-J1S PTB625-16000-1125-J1S PTB750-16000-1250-J1S
16.5	-0.003	17.5	0.007	0.825	0.5	0.03	0.625	–	PTB500-16500-750-J1S
17	-0.003	18	0.007	0.825	0.5	0.03	0.625	–	PTB500-17000-750-J1S
18	-0.003 -0.003	19 19.25	0.007 0.009	0.825 1.1	0.5 0.625	0.03 0.045	0.625 0.875	–	PTB500-18000-750-J1S PTB625-18000-1000-J1S
18.5	-0.003	20	0.011	1.375	0.75	0.045	1	–	PTB750-18500-1250-J1S
18.75	-0.003	20	0.009	1.1	0.625	0.045	0.875	–	PTB625-18750-1000-J1S
19	-0.003	20	0.007	0.825	0.5	0.03	0.625	–	PTB500-19000-750-J1S
20	-0.003	21.5	0.011	1.375	0.75	0.045	1	–	PTB750-20000-1250-J1S
21	-0.003	22	0.007	0.825	0.5	0.03	0.625	–	PTB500-21000-750-J1S
22.5	-0.003	24	0.011	1.1	0.75	0.045	1	–	PTB750-22500-1000-J1S
23	-0.003	24	0.007	0.825	0.5	0.03	0.625	–	PTB500-23000-750-J1S
24.5	-0.003	25.5	0.007	0.825	0.5	0.03	0.625	–	PTB500-24500-750-J1S
25.5	-0.003	26.5	0.007	0.825	0.5	0.03	0.625	–	PTB500-25500-750-J1S

**Dimensions****Designation**

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.		
30.75	-0.003	32	0.009	1.1	0.625	0.045	0.875	<b>PTB625-30750-1000-J1S</b>
35	-0.002	35.75	0.005	0.688	0.375	0.03	0.5	<b>PTB375-35000-625-J1S</b>

**Other sizes are available on request**

3.4

### 3.5 STD profile

#### STD profile data

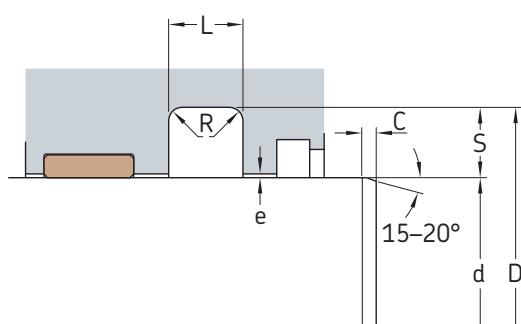
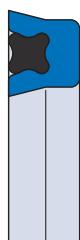


<b>Material codes</b>	Sealing ring: U-1003 X-ring: A-8501 For additional information → <b>page 26</b>
<b>Pressure</b>	Up to 400 bar (5 800 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<p>  -50   -40   -30   <b>100   110   120 [°C]</b>                            -60   -40   -20   <b>210   230   250 [°F]</b> </p> <ul style="list-style-type: none"> <li><span style="color: blue;">█</span> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li><span style="color: grey;">█</span> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: green;">█</span> <b>Recommended operating temperature range for this profile and material</b></li> <li><span style="color: yellow;">█</span> Temperatures above the recommended operating range: acceptable only with reduced pressure, speed, e-gap and/or with the use of a full-face anti-extrusion ring</li> <li><span style="color: red;">█</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Counter-surface</b>	→ <b>page 22</b>

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.5 STD profile rod seals, inch sizes

d 0.125 – 0.562 in.



#### Maximum extrusion gap e

Radial depth S in.	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

3.5

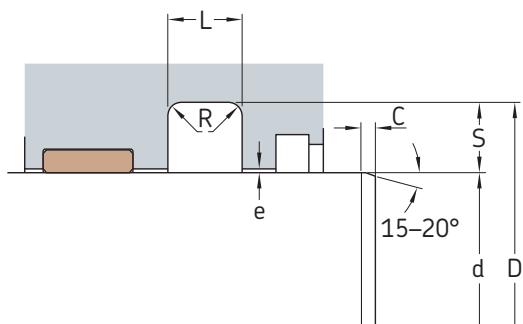
#### Dimensions

#### Designation

d Tolerance in.	D Tolerance	L +0.01	S	R max.	C min.	–	Designation	
0.125	-0.001	0.375	0.002	0.138	0.125	0.015	0.25	STD125-125-125-J1S
0.14	-0.001	0.39	0.002	0.138	0.125	0.015	0.25	STD125-140-125-J1S
0.156	-0.001	0.406	0.002	0.138	0.125	0.015	0.25	STD125-156-125-J1S
0.187	-0.001	0.437	0.002	0.138	0.125	0.015	0.25	STD125-187-125-J1S
	-0.001	0.561	0.002	0.206	0.187	0.015	0.25	STD187-187-187-J1S
0.25	-0.001	0.5	0.002	0.138	0.125	0.015	0.25	STD125-250-125-J1S
	-0.001	0.624	0.002	0.206	0.187	0.015	0.25	STD187-250-187-J1S
	-0.002	0.75	0.003	0.275	0.25	0.02	0.312	STD250-250-250-J1S
	-0.002	0.874	0.004	0.343	0.312	0.02	0.312	STD312-250-312-J1S
0.312	-0.001	0.562	0.002	0.138	0.125	0.015	0.25	STD125-312-125-J1S
	-0.001	0.686	0.002	0.206	0.187	0.015	0.25	STD187-312-187-J1S
	-0.002	0.748	0.003	0.24	0.218	0.015	0.25	STD218-312-218-J1S
	-0.002	0.812	0.003	0.275	0.25	0.02	0.312	STD250-312-250-J1S
0.375	-0.001	0.625	0.002	0.138	0.125	0.015	0.25	STD125-375-125-J1S
	-0.001	0.749	0.002	0.206	0.187	0.015	0.25	STD187-375-187-J1S
	-0.002	0.875	0.003	0.275	0.25	0.02	0.312	STD250-375-250-J1S
	-0.002	0.999	0.004	0.343	0.312	0.02	0.312	STD312-375-312-J1S
0.437	-0.001	0.687	0.002	0.138	0.125	0.015	0.25	STD125-437-125-J1S
	-0.001	0.811	0.002	0.206	0.187	0.015	0.25	STD187-437-187-J1S
	-0.002	0.937	0.003	0.275	0.25	0.02	0.312	STD250-437-250-J1S
	-0.002	1.061	0.004	0.343	0.312	0.02	0.312	STD312-437-312-J1S
0.5	-0.001	0.75	0.002	0.138	0.125	0.015	0.25	STD125-500-125-J1S
	-0.001	0.812	0.002	0.172	0.156	0.015	0.25	STD156-500-156-J1S
	-0.001	0.874	0.002	0.206	0.187	0.015	0.25	STD187-500-187-J1S
	-0.002	1	0.003	0.275	0.25	0.02	0.312	STD250-500-250-J1S
	-0.002	1.124	0.004	0.343	0.312	0.02	0.312	STD312-500-312-J1S
	-0.002	1.25	0.005	0.413	0.375	0.03	0.5	STD375-500-375-J1S
0.562	-0.001	0.812	0.002	0.138	0.125	0.015	0.25	STD125-562-125-J1S
	-0.001	0.936	0.002	0.206	0.187	0.015	0.25	STD187-562-187-J1S
	-0.002	1.062	0.003	0.275	0.25	0.02	0.312	STD250-562-250-J1S

### 3.5 STD profile rod seals, inch sizes

d 0.625 – 1.75 in.



#### Maximum extrusion gap e

Radial depth S in.	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d Tolerance in.	D Tolerance	L +0.01	S	R max.	C min.	Designation
<b>0.625</b>	-0.001 0.875 0.002	0.138	0.125	0.015	0.25	<b>STD125-625-125-J1S</b>
-0.001	0.937 0.002	0.172	0.156	0.015	0.25	<b>STD156-625-156-J1S</b>
-0.001	0.999 0.002	0.206	0.187	0.015	0.25	<b>STD187-625-187-J1S</b>
-0.002	1.125 0.003	0.275	0.25	0.02	0.312	<b>STD250-625-250-J1S</b>
-0.002	1.249 0.004	0.343	0.312	0.02	0.312	<b>STD312-625-312-J1S</b>
-0.002	1.375 0.005	0.413	0.375	0.03	0.5	<b>STD375-625-375-J1S</b>
-0.003	1.625 0.007	0.55	0.5	0.03	0.625	<b>STD500-625-500-J1S</b>
<b>0.687</b>	-0.001 0.937 0.002	0.138	0.125	0.015	0.25	<b>STD125-687-125-J1S</b>
<b>0.75</b>	-0.001 1 0.002	0.138	0.125	0.015	0.25	<b>STD125-750-125-J1S</b>
-0.001	1.062 0.002	0.172	0.156	0.015	0.25	<b>STD156-750-156-J1S</b>
-0.001	1.124 0.002	0.206	0.187	0.015	0.25	<b>STD187-750-187-J1S</b>
-0.002	1.25 0.003	0.275	0.25	0.02	0.312	<b>STD250-750-250-J1S</b>
-0.002	1.374 0.004	0.343	0.312	0.02	0.312	<b>STD312-750-312-J1S</b>
-0.002	1.5 0.005	0.413	0.375	0.03	0.5	<b>STD375-750-375-J1S</b>
<b>0.812</b>	-0.001 1.062 0.002	0.138	0.125	0.015	0.25	<b>STD125-812-125-J1S</b>
-0.002	1.312 0.003	0.275	0.25	0.02	0.312	<b>STD250-812-250-J1S</b>
<b>0.875</b>	-0.001 1.125 0.002	0.138	0.125	0.015	0.25	<b>STD125-875-125-J1S</b>
-0.001	1.249 0.002	0.206	0.187	0.015	0.25	<b>STD187-875-187-J1S</b>
-0.002	1.375 0.003	0.275	0.25	0.02	0.312	<b>STD250-875-250-J1S</b>
-0.002	1.499 0.004	0.343	0.312	0.02	0.312	<b>STD312-875-312-J1S</b>
-0.002	1.625 0.005	0.413	0.375	0.03	0.5	<b>STD375-875-375-J1S</b>
<b>0.937</b>	-0.002 1.687 0.005	0.413	0.375	0.03	0.5	<b>STD375-937-375-J1S</b>
<b>1</b>	-0.001 1.25 0.002	0.138	0.125	0.015	0.25	<b>STD125-1000-125-J1S</b>
-0.001	1.312 0.002	0.172	0.156	0.015	0.25	<b>STD156-1000-156-J1S</b>
-0.001	1.374 0.002	0.206	0.187	0.015	0.25	<b>STD187-1000-187-J1S</b>
-0.002	1.5 0.003	0.275	0.25	0.02	0.312	<b>STD250-1000-250-J1S</b>
-0.002	1.562 0.003	0.309	0.281	0.02	0.312	<b>STD281-1000-281-J1S</b>
-0.002	1.624 0.004	0.343	0.312	0.02	0.312	<b>STD312-1000-312-J1S</b>
-0.002	1.75 0.005	0.413	0.375	0.03	0.5	<b>STD375-1000-375-J1S</b>
-0.003	2 0.007	0.55	0.5	0.03	0.625	<b>STD500-1000-500-J1S</b>
<b>1.062</b>	-0.001 1.312 0.002	0.138	0.125	0.015	0.25	<b>STD125-1062-125-J1S</b>
-0.001	1.436 0.002	0.206	0.187	0.015	0.25	<b>STD187-1062-187-J1S</b>

## Dimensions

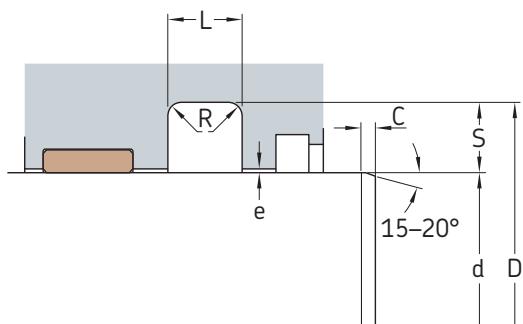
## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>1.125</b>	-0.001	1.375	0.002	0.138	0.125	0.015	0.25	<b>STD125-1125-125-J1S</b>
	-0.001	1.437	0.002	0.172	0.156	0.015	0.25	<b>STD156-1125-156-J1S</b>
	-0.001	1.499	0.002	0.206	0.187	0.015	0.25	<b>STD187-1125-187-J1S</b>
	-0.002	1.625	0.003	0.275	0.25	0.02	0.312	<b>STD250-1125-250-J1S</b>
	-0.002	1.749	0.004	0.343	0.312	0.02	0.312	<b>STD312-1125-312-J1S</b>
	-0.002	1.875	0.005	0.413	0.375	0.03	0.5	<b>STD375-1125-375-J1S</b>
<b>1.187</b>	-0.001	1.499	0.002	0.172	0.156	0.015	0.25	<b>STD156-1187-156-J1S</b>
	-0.001	1.561	0.002	0.206	0.187	0.015	0.25	<b>STD187-1187-187-J1S</b>
	-0.002	1.687	0.003	0.275	0.25	0.02	0.312	<b>STD250-1187-250-J1S</b>
	-0.002	1.811	0.004	0.343	0.312	0.02	0.312	<b>STD312-1187-312-J1S</b>
<b>1.25</b>	-0.001	1.5	0.002	0.138	0.125	0.015	0.25	<b>STD125-1250-125-J1S</b>
	-0.001	1.562	0.002	0.172	0.156	0.015	0.25	<b>STD156-1250-156-J1S</b>
	-0.001	1.624	0.002	0.206	0.187	0.015	0.25	<b>STD187-1250-187-J1S</b>
	-0.002	1.75	0.003	0.275	0.25	0.02	0.312	<b>STD250-1250-250-J1S</b>
	-0.002	1.874	0.004	0.343	0.312	0.02	0.312	<b>STD312-1250-312-J1S</b>
	-0.002	2	0.005	0.413	0.375	0.03	0.5	<b>STD375-1250-375-J1S</b>
	-0.003	2.25	0.007	0.55	0.5	0.03	0.625	<b>STD500-1250-500-J1S</b>
	-0.003	2.5	0.009	0.688	0.625	0.045	0.875	<b>STD625-1250-625-J1S</b>
<b>1.312</b>	-0.001	1.562	0.002	0.138	0.125	0.015	0.25	<b>STD125-1312-125-J1S</b>
	-0.001	1.686	0.002	0.206	0.187	0.015	0.25	<b>STD187-1312-187-J1S</b>
	-0.002	1.812	0.003	0.275	0.25	0.02	0.312	<b>STD250-1312-250-J1S</b>
	-0.002	2.062	0.005	0.413	0.375	0.03	0.5	<b>STD375-1312-375-J1S</b>
<b>1.375</b>	-0.001	1.687	0.002	0.172	0.156	0.015	0.25	<b>STD156-1375-156-J1S</b>
	-0.001	1.749	0.002	0.206	0.187	0.015	0.25	<b>STD187-1375-187-J1S</b>
	-0.002	1.875	0.003	0.275	0.25	0.02	0.312	<b>STD250-1375-250-J1S</b>
	-0.002	1.999	0.004	0.343	0.312	0.02	0.312	<b>STD312-1375-312-J1S</b>
	-0.002	2.125	0.005	0.413	0.375	0.03	0.5	<b>STD375-1375-375-J1S</b>
<b>1.437</b>	-0.001	1.687	0.002	0.138	0.125	0.015	0.25	<b>STD125-1437-125-J1S</b>
	-0.001	1.811	0.002	0.206	0.187	0.015	0.25	<b>STD187-1437-187-J1S</b>
	-0.002	1.937	0.003	0.275	0.25	0.02	0.312	<b>STD250-1437-250-J1S</b>
	-0.002	2.061	0.004	0.343	0.312	0.02	0.312	<b>STD312-1437-312-J1S</b>
<b>1.5</b>	-0.001	1.75	0.002	0.138	0.125	0.015	0.25	<b>STD125-1500-125-J1S</b>
	-0.001	1.874	0.002	0.206	0.187	0.015	0.25	<b>STD187-1500-187-J1S</b>
	-0.002	2	0.003	0.275	0.25	0.02	0.312	<b>STD250-1500-250-J1S</b>
	-0.002	2.124	0.004	0.343	0.312	0.02	0.312	<b>STD312-1500-312-J1S</b>
	-0.002	2.25	0.005	0.413	0.375	0.03	0.5	<b>STD375-1500-375-J1S</b>
	-0.002	2.374	0.006	0.481	0.437	0.03	0.5	<b>STD437-1500-437-J1S</b>
	-0.003	2.5	0.007	0.55	0.5	0.03	0.625	<b>STD500-1500-500-J1S</b>
<b>1.562</b>	-0.001	1.812	0.002	0.138	0.125	0.015	0.25	<b>STD125-1562-125-J1S</b>
	-0.001	1.936	0.002	0.206	0.187	0.015	0.25	<b>STD187-1562-187-J1S</b>
	-0.002	2.312	0.005	0.413	0.375	0.03	0.5	<b>STD375-1562-375-J1S</b>
<b>1.593</b>	-0.002	2.093	0.003	0.275	0.25	0.02	0.312	<b>STD250-1593-250-J1S</b>
<b>1.625</b>	-0.001	1.875	0.002	0.138	0.125	0.015	0.25	<b>STD125-1625-125-J1S</b>
	-0.001	1.999	0.002	0.206	0.187	0.015	0.25	<b>STD187-1625-187-J1S</b>
	-0.002	2.125	0.003	0.275	0.25	0.02	0.312	<b>STD250-1625-250-J1S</b>
	-0.002	2.249	0.004	0.343	0.312	0.02	0.312	<b>STD312-1625-312-J1S</b>
	-0.002	2.375	0.005	0.413	0.375	0.03	0.5	<b>STD375-1625-375-J1S</b>
	-0.003	2.625	0.007	0.55	0.5	0.03	0.625	<b>STD500-1625-500-J1S</b>
<b>1.687</b>	-0.001	2.061	0.002	0.206	0.187	0.015	0.25	<b>STD187-1687-187-J1S</b>
	-0.002	2.311	0.004	0.343	0.312	0.02	0.312	<b>STD312-1687-312-J1S</b>
<b>1.75</b>	-0.001	2	0.002	0.138	0.125	0.015	0.25	<b>STD125-1750-125-J1S</b>
	-0.001	2.124	0.002	0.206	0.187	0.015	0.25	<b>STD187-1750-187-J1S</b>
	-0.002	2.25	0.003	0.275	0.25	0.02	0.312	<b>STD250-1750-250-J1S</b>
	-0.002	2.374	0.004	0.343	0.312	0.02	0.312	<b>STD312-1750-312-J1S</b>

3.5

### 3.5 STD profile rod seals, inch sizes

d 1.75 – 3.25 in.



#### Maximum extrusion gap e

Radial depth S in.	e <sub>max</sub> at 60 °C (140 °F) for pressures 2 300 psi 3 600 psi 5 800 psi
0.125	0.008
0.156 to 0.187	0.014
0.218 to 0.25	0.018
0.281 to 0.437	0.02
0.5 to 0.562	0.024
0.625 to 0.75	0.024
	0.004
	0.008
	0.01
	0.012
	0.006
	0.012
	0.008
	0.012
	0.008

For additional information → page 34

#### Dimensions

#### Designation

d Tolerance in.	D Tolerance	L +0.01	S	R max.	C min.	–	Designation
<b>1.75</b>	-0.002	2.5	0.005	0.413	0.375	0.03	0.5 <b>STD375-1750-375-J1S</b>
cont.	-0.003	2.75	0.007	0.55	0.5	0.03	0.625 <b>STD500-1750-500-J1S</b>
	-0.003	3	0.009	0.688	0.625	0.045	0.875 <b>STD625-1750-625-J1S</b>
<b>1.875</b>	-0.001	2.125	0.002	0.138	0.125	0.015	0.25 <b>STD125-1875-125-J1S</b>
	-0.001	2.249	0.002	0.206	0.187	0.015	0.25 <b>STD187-1875-187-J1S</b>
	-0.002	2.375	0.003	0.275	0.25	0.02	0.312 <b>STD250-1875-250-J1S</b>
	-0.002	2.499	0.004	0.343	0.312	0.02	0.312 <b>STD312-1875-312-J1S</b>
	-0.002	2.625	0.005	0.413	0.375	0.03	0.5 <b>STD375-1875-375-J1S</b>
	-0.002	2.749	0.006	0.481	0.437	0.03	0.5 <b>STD437-1875-437-J1S</b>
<b>1.937</b>	-0.002	2.561	0.004	0.343	0.312	0.02	0.312 <b>STD312-1937-312-J1S</b>
<b>2</b>	-0.001	2.374	0.002	0.206	0.187	0.015	0.25 <b>STD187-2000-187-J1S</b>
	-0.002	2.5	0.003	0.275	0.25	0.02	0.312 <b>STD250-2000-250-J1S</b>
	-0.002	2.624	0.004	0.343	0.312	0.02	0.312 <b>STD312-2000-312-J1S</b>
	-0.002	2.75	0.005	0.413	0.375	0.03	0.5 <b>STD375-2000-375-J1S</b>
	-0.003	3	0.007	0.55	0.5	0.03	0.625 <b>STD500-2000-500-J1S</b>
	-0.003	3.25	0.009	0.688	0.625	0.045	0.875 <b>STD625-2000-625-J1S</b>
<b>2.125</b>	-0.001	2.375	0.002	0.138	0.125	0.015	0.25 <b>STD125-2125-125-J1S</b>
	-0.001	2.499	0.002	0.206	0.187	0.015	0.25 <b>STD187-2125-187-J1S</b>
	-0.002	2.625	0.003	0.275	0.25	0.02	0.312 <b>STD250-2125-250-J1S</b>
	-0.002	2.749	0.004	0.343	0.312	0.02	0.312 <b>STD312-2125-312-J1S</b>
	-0.002	2.875	0.005	0.413	0.375	0.03	0.5 <b>STD375-2125-375-J1S</b>
<b>2.25</b>	-0.001	2.624	0.002	0.206	0.187	0.015	0.25 <b>STD187-2250-187-J1S</b>
	-0.002	2.75	0.003	0.275	0.25	0.02	0.312 <b>STD250-2250-250-J1S</b>
	-0.002	2.874	0.004	0.343	0.312	0.02	0.312 <b>STD312-2250-312-J1S</b>
	-0.002	3	0.005	0.413	0.375	0.03	0.5 <b>STD375-2250-375-J1S</b>
	-0.003	3.25	0.007	0.55	0.5	0.03	0.625 <b>STD500-2250-500-J1S</b>
	-0.003	3.5	0.009	0.688	0.625	0.045	0.875 <b>STD625-2250-625-J1S</b>
<b>2.312</b>	-0.002	2.874	0.003	0.309	0.281	0.02	0.312 <b>STD281-2312-281-J1S</b>
<b>2.375</b>	-0.001	2.625	0.002	0.138	0.125	0.015	0.25 <b>STD125-2375-125-J1S</b>
	-0.001	2.749	0.002	0.206	0.187	0.015	0.25 <b>STD187-2375-187-J1S</b>
	-0.002	2.875	0.003	0.275	0.25	0.02	0.312 <b>STD250-2375-250-J1S</b>
	-0.002	2.999	0.004	0.343	0.312	0.02	0.312 <b>STD312-2375-312-J1S</b>
	-0.002	3.125	0.005	0.413	0.375	0.03	0.5 <b>STD375-2375-375-J1S</b>
	-0.003	3.375	0.007	0.55	0.5	0.03	0.625 <b>STD500-2375-500-J1S</b>

## Dimensions

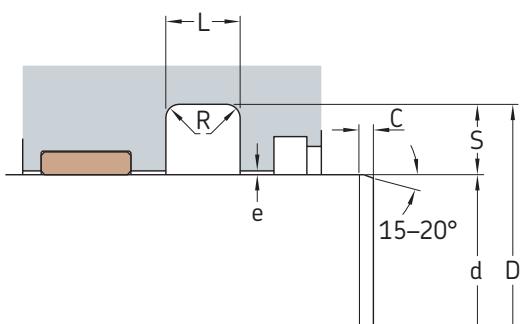
## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>2.437</b>	-0.002	2.937	0.003	0.275	0.25	0.02	0.312	<b>STD250-2437-250-J1S</b>
	-0.002	3.187	0.005	0.413	0.375	0.03	0.5	<b>STD375-2437-375-J1S</b>
<b>2.5</b>	-0.001	2.75	0.002	0.138	0.125	0.015	0.25	<b>STD125-2500-125-J1S</b>
	-0.001	2.874	0.002	0.206	0.187	0.015	0.25	<b>STD187-2500-187-J1S</b>
	-0.002	2.936	0.003	0.24	0.218	0.015	0.25	<b>STD218-2500-218-J1S</b>
	-0.002	3	0.003	0.275	0.25	0.02	0.312	<b>STD250-2500-250-J1S</b>
	-0.002	3.124	0.004	0.343	0.312	0.02	0.312	<b>STD312-2500-312-J1S</b>
	-0.002	3.25	0.005	0.413	0.375	0.03	0.5	<b>STD375-2500-375-J1S</b>
	-0.002	3.374	0.006	0.481	0.437	0.03	0.5	<b>STD437-2500-437-J1S</b>
	-0.003	3.5	0.007	0.55	0.5	0.03	0.625	<b>STD500-2500-500-J1S</b>
	-0.003	3.75	0.009	0.688	0.625	0.045	0.875	<b>STD625-2500-625-J1S</b>
<b>2.562</b>	-0.002	3.062	0.003	0.275	0.25	0.02	0.312	<b>STD250-2562-250-J1S</b>
	-0.002	3.186	0.004	0.343	0.312	0.02	0.312	<b>STD312-2562-312-J1S</b>
	-0.002	3.312	0.005	0.413	0.375	0.03	0.5	<b>STD375-2562-375-J1S</b>
<b>2.625</b>	-0.001	2.875	0.002	0.138	0.125	0.015	0.25	<b>STD125-2625-125-J1S</b>
	-0.001	2.999	0.002	0.206	0.187	0.015	0.25	<b>STD187-2625-187-J1S</b>
	-0.002	3.125	0.003	0.275	0.25	0.02	0.312	<b>STD250-2625-250-J1S</b>
	-0.002	3.249	0.004	0.343	0.312	0.02	0.312	<b>STD312-2625-312-J1S</b>
	-0.002	3.375	0.005	0.413	0.375	0.03	0.5	<b>STD375-2625-375-J1S</b>
<b>2.75</b>	-0.001	3.124	0.002	0.206	0.187	0.015	0.25	<b>STD187-2750-187-J1S</b>
	-0.002	3.25	0.003	0.275	0.25	0.02	0.312	<b>STD250-2750-250-J1S</b>
	-0.002	3.374	0.004	0.343	0.312	0.02	0.312	<b>STD312-2750-312-J1S</b>
	-0.002	3.5	0.005	0.413	0.375	0.03	0.5	<b>STD375-2750-375-J1S</b>
	-0.002	3.624	0.006	0.481	0.437	0.03	0.5	<b>STD437-2750-437-J1S</b>
	-0.003	3.75	0.007	0.55	0.5	0.03	0.625	<b>STD500-2750-500-J1S</b>
	-0.003	4	0.009	0.688	0.625	0.045	0.875	<b>STD625-2750-625-J1S</b>
<b>2.812</b>	-0.002	3.562	0.005	0.413	0.375	0.03	0.5	<b>STD375-2812-375-J1S</b>
<b>2.875</b>	-0.001	3.249	0.002	0.206	0.187	0.015	0.25	<b>STD187-2875-187-J1S</b>
	-0.002	3.375	0.003	0.275	0.25	0.02	0.312	<b>STD250-2875-250-J1S</b>
	-0.002	3.499	0.004	0.343	0.312	0.02	0.312	<b>STD312-2875-312-J1S</b>
	-0.002	3.625	0.005	0.413	0.375	0.03	0.5	<b>STD375-2875-375-J1S</b>
<b>2.937</b>	-0.002	3.687	0.005	0.413	0.375	0.03	0.5	<b>STD375-2937-375-J1S</b>
<b>3</b>	-0.001	3.25	0.002	0.138	0.125	0.015	0.25	<b>STD125-3000-125-J1S</b>
	-0.001	3.374	0.002	0.206	0.187	0.015	0.25	<b>STD187-3000-187-J1S</b>
	-0.002	3.436	0.003	0.24	0.218	0.015	0.25	<b>STD218-3000-218-J1S</b>
	-0.002	3.5	0.003	0.275	0.25	0.02	0.312	<b>STD250-3000-250-J1S</b>
	-0.002	3.624	0.004	0.343	0.312	0.02	0.312	<b>STD312-3000-312-J1S</b>
	-0.002	3.75	0.005	0.413	0.375	0.03	0.5	<b>STD375-3000-375-J1S</b>
	-0.003	4	0.007	0.55	0.5	0.03	0.625	<b>STD500-3000-500-J1S</b>
	-0.003	4.25	0.009	0.688	0.625	0.045	0.875	<b>STD625-3000-625-J1S</b>
<b>3.125</b>	-0.001	3.375	0.002	0.138	0.125	0.015	0.25	<b>STD125-3125-125-J1S</b>
	-0.001	3.499	0.002	0.206	0.187	0.015	0.25	<b>STD187-3125-187-J1S</b>
	-0.002	3.625	0.003	0.275	0.25	0.02	0.312	<b>STD250-3125-250-J1S</b>
	-0.002	3.749	0.004	0.343	0.312	0.02	0.312	<b>STD312-3125-312-J1S</b>
	-0.002	3.875	0.005	0.413	0.375	0.03	0.5	<b>STD375-3125-375-J1S</b>
	-0.002	3.999	0.006	0.481	0.437	0.03	0.5	<b>STD437-3125-437-J1S</b>
<b>3.25</b>	-0.001	3.5	0.002	0.138	0.125	0.015	0.25	<b>STD125-3250-125-J1S</b>
	-0.001	3.624	0.002	0.206	0.187	0.015	0.25	<b>STD187-3250-187-J1S</b>
	-0.002	3.75	0.003	0.275	0.25	0.02	0.312	<b>STD250-3250-250-J1S</b>
	-0.002	3.874	0.004	0.343	0.312	0.02	0.312	<b>STD312-3250-312-J1S</b>
	-0.002	4	0.005	0.413	0.375	0.03	0.5	<b>STD375-3250-375-J1S</b>
	-0.002	4.124	0.006	0.481	0.437	0.03	0.5	<b>STD437-3250-437-J1S</b>
	-0.003	4.25	0.007	0.55	0.5	0.03	0.625	<b>STD500-3250-500-J1S</b>
	-0.003	4.5	0.009	0.688	0.625	0.045	0.875	<b>STD625-3250-625-J1S</b>

3.5

### 3.5 STD profile rod seals, inch sizes

d 3.375 – 5.125 in.



#### Maximum extrusion gap e

Radial depth S in.	$e_{\max}$ at 60 °C (140 °F) for pressures 2 300    3 600    5 800 psi            psi            psi			
		0.125	0.156 to 0.187	0.218 to 0.25
0.125	0.008	0.004	–	–
0.156 to 0.187	0.014	0.008	–	–
0.218 to 0.25	0.018	0.01	0.004	0.004
0.281 to 0.437	0.02	0.012	0.006	0.006
0.5 to 0.562	0.024	0.012	0.008	0.008
0.625 to 0.75	0.024	0.012	0.008	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L	S	R max.	C min.	Designation
3.375	-0.001	3.749	0.002	0.206	0.187	0.015	0.25	STD187-3375-187-J1S
	-0.002	3.875	0.003	0.275	0.25	0.02	0.312	STD250-3375-250-J1S
	-0.002	4.125	0.005	0.413	0.375	0.03	0.5	STD375-3375-375-J1S
3.5	-0.001	3.75	0.002	0.138	0.125	0.015	0.25	STD125-3500-125-J1S
	-0.002	4	0.003	0.275	0.25	0.02	0.312	STD250-3500-250-J1S
	-0.002	4.124	0.004	0.343	0.312	0.02	0.312	STD312-3500-312-J1S
	-0.002	4.25	0.005	0.413	0.375	0.03	0.5	STD375-3500-375-J1S
	-0.003	4.5	0.007	0.55	0.5	0.03	0.625	STD500-3500-500-J1S
	-0.003	4.75	0.009	0.688	0.625	0.045	0.875	STD625-3500-625-J1S
	-0.003	5	0.011	0.825	0.75	0.045	1	STD750-3500-750-J1S
3.625	-0.001	3.999	0.002	0.206	0.187	0.015	0.25	STD187-3625-187-J1S
	-0.002	4.125	0.003	0.275	0.25	0.02	0.312	STD250-3625-250-J1S
	-0.002	4.249	0.004	0.343	0.312	0.02	0.312	STD312-3625-312-J1S
	-0.002	4.375	0.005	0.413	0.375	0.03	0.5	STD375-3625-375-J1S
3.75	-0.001	4	0.002	0.138	0.125	0.015	0.25	STD125-3750-125-J1S
	-0.001	4.124	0.002	0.206	0.187	0.015	0.25	STD187-3750-187-J1S
	-0.002	4.25	0.003	0.275	0.25	0.02	0.312	STD250-3750-250-J1S
	-0.002	4.374	0.004	0.343	0.312	0.02	0.312	STD312-3750-312-J1S
	-0.002	4.5	0.005	0.413	0.375	0.03	0.5	STD375-3750-375-J1S
	-0.003	4.75	0.007	0.55	0.5	0.03	0.625	STD500-3750-500-J1S
	-0.003	5	0.009	0.688	0.625	0.045	0.875	STD625-3750-625-J1S
3.875	-0.001	4.249	0.002	0.206	0.187	0.015	0.25	STD187-3875-187-J1S
	-0.002	4.375	0.003	0.275	0.25	0.02	0.312	STD250-3875-250-J1S
	-0.002	4.499	0.004	0.343	0.312	0.02	0.312	STD312-3875-312-J1S
	-0.002	4.625	0.005	0.413	0.375	0.03	0.5	STD375-3875-375-J1S
4	-0.001	4.25	0.002	0.138	0.125	0.015	0.25	STD125-4000-125-J1S
	-0.001	4.374	0.002	0.206	0.187	0.015	0.25	STD187-4000-187-J1S
	-0.002	4.5	0.003	0.275	0.25	0.02	0.312	STD250-4000-250-J1S
	-0.002	4.624	0.004	0.343	0.312	0.02	0.312	STD312-4000-312-J1S
	-0.002	4.75	0.005	0.413	0.375	0.03	0.5	STD375-4000-375-J1S
	-0.002	4.874	0.006	0.481	0.437	0.03	0.5	STD437-4000-437-J1S
	-0.003	5	0.007	0.55	0.5	0.03	0.625	STD500-4000-500-J1S
	-0.003	5.25	0.009	0.688	0.625	0.045	0.875	STD625-4000-625-J1S

## Dimensions

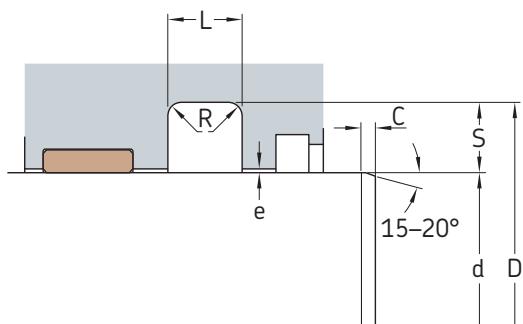
## Designation

d	D	L Tolerance	S Tolerance	R +0.01	C max.	C min.		
in.							-	
<b>4.125</b>	-0.001	4.499	0.002	0.206	0.187	0.015	0.25	<b>STD187-4125-187-J1S</b>
	-0.002	4.625	0.003	0.275	0.25	0.02	0.312	<b>STD250-4125-250-J1S</b>
	-0.002	4.749	0.004	0.343	0.312	0.02	0.312	<b>STD312-4125-312-J1S</b>
	-0.002	4.875	0.005	0.413	0.375	0.03	0.5	<b>STD375-4125-375-J1S</b>
	-0.002	4.999	0.006	0.481	0.437	0.03	0.5	<b>STD437-4125-437-J1S</b>
<b>4.25</b>	-0.001	4.5	0.002	0.138	0.125	0.015	0.25	<b>STD125-4250-125-J1S</b>
	-0.001	4.624	0.002	0.206	0.187	0.015	0.25	<b>STD187-4250-187-J1S</b>
	-0.002	4.75	0.003	0.275	0.25	0.02	0.312	<b>STD250-4250-250-J1S</b>
	-0.002	4.874	0.004	0.343	0.312	0.02	0.312	<b>STD312-4250-312-J1S</b>
	-0.002	5	0.005	0.413	0.375	0.03	0.5	<b>STD375-4250-375-J1S</b>
	-0.003	5.25	0.007	0.55	0.5	0.03	0.625	<b>STD500-4250-500-J1S</b>
	-0.003	5.5	0.009	0.688	0.625	0.045	0.875	<b>STD625-4250-625-J1S</b>
<b>4.375</b>	-0.001	4.625	0.002	0.138	0.125	0.015	0.25	<b>STD125-4375-125-J1S</b>
	-0.001	4.749	0.002	0.206	0.187	0.015	0.25	<b>STD187-4375-187-J1S</b>
	-0.002	4.875	0.003	0.275	0.25	0.02	0.312	<b>STD250-4375-250-J1S</b>
	-0.002	4.999	0.004	0.343	0.312	0.02	0.312	<b>STD312-4375-312-J1S</b>
	-0.002	5.125	0.005	0.413	0.375	0.03	0.5	<b>STD375-4375-375-J1S</b>
<b>4.437</b>	-0.002	4.999	0.003	0.309	0.281	0.02	0.312	<b>STD281-4437-281-J1S</b>
<b>4.5</b>	-0.001	4.75	0.002	0.138	0.125	0.015	0.25	<b>STD125-4500-125-J1S</b>
	-0.001	4.874	0.002	0.206	0.187	0.015	0.25	<b>STD187-4500-187-J1S</b>
	-0.002	5	0.003	0.275	0.25	0.02	0.312	<b>STD250-4500-250-J1S</b>
	-0.002	5.124	0.004	0.343	0.312	0.02	0.312	<b>STD312-4500-312-J1S</b>
	-0.002	5.25	0.005	0.413	0.375	0.03	0.5	<b>STD375-4500-375-J1S</b>
	-0.002	5.374	0.006	0.481	0.437	0.03	0.5	<b>STD437-4500-437-J1S</b>
	-0.003	5.5	0.007	0.55	0.5	0.03	0.625	<b>STD500-4500-500-J1S</b>
	-0.003	5.75	0.009	0.688	0.625	0.045	0.875	<b>STD625-4500-625-J1S</b>
	-0.003	6	0.011	0.825	0.75	0.045	1	<b>STD750-4500-750-J1S</b>
<b>4.625</b>	-0.001	4.999	0.002	0.206	0.187	0.015	0.25	<b>STD187-4625-187-J1S</b>
	-0.002	5.125	0.003	0.275	0.25	0.02	0.312	<b>STD250-4625-250-J1S</b>
	-0.002	5.375	0.005	0.413	0.375	0.03	0.5	<b>STD375-4625-375-J1S</b>
<b>4.75</b>	-0.001	5	0.002	0.138	0.125	0.015	0.25	<b>STD125-4750-125-J1S</b>
	-0.001	5.124	0.002	0.206	0.187	0.015	0.25	<b>STD187-4750-187-J1S</b>
	-0.002	5.25	0.003	0.275	0.25	0.02	0.312	<b>STD250-4750-250-J1S</b>
	-0.002	5.374	0.004	0.343	0.312	0.02	0.312	<b>STD312-4750-312-J1S</b>
	-0.002	5.5	0.005	0.413	0.375	0.03	0.5	<b>STD375-4750-375-J1S</b>
	-0.002	5.624	0.006	0.481	0.437	0.03	0.5	<b>STD437-4750-437-J1S</b>
	-0.003	5.75	0.007	0.55	0.5	0.03	0.625	<b>STD500-4750-500-J1S</b>
	-0.003	6	0.009	0.688	0.625	0.045	0.875	<b>STD625-4750-625-J1S</b>
<b>4.875</b>	-0.001	5.249	0.002	0.206	0.187	0.015	0.25	<b>STD187-4875-187-J1S</b>
	-0.002	5.375	0.003	0.275	0.25	0.02	0.312	<b>STD250-4875-250-J1S</b>
	-0.002	5.499	0.004	0.343	0.312	0.02	0.312	<b>STD312-4875-312-J1S</b>
	-0.002	5.625	0.005	0.413	0.375	0.03	0.5	<b>STD375-4875-375-J1S</b>
<b>5</b>	-0.001	5.374	0.002	0.206	0.187	0.015	0.25	<b>STD187-5000-187-J1S</b>
	-0.002	5.5	0.003	0.275	0.25	0.02	0.312	<b>STD250-5000-250-J1S</b>
	-0.002	5.562	0.003	0.309	0.281	0.02	0.312	<b>STD281-5000-281-J1S</b>
	-0.002	5.624	0.004	0.343	0.312	0.02	0.312	<b>STD312-5000-312-J1S</b>
	-0.002	5.75	0.005	0.413	0.375	0.03	0.5	<b>STD375-5000-375-J1S</b>
	-0.003	6	0.007	0.55	0.5	0.03	0.625	<b>STD500-5000-500-J1S</b>
	-0.003	6.25	0.009	0.688	0.625	0.045	0.875	<b>STD625-5000-625-J1S</b>
	-0.003	6.5	0.011	0.825	0.75	0.045	1	<b>STD750-5000-750-J1S</b>
<b>5.125</b>	-0.002	5.625	0.003	0.275	0.25	0.02	0.312	<b>STD250-5125-250-J1S</b>
	-0.002	5.749	0.004	0.343	0.312	0.02	0.312	<b>STD312-5125-312-J1S</b>
	-0.002	5.875	0.005	0.413	0.375	0.03	0.5	<b>STD375-5125-375-J1S</b>
	-0.002	5.999	0.006	0.481	0.437	0.03	0.5	<b>STD437-5125-437-J1S</b>

3.5

### 3.5 STD profile rod seals, inch sizes

d 5.25 – 8.125 in.



#### Maximum extrusion gap e

Radial depth S in.	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d Tolerance in.	D Tolerance	L +0.01	S	R max.	C min.	–	Designation
5.25	-0.002 5.75 0.003	0.275	0.25	0.02	0.312	STD250-5250-250-J1S	
	-0.002 5.874 0.004	0.343	0.312	0.02	0.312	STD312-5250-312-J1S	
	-0.002 6 0.005	0.413	0.375	0.03	0.5	STD375-5250-375-J1S	
	-0.002 6.124 0.006	0.481	0.437	0.03	0.5	STD437-5250-437-J1S	
	-0.003 6.25 0.007	0.55	0.5	0.03	0.625	STD500-5250-500-J1S	
	-0.003 6.5 0.009	0.688	0.625	0.045	0.875	STD625-5250-625-J1S	
5.375	-0.002 5.875 0.003	0.275	0.25	0.02	0.312	STD250-5375-250-J1S	
	-0.002 5.999 0.004	0.343	0.312	0.02	0.312	STD312-5375-312-J1S	
	-0.002 6.125 0.005	0.413	0.375	0.03	0.5	STD375-5375-375-J1S	
5.437	-0.002 5.999 0.003	0.309	0.281	0.02	0.312	STD281-5437-281-J1S	
	-0.003 6.437 0.007	0.55	0.5	0.03	0.625	STD500-5437-500-J1S	
5.5	-0.001 5.874 0.002	0.206	0.187	0.015	0.25	STD187-5500-187-J1S	
	-0.002 6 0.003	0.275	0.25	0.02	0.312	STD250-5500-250-J1S	
	-0.002 6.124 0.004	0.343	0.312	0.02	0.312	STD312-5500-312-J1S	
	-0.002 6.25 0.005	0.413	0.375	0.03	0.5	STD375-5500-375-J1S	
	-0.003 6.5 0.007	0.55	0.5	0.03	0.625	STD500-5500-500-J1S	
	-0.003 6.624 0.007	0.618	0.562	0.03	0.75	STD562-5500-562-J1S	
	-0.003 6.75 0.009	0.688	0.625	0.045	0.875	STD625-5500-625-J1S	
	-0.003 7 0.011	0.825	0.75	0.045	1	STD750-5500-750-J1S	
5.625	-0.002 6.125 0.003	0.275	0.25	0.02	0.312	STD250-5625-250-J1S	
	-0.002 6.249 0.004	0.343	0.312	0.02	0.312	STD312-5625-312-J1S	
	-0.002 6.375 0.005	0.413	0.375	0.03	0.5	STD375-5625-375-J1S	
5.75	-0.001 6 0.002	0.138	0.125	0.015	0.25	STD125-5750-125-J1S	
	-0.002 6.25 0.003	0.275	0.25	0.02	0.312	STD250-5750-250-J1S	
	-0.002 6.5 0.005	0.413	0.375	0.03	0.5	STD375-5750-375-J1S	
	-0.003 6.75 0.007	0.55	0.5	0.03	0.625	STD500-5750-500-J1S	
	-0.003 7 0.009	0.688	0.625	0.045	0.875	STD625-5750-625-J1S	
5.875	-0.002 6.375 0.003	0.275	0.25	0.02	0.312	STD250-5875-250-J1S	
	-0.002 6.499 0.004	0.343	0.312	0.02	0.312	STD312-5875-312-J1S	
	-0.002 6.625 0.005	0.413	0.375	0.03	0.5	STD375-5875-375-J1S	
6	-0.001 6.374 0.002	0.206	0.187	0.015	0.25	STD187-6000-187-J1S	
	-0.002 6.5 0.003	0.275	0.25	0.02	0.312	STD250-6000-250-J1S	
	-0.002 6.624 0.004	0.343	0.312	0.02	0.312	STD312-6000-312-J1S	
	-0.002 6.75 0.005	0.413	0.375	0.03	0.5	STD375-6000-375-J1S	

## Dimensions

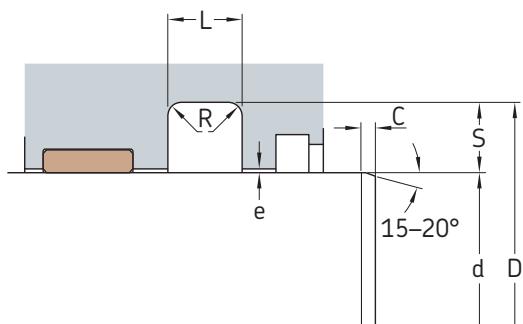
## Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	
in.								-
<b>6</b>	-0.003	7	0.007	0.55	0.5	0.03	0.625	<b>STD500-6000-500-J1S</b>
cont.	-0.003	7.25	0.009	0.688	0.625	0.045	0.875	<b>STD625-6000-625-J1S</b>
	-0.003	7.5	0.011	0.825	0.75	0.045	1	<b>STD750-6000-750-J1S</b>
<b>6.125</b>	-0.002	6.749	0.004	0.343	0.312	0.02	0.312	<b>STD312-6125-312-J1S</b>
	-0.003	7.125	0.007	0.55	0.5	0.03	0.625	<b>STD500-6125-500-J1S</b>
<b>6.25</b>	-0.002	6.75	0.003	0.275	0.25	0.02	0.312	<b>STD250-6250-250-J1S</b>
	-0.002	6.874	0.004	0.343	0.312	0.02	0.312	<b>STD312-6250-312-J1S</b>
	-0.002	7	0.005	0.413	0.375	0.03	0.5	<b>STD375-6250-375-J1S</b>
	-0.003	7.25	0.007	0.55	0.5	0.03	0.625	<b>STD500-6250-500-J1S</b>
	-0.003	7.5	0.009	0.688	0.625	0.045	0.875	<b>STD625-6250-625-J1S</b>
<b>6.375</b>	-0.002	6.999	0.004	0.343	0.312	0.02	0.312	<b>STD312-6375-312-J1S</b>
	-0.002	7.125	0.005	0.413	0.375	0.03	0.5	<b>STD375-6375-375-J1S</b>
<b>6.5</b>	-0.002	7	0.003	0.275	0.25	0.02	0.312	<b>STD250-6500-250-J1S</b>
	-0.002	7.124	0.004	0.343	0.312	0.02	0.312	<b>STD312-6500-312-J1S</b>
	-0.002	7.25	0.005	0.413	0.375	0.03	0.5	<b>STD375-6500-375-J1S</b>
	-0.003	7.5	0.007	0.55	0.5	0.03	0.625	<b>STD500-6500-500-J1S</b>
	-0.003	8	0.011	0.825	0.75	0.045	1	<b>STD750-6500-750-J1S</b>
<b>6.625</b>	-0.002	7.249	0.004	0.343	0.312	0.02	0.312	<b>STD312-6625-312-J1S</b>
<b>6.75</b>	-0.002	7.25	0.003	0.275	0.25	0.02	0.312	<b>STD250-6750-250-J1S</b>
	-0.002	7.374	0.004	0.343	0.312	0.02	0.312	<b>STD312-6750-312-J1S</b>
	-0.002	7.5	0.005	0.413	0.375	0.03	0.5	<b>STD375-6750-375-J1S</b>
	-0.003	7.75	0.007	0.55	0.5	0.03	0.625	<b>STD500-6750-500-J1S</b>
	-0.003	8	0.009	0.688	0.625	0.045	0.875	<b>STD625-6750-625-J1S</b>
<b>7</b>	-0.002	7.5	0.003	0.275	0.25	0.02	0.312	<b>STD250-7000-250-J1S</b>
	-0.002	7.75	0.005	0.413	0.375	0.03	0.5	<b>STD375-7000-375-J1S</b>
	-0.003	8	0.007	0.55	0.5	0.03	0.625	<b>STD500-7000-500-J1S</b>
	-0.003	8.25	0.009	0.688	0.625	0.045	0.875	<b>STD625-7000-625-J1S</b>
	-0.003	8.5	0.011	0.825	0.75	0.045	1	<b>STD750-7000-750-J1S</b>
<b>7.125</b>	-0.003	8.125	0.007	0.55	0.5	0.03	0.625	<b>STD500-7125-500-J1S</b>
<b>7.25</b>	-0.002	7.75	0.003	0.275	0.25	0.02	0.312	<b>STD250-7250-250-J1S</b>
	-0.002	7.874	0.004	0.343	0.312	0.02	0.312	<b>STD312-7250-312-J1S</b>
	-0.002	8	0.005	0.413	0.375	0.03	0.5	<b>STD375-7250-375-J1S</b>
	-0.003	8.25	0.007	0.55	0.5	0.03	0.625	<b>STD500-7250-500-J1S</b>
	-0.003	8.5	0.009	0.688	0.625	0.045	0.875	<b>STD625-7250-625-J1S</b>
<b>7.375</b>	-0.002	7.999	0.004	0.343	0.312	0.02	0.312	<b>STD312-7375-312-J1S</b>
<b>7.5</b>	-0.002	8	0.003	0.275	0.25	0.02	0.312	<b>STD250-7500-250-J1S</b>
	-0.002	8.124	0.004	0.343	0.312	0.02	0.312	<b>STD312-7500-312-J1S</b>
	-0.002	8.25	0.005	0.413	0.375	0.03	0.5	<b>STD375-7500-375-J1S</b>
	-0.003	8.5	0.007	0.55	0.5	0.03	0.625	<b>STD500-7500-500-J1S</b>
	-0.003	9	0.011	0.825	0.75	0.045	1	<b>STD750-7500-750-J1S</b>
<b>7.625</b>	-0.002	8.375	0.005	0.413	0.375	0.03	0.5	<b>STD375-7625-375-J1S</b>
<b>7.75</b>	-0.002	8.25	0.003	0.275	0.25	0.02	0.312	<b>STD250-7750-250-J1S</b>
	-0.002	8.5	0.005	0.413	0.375	0.03	0.5	<b>STD375-7750-375-J1S</b>
	-0.003	8.75	0.007	0.55	0.5	0.03	0.625	<b>STD500-7750-500-J1S</b>
	-0.003	9	0.009	0.688	0.625	0.045	0.875	<b>STD625-7750-625-J1S</b>
<b>8</b>	-0.002	8.5	0.003	0.275	0.25	0.02	0.312	<b>STD250-8000-250-J1S</b>
	-0.002	8.75	0.005	0.413	0.375	0.03	0.5	<b>STD375-8000-375-J1S</b>
	-0.003	9	0.007	0.55	0.5	0.03	0.625	<b>STD500-8000-500-J1S</b>
	-0.003	9.25	0.009	0.688	0.625	0.045	0.875	<b>STD625-8000-625-J1S</b>
	-0.003	9.5	0.011	0.825	0.75	0.045	1	<b>STD750-8000-750-J1S</b>
<b>8.125</b>	-0.002	8.625	0.003	0.275	0.25	0.02	0.312	<b>STD250-8125-250-J1S</b>

3.5

### 3.5 STD profile rod seals, inch sizes

d 8.25 – 13.75 in.



#### Maximum extrusion gap e

Radial depth S in.	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d Tolerance in.	D Tolerance	L +0.01	S	R max.	C min.	–	Designation
8.25	-0.002 8.75 0.003	0.275	0.25	0.02	0.312	STD250-8250-250-J1S	
	-0.002 9 0.005	0.413	0.375	0.03	0.5	STD375-8250-375-J1S	
	-0.003 9.25 0.007	0.55	0.5	0.03	0.625	STD500-8250-500-J1S	
8.5	-0.002 9 0.003	0.275	0.25	0.02	0.312	STD250-8500-250-J1S	
	-0.002 9.25 0.005	0.413	0.375	0.03	0.5	STD375-8500-375-J1S	
	-0.003 9.5 0.007	0.55	0.5	0.03	0.625	STD500-8500-500-J1S	
	-0.003 9.75 0.009	0.688	0.625	0.045	0.875	STD625-8500-625-J1S	
	-0.003 10 0.011	0.825	0.75	0.045	1	STD750-8500-750-J1S	
8.625	-0.002 9.375 0.005	0.413	0.375	0.03	0.5	STD375-8625-375-J1S	
8.75	-0.002 9.25 0.003	0.275	0.25	0.02	0.312	STD250-8750-250-J1S	
	-0.002 9.5 0.005	0.413	0.375	0.03	0.5	STD375-8750-375-J1S	
	-0.003 9.75 0.007	0.55	0.5	0.03	0.625	STD500-8750-500-J1S	
	-0.003 10 0.009	0.688	0.625	0.045	0.875	STD625-8750-625-J1S	
8.875	-0.002 9.499 0.004	0.343	0.312	0.02	0.312	STD312-8875-312-J1S	
9	-0.002 9.5 0.003	0.275	0.25	0.02	0.312	STD250-9000-250-J1S	
	-0.002 9.75 0.005	0.413	0.375	0.03	0.5	STD375-9000-375-J1S	
	-0.003 10 0.007	0.55	0.5	0.03	0.625	STD500-9000-500-J1S	
	-0.003 10.25 0.009	0.688	0.625	0.045	0.875	STD625-9000-625-J1S	
	-0.003 10.5 0.011	0.825	0.75	0.045	1	STD750-9000-750-J1S	
9.25	-0.002 9.75 0.003	0.275	0.25	0.02	0.312	STD250-9250-250-J1S	
	-0.003 10.5 0.009	0.688	0.625	0.045	0.875	STD625-9250-625-J1S	
9.312	-0.002 9.998 0.004	0.377	0.343	0.02	0.312	STD343-9312-343-J1S	
9.5	-0.002 10 0.003	0.275	0.25	0.02	0.312	STD250-9500-250-J1S	
	-0.002 10.25 0.005	0.413	0.375	0.03	0.5	STD375-9500-375-J1S	
	-0.003 10.5 0.007	0.55	0.5	0.03	0.625	STD500-9500-500-J1S	
	-0.003 10.75 0.009	0.688	0.625	0.045	0.875	STD625-9500-625-J1S	
	-0.003 11 0.011	0.825	0.75	0.045	1	STD750-9500-750-J1S	
9.75	-0.002 10.25 0.003	0.275	0.25	0.02	0.312	STD250-9750-250-J1S	
	-0.002 10.5 0.005	0.413	0.375	0.03	0.5	STD375-9750-375-J1S	
	-0.003 10.75 0.007	0.55	0.5	0.03	0.625	STD500-9750-500-J1S	
	-0.003 11 0.009	0.688	0.625	0.045	0.875	STD625-9750-625-J1S	

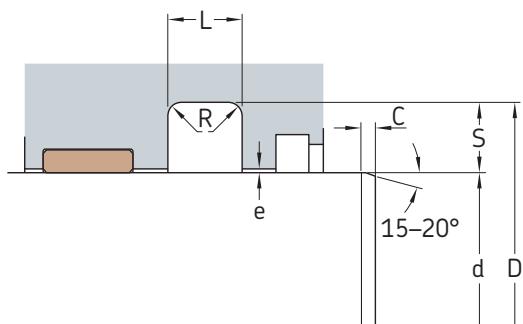
**Dimensions****Designation**

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.	
<b>9.875</b>	-0.002	10.625 0.005	0.413	0.375	0.03	0.5	<b>STD375-9875-375-J1S</b>
<b>10</b>	-0.002	10.5 0.003	0.275	0.25	0.02	0.312	<b>STD250-10000-250-J1S</b>
	-0.002	10.75 0.005	0.413	0.375	0.03	0.5	<b>STD375-10000-375-J1S</b>
	-0.003	11 0.007	0.55	0.5	0.03	0.625	<b>STD500-10000-500-J1S</b>
	-0.003	11.25 0.009	0.688	0.625	0.045	0.875	<b>STD625-10000-625-J1S</b>
	-0.003	11.5 0.011	0.825	0.75	0.045	1	<b>STD750-10000-750-J1S</b>
<b>10.25</b>	-0.002	10.75 0.003	0.275	0.25	0.02	0.312	<b>STD250-10250-250-J1S</b>
	-0.002	11 0.005	0.413	0.375	0.03	0.5	<b>STD375-10250-375-J1S</b>
	-0.003	11.5 0.009	0.688	0.625	0.045	0.875	<b>STD625-10250-625-J1S</b>
<b>10.5</b>	-0.002	11 0.003	0.275	0.25	0.02	0.312	<b>STD250-10500-250-J1S</b>
	-0.002	11.25 0.005	0.413	0.375	0.03	0.5	<b>STD375-10500-375-J1S</b>
	-0.003	11.5 0.007	0.55	0.5	0.03	0.625	<b>STD500-10500-500-J1S</b>
	-0.003	12 0.011	0.825	0.75	0.045	1	<b>STD750-10500-750-J1S</b>
<b>10.75</b>	-0.002	11.25 0.003	0.275	0.25	0.02	0.312	<b>STD250-10750-250-J1S</b>
	-0.002	11.5 0.005	0.413	0.375	0.03	0.5	<b>STD375-10750-375-J1S</b>
	-0.003	11.75 0.007	0.55	0.5	0.03	0.625	<b>STD500-10750-500-J1S</b>
	-0.003	12 0.009	0.688	0.625	0.045	0.875	<b>STD625-10750-625-J1S</b>
<b>11</b>	-0.002	11.75 0.005	0.413	0.375	0.03	0.5	<b>STD375-11000-375-J1S</b>
	-0.003	12 0.007	0.55	0.5	0.03	0.625	<b>STD500-11000-500-J1S</b>
	-0.003	12.25 0.009	0.688	0.625	0.045	0.875	<b>STD625-11000-625-J1S</b>
	-0.003	12.5 0.011	0.825	0.75	0.045	1	<b>STD750-11000-750-J1S</b>
<b>11.25</b>	-0.002	11.75 0.003	0.275	0.25	0.02	0.312	<b>STD250-11250-250-J1S</b>
	-0.002	12 0.005	0.413	0.375	0.03	0.5	<b>STD375-11250-375-J1S</b>
	-0.003	12.25 0.007	0.55	0.5	0.03	0.625	<b>STD500-11250-500-J1S</b>
<b>11.5</b>	-0.002	12 0.003	0.275	0.25	0.02	0.312	<b>STD250-11500-250-J1S</b>
	-0.003	12.5 0.007	0.55	0.5	0.03	0.625	<b>STD500-11500-500-J1S</b>
<b>11.75</b>	-0.002	12.25 0.003	0.275	0.25	0.02	0.312	<b>STD250-11750-250-J1S</b>
	-0.002	12.5 0.005	0.413	0.375	0.03	0.5	<b>STD375-11750-375-J1S</b>
	-0.003	13 0.009	0.688	0.625	0.045	0.875	<b>STD625-11750-625-J1S</b>
<b>12</b>	-0.002	12.5 0.003	0.275	0.25	0.02	0.312	<b>STD250-12000-250-J1S</b>
	-0.002	12.75 0.005	0.413	0.375	0.03	0.5	<b>STD375-12000-375-J1S</b>
	-0.003	13 0.007	0.55	0.5	0.03	0.625	<b>STD500-12000-500-J1S</b>
	-0.003	13.25 0.009	0.688	0.625	0.045	0.875	<b>STD625-12000-625-J1S</b>
<b>12.25</b>	-0.002	13 0.005	0.413	0.375	0.03	0.5	<b>STD375-12250-375-J1S</b>
<b>12.5</b>	-0.002	13 0.003	0.275	0.25	0.02	0.312	<b>STD250-12500-250-J1S</b>
	-0.003	13.5 0.007	0.55	0.5	0.03	0.625	<b>STD500-12500-500-J1S</b>
	-0.003	14 0.011	0.825	0.75	0.045	1	<b>STD750-12500-750-J1S</b>
<b>12.75</b>	-0.002	13.5 0.005	0.413	0.375	0.03	0.5	<b>STD375-12750-375-J1S</b>
	-0.003	14 0.009	0.688	0.625	0.045	0.875	<b>STD625-12750-625-J1S</b>
<b>13</b>	-0.002	13.75 0.005	0.413	0.375	0.03	0.5	<b>STD375-13000-375-J1S</b>
	-0.003	14 0.007	0.55	0.5	0.03	0.625	<b>STD500-13000-500-J1S</b>
	-0.003	14.25 0.009	0.688	0.625	0.045	0.875	<b>STD625-13000-625-J1S</b>
	-0.003	14.5 0.011	0.825	0.75	0.045	1	<b>STD750-13000-750-J1S</b>
<b>13.25</b>	-0.002	14 0.005	0.413	0.375	0.03	0.5	<b>STD375-13250-375-J1S</b>
	-0.003	14.25 0.007	0.55	0.5	0.03	0.625	<b>STD500-13250-500-J1S</b>
<b>13.375</b>	-0.002	14.125 0.005	0.413	0.375	0.03	0.5	<b>STD375-13375-375-J1S</b>
<b>13.5</b>	-0.002	14 0.003	0.275	0.25	0.02	0.312	<b>STD250-13500-250-J1S</b>
	-0.003	14.5 0.007	0.55	0.5	0.03	0.625	<b>STD500-13500-500-J1S</b>
	-0.003	15 0.011	0.825	0.75	0.045	1	<b>STD750-13500-750-J1S</b>
<b>13.75</b>	-0.002	14.5 0.005	0.413	0.375	0.03	0.5	<b>STD375-13750-375-J1S</b>

3.5

### 3.5 STD profile rod seals, inch sizes

d 14 – 45 in.



#### Maximum extrusion gap e

Radial depth S in.	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.218 to 0.25	0.018	0.01	0.004
0.281 to 0.437	0.02	0.012	0.006
0.5 to 0.562	0.024	0.012	0.008
0.625 to 0.75	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d in.	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	–	Designation
14	-0.002 -0.003 -0.003	14.75 15 15.5	0.005 0.007 0.011	0.413 0.55 0.825	0.375 0.5 0.75	0.03 0.03 0.045	0.5 0.625 1	STD375-14000-375-J1S STD500-14000-500-J1S STD750-14000-750-J1S	
14.25	-0.002	14.75	0.003	0.275	0.25	0.02	0.312	–	STD250-14250-250-J1S
14.375	-0.002	14.999	0.004	0.343	0.312	0.02	0.312	–	STD312-14375-312-J1S
14.5	-0.003	16	0.011	0.825	0.75	0.045	1	–	STD750-14500-750-J1S
15	-0.002 -0.003	15.75 16	0.005 0.007	0.413 0.55	0.375 0.5	0.03 0.03	0.5 0.625	–	STD375-15000-375-J1S STD500-15000-500-J1S
15.5	-0.002 -0.003	16.25 16.5	0.005 0.007	0.413 0.55	0.375 0.5	0.03 0.03	0.5 0.625	–	STD375-15500-375-J1S STD500-15500-500-J1S
16	-0.003 -0.003	17 17.5	0.007 0.011	0.55 0.825	0.5 0.75	0.03 0.045	0.625 1	–	STD500-16000-500-J1S STD750-16000-750-J1S
16.5	-0.003 -0.003	17.5 18	0.007 0.011	0.55 0.825	0.5 0.75	0.03 0.045	0.625 1	–	STD500-16500-500-J1S STD750-16500-750-J1S
16.75	-0.002	17.25	0.003	0.275	0.25	0.02	0.312	–	STD250-16750-250-J1S
16.875	-0.002	17.625	0.005	0.413	0.375	0.03	0.5	–	STD375-16875-375-J1S
17	-0.003	18	0.007	0.55	0.5	0.03	0.625	–	STD500-17000-500-J1S
17.25	-0.002 -0.003	18 18.5	0.005 0.009	0.413 0.688	0.375 0.625	0.03 0.045	0.5 0.875	–	STD375-17250-375-J1S STD625-17250-625-J1S
18	-0.003 -0.003	19 19.5	0.007 0.011	0.55 0.825	0.5 0.75	0.03 0.045	0.625 1	–	STD500-18000-500-J1S STD750-18000-750-J1S
18.375	-0.002	18.875	0.003	0.275	0.25	0.02	0.312	–	STD250-18375-250-J1S
19.5	-0.002	20.25	0.005	0.413	0.375	0.03	0.5	–	STD375-19500-375-J1S
20	-0.003	21	0.007	0.55	0.5	0.03	0.625	–	STD500-20000-500-J1S
20.5	-0.003	22	0.011	0.825	0.75	0.045	1	–	STD750-20500-750-J1S

**Dimensions****Designation**

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.	—
<b>20.75</b>	-0.002	21.25	0.003	0.275	0.25	0.02	0.312 <b>STD250-20750-250-J1S</b>
<b>21</b>	-0.003	22	0.007	0.55	0.5	0.03	0.625 <b>STD500-21000-500-J1S</b>
<b>22</b>	-0.003	23	0.007	0.55	0.5	0.03	0.625 <b>STD500-22000-500-J1S</b>
<b>23</b>	-0.002	23.5	0.003	0.275	0.25	0.02	0.312 <b>STD250-23000-250-J1S</b>
<b>23.5</b>	-0.003	24.5	0.007	0.55	0.5	0.03	0.625 <b>STD500-23500-500-J1S</b>
<b>24</b>	-0.003	25.25	0.009	0.688	0.625	0.045	0.875 <b>STD625-24000-625-J1S</b>
<b>24.75</b>	-0.003	26	0.009	0.688	0.625	0.045	0.875 <b>STD625-24750-625-J1S</b>
<b>25</b>	-0.003	26	0.007	0.55	0.5	0.03	0.625 <b>STD500-25000-500-J1S</b>
<b>26.5</b>	-0.003	27.5	0.007	0.55	0.5	0.03	0.625 <b>STD500-26500-500-J1S</b>
<b>27</b>	-0.003	28	0.007	0.55	0.5	0.03	0.625 <b>STD500-27000-500-J1S</b>
<b>27.5</b>	-0.003	28.5	0.007	0.55	0.5	0.03	0.625 <b>STD500-27500-500-J1S</b>
<b>28.5</b>	-0.003	29.5	0.007	0.55	0.5	0.03	0.625 <b>STD500-28500-500-J1S</b>
<b>31</b>	-0.003	32	0.007	0.55	0.5	0.03	0.625 <b>STD500-31000-500-J1S</b>
<b>32</b>	-0.003	33	0.007	0.55	0.5	0.03	0.625 <b>STD500-32000-500-J1S</b>
<b>34.25</b>	-0.003	35.75	0.011	0.825	0.75	0.045	1 <b>STD750-34250-750-J1S</b>
<b>35.75</b>	-0.003	36.75	0.007	0.55	0.5	0.03	0.625 <b>STD500-35750-500-J1S</b>
<b>36</b>	-0.003	37	0.007	0.55	0.5	0.03	0.625 <b>STD500-36000-500-J1S</b>
	-0.003	37.5	0.011	0.825	0.75	0.045	1 <b>STD750-36000-750-J1S</b>
<b>36.75</b>	-0.003	37.75	0.007	0.55	0.5	0.03	0.625 <b>STD500-36750-500-J1S</b>
<b>37</b>	-0.003	38	0.007	0.55	0.5	0.03	0.625 <b>STD500-37000-500-J1S</b>
<b>38</b>	-0.003	39	0.007	0.55	0.5	0.03	0.625 <b>STD500-38000-500-J1S</b>
<b>39</b>	-0.003	40	0.007	0.55	0.5	0.03	0.625 <b>STD500-39000-500-J1S</b>
<b>40</b>	-0.003	41	0.007	0.55	0.5	0.03	0.625 <b>STD500-40000-500-J1S</b>
<b>40.25</b>	-0.003	41.25	0.007	0.55	0.5	0.03	0.625 <b>STD500-40250-500-J1S</b>
<b>41</b>	-0.003	42	0.007	0.55	0.5	0.03	0.625 <b>STD500-41000-500-J1S</b>
<b>42</b>	-0.003	43	0.007	0.55	0.5	0.03	0.625 <b>STD500-42000-500-J1S</b>
<b>42.75</b>	-0.003	43.75	0.007	0.55	0.5	0.03	0.625 <b>STD500-42750-500-J1S</b>
<b>43</b>	-0.003	44	0.007	0.55	0.5	0.03	0.625 <b>STD500-43000-500-J1S</b>
<b>44.5</b>	-0.003	45.5	0.007	0.55	0.5	0.03	0.625 <b>STD500-44500-500-J1S</b>
<b>45</b>	-0.003	46	0.007	0.55	0.5	0.03	0.625 <b>STD500-45000-500-J1S</b>

Other sizes are available on request

3.5

### 3.6 DZ profile

#### DZ profile data

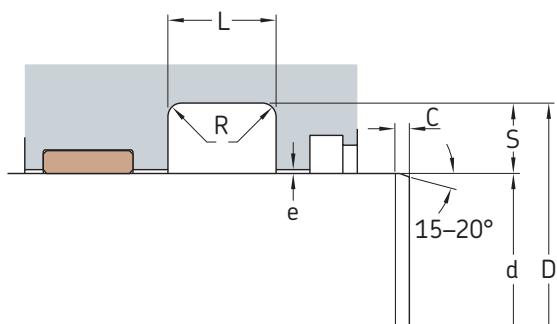
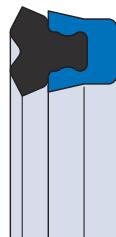


<b>Material codes</b>	Primary sealing ring: A-8504 Secondary sealing ring: U-1003 For additional information → <a href="#">page 26</a>
<b>Pressure</b>	Up to 400 bar (5 800 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<p>    <span style="color: blue;">■</span> Extreme low temperature range: seal performance depends on system design (precision guiding arrangement recommended)         </p> <p> <span style="color: green;">■</span> <b>Recommended operating temperature range for this profile and material</b> </p> <p> <span style="color: yellow;">■</span> Temperatures above the recommended operating range: acceptable only with reduced pressure, speed, and/or e-gap         </p> <p> <span style="color: red;">■</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)         </p>
<b>Counter-surface</b>	→ <a href="#">page 22</a>

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.6 DZ profile rod seals, metric sizes

d 25 – 105 mm



#### Maximum extrusion gap e

Radial depth S mm	e <sub>max</sub> at 60 °C (140 °F) for pressures		
	160 bar	250 bar	400 bar
4	0,35	0,2	–
5	0,45	0,25	0,1
7,5	0,5	0,3	0,15

For additional information → page 34

3.6

#### Dimensions

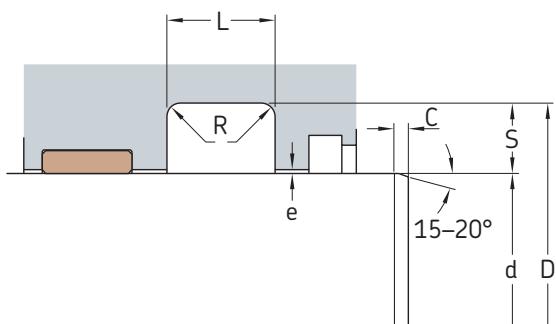
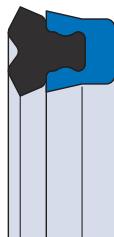
#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	–	Designation
25	33	7,2	4	0,2	6	–	DZ-25x33x7.2-E2F
30	40	9,9	5	0,2	6	–	DZ-30x40x9.9-E2F
35	45	9,9	5	0,2	6	–	DZ-35x45x9.9-E2F
40	50	8	5	0,2	6	–	DZ-40x50x8-E2F
	50	9,9	5	0,2	6	–	DZ-40x50x9.9-E2F
45	55	9,9	5	0,2	6	–	DZ-45x55x9.9-E2F
50	60	9,9	5	0,2	6	–	DZ-50x60x9.9-E2F
55	65	9,9	5	0,2	6	–	DZ-55x65x9.9-E2F
60	70	9,9	5	0,2	6	–	DZ-60x70x9.9-E2F
65	75	9,9	5	0,2	6	–	DZ-65x75x9.9-E2F
70	80	9,9	5	0,2	6	–	DZ-70x80x9.9-E2F
75	85	9,9	5	0,2	6	–	DZ-75x85x9.9-E2F
80	90	9,9	5	0,2	6	–	DZ-80x90x9.9-E2F
85	100	13,8	7,5	0,5	8,5	–	DZ-85x100x13.8-E2F
90	105	13,2	7,5	0,5	8,5	–	DZ-90x105x13.2-E2F
100	115	13,2	7,5	0,5	8,5	–	DZ-100x115x13.2-E2F
105	120	13,2	7,5	0,5	8,5	–	DZ-105x120x13.2-E2F

Other sizes are available on request

### 3.6 DZ profile rod seals, inch sizes

d 0.187 – 3.25 in.



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 60 °C (140 °F) for pressures		
	2 300 psi	3 600 psi	5 800 psi
in.			in.
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.25	0.018	0.01	0.004
0.312 to 0.375	0.02	0.012	0.006
0.5	0.024	0.012	0.008

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>0.187</b>	-0.001 -0.001	0.437 0.437	+0.002 +0.002	0.213 0.275	0.125 0.125	0.015 0.015	0.25 0.25	<b>DZ125-187-187-E2F DZ125-187-250-E2F</b>
<b>0.375</b>	-0.002	0.875	+0.003	0.413	0.25	0.02	0.312	<b>DZ250-375-375-E2F</b>
<b>0.5</b>	-0.001 -0.002	0.75 0.875	+0.002 +0.002	0.275 0.343	0.125 0.187	0.015 0.015	0.25 0.25	<b>DZ125-500-250-E2F DZ187-500-312-E2F</b>
<b>0.625</b>	-0.001	0.937	+0.002	0.275	0.156	0.015	0.25	<b>DZ156-625-250-E2F</b>
<b>0.75</b>	-0.001 -0.001 -0.002	1 1 1.125	+0.002 +0.002 +0.002	0.213 0.275 0.343	0.125 0.125 0.187	0.015 0.015 0.015	0.25 0.25 0.25	<b>DZ125-750-187-E2F DZ125-750-250-E2F DZ187-750-312-E2F</b>
<b>0.875</b>	-0.001	1.125	+0.002	0.275	0.125	0.015	0.25	<b>DZ125-875-250-E2F</b>
<b>1</b>	-0.001 -0.002	1.25 1.375	+0.002 +0.002	0.275 0.343	0.125 0.187	0.015 0.015	0.25 0.25	<b>DZ125-1000-250-E2F DZ187-1000-312-E2F</b>
<b>1.125</b>	-0.001 -0.002 -0.002	1.375 1.5 1.625	+0.002 +0.002 +0.003	0.275 0.343 0.413	0.125 0.187 0.25	0.015 0.015 0.02	0.25 0.25 0.312	<b>DZ125-1125-250-E2F DZ187-1125-312-E2F DZ250-1125-375-E2F</b>
<b>1.187</b>	-0.002	1.562	+0.002	0.343	0.187	0.015	0.25	<b>DZ187-1187-312-E2F</b>
<b>1.25</b>	-0.001 -0.002 -0.002 -0.002 -0.002	1.5 1.625 1.75 1.75 2	+0.002 +0.002 +0.003 +0.003 +0.005	0.275 0.343 0.413 0.618 0.688	0.125 0.187 0.25 0.25 0.375	0.015 0.015 0.02 0.02 0.03	0.25 0.25 0.312 0.312 0.5	<b>DZ125-1250-250-E2F DZ187-1250-312-E2F DZ250-1250-375-E2F DZ250-1250-562-E2F DZ375-1250-625-E2F</b>
<b>1.375</b>	-0.001 -0.002 -0.002	1.625 1.75 1.875	+0.002 +0.002 +0.003	0.343 0.343 0.413	0.125 0.187 0.25	0.015 0.015 0.02	0.25 0.25 0.312	<b>DZ125-1375-312-E2F DZ187-1375-312-E2F DZ250-1375-375-E2F</b>

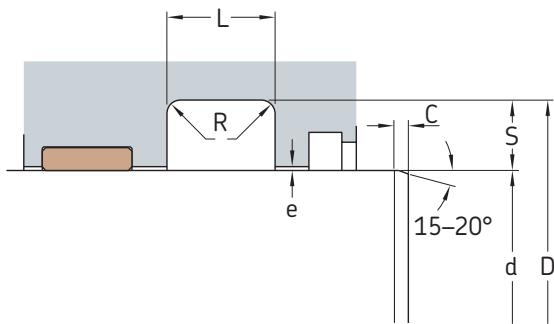
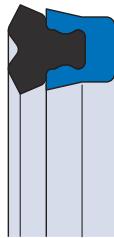
## Dimensions

## Designation

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.	
<b>1.5</b>	-0.001	1.75 +0.002	0.275	0.125	0.015	0.25	<b>DZ125-1500-250-E2F</b>
	-0.001	1.812 +0.002	0.343	0.156	0.015	0.25	<b>DZ156-1500-312-E2F</b>
	-0.002	1.875 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-1500-312-E2F</b>
	-0.002	1.875 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-1500-375-E2F</b>
	-0.002	2 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-1500-375-E2F</b>
	-0.002	2 +0.003	0.618	0.25	0.02	0.312	<b>DZ250-1500-562-E2F</b>
<b>1.625</b>	-0.002	2 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-1625-312-E2F</b>
	-0.002	2 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-1625-375-E2F</b>
	-0.002	2.125 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-1625-375-E2F</b>
<b>1.75</b>	-0.001	2 +0.002	0.275	0.125	0.015	0.25	<b>DZ125-1750-250-E2F</b>
	-0.002	2.125 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-1750-312-E2F</b>
	-0.002	2.125 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-1750-375-E2F</b>
	-0.002	2.25 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-1750-375-E2F</b>
	-0.002	2.5 +0.005	0.413	0.375	0.03	0.5	<b>DZ375-1750-375-E2F</b>
	-0.002	2.5 +0.005	0.825	0.375	0.03	0.5	<b>DZ375-1750-750-E2F</b>
<b>1.875</b>	-0.002	2.25 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-1875-312-E2F</b>
<b>2</b>	-0.002	2.375 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-2000-312-E2F</b>
	-0.002	2.375 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-2000-375-E2F</b>
	-0.002	2.5 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2000-375-E2F</b>
	-0.002	2.5 +0.003	0.618	0.25	0.02	0.312	<b>DZ250-2000-562-E2F</b>
<b>2.25</b>	-0.002	2.625 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-2250-312-E2F</b>
	-0.002	2.625 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-2250-375-E2F</b>
	-0.002	2.75 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2250-375-E2F</b>
<b>2.375</b>	-0.002	2.75 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-2375-312-E2F</b>
	-0.002	2.875 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2375-375-E2F</b>
<b>2.5</b>	-0.002	2.875 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-2500-312-E2F</b>
	-0.002	2.875 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-2500-375-E2F</b>
	-0.002	3 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2500-375-E2F</b>
	-0.002	3.125 +0.004	0.55	0.312	0.02	0.312	<b>DZ312-2500-500-E2F</b>
	-0.002	3.25 +0.005	0.688	0.375	0.03	0.5	<b>DZ375-2500-625-E2F</b>
<b>2.625</b>	-0.002	3.125 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2625-375-E2F</b>
<b>2.75</b>	-0.002	3.125 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-2750-312-E2F</b>
	-0.002	3.25 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2750-375-E2F</b>
	-0.002	3.5 +0.005	0.688	0.375	0.03	0.5	<b>DZ375-2750-625-E2F</b>
<b>2.875</b>	-0.002	3.375 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-2875-375-E2F</b>
<b>3</b>	-0.002	3.375 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-3000-312-E2F</b>
	-0.002	3.375 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-3000-375-E2F</b>
	-0.002	3.5 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-3000-375-E2F</b>
	-0.002	3.5 +0.003	0.618	0.25	0.02	0.312	<b>DZ250-3000-562-E2F</b>
	-0.002	3.625 +0.004	0.55	0.312	0.02	0.312	<b>DZ312-3000-500-E2F</b>
	-0.002	3.75 +0.005	0.688	0.375	0.03	0.5	<b>DZ375-3000-625-E2F</b>
	-0.002	3.75 +0.005	0.965	0.375	0.03	0.5	<b>DZ375-3000-875-E2F</b>
<b>3.125</b>	-0.002	3.625 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-3125-375-E2F</b>
<b>3.187</b>	-0.002	3.562 +0.002	0.413	0.187	0.015	0.25	<b>DZ187-3187-375-E2F</b>
<b>3.25</b>	-0.002	3.625 +0.002	0.343	0.187	0.015	0.25	<b>DZ187-3250-312-E2F</b>
	-0.002	3.75 +0.003	0.413	0.25	0.02	0.312	<b>DZ250-3250-375-E2F</b>
	-0.002	3.875 +0.004	0.55	0.312	0.02	0.312	<b>DZ312-3250-500-E2F</b>
	-0.002	4 +0.005	0.688	0.375	0.03	0.5	<b>DZ375-3250-625-E2F</b>

3.6

### 3.6 DZ profile rod seals, inch sizes d 3.375 – 12 in.



#### Maximum extrusion gap e

Radial depth S	e <sub>max</sub> at 60 °C (140 °F) for pressures		
2 300 psi	3 600 psi	5 800 psi	
in.	in.		
0.125	0.008	0.004	–
0.156 to 0.187	0.014	0.008	–
0.25	0.018	0.01	0.004
0.312 to 0.375	0.02	0.012	0.006
0.5	0.024	0.012	0.008

For additional information → page 34

Dimensions	Designation					
d Tolerance	D Tolerance	L +0.01	S	R max.	C min.	–
in.						

3.375	-0.002	3.875	+0.003	0.413	0.25	0.02	0.312	DZ250-3375-375-E2F
	-0.002	4	+0.004	0.55	0.312	0.02	0.312	DZ312-3375-500-E2F
3.5	-0.002	4	+0.003	0.413	0.25	0.02	0.312	DZ250-3500-375-E2F
	-0.002	4.125	+0.004	0.55	0.312	0.02	0.312	DZ312-3500-500-E2F
	-0.002	4.25	+0.005	0.688	0.375	0.03	0.5	DZ375-3500-625-E2F
	-0.003	4.5	+0.007	0.825	0.5	0.03	0.625	DZ500-3500-750-E2F
3.625	-0.002	4.375	+0.005	0.688	0.375	0.03	0.5	DZ375-3625-625-E2F
	-0.002	4.375	+0.005	0.965	0.375	0.03	0.5	DZ375-3625-875-E2F
3.75	-0.002	4.25	+0.003	0.413	0.25	0.02	0.312	DZ250-3750-375-E2F
	-0.002	4.25	+0.003	0.618	0.25	0.02	0.312	DZ250-3750-562-E2F
	-0.002	4.375	+0.004	0.413	0.312	0.02	0.312	DZ312-3750-375-E2F
	-0.002	4.375	+0.004	0.55	0.312	0.02	0.312	DZ312-3750-500-E2F
	-0.002	4.5	+0.005	0.688	0.375	0.03	0.5	DZ375-3750-625-E2F
3.875	-0.002	4.375	+0.003	0.413	0.25	0.02	0.312	DZ250-3875-375-E2F
4	-0.002	4.375	+0.002	0.413	0.187	0.015	0.25	DZ187-4000-375-E2F
	-0.002	4.5	+0.003	0.413	0.25	0.02	0.312	DZ250-4000-375-E2F
	-0.002	4.5	+0.003	0.618	0.25	0.02	0.312	DZ250-4000-562-E2F
	-0.002	4.75	+0.005	0.688	0.375	0.03	0.5	DZ375-4000-625-E2F
	-0.002	4.75	+0.005	0.825	0.375	0.03	0.5	DZ375-4000-750-E2F
	-0.003	5	+0.007	0.825	0.5	0.03	0.625	DZ500-4000-750-E2F
4.25	-0.002	4.75	+0.003	0.413	0.25	0.02	0.312	DZ250-4250-375-E2F
	-0.002	4.875	+0.004	0.618	0.312	0.02	0.312	DZ312-4250-562-E2F
	-0.002	5	+0.005	0.688	0.375	0.03	0.5	DZ375-4250-625-E2F
4.5	-0.002	5	+0.003	0.413	0.25	0.02	0.312	DZ250-4500-375-E2F
	-0.002	5	+0.003	0.618	0.25	0.02	0.312	DZ250-4500-562-E2F
	-0.002	5.25	+0.005	0.688	0.375	0.03	0.5	DZ375-4500-625-E2F
	-0.002	5.25	+0.005	0.825	0.375	0.03	0.5	DZ375-4500-750-E2F
4.625	-0.002	5.125	+0.003	0.618	0.25	0.02	0.312	DZ250-4625-562-E2F
4.75	-0.002	5.125	+0.002	0.413	0.187	0.015	0.25	DZ187-4750-375-E2F
	-0.002	5.25	+0.003	0.618	0.25	0.02	0.312	DZ250-4750-562-E2F
	-0.002	5.5	+0.005	0.688	0.375	0.03	0.5	DZ375-4750-625-E2F

Dimensions							Designation
d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.
in.							-
5	-0.002	5.5	+0.003	0.413	0.25	0.02	0.312
	-0.002	5.5	+0.003	0.618	0.25	0.02	0.312
	-0.002	5.75	+0.005	0.688	0.375	0.03	0.5
5.25	-0.002	5.75	+0.003	0.618	0.25	0.02	0.312
5.375	-0.002	5.875	+0.003	0.413	0.25	0.02	0.312
5.5	-0.002	5.875	+0.002	0.413	0.187	0.015	0.25
	-0.002	6	+0.003	0.618	0.25	0.02	0.312
	-0.002	6.25	+0.005	0.688	0.375	0.03	0.5
5.75	-0.002	6.25	+0.003	0.413	0.25	0.02	0.312
	-0.002	6.5	+0.005	0.688	0.375	0.03	0.5
6	-0.002	6.5	+0.003	0.413	0.25	0.02	0.312
	-0.002	6.5	+0.003	0.618	0.25	0.02	0.312
	-0.002	6.75	+0.005	0.688	0.375	0.03	0.5
	-0.003	7	+0.007	0.825	0.5	0.03	0.625
6.375	-0.002	6.875	+0.003	0.55	0.25	0.02	0.312
6.5	-0.002	7	+0.003	0.413	0.25	0.02	0.312
	-0.002	7	+0.003	0.618	0.25	0.02	0.312
	-0.002	7.25	+0.005	0.688	0.375	0.03	0.5
6.75	-0.002	7.25	+0.003	0.618	0.25	0.02	0.312
7	-0.002	7.5	+0.003	0.413	0.25	0.02	0.312
	-0.002	7.75	+0.005	0.688	0.375	0.03	0.5
	-0.003	8	+0.007	0.825	0.5	0.03	0.625
7.25	-0.002	7.75	+0.003	0.55	0.25	0.02	0.312
7.5	-0.002	8.25	+0.005	0.688	0.375	0.03	0.5
7.75	-0.002	8.5	+0.005	0.55	0.375	0.03	0.5
8	-0.002	8.75	+0.005	0.688	0.375	0.03	0.5
	-0.003	9	+0.007	0.825	0.5	0.03	0.625
8.125	-0.002	8.625	+0.003	0.413	0.25	0.02	0.312
	-0.002	8.625	+0.003	0.55	0.25	0.02	0.312
	-0.002	8.625	+0.003	0.618	0.25	0.02	0.312
8.25	-0.002	9	+0.005	0.688	0.375	0.03	0.5
8.5	-0.003	9.5	+0.007	0.825	0.5	0.03	0.625
8.875	-0.002	9.5	+0.004	0.55	0.312	0.02	0.312
9	-0.002	9.75	+0.005	0.688	0.375	0.03	0.5
	-0.003	10	+0.007	0.825	0.5	0.03	0.625
9.25	-0.002	10	+0.005	0.618	0.375	0.03	0.5
10.5	-0.002	11.25	+0.005	0.688	0.375	0.03	0.5
10.75	-0.002	11.5	+0.005	0.688	0.375	0.03	0.5
11	-0.003	12	+0.007	0.825	0.5	0.03	0.625
12	-0.003	13	+0.007	0.825	0.5	0.03	0.625

Other sizes are available on request

3.6

### 3.7 DZR profile

#### DZR profile data

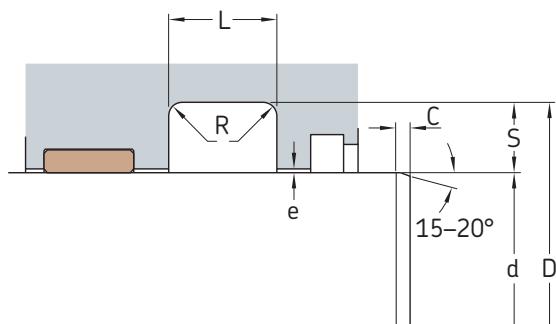
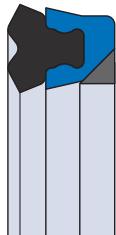


<b>Material codes</b>	Primary sealing ring: A-8504 Secondary sealing ring: U-1003 Anti-extrusion ring: suffix E2E → P-2506 suffix E2D → 707 For additional information → <b>page 26</b>
<b>Pressure</b>	Up to 690 bar (10 000 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<p>   <span style="float: left; width: 20%;">-60      -50</span> <span style="float: right; width: 20%;">100      110      120 [°C]</span>   <span style="float: left; width: 20%;">-75      -60</span> <span style="float: right; width: 20%;">210      230      250 [°F]</span> </p> <ul style="list-style-type: none"> <li><span style="color: blue;">█</span> Extreme low temperature range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: green;">█</span> Recommended operating temperature range for this profile and material</li> <li><span style="color: yellow;">█</span> Temperatures above the recommended operating range: acceptable only with reduced pressure and/or speed</li> <li><span style="color: red;">█</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Counter-surface</b>	→ <b>page 22</b>

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.7 DZR profile rod seals, metric sizes

d 40 – 150 mm



#### Maximum extrusion gap e

Radial depth  $e_{\max}$  at 80 °C (175 °F) for pressures

S	160 bar	250 bar	400 bar	690 bar
mm	mm			

5	0,55	0,35	0,2	0,1
7,5	0,8	0,5	0,3	0,15
10 to 11	1,1	0,75	0,45	0,2

For additional information → page 34

3.7

#### Dimensions

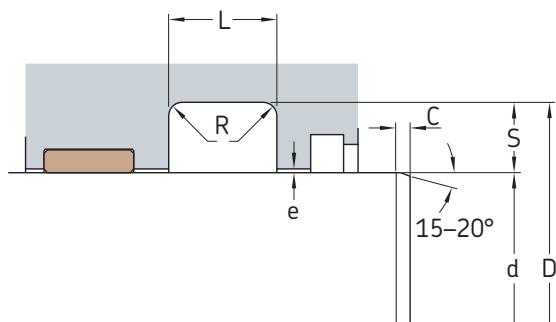
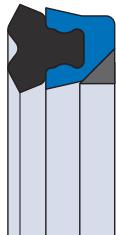
#### Designation

d f8 or h9	D H10	L +0,2	S	R max.	C min.	–	Designation
40	50	8	5	0,2	6	–	DZR-40x50x8-E2E
50	60	8	5	0,2	6	–	DZR-50x60x8-E2E
56	71	11,7	7,5	0,5	8,5	–	DZR-56x71x11.7-E2E
63	78	11,7	7,5	0,5	8,5	–	DZR-63x78x11.7-E2E
75	95	16,5	10	0,8	11	–	DZR-75x95x16.5-E2D
85	100	13,8	7,5	0,5	8,5	–	DZR-85x100x13.8-E2E
110	125	12,5	7,5	0,5	8,5	–	DZR-110x125x12.5-E2D
150	172	16,5	11	0,8	13	–	DZR-150x172x16.5-E2D

Other sizes are available on request

### 3.7 DZR profile rod seals, inch sizes

d 1.25 – 12 in.



#### Maximum extrusion gap e

Radial depth S in.	$e_{\max}$ at 80 °C (175 °F) for pressures			
	2 300 psi	3 600 psi	5 800 psi	10 000 psi
0.187	0.021	0.013	0.008	0.005
0.25	0.028	0.018	0.011	0.007
0.312	0.044	0.028	0.017	0.01
0.375	0.044	0.028	0.017	0.01
0.5	0.059	0.038	0.023	0.014

For additional information → page 34

#### Dimensions

#### Designation

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.	Designation	
1.25	-0.002 -0.002	1.625 1.750	+0.002 +0.003	0.343 0.413	0.187 0.25	0.015 0.02	0.250 0.312	DZR187-1250-312-E2E DZR250-1250-375-E2E
1.5	-0.002 -0.002	1.875 2.000	+0.002 +0.003	0.343 0.413	0.187 0.25	0.015 0.02	0.250 0.312	DZR187-1500-312-E2E DZR250-1500-375-E2E
1.75	-0.002	2.250	+0.003	0.413	0.25	0.02	0.312	DZR250-1750-375-E2E
2	-0.002 -0.002	2.500 2.750	+0.003 +0.005	0.413 0.688	0.25 0.375	0.02 0.03	0.312 0.500	DZR250-2000-375-E2E DZR375-2000-625-E2E
2.25	-0.002	2.750	+0.003	0.413	0.25	0.02	0.312	DZR250-2250-375-E2E
2.375	-0.002	2.875	+0.003	0.413	0.25	0.02	0.312	DZR250-2375-375-E2D
2.5	-0.002	3.000	+0.003	0.413	0.25	0.02	0.312	DZR250-2500-375-E2E
2.625	-0.002	3.125	+0.003	0.413	0.25	0.02	0.312	DZR250-2625-375-E2E
2.75	-0.002	3.250	+0.003	0.413	0.25	0.02	0.312	DZR250-2750-375-E2E
3	-0.002 -0.002 -0.002	3.374 3.500 3.750	+0.003 +0.003 +0.005	0.413 0.413 0.688	0.187 0.25 0.375	0.015 0.02 0.03	0.250 0.312 0.500	DZR187-3000-375-E2D DZR250-3000-375-E2E DZR375-3000-625-E2E
3.5	-0.002 -0.002	4.000 4.250	+0.003 +0.005	0.413 0.688	0.25 0.375	0.02 0.03	0.312 0.500	DZR250-3500-375-E2E DZR375-3500-625-E2E
3.625	-0.002 -0.002	4.125 4.375	+0.003 +0.005	0.413 0.688	0.25 0.375	0.02 0.03	0.312 0.500	DZR250-3625-375-E2E DZR375-3625-625-E2E
3.75	-0.002	4.250	+0.003	0.413	0.25	0.02	0.312	DZR250-3750-375-E2E
3.875	-0.002	4.375	+0.003	0.413	0.25	0.02	0.312	DZR250-3875-375-E2D
4	-0.002 -0.002 -0.002 -0.002 -0.002	4.500 4.500 4.625 4.625 4.750	+0.003 +0.003 +0.004 +0.004 +0.005	0.413 0.618 0.550 0.618 0.688	0.25 0.25 0.312 0.312 0.375	0.02 0.02 0.02 0.02 0.03	0.312 0.312 0.312 0.312 0.500	DZR250-4000-375-E2E DZR250-4000-562-E2E DZR312-4000-500-E2E DZR312-4000-562-E2E DZR375-4000-625-E2E

**Dimensions****Designation**

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.		
<b>4.25</b>	-0.002	5.000	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-4250-625-E2E</b>
<b>4.375</b>	-0.002	4.875	+0.003	0.413	0.25	0.02	0.312	<b>DZR250-4375-375-E2D</b>
<b>4.5</b>	-0.002	5.000	+0.003	0.413	0.25	0.02	0.312	<b>DZR250-4500-375-E2E</b>
	-0.002	5.250	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-4500-625-E2E</b>
<b>4.875</b>	-0.002	5.375	+0.003	0.413	0.25	0.02	0.312	<b>DZR250-4875-375-E2D</b>
<b>5</b>	-0.002	5.500	+0.003	0.413	0.25	0.02	0.312	<b>DZR250-5000-375-E2E</b>
	-0.002	5.500	+0.003	0.618	0.25	0.02	0.312	<b>DZR250-5000-562-E2E</b>
	-0.002	5.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-5000-625-E2E</b>
<b>5.25</b>	-0.002	6.000	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-5250-625-E2E</b>
<b>5.5</b>	-0.002	6.000	+0.003	0.413	0.25	0.02	0.312	<b>DZR250-5500-375-E2E</b>
	-0.002	6.250	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-5500-625-E2E</b>
<b>6</b>	-0.002	6.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-6000-625-E2E</b>
	-0.003	7.000	+0.007	0.825	0.5	0.03	0.625	<b>DZR500-6000-750-E2E</b>
<b>6.5</b>	-0.002	7.250	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-6500-625-E2E</b>
	-0.003	7.500	+0.007	0.825	0.5	0.03	0.625	<b>DZR500-6500-750-E2E</b>
<b>6.75</b>	-0.002	7.500	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-6750-625-E2E</b>
<b>7</b>	-0.002	7.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-7000-625-E2E</b>
	-0.003	8.000	+0.007	0.825	0.5	0.03	0.625	<b>DZR500-7000-750-E2E</b>
<b>7.25</b>	-0.002	8.000	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-7250-625-E2D</b>
<b>7.5</b>	-0.002	8.250	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-7500-625-E2D</b>
<b>7.75</b>	-0.002	8.500	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-7750-625-E2D</b>
<b>7.875</b>	-0.002	8.625	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-7875-625-E2D</b>
<b>8</b>	-0.002	8.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-8000-625-E2E</b>
	-0.003	9.000	+0.007	0.825	0.5	0.03	0.625	<b>DZR500-8000-750-E2E</b>
<b>8.5</b>	-0.003	9.500	+0.007	0.825	0.5	0.03	0.625	<b>DZR500-8500-750-E2E</b>
<b>9</b>	-0.002	9.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-9000-625-E2D</b>
<b>11</b>	-0.002	11.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-11000-625-E2D</b>
	-0.003	12.000	+0.007	0.825	0.5	0.03	0.625	<b>DZR500-11000-750-E2D</b>
<b>12</b>	-0.002	12.750	+0.005	0.688	0.375	0.03	0.500	<b>DZR375-12000-625-E2D</b>

Other sizes are available on request

### 3.8 RBB profile

#### RBB profile data

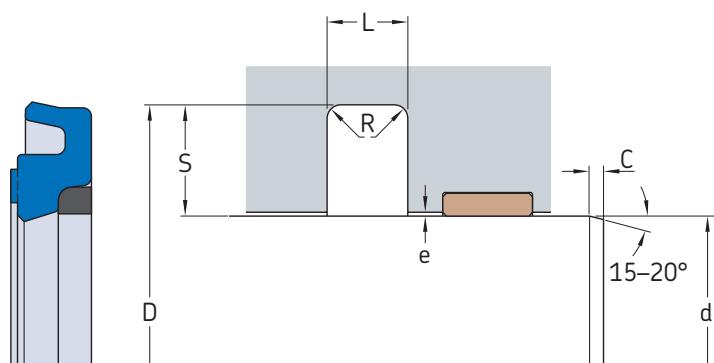


<b>Material codes</b>	Sealing ring: metric sizes → U-1029 inch sizes → U-1023 Anti-extrusion ring: metric sizes → P-2518 inch sizes → 707 For additional information → <b>page 26</b>
<b>Pressure</b>	Up to 690 bar (10 000 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<p>   <span style="color: #0070C0;">-60</span>   <span style="color: #A9A9A9;">-40</span>   <span style="color: #2ECC71;">-30</span>   <span style="color: #2ECC71;">110</span>   <span style="color: #F39C12;">120</span>   <span style="color: #F39C12;">130 [°C]</span>  <span style="color: #A9A9A9;">-75</span>   <span style="color: #A9A9A9;">-40</span>   <span style="color: #A9A9A9;">-20</span>   <span style="color: #F39C12;">230</span>   <span style="color: #F39C12;">250</span>   <span style="color: #F39C12;">265 [°F]</span> </p> <ul style="list-style-type: none"> <li><span style="color: #0070C0;">■</span> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li><span style="color: #A9A9A9;">■</span> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: #2ECC71;">■</span> <b>Recommended operating temperature range for this profile and material</b></li> <li><span style="color: #F39C12;">■</span> Temperatures above the recommended operating range: acceptable only with reduced pressure and/or speed</li> <li><span style="color: #F39C12;">■</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Dimension standards</b>	Some metric sizes fit seal housings in accordance with ISO 7425-2.
<b>Counter-surface</b>	→ <b>page 22</b>

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.8 RBB profile buffer seals, metric sizes

d 25 – 110 mm



#### Maximum extrusion gap e

Radial depth S	$e_{\max}$ at 80 °C (175 °F) for pressures			
	160 bar	250 bar	400 bar	690 bar
mm	mm			
5,35	0,6	0,4	0,25	0,1
7,55 to 7,75	0,8	0,55	0,35	0,15

For additional information → page 34

3.8

#### Dimensions

#### Designation

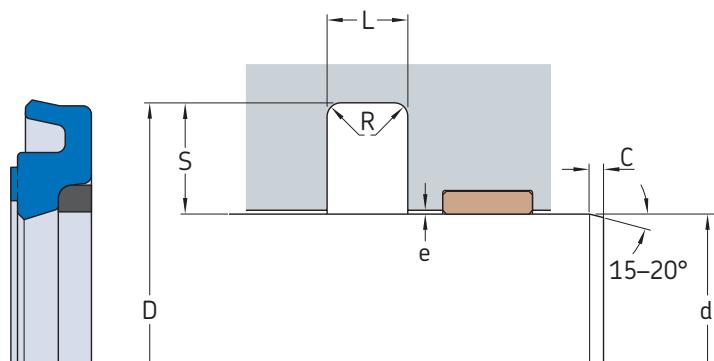
d <sup>1)</sup>	D H9	L +0,2	S	R max.	C min.	Designation
mm					–	
25	35,7	4,2	5,35	0,55	6	RBB-25x35.7x4.2-JOS
30	40,7	4,2	5,35	0,55	6	RBB-30x40.7x4.2-JOS
35	45,7	4,2	5,35	0,55	6	RBB-35x45.7x4.2-JOS
40	55,1	6,3	7,55	0,7	8	RBB-40x55.1x6.3-JOS
50	65,1	6,3	7,55	0,7	8	RBB-50x65.1x6.3-JOS
55	70,1 70,5	6,3	7,55 7,75	0,7 0,7	8	RBB-55x70.1x6.3-JOS RBB-55x70.5x6.3-JOS
60	75,1	6,3	7,55	0,7	8	RBB-60x75.1x6.3-JOS
65	80,1 80,5	6,3	7,55 7,75	0,7 0,7	8	RBB-65x80.1x6.3-JOS RBB-65x80.5x6.3-JOS
70	85,1 85,5	6,3	7,55 7,75	0,7 0,7	8	RBB-70x85.1x6.3-JOS • RBB-70x85.5x6.3-JOS
75	90,1 90,5	6,3	7,55 7,75	0,7 0,7	8	RBB-75x90.1x6.3-JOS RBB-75x90.5x6.3-JOS
80	95,1	6,3	7,55	0,7	8	RBB-80x95.1x6.3-JOS
85	100,1	6,3	7,55	0,7	8	RBB-85x100.1x6.3-JOS
90	105,1 105,5	6,3	7,55 7,75	0,7 0,7	8	RBB-90x105.1x6.3-JOS • RBB-90x105.5x6.3-JOS
95	110,1 110,5	6,3	7,55 7,75	0,7 0,7	8	RBB-95x110.1x6.3-JOS RBB-95x110.5x6.3-JOS
100	115,1	6,3	7,55	0,7	8	RBB-100x115.1x6.3-JOS
105	120,1	6,3	7,55	0,7	8	RBB-105x120.1x6.3-JOS
110	125,1	6,3	7,55	0,7	8	RBB-110x125.1x6.3-JOS

<sup>1)</sup> Tolerance is determined by the rod seal

• Seal housing dimensions in accordance with ISO 7425-2

### 3.8 RBB profile buffer seals, metric sizes

d 115 – 170 mm



#### Maximum extrusion gap e

Radial depth S	$e_{max}$ at 80 °C (175 °F) for pressures			
	160 bar	250 bar	400 bar	690 bar
mm	mm	mm	mm	mm
5,35	0,6	0,4	0,25	0,1
7,55 to 7,75	0,8	0,55	0,35	0,15

For additional information → page 34

#### Dimensions

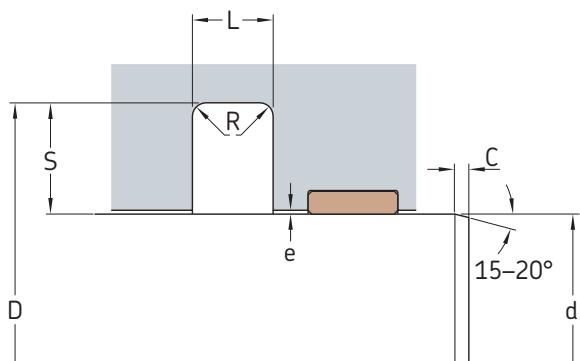
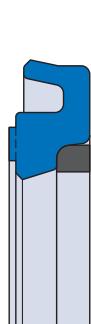
#### Designation

d <sup>1)</sup>	D H9	L +0,2	S	R max.	C min.	Designation
mm					–	
115	130,1	6,3	7,55	0,7	8	RBB-115x130.1x6.3-JOS
120	135,1	6,3	7,55	0,7	8	RBB-120x135.1x6.3-JOS
125	140,1	6,3	7,55	0,7	8	RBB-125x140.1x6.3-JOS
130	145,1	6,3	7,55	0,7	8	RBB-130x145.1x6.3-JOS
140	155,1	6,3	7,55	0,7	8	RBB-140x155.1x6.3-JOS
150	165,1	6,3	7,55	0,7	8	RBB-150x165.1x6.3-JOS
170	185,1	6,3	7,55	0,7	8	RBB-170x185.1x6.3-JOS

Other sizes are available on request

<sup>1)</sup> Tolerance is determined by the rod seal

### 3.8 RBB profile buffer seals, inch sizes d 2 – 8 in.



#### Maximum extrusion gap e

Radial depth S	Series	e <sub>max</sub> at 80 °C (175 °F) for pressures			
		2 300 psi	3 600 psi	5 800 psi	10 000 psi
in.	–	in.			
0.166 to 0.212	RBB2	0.019	0.012	0.008	0.004
0.247 to 0.308	RBB3	0.029	0.019	0.012	0.005
0.32 to 0.415	RBB4	0.037	0.024	0.015	0.007

For additional information → page 34

3.8

#### Dimensions

#### Designation

d in.	Tolerance	D Tolerance	L +0.01	S	R max.	C min.	–	Designation
2	-0.004	2.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-2000-E6T
2.25	-0.003	2.674 +0.004	0.166	0.212	0.022	0.25	–	RBB2-2250-E6T
2.5	-0.003 -0.004	2.924 +0.004 3.116 +0.005	0.166 0.247	0.212 0.308	0.022 0.028	0.25 0.312	–	RBB2-2500-E6T RBB3-2500-E6T
2.75	-0.004	3.366 +0.005	0.247	0.308	0.028	0.312	–	RBB3-2750-E6T
3	-0.004	3.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-3000-E6T
3.5	-0.004	4.116 +0.005	0.247	0.308	0.028	0.312	–	RBB3-3500-E6T
4	-0.004	4.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-4000-E6T
4.5	-0.004	5.116 +0.005	0.247	0.308	0.028	0.312	–	RBB3-4500-E6T
4.75	-0.004	5.366 +0.005	0.247	0.308	0.028	0.312	–	RBB3-4750-E6T
5	-0.004	5.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-5000-E6T
5.5	-0.004	6.116 +0.005	0.247	0.308	0.028	0.312	–	RBB3-5500-E6T
6	-0.004	6.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-6000-E6T
6.5	-0.004	7.116 +0.005	0.247	0.308	0.028	0.312	–	RBB3-6500-E6T
7	-0.004	7.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-7000-E6T
7.25	-0.004	7.866 +0.005	0.247	0.308	0.028	0.312	–	RBB3-7250-E6T
8	-0.004	8.616 +0.005	0.247	0.308	0.028	0.312	–	RBB3-8000-E6T

Other sizes are available on request

### 3.9 S9B profile

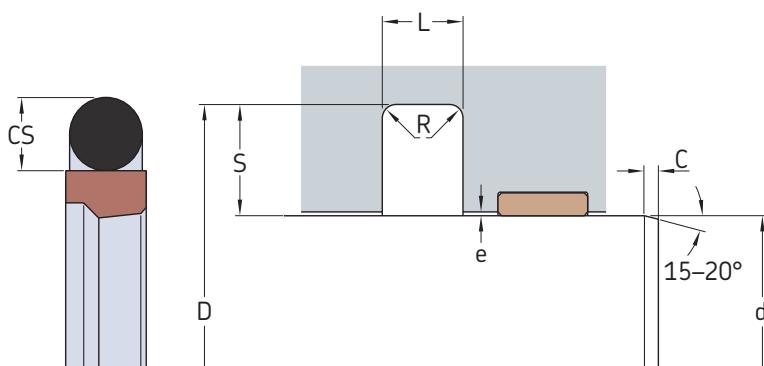
## S9B profile data



<b>Material codes</b>	O-ring energizer: N70/6052 or A-8501 Slide ring: X-ECOPUR or 741 For additional information → <b>page 26</b>																														
<b>Pressure</b>	X-ECOPUR slide ring → up to 600 bar (8 700 psi) PTFE 741 slide ring → up to 400 bar (5 800 psi)																														
<b>Speed</b>	Up to 2 m/s (6.5 ft/s)																														
<b>Temperature range</b>	<p>With X-ECOPUR slide ring:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right; width: 10%;">-40</td> <td style="text-align: right; width: 10%;">-30</td> <td style="text-align: right; width: 10%;">-25</td> <td style="text-align: right; width: 10%; background-color: #008000;"></td> <td style="text-align: right; width: 10%;">110</td> <td style="text-align: right; width: 10%;">120</td> <td style="text-align: right; width: 10%;">130</td> <td style="text-align: right; width: 10%; background-color: #FF0000;"></td> </tr> <tr> <td style="text-align: right;">-40</td> <td style="text-align: right;">-20</td> <td style="text-align: right;">-15</td> <td style="text-align: right; background-color: #008000;"></td> <td style="text-align: right;">230</td> <td style="text-align: right;">250</td> <td style="text-align: right;">265</td> <td style="text-align: right; background-color: #FF0000;"></td> </tr> </table> <p>With 741 slide ring:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right; width: 10%;">-40</td> <td style="text-align: right; width: 10%;">-30</td> <td style="text-align: right; width: 10%;">-20</td> <td style="text-align: right; width: 10%; background-color: #008000;"></td> <td style="text-align: right; width: 10%;">110</td> <td style="text-align: right; width: 10%;">120</td> <td style="text-align: right; width: 10%; background-color: #FF0000;"></td> </tr> <tr> <td style="text-align: right;">-40</td> <td style="text-align: right;">-20</td> <td style="text-align: right;">-5</td> <td style="text-align: right; background-color: #008000;"></td> <td style="text-align: right;">230</td> <td style="text-align: right;">250</td> <td style="text-align: right; background-color: #FF0000;"></td> </tr> </table> <ul style="list-style-type: none"> <li><span style="color: blue;">█</span> Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li><span style="color: grey;">█</span> Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li><span style="color: green;">█</span> <b>Recommended operating temperature range for this profile and these materials</b></li> <li><span style="color: yellow;">█</span> Temperatures above the recommended operating range: acceptable only with reduced pressure, speed, and/or e-gap</li> <li><span style="color: red;">█</span> Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>	-40	-30	-25		110	120	130		-40	-20	-15		230	250	265		-40	-30	-20		110	120		-40	-20	-5		230	250	
-40	-30	-25		110	120	130																									
-40	-20	-15		230	250	265																									
-40	-30	-20		110	120																										
-40	-20	-5		230	250																										
<b>Dimension standards</b>	Some metric sizes fit seal housings in accordance with ISO 7425-2 or ISO 3320.																														
<b>Counter-surface</b>	→ <b>page 22</b>																														

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.9 S9B profile buffer seals, metric sizes d 6 – 18 mm



#### Maximum extrusion gap e with X-ECOPUR slide ring

Radial depth S mm	e <sub>max</sub> at 80 °C (175 °F) for pressures			
	160 bar	250 bar	400 bar	600 bar
2,45 to 2,5	0,3	0,25	0,2	0,1
3,5 to 3,75	0,4	0,3	0,2	0,1
5,35 to 5,5	0,5	0,4	0,3	0,2
7,55 to 7,75	0,5	0,4	0,3	0,2
10,25 to 12,25	0,7	0,5	0,4	0,2

For additional information → page 34

#### Maximum extrusion gap e with 741 slide ring

Radial depth S mm	e <sub>max</sub> at 80 °C (175 °F) for pressures		
	160 bar	250 bar	400 bar
2,45 to 2,5	0,25	0,2	0,15
3,5 to 3,75	0,35	0,25	0,15
5,35 to 5,5	0,4	0,3	0,2
7,55 to 7,75	0,5	0,35	0,25
10,25 to 12,25	0,6	0,45	0,35

For additional information → page 34

3.9

#### Dimensions

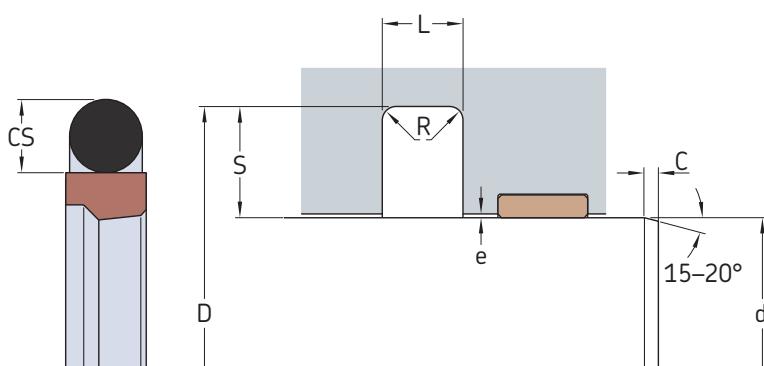
d <sup>1)</sup>	D H9	L +0,2	S	R max.	C min.	CS nom.	Designations	
							With slide ring made of X-ECOPUR	741
mm							–	
6	11	2,2	2,5	0,5	3,5	1,78	• S9B-6x11x2.2	S9B-6x11x2.2-AD1
8	13	2,2	2,5	0,5	3,5	1,78	• S9B-8x13x2.2	S9B-8x13x2.2-AD1
	15,3	3,2	3,65	0,6	3,5	2,62	▲ S9B-8x15.3x3.2	S9B-8x15.3x3.2-AD1
10	15	2,2	2,5	0,5	3,5	1,78	• S9B-10x15x2.2	S9B-10x15x2.2-AD1
	17,3	3,2	3,65	0,6	3,5	2,62	▲ S9B-10x17.3x3.2	S9B-10x17.3x3.2-AD1
12	17	2,2	2,5	0,5	3,5	1,78	• S9B-12x17x2.2	S9B-12x17x2.2-AD1
	19,5	3,2	3,75	0,5	3,5	2,62	• S9B-12x19.5x3.2	S9B-12x19.5x3.2-AD1
14	19	2,2	2,5	0,5	3,5	2,62	• S9B-14x19x2.2	S9B-14x19x2.2-AD1
	21,3	3,2	3,65	0,6	3,5	2,62	▲ S9B-14x21.3x3.2	S9B-14x21.3x3.2-AD1
	21,5	3,2	3,75	0,5	3,5	2,62	• S9B-14x21.5x3.2	S9B-14x21.5x3.2-AD1
16	23,3	3,2	3,65	0,6	3,5	2,62	▲ S9B-16x23.3x3.2	S9B-16x23.3x3.2-AD1
	23,5	3,2	3,75	0,5	3,5	2,62	• S9B-16x23.5x3.2	S9B-16x23.5x3.2-AD1
18	25,3	3,2	3,65	0,6	3,5	2,62	▲ S9B-18x25.3x3.2	S9B-18x25.3x3.2-AD1
	25,5	3,2	3,75	0,5	3,5	2,62	• S9B-18x25.5x3.2	S9B-18x25.5x3.2-AD1

<sup>1)</sup> Tolerance is determined by the rod seal

• Dimensions in accordance with ISO 7425-2

▲ Dimensions in accordance with ISO 3320

### 3.9 S9B profile buffer seals, metric sizes d 20 – 360 mm



#### Maximum extrusion gap e with X-ECOPUR slide ring

Radial depth S mm	e <sub>max</sub> at 80 °C (175 °F) for pressures			
	160 bar	250 bar	400 bar	600 bar
2,45 to 2,5	0,3	0,25	0,2	0,1
3,5 to 3,75	0,4	0,3	0,2	0,1
5,35 to 5,5	0,5	0,4	0,3	0,2
7,55 to 7,75	0,5	0,4	0,3	0,2
10,25 to 12,25	0,7	0,5	0,4	0,2

For additional information → page 34

#### Maximum extrusion gap e with 741 slide ring

Radial depth S mm	e <sub>max</sub> at 80 °C (175 °F) for pressures		
	160 bar	250 bar	400 bar
2,45 to 2,5	0,25	0,2	0,15
3,5 to 3,75	0,35	0,25	0,15
5,35 to 5,5	0,4	0,3	0,2
7,55 to 7,75	0,5	0,35	0,25
10,25 to 12,25	0,6	0,45	0,35

For additional information → page 34

#### Dimensions

d <sup>1)</sup>	D H9	L +0,2	S	R max.	C min.	CS nom.	Designations	
							With slide ring made of X-ECOPUR	741
mm							–	
20	27,5 30,7 31	3,2 4,2 4,2	3,5 5,35 5,5	0,5 1 0,5	4,5 4,5 4,5	2,62 3,53 3,53	• S9B-20x27.5x3.2-AD1 ▲ S9B-20x30.7x4.2-AD1 • S9B-20x31x4.2-AD1	S9B-20x27.5x3.2-AD1 S9B-20x30.7x4.2-AD1 S9B-20x31x4.2-AD1
22	29,5 33	3,2 4,2	3,75 5,5	0,5 0,5	4,5 4,5	2,62 3,53	• S9B-22x29.5x3.2-AD1 • S9B-22x33x4.2-AD1	S9B-22x29.5x3.2-AD1 S9B-22x33x4.2-AD1
25	32,5 35,7 36	3,2 4,2 4,2	3,75 5,35 5,5	0,5 1 0,5	4,5 4,5 4,5	2,62 3,53 3,53	• S9B-25x32.5x3.2-AD1 ▲ S9B-25x35.7x4.2-AD1 • S9B-25x36x4.2-AD1	S9B-25x32.5x3.2-AD1 S9B-25x35.7x4.2-AD1 S9B-25x36x4.2-AD1
28	38,7 39	4,2 4,2	5,35 5,5	1 0,5	4,5 4,5	3,53 3,53	▲ S9B-28x38.7x4.2-AD1 • S9B-28x39x4.2-AD1	S9B-28x38.7x4.2-AD1 S9B-28x39x4.2-AD1
32	42,7 43	4,2 4,2	5,35 5,5	1 0,5	4,5 4,5	3,53 3,53	▲ S9B-32x42.7x4.2-AD1 • S9B-32x43x4.2-AD1	S9B-32x42.7x4.2-AD1 S9B-32x43x4.2-AD1
35	45,7	4,2	5,35	1	4,5	3,53	S9B-35x45.7x4.2-AD1	S9B-35x45.7x4.2-AD1
36	46,7 47	4,2 4,2	5,35 5,5	1 0,5	4,5 4,5	3,53 3,53	▲ S9B-36x46.7x4.2-AD1 • S9B-36x47x4.2-AD1	S9B-36x46.7x4.2-AD1 S9B-36x47x4.2-AD1

<sup>1)</sup> Tolerance is determined by the rod seal  
• Dimensions in accordance with ISO 7425-2  
▲ Dimensions in accordance with ISO 3320

Dimensions							Designations		741
d <sup>1)</sup>	D H9	L +0,2	S	R max.	C min.	CS nom.	With slide ring made of X-ECOPUR		
mm							—		
40	51 55,1	4,2 6,3	5,5 7,55	0,5 1,3	5	3,53 5,33	• S9B-40x51x4.2 ▲ S9B-40x55.1x6.3	S9B-40x51x4.2-AD1 S9B-40x55.1x6.3-AD1	
45	56 60,1	4,2 6,3	5,5 7,55	0,5 1,3	5	3,53 5,33	• S9B-45x56x4.2 ▲ S9B-45x60.1x6.3	S9B-45x56x4.2-AD1 S9B-45x60.1x6.3-AD1	
50	61 65,1	4,2 6,3	5,5 7,55	0,5 1,3	5	3,53 5,33	• S9B-50x61x4.2 ▲ S9B-50x65.1x6.3	S9B-50x61x4.2-AD1 S9B-50x65.1x6.3-AD1	
56	67 71,5	4,2 6,3	5,5 7,75	0,5 0,9	5	3,53 5,33	• S9B-56x67x4.2 • S9B-56x71.5x6.3	S9B-56x67x4.2-AD1 S9B-56x71.5x6.3-AD1	
55	70,1	6,3	7,55	1,3	5	5,33	S9B-55x70.1x6.3	S9B-55x70.1x6.3-AD1	
63	74 78,1 78,5	4,2 6,3 6,3	5,5 7,55 7,75	0,5 1,3 0,9	5	3,53 5,33 5,33	• S9B-63x74x4.2 ▲ S9B-63x78.1x6.3 • S9B-63x78.5x6.3	S9B-63x74x4.2-AD1 S9B-63x78.1x6.3-AD1 S9B-63x78.5x6.3-AD1	
70	85,5	6,3	7,75	0,9	5	5,33	• S9B-70x85.5x6.3	S9B-70x85.5x6.3-AD1	
75	90,1	6,3	7,55	1,3	5	5,33	S9B-75x90.1x6.3	S9B-75x90.1x6.3-AD1	
80	95,1 95,5	6,3 6,3	7,55 7,75	1,3 0,9	5	5,33 5,33	▲ S9B-80x95.1x6.3 • S9B-80x95.5x6.3	S9B-80x95.1x6.3-AD1 S9B-80x95.5x6.3-AD1	
90	105,1 105,5	6,3 6,3	7,55 7,75	1,3 0,9	5	5,33 5,33	▲ S9B-90x105.1x6.3 • S9B-90x105.5x6.3	S9B-90x105.1x6.3-AD1 S9B-90x105.5x6.3-AD1	
100	115,1 115,5	6,3 6,3	7,55 7,75	1,3 0,9	5	5,33 5,33	▲ S9B-100x115.1x6.3 • S9B-100x115.5x6.3	S9B-100x115.1x6.3-AD1 S9B-100x115.5x6.3-AD1	
110	125,1 125,5	6,3 6,3	7,55 7,75	1,3 0,9	5	5,33 5,33	▲ S9B-110x125.1x6.3 • S9B-110x125.5x6.3	S9B-110x125.1x6.3-AD1 S9B-110x125.5x6.3-AD1	
125	140,1 140,5	6,3 6,3	7,55 7,75	1,3 0,9	5	5,33 5,33	▲ S9B-125x140.1x6.3 • S9B-125x140.5x6.3	S9B-125x140.1x6.3-AD1 S9B-125x140.5x6.3-AD1	
140	155,1 155,5	6,3 6,3	7,55 7,75	1,3 0,9	5	5,33 5,33	▲ S9B-140x155.1x6.3 • S9B-140x155.5x6.3	S9B-140x155.1x6.3-AD1 S9B-140x155.5x6.3-AD1	
160	175,1 175,5 181	6,3 6,3 8,1	7,55 7,75 10,5	1,3 0,9 0,9	5 5 5	5,33 5,33 7,0	▲ S9B-160x175.1x6.3 • S9B-160x175.5x6.3 • S9B-160x181x8.1	S9B-160x175.1x6.3-AD1 S9B-160x175.5x6.3-AD1 S9B-160x181x8.1-AD1	
180	195,1 195,5 201	6,3 6,3 8,1	7,55 7,75 10,5	1,3 0,9 0,9	5 5 5	5,33 5,33 7,0	▲ S9B-180x195.1x6.3 • S9B-180x195.5x6.3 • S9B-180x201x8.1	S9B-180x195.1x6.3-AD1 S9B-180x195.5x6.3-AD1 S9B-180x201x8.1-AD1	
200	215,1 221	6,3 8,1	7,55 10,5	1,3 0,9	5 5	5,33 7,0	• S9B-200x215.1x6.3 • S9B-200x221x8.1	S9B-200x215.1x6.3-AD1 S9B-200x221x8.1-AD1	
220	241	8,1	10,5	0,9	6	7,0	• S9B-220x241x8.1	S9B-220x241x8.1-AD1	
240	260,5	8,1	10,25	1,8	6	7,0	S9B-240x260.5x8.1	S9B-240x260.5x8.1-AD1	
250	271	8,1	10,5	0,9	6	7,0	• S9B-250x271x8.1	S9B-250x271x8.1-AD1	
280	304,5	8,1	12,25	0,9	6	7,0	• S9B-280x304.5x8.1	S9B-280x304.5x8.1-AD1	
320	344,5	8,1	12,25	0,9	6	7,0	• S9B-320x344.5x8.1	S9B-320x344.5x8.1-AD1	
360	384,5	8,1	12,25	0,9	6	7,0	• S9B-360x384.5x8.1	S9B-360x384.5x8.1-AD1	

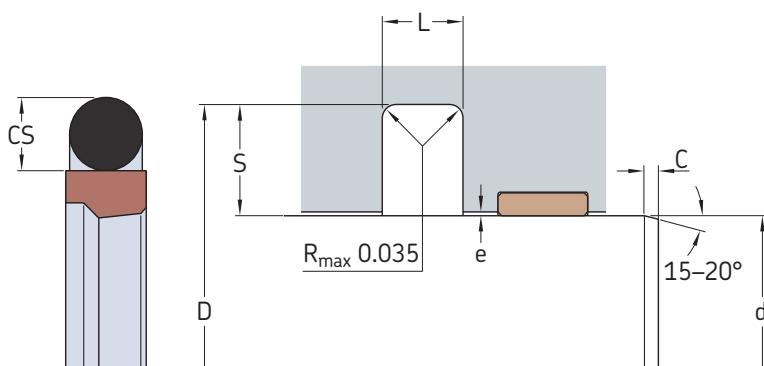
Other sizes are available on request

<sup>1)</sup> Tolerance is determined by the rod seal

• Dimensions in accordance with ISO 7425-2

▲ Dimensions in accordance with ISO 3320

### 3.9 S9B profile buffer seals, inch sizes d 1–10 in.



#### Maximum extrusion gap e with X-ECOPUR slide ring

Radial depth	Series	$e_{max}$ at 80 °C (175 °F) for pressures	2 300 psi	3 600 psi	5 800 psi	8 700 psi
S	in.	in.				
0.149	S9B1	0.016	0.012	0.008	0.004	
0.212	S9B2	0.02	0.016	0.012	0.008	
0.308	S9B3	0.02	0.016	0.012	0.008	
0.415	S9B4	0.028	0.02	0.016	0.008	

For additional information → page 34

#### Maximum extrusion gap e with 741 slide ring

Radial depth	Series	$e_{max}$ at 80 °C (175 °F) for pressures	2 300 psi	3 600 psi	5 800 psi
S	in.	in.			
0.149	S9B1	0.014	0.01	0.006	
0.212	S9B2	0.016	0.012	0.008	
0.308	S9B3	0.02	0.014	0.01	
0.415	S9B4	0.024	0.018	0.014	

For additional information → page 34

#### Dimensions

**Designations**  
With slide ring made of  
X-ECOPUR 741

d	Tolerance	D	Tolerance	L +0.01	S	C min.	CS nom.		
in.								—	
<b>1</b>	-0.002 -0.003	1.298 1.424	+0.003 +0.004	0.126	0.149 0.212	0.14 0.18	0.103 0.139	<b>S9B1-1000</b> <b>S9B2-1000</b>	<b>S9B1-1000-AD1</b> <b>S9B2-1000-AD1</b>
<b>1.125</b>	-0.002	1.423	+0.003	0.126	0.149	0.14	0.103	<b>S9B1-1125</b>	<b>S9B1-1125-AD1</b>
<b>1.25</b>	-0.002 -0.003	1.548 1.674	+0.003 +0.004	0.126	0.149 0.212	0.14 0.18	0.103 0.139	<b>S9B1-1250</b> <b>S9B2-1250</b>	<b>S9B1-1250-AD1</b> <b>S9B2-1250-AD1</b>
<b>1.375</b>	-0.003	1.799	+0.004	0.166	0.212	0.18	0.139	<b>S9B2-1375</b>	<b>S9B2-1375-AD1</b>
<b>1.5</b>	-0.002 -0.003 -0.004	1.798 1.924 2.116	+0.003 +0.004 +0.005	0.126	0.149 0.212 0.308	0.14 0.18 0.2	0.103 0.139 0.21	<b>S9B1-1500</b> <b>S9B2-1500</b> <b>S9B3-1500</b>	<b>S9B1-1500-AD1</b> <b>S9B2-1500-AD1</b> <b>S9B3-1500-AD1</b>
<b>1.75</b>	-0.002 -0.003 -0.004	2.048 2.174 2.366	+0.003 +0.004 +0.005	0.126	0.149 0.212 0.308	0.14 0.18 0.2	0.103 0.139 0.21	<b>S9B1-1750</b> <b>S9B2-1750</b> <b>S9B3-1750</b>	<b>S9B1-1750-AD1</b> <b>S9B2-1750-AD1</b> <b>S9B3-1750-AD1</b>
<b>1.875</b>	-0.003	2.299	+0.004	0.166	0.212	0.18	0.139	<b>S9B2-1875</b>	<b>S9B2-1875-AD1</b>
<b>2</b>	-0.003 -0.004	2.424 2.616	+0.004 +0.005	0.166	0.212 0.308	0.18 0.2	0.139 0.21	<b>S9B2-2000</b> <b>S9B3-2000</b>	<b>S9B2-2000-AD1</b> <b>S9B3-2000-AD1</b>
<b>2.25</b>	-0.003 -0.004	2.674 2.866	+0.004 +0.005	0.166	0.212 0.308	0.18 0.2	0.139 0.21	<b>S9B2-2250</b> <b>S9B3-2250</b>	<b>S9B2-2250-AD1</b> <b>S9B3-2250-AD1</b>
<b>2.5</b>	-0.003 -0.004	2.924 3.116	+0.004 +0.005	0.166	0.212 0.308	0.18 0.2	0.139 0.21	<b>S9B2-2500</b> <b>S9B3-2500</b>	<b>S9B2-2500-AD1</b> <b>S9B3-2500-AD1</b>
<b>2.625</b>	-0.004 -0.003 -0.004	3.241 3.049 3.241	+0.005 +0.004 +0.005	0.247	0.308 0.212 0.308	0.2 0.18 0.2	0.21 0.139 0.21	<b>S9B3-2625</b> <b>S9B2-2750</b> <b>S9B3-2750</b>	<b>S9B3-2625-AD1</b> <b>S9B2-2750-AD1</b> <b>S9B3-2750-AD1</b>

**Dimensions****Designations**With slide ring made of  
X-ECOPUR 741

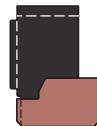
d	Tolerance	D	Tolerance	L +0.01	S	C min.	CS nom.	
in.								-
3	-0.003 -0.004	3.424 3.616	+0.004 +0.005	0.166 0.247	0.212 0.308	0.18 0.2	0.139 0.21	S9B2-3000 S9B3-3000
3.25	-0.004	3.866	+0.005	0.247	0.308	0.2	0.21	S9B3-3250
3.5	-0.004	4.116	+0.005	0.247	0.308	0.2	0.21	S9B3-3500
3.75	-0.004	4.366	+0.005	0.247	0.308	0.2	0.21	S9B3-3750
4	-0.003 -0.004 -0.005	4.424 4.616 4.83	+0.004 +0.005 +0.006	0.166 0.247 0.32	0.212 0.308 0.415	0.18 0.2 0.25	0.139 0.21 0.275	S9B2-4000 S9B3-4000 S9B4-4000
4.25	-0.004 -0.005	4.866 5.08	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-4250 S9B4-4250
4.5	-0.004 -0.005	5.116 5.33	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-4500 S9B4-4500
4.75	-0.004 -0.005	5.366 5.58	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-4750 S9B4-4750
5	-0.004 -0.005	5.616 5.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-5000 S9B4-5000
5.25	-0.004 -0.005	5.866 6.08	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-5250 S9B4-5250
5.5	-0.004 -0.005	6.116 6.33	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-5500 S9B4-5500
5.75	-0.004 -0.005	6.366 6.58	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-5750 S9B4-5750
6	-0.004 -0.005	6.616 6.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-6000 S9B4-6000
6.25	-0.004 -0.005	6.866 7.08	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-6250 S9B4-6250
6.5	-0.004 -0.005	7.116 7.33	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-6500 S9B4-6500
6.75	-0.004 -0.005	7.366 7.58	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-6750 S9B4-6750
7	-0.004 -0.005	7.616 7.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-7000 S9B4-7000
7.25	-0.004 -0.005	7.866 8.08	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-7250 S9B4-7250
7.5	-0.004 -0.005	8.116 8.33	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-7500 S9B4-7500
7.75	-0.004 -0.005	8.366 8.58	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-7750 S9B4-7750
8	-0.004 -0.005	8.616 8.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.2 0.25	0.21 0.275	S9B3-8000 S9B4-8000
8.5	-0.005	9.33	+0.006	0.32	0.415	0.25	0.275	S9B4-8500
9	-0.005	9.83	+0.006	0.32	0.415	0.25	0.275	S9B4-9000
9.5	-0.005	10.33	+0.006	0.32	0.415	0.25	0.275	S9B4-9500
10	-0.005	10.83	+0.006	0.32	0.415	0.25	0.275	S9B4-10000

Other sizes are available on request

3.9

### 3.10 RSB profile

## RSB profile data

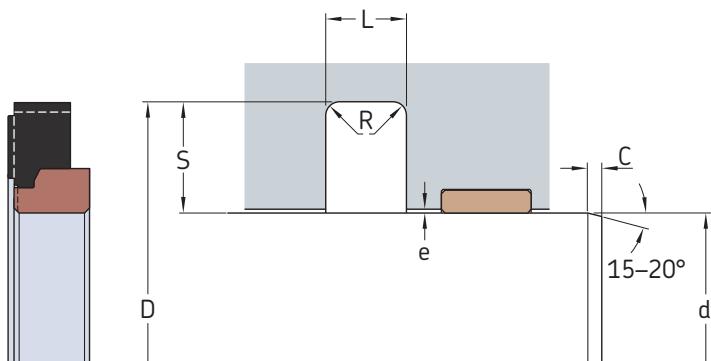


<b>Material codes</b>	Slide ring: 741 Energizer: A-8501 For additional information → <b>page 26</b>
<b>Pressure</b>	Up to 400 bar (5 800 psi)
<b>Speed</b>	Up to 1 m/s (3.2 ft/s)
<b>Temperature range</b>	<p>-40    -30    -20    110    120 [°C]  -40    -20    -5    230    250 [°F]</p> <ul style="list-style-type: none"> <li>■ Extreme low temperature range: may be intermittently exposed (e.g. cold start-up) without seal damage, but seal performance may be compromised while in this range</li> <li>■ Temperatures below the recommended operating range: seal performance depends on system design (precision guiding arrangement recommended)</li> <li>■ <b>Recommended operating temperature range for this profile and material</b></li> <li>■ Extreme high temperature range: only occasional short-term exposure (e.g. cylinder in curing oven of a powder coating process)</li> </ul>
<b>Counter-surface</b>	→ <b>page 22</b>

Maximum values of application parameters (e.g. pressure, speed, temperature, e-gap) should not be applied continuously nor simultaneously.

### 3.10 RSB profile buffer seals, inch sizes

d 1.25 – 6 in.



#### Maximum extrusion gap e

Radial depth S	Series	e <sub>max</sub> at 80 °C (175 °F) for pressures	2 300 psi	3 600 psi	5 800 psi
in.	–	in.			
0.166 to 0.212	RSB2	0.014	0.01	0.008	
0.247 to 0.308	RSB3	0.018	0.012	0.008	
0.32 to 0.415	RSB4	0.02	0.014	0.01	

For additional information → page 34

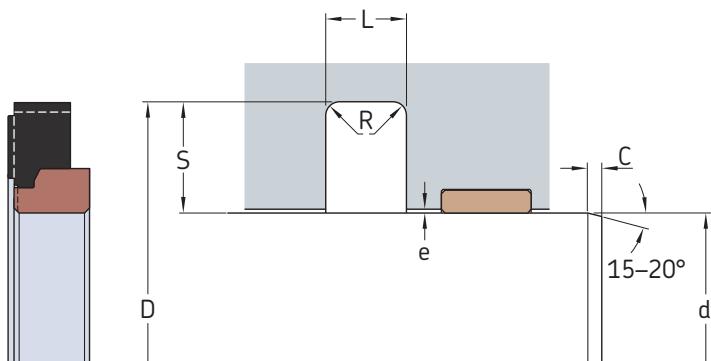
3.10

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	–	Designation
in.									
1.25	-0.003	1.674	+0.004	0.166	0.212	0.022	0.25	–	RSB2-1250-AD2
1.5	-0.003 -0.004	1.924 2.116	+0.004 +0.005	0.166 0.247	0.212 0.308	0.022 0.028	0.25 0.312	–	RSB2-1500-AD2 RSB3-1500-AD2
1.75	-0.003	2.174	+0.004	0.166	0.212	0.022	0.25	–	RSB2-1750-AD2
2	-0.004	2.616	+0.005	0.247	0.308	0.028	0.312	–	RSB3-2000-AD2
2.25	-0.003 -0.004	2.674 2.866	+0.004 +0.005	0.166 0.247	0.212 0.308	0.022 0.028	0.25 0.312	–	RSB2-2250-AD2 RSB3-2250-AD2
2.375	-0.004	2.991	+0.005	0.247	0.308	0.028	0.312	–	RSB3-2375-AD2
2.5	-0.003 -0.004	2.924 3.116	+0.004 +0.005	0.166 0.247	0.212 0.308	0.022 0.028	0.25 0.312	–	RSB2-2500-AD2 RSB3-2500-AD2
2.75	-0.004	3.366	+0.005	0.247	0.308	0.028	0.312	–	RSB3-2750-AD2
3	-0.004	3.616	+0.005	0.247	0.308	0.028	0.312	–	RSB3-3000-AD2
3.25	-0.004	3.866	+0.005	0.247	0.308	0.028	0.312	–	RSB3-3250-AD2
3.5	-0.004	4.116	+0.005	0.247	0.308	0.028	0.312	–	RSB3-3500-AD2
3.75	-0.004	4.366	+0.005	0.247	0.308	0.028	0.312	–	RSB3-3750-AD2
4	-0.004	4.616	+0.005	0.247	0.308	0.028	0.312	–	RSB3-4000-AD2
4.5	-0.004 -0.005	5.116 5.33	+0.005 +0.006	0.247 0.32	0.308 0.415	0.028 0.035	0.312 0.312	–	RSB3-4500-AD2 RSB4-4500-AD2
5	-0.004 -0.005	5.616 5.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.028 0.035	0.312 0.312	–	RSB3-5000-AD2 RSB4-5000-AD2
5.25	-0.004	5.866	+0.005	0.247	0.308	0.028	0.312	–	RSB3-5250-AD2
5.5	-0.004	6.116	+0.005	0.247	0.308	0.028	0.312	–	RSB3-5500-AD2
6	-0.004 -0.005	6.616 6.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.028 0.035	0.312 0.312	–	RSB3-6000-AD2 RSB4-6000-AD2

### 3.10 RSB profile buffer seals, inch sizes d 6.5 – 13 in.



#### Maximum extrusion gap e

Radial depth S	Series	e <sub>max</sub> at 80 °C (175 °F) for pressures	2 300 psi	3 600 psi	5 800 psi
in.	–	in.			
0.166 to 0.212	RSB2	0.014	0.01	0.008	
0.247 to 0.308	RSB3	0.018	0.012	0.008	
0.32 to 0.415	RSB4	0.02	0.014	0.01	

For additional information → page 34

#### Dimensions

#### Designation

d	Tolerance	D	Tolerance	L +0.01	S	R max.	C min.	Designation
in.							–	
<b>6.5</b>	-0.005	7.33	+0.006	0.32	0.415	0.035	0.312	<b>RSB4-6500-AD2</b>
<b>7</b>	-0.004 -0.005	7.616 7.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.028 0.035	0.312 0.312	<b>RSB3-7000-AD2</b> <b>RSB4-7000-AD2</b>
<b>8</b>	-0.004 -0.005	8.616 8.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.028 0.035	0.312 0.312	<b>RSB3-8000-AD2</b> <b>RSB4-8000-AD2</b>
<b>8.5</b>	-0.004	9.116	+0.005	0.247	0.308	0.028	0.312	<b>RSB3-8500-AD2</b>
<b>9</b>	-0.005	9.83	+0.006	0.32	0.415	0.035	0.312	<b>RSB4-9000-AD2</b>
<b>10</b>	-0.005	10.83	+0.006	0.32	0.415	0.035	0.312	<b>RSB4-10000-AD2</b>
<b>10.5</b>	-0.004	11.116	+0.005	0.247	0.308	0.028	0.312	<b>RSB3-10500-AD2</b>
<b>11</b>	-0.005	11.83	+0.006	0.32	0.415	0.035	0.312	<b>RSB4-11000-AD2</b>
<b>13</b>	-0.004 -0.005	13.616 13.83	+0.005 +0.006	0.247 0.32	0.308 0.415	0.028 0.035	0.312 0.312	<b>RSB3-13000-AD2</b> <b>RSB4-13000-AD2</b>

Other sizes are available on request

3.10

## Rod and buffer seals

The rod and buffer seals listed in this catalogue represent the preferred profiles in common sizes. SKF supplies many additional sizes and profiles and provides customized solutions for the toughest application conditions. The following profiles are also manufactured in series production. For additional information about these profiles or if the application requires a solution not provided in this catalogue, contact SKF.

### Rod locking T-seals

LTR profiles (→ fig. 15) have a T-shaped rubber sealing ring supported by patented locking anti-extrusion rings on both sides. Therefore, they can be used as double-acting rod seals for special applications. For example, in tandem cylinders that require a rod seal to take pressure from both sides. For additional information about materials and sizes, contact SKF.

### TEFLATHANE seals

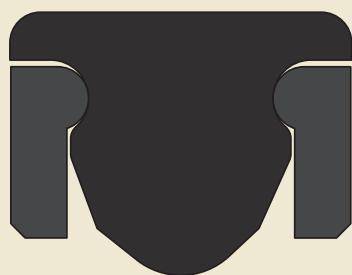
These rod seals of various designs and material combinations incorporate an anti-extrusion ring that is bonded into the body. They are suitable for high temperature and/or short-stroke applications. For example, U-cup seals made of special high-temperature polyurethane bonded to a PTFE anti-extrusion ring in rock hammer applications (→ fig. 16). For additional information about materials and sizes, contact SKF.

### Chevron V-packing sets

These moulded or machined chevron sets (→ fig. 17) are available in a wide variety of materials and designs. They typically consist of a base ring, one or several chevron rings, and a header ring. These rings can be made of different materials to achieve their own specific functional benefits. For additional information about designs, materials and sizes, contact SKF.

Fig. 15

#### Rod locking T-seal



LTR

Fig. 16

#### TEFLATHANE seal example

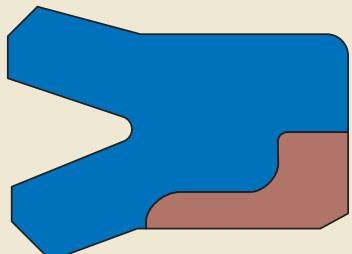
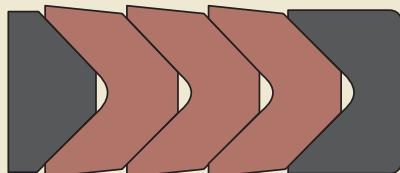


Fig. 17

#### Chevron set example



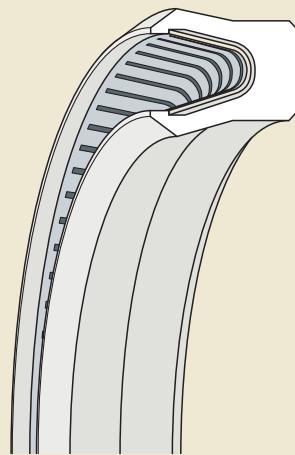
More rod and buffer seals

## SPECTRASEAL

SPECTRASEAL is a PTFE seal that can be used as a single-acting rod seal (→ **fig. 18**). The metal spring energizer adds radial load to the seal lip contact areas. SPECTRASEAL is intended for extreme condition applications including high temperature or aggressive media. For additional information, contact SKF.

Fig. 18

SPECTRASEAL



3

## Rod and buffer seals

### Customized machined seal profiles

SKF can manufacture a wide variety of rod seal profiles with different materials and sizes with its industry-leading SKF SEAL JET production system (→ **fig. 19**). For additional information about customized machined profiles, refer to publication *Customized machined seals – Product range* or contact SKF.

More rod and buffer seals

Fig. 19

SKF SEAL JET profile examples



S01-P



S01-R



S02-P



S02-PD



S02-R



S02-RD



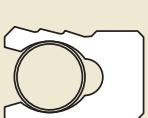
S02-S



S03-P



S03-F



S03-S



S04-P



S04-PD



S05-P



S05-R



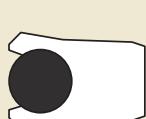
S06-P



S06-R



S07-P



S07-F



S08-P



S08-PE



S08-R



S09-E



S09-ES



S09-D



S09-DS



S09-P



S1012-T



S1012-M



S1315-T



S16-A



S16-B



S17-P



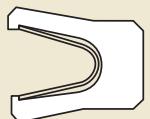
S17-R



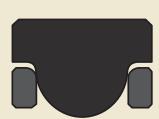
S18-P



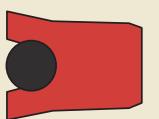
S18-R



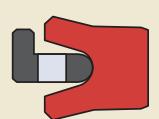
S19-F



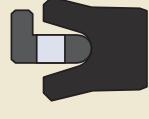
S20-R



S21-P



S22-P



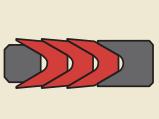
S22-R



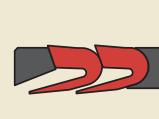
S24-P



S2527-F



S2931-F



S32-P



S35-P

3

