Turcon® Stepseal® V

Single-acting

Rubber-energized plastic-faced seal

Material:
Turcon®, Zurcon® and Elastomer

Notes

Turcon® Stepseal® V*

Description

Stepseal® V is based on the dynamic, unidirectional Turcon® Stepseal® sealing concept. During the extending stroke of the rod, the contact force on the sealing edge creates high local sealing pressure and limits the formation of fluid film under the seal. When the rod is retracted, the Stepseal® sealing face supports hydrodynamic back-pumping of the fluid film, and ensures leak-free sealing efficiency with low friction and long service life.

In long-stroke cylinders and equipment operating with low speed during retraction, it has been found that hydrodynamic back-pumping may become insufficient to prevent build-up of pressure in the seal system behind the primary seal. Pressure build-up in the seal system leads to leakage, increased friction and wear, and may ultimately require replacement of the seals. The usual precaution in such equipment has been to provide space for a buffer volume behind the primary seal or to install a drain line.

First invented by Trelleborg Sealing Solutions, the built-in check valve function eliminates pressure build-up and so render buffer volumes and drain lines obsolete.

Stepseal® V has the efficient seal performance and outstanding service life of the Turcon® Stepseal® range and the reliable prevention of pressure build-up brought by a refined check valve function. Stepseal® V is available in high-grade Turcon® or Zurcon® materials with outstanding sliding and wear resistance properties.

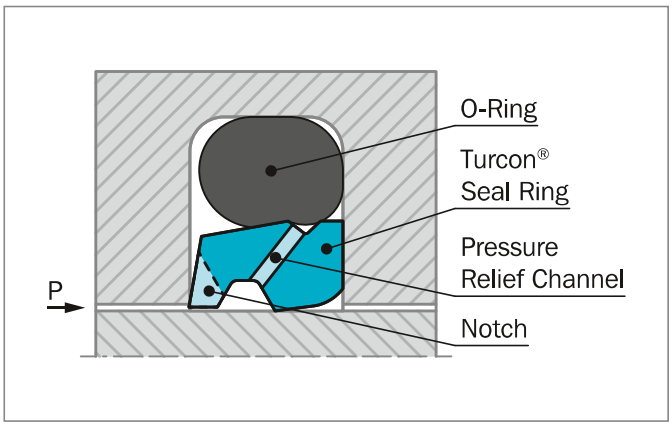


Figure 23: Turcon® Stepseal® V with tight axial groove fit

ADVANTAGES

- Check valve function of O-Ring eliminates risk of fluid bypassing the seal during pressure loading when pressurized
- No pressure build-up on secondary sealing element and Excluder®
- Independent of any speed relation of counter surface
- Independent of stroke length
- High tolerance to hardware non-concentricity and radial play
- Minimum contribution of friction of secondary sealing element and/or Excluder®
- Minimum wear of secondary sealing element and/or Excluder®
- Increased leakage control
- Prolonged seal life
- Increased operational reliability
- Fits standard Stepseal® 2K groove dimensions as well as ISO 7425 seal housings

APPLICATION EXAMPLES

- Mobile hydraulics
- Construction equipment
- Crane boom cylinders
- Presses
- Injection molding machines
- Clamp cylinders
- Wind power cylinders
- Long stroke cylinders
- Waterpower cylinders
- Storm barrier cylinders
- Tensioner cylinders
- Theater hydraulics
- Safety systems

* Patent DE 9654357; 24. 2. 996

CHARACTERISTICS

- Primary seal with hydrostatic ventilation
- Check valve function
- Hydrodynamic back-pumping
- Stabilized position in the groove
- Prolonged seal life
- Increased leakage control

IMPROVED FRICTION PERFORMANCE

Turcon® Stepseal® V offers a uniform, low friction characteristic to the sealing system throughout its whole life by preventing undefined pressurization of the secondary seal element.

FEATURES

Stepseal® V has been developed to meet continuously increasing demands on sealing systems. In dynamic applications, Stepseal® V brings efficient, reliable sealing performance under even the most demanding service conditions. The high seal efficiency and refined valve function of Stepseal® V eliminates seal system pressure build-up between tandem rod seal configuration and makes buffer volume between the seals a thing of the past.

In rod seal systems, Stepseal® V is preferably used together with a secondary seal from the range of Turcon® and Zurcon® rod seals, or with only a double-acting Turcon® Excluder® or Scraper.

Applied as a piston seal, Stepseal® V is used with a double-acting seal from the Turcon® range of piston seals. Under extreme performance requirements Stepseal® V offers improved leakage control, extended service life and increased reliability.

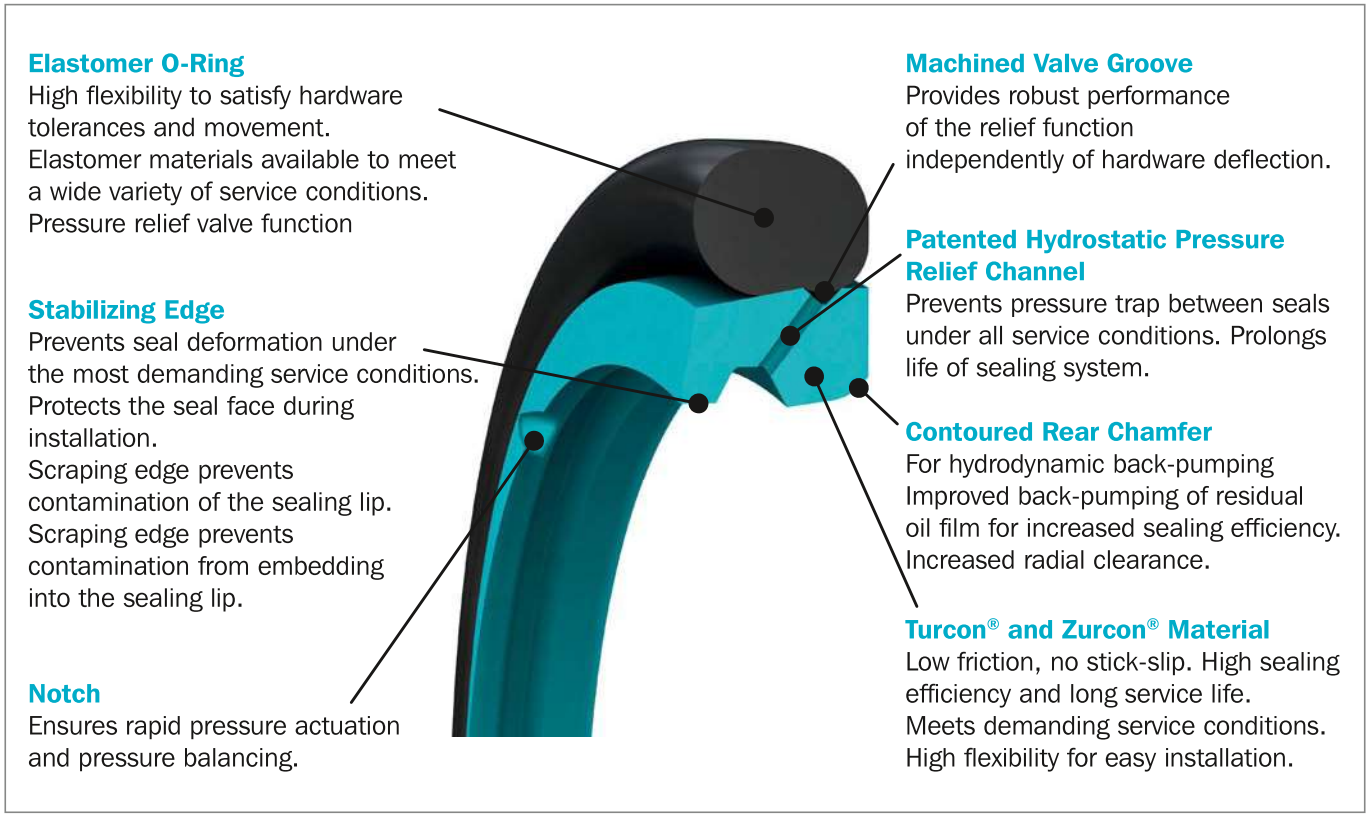


Figure 24: Turcon® Stepseal® V design features

OPERATING CONDITIONS

Pressure:	Up to 50 MPa (Turcon® M12) Up to 60 MPa (Turcon® T08 and Zurcon® Z53
Speed:	Up to 15 m/s with linear movements, frequency up to 15 Hz
Temperature:	-45 °C to +200 °C depending on seal and O-Ring material
Media:	Mineral oil based hydraulic fluids, flame retardant hydraulic fluids, environmentally friendly hydraulic fluids (bio-oils), phosphate ester, water and others, depending on the seal and O-Ring material - see Table 16.
Clearance:	The maximum permissible radial clearance S_{max} is shown in Table 17, as a function of the operating pressure and functional diameter.

IMPORTANT NOTE

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

SERIES

Different cross section sizes are recommended as a function of the seal diameters. Table 15 shows the relationship between the series number according to the seal diameter range and the different application class sizes:

Standard application:	General applications without exceptional operating conditions.
Light application:	Applications with demands for reduced friction or for smaller grooves.
Heavy-duty application:	For exceptional operating loads such as high pressures, pressure peaks, etc.

Table 15: Available Range

Series No.	Rod Diameter d_N f8/h9
RSV20	12.0 - 455.0
RSV30	12.0 - 655.0
RSV40	38.0 - 655.0
RSV80	140.0 - 999.9
RSV50	160.0 - 999.9
RSV5X	1,000.0 - 1,200.0
RSV60	650.0 - 999.9
RSV6X	1,000.0 - 2,600.0

For the Standard Recommendations Application range see Table 15.

REDUNDANT SEALING SYSTEM

In many applications, secondary seal systems are needed. Figure 25 shows such a tandem configuration with the Stepseal® V.

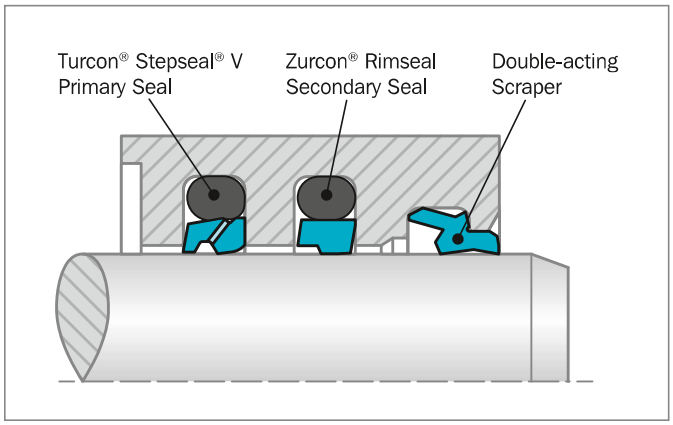


Figure 25: Turcon® Stepseal® 2K and Zurcon® Rimseal in tandem configuration

The integrated check valve function of Stepseal® V renders pressure trapping between the primary and secondary seal impossible and a dedicated buffer volume between them is unnecessary.

Depending on the application and the operating conditions, the combination of different materials offers a further improvement in the sealing efficiency and the service life of the system. For example in hydraulic cylinders subject to high loads and under rough operating conditions the primary seal should be made of Turcon® and the secondary seal of Zurcon® .

INSTALLATION INSTRUCTIONS

Stepseal® V is installed according to information on page 37 to 38

Closed groove installation applies the same dimensions as for Turcon® Stepseal® 2K in Table 6 on page 38.

RECOMMENDED MATERIALS

The following material combinations have proven effective for hydraulic applications:

Turcon® Stepseal® V in Turcon® M12
All-round material for light to heavy hydraulic applications with linear, short stroke or helical movements in mineral oils, flame retardant hydraulic fluids, phospate ester, bio-oils or fluids with low lubricating properties:

O-Ring:	NBR 70 Shore A	N
	FKM 70 Shore A	V

Set code: M12N or M12V

Turcon® Stepseal® V in Turcon® T46
For medium to heavy applications with linear movements in mineral oils and other media with good lubrication:

O-Ring:	NBR 70 Shore A	N
	FKM 70 Shore A	V

Set code: T46N or T46V

For specific applications, all Turcon® materials are available.

Other material combinations are listed in Table 16.

Table 16: Turcon® and Zurcon® Materials for Stepseal® V

Material, Applications, Properties	Code	O–Ring Material Shore A	Code	O-Ring Operating Temp.* °C	Mating Surface Material	MPa max. Dyna-mic
Turcon® M12 First material choice for seals in linear motion Overall improved properties For new constructions and updating For all commonly applied hydraulic fluids including fluids with low lubrication performance Lowest friction and best sliding properties Lowest wear on seals Improved absorption of abrasive contaminants Low wear or abrasion of counter surface BAM tested Mineral fiber and Additives filled Color: Dark gray	M12	NBR 70	N	-30 to +100	Steel Steel hardened Steel chrome plated (rod) Steel plated (rod) Cast iron Stainless steel Titanium	50
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
Turcon® T05 For lubricating fluids Also for gas service Very low friction Very good sliding and sealing properties Color: Turquoise	T05	NBR 70	N	-30 to +100	Steel Steel hardened Steel chrome plated (rod)	20
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
Turcon® T08 For lubricating fluids and linear motion Very high compressive strength and extrusion resistance Hard counter surfaces are recommended Bronze filled Color: Light to dark brown, which may have variations in shading	T08	NBR 70	N	-30 to +100	Steel hardened Steel chrome plated (rod) Cast iron	60
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
Turcon® T10 For hydraulic and pneumatic For lubricating and non-lubricating fluids High extrusion resistance Good chemical resistance Not for electrically conducting fluids BAM tested Carbon, graphite filled Color: Black	T10	NBR 70	N	-30 to +100	Steel Steel hardened Steel chrome plated (rod) Stainless steel	40
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
		EPDM 70	E**	-45 to +145		
Turcon® T29 For lubricating and non-lubricating fluids Good extrusion resistance Surface texture is not suitable for gas sealing Not for electrically conducting fluids Carbon fiber filled Color: Gray	T29	NBR 70	N	-30 to +100	Steel Steel hardened Steel chrome plated (rod) Cast iron Stainless steel	30
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
		EPDM 70	E**	-45 to +145		

Table continues on next page

Material, Applications, Properties	Code	O–Ring Material Shore A	Code	O-Ring Operating Temp.* °C	Mating Surface Material	MPa max. Dyna-mic
Turcon® T40 For lubricating and non-lubricating fluids High frequency and short strokes Water hydraulics Surface texture is not suitable for gas sealing Carbon fiber filled Color: Gray	T40	NBR 70	N	-30 to +100	Steel Steel hardened Steel chrome plated (rod) Cast iron Stainless steel Aluminum	25
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
		EPDM 70	E**	-45 to +145		
Turcon® T46 For lubricated hydraulics in linear motion High compressive strength High extrusion resistance Very good sliding and wear properties BAM tested Bronze filled Color: Light to dark brown, which may have variations in shading	T46	NBR 70	N	-30 to +100	Steel hardened Steel chrome plated (rod) Cast iron	50
		NBR 70 Low temp.	T	-45 to +80		
		FKM 70	V	-10 to +200		
Zurcon® Z53*** For mineral oil based fluids Very high abrasion and extrusion resistance For counter surface with rougher surface finish Limited chemical resistance Max. working temperature +110 °C Cast polyurethane Color: Yellow to light-brown	Z53	NBR 70	N	-30 to +100	Steel Steel hardened Steel chrome plated (rod) Cast iron Stainless steel Ceramic coating	60
		NBR 70 Low temp.	T	-45 to +80		
Zurcon® Z80 For lubricating and non-lubricating fluids Water based fluids, air and gases Dry air pneumatics High abrasion and extrusion resistance For service in abrasive conditions and media with particles Good chemical resistance Limited temperature capability (-60 to +80 °C) UHMWPE (Ultra High Molecular Weight Polyethylene) Color: White to off-white	Z80	NBR 70	N	-30 to (+100)	Steel Steel hardened Steel chrome plated (rod) Stainless steel Aluminum Ceramic coating	35
		NBR 70 Low temp.	T	-45 to +80		
		EPDM 70	E**	-45 to (+145)		

* The O-Ring operation temperature is only valid in mineral hydraulic oil (except EPDM).

** Material not suitable for mineral oils.

*** Max. diameter 2,200 mm.

BAM: Tested by "Bundesanstalt Materialprufung, Germany".

Highlighted materials are recommended.

Installation Recommendation

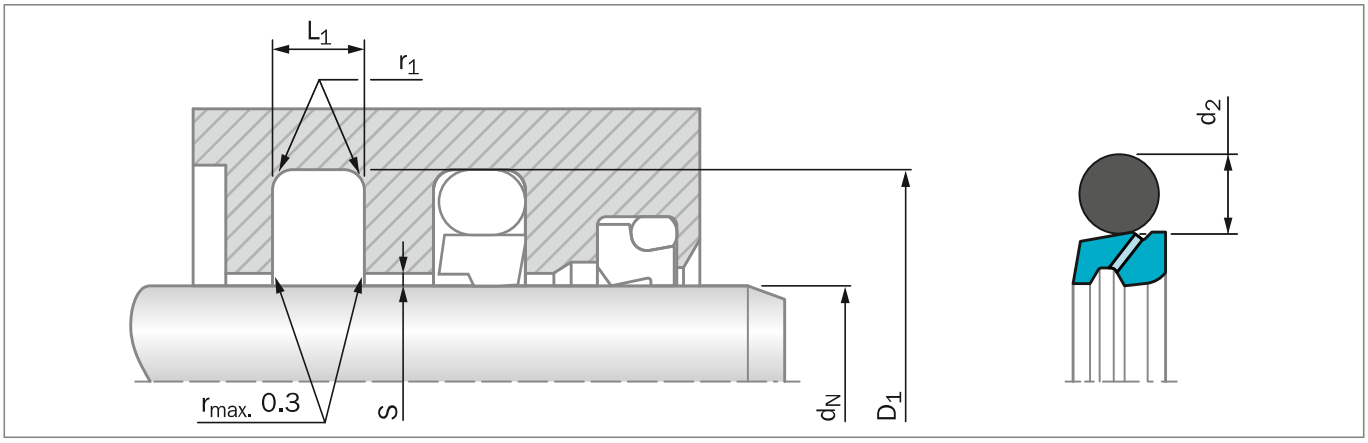


Figure 26: Installation Drawing

Table 17: Installation Dimensions – Standard Recommendations

Series No.	Rod Diameter d_N f8/h9			Groove Diameter	Groove Width	Radius	Radial Clearance S_{max}*			O-Ring Cross Section
	Standard Application	Light Application	Heavy Duty Application	D_1 H9	L_1 +0.2	$r_{1\,max}$	10 MPa	20 MPa	40 MPa	d_2
RSV2	12 - 37.9	38 - 199.9	-	d_N + 10.7	4.2	1.0	0.50	0.30	0.20	3.53
RSV3	38 - 199.9	200 - 255.9	19 - 37.9	d_N + 15.1	6.3	1.3	0.70	0.40	0.25	5.33
RSV4	200 - 255.9	256 - 649.9	38 - 199.9	d_N + 20.5	8.1	1.8	0.80	0.60	0.35	7.00
RSV8	256 - 649.9	650 - 999.9	200 - 255.9	d_N + 24.0	8.1	1.8	0.90	0.70	0.40	7.00
RSV5	650 - 999.9	-	256 - 649.9	d_N + 27.3	9.5	2.5	1.00	0.80	0.50	8.40
RSV5X	-	1,000 - 1,200	-	d_N + 27.3	9.5	2.5	1.00	0.80	0.50	8.40
RSV6**	-	-	650 - 999.9	d_N + 38.0	13.8	3.0	1.20	0.90	0.60	12.00
RSV6X**	1,000 - 2,600	-	-	d_N + 38.0	13.8	3.0	1.20	0.90	0.60	12.00

* At pressures > **40 MPa** use diameter tolerance H8/f8 (bore/rod) in the area behind seal or consult your local Customer Solution Center for alternative material or profiles.
Slydring® / Wear Rings are not applicable at very small radial clearances please consult the Slydring® section in this catalog.

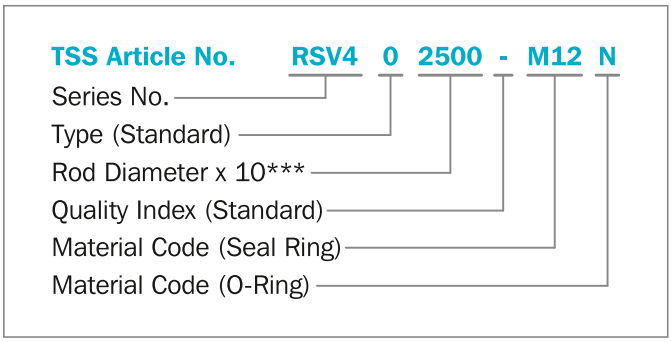
** All O-Rings with 12 mm cross section are delivered as a special profile ring.

ORDERING EXAMPLE

Turcon® Stepseal® V complete with O-Ring, standard application:

Series:	RSV4 from Table 17
Rod diameter:	d_N = 250.0 mm
TSS Part No.:	RSV402500 from Table 18

Select the material from Table 16. The corresponding code numbers are appended to the TSS Part No. Together these form the TSS Article Number. The TSS Article Number for all intermediate sizes can be determined by following the example:



*** For diameters $d_N \geq$ 1,000.0 mm multiply only by factor 1.
Example: RSV6 for diameter d_N = 1,200.0 mm.
TSS Article No.: RSV6**X1200** -M12N

Table 18: Installation Dimensions / TSS Part No.

Rod Dia. d_N f8/h9	Groove Dia. D_1 H9	Groove Width L_1 +0.2	TSS Part No.	O-Ring Size
12.0	**22.7**	**4.2**	**RSV200120**	**17.04 x 3.53**
15.0	25.7	4.2	RSV200150	18.66 x 3.53
19.0	29.7	4.2	RSV200190	23.40 x 3.53
20.0	**30.7**	**4.2**	**RSV200200**	**25.00 x 3.53**
22.0	**32.7**	**4.2**	**RSV200220**	**26.58 x 3.53**
25.0	**35.7**	**4.2**	**RSV200250**	**29.75 x 3.53**
25.4	36.1	4.2	RSV200254	29.75 x 3.53
26.0	36.7	4.2	RSV200260	29.75 x 3.53
28.0	**38.7**	**4.2**	**RSV200280**	**32.92 x 3.53**
30.0	40.7	4.2	RSV200300	34.52 x 3.53
32.0	**42.7**	**4.2**	**RSV200320**	**36.09 x 3.53**
35.0	45.7	4.2	RSV200350	37.69 x 3.53
36.0	**46.7**	**4.2**	**RSV200360**	**40.87 x 3.53**
37.0	47.7	4.2	RSV200370	40.87 x 3.53
38.0	48.7	4.2	RSV200380	40.87 x 3.53
38.0	53.1	6.3	RSV300380	43.82 x 5.33
40.0	**50.7**	**4.2**	**RSV200400**	**44.04 x 3.53**
40.0	**55.1**	**6.3**	**RSV300400**	**43.82 x 5.33**
42.0	52.7	4.2	RSV200420	47.22 x 3.53
42.0	57.1	6.3	RSV300420	46.99 x 5.33
43.0	53.7	4.2	RSV200430	47.22 x 3.53
44.45	59.5	6.3	RSV300444	50.17 x 5.33
45.0	**55.7**	**4.2**	**RSV200450**	**50.39 x 3.53**
45.0	**60.1**	**6.3**	**RSV300450**	**50.17 x 5.33**
48.0	58.7	4.2	RSV200480	53.57 x 3.53
48.0	63.1	6.3	RSV300480	53.34 x 5.33
50.0	**60.7**	**4.2**	**RSV200500**	**53.57 x 3.53**
50.0	**65.1**	**6.3**	**RSV300500**	**56.52 x 5.33**
50.8	61.5	4.2	RSV200508	53.57 x 3.53
50.8	65.9	6.3	RSV300508	56.52 x 5.33
52.0	62.7	4.2	RSV200520	56.74 x 3.53
52.0	67.1	6.3	RSV300520	56.52 x 5.33
54.0	69.1	6.3	RSV300540	59.69 x 5.33
55.0	65.7	4.2	RSV200550	59.92 x 3.53
55.0	70.1	6.3	RSV300550	59.69 x 5.33
56.0	**66.7**	**4.2**	**RSV200560**	**59.92 x 3.53**
56.0	**71.1**	**6.3**	**RSV300560**	**62.87 x 5.33**
57.1	67.8	4.2	RSV200571	59.92 x 3.53
59.0	69.7	4.2	RSV200590	63.09 x 3.53
60.0	70.7	4.2	RSV200600	63.09 x 3.53
60.0	75.1	6.3	RSV300600	66.04 x 5.33
63.0	**73.7**	**4.2**	**RSV200630**	**66.27 x 3.53**
63.0	**78.1**	**6.3**	**RSV300630**	**69.22 x 5.33**
63.5	78.6	6.3	RSV300635	69.22 x 5.33
65.0	75.7	4.2	RSV200650	69.44 x 3.53
65.0	80.1	6.3	RSV300650	69.22 x 5.33
67.0	77.7	4.2	RSV200670	72.62 x 3.53
69.0	84.1	6.3	RSV300690	75.57 x 5.33
70.0	**80.7**	**4.2**	**RSV200700**	**75.79 x 3.53**
70.0	**85.1**	**6.3**	**RSV300700**	**75.57 x 5.33**
70.0	**90.5**	**8.1**	**RSV400700**	**78.00 x 7.00**
72.0	82.7	4.2	RSV200720	75.79 x 3.53
73.0	88.1	6.3	RSV300730	78.74 x 5.33
75.0	85.7	4.2	RSV200750	78.97 x 3.53
75.0	90.1	6.3	RSV300750	81.92 x 5.33
75.0	95.5	8.1	RSV400750	83.00 x 7.00
76.2	91.3	6.3	RSV300762	81.92 x 5.33
78.0	93.1	6.3	RSV300780	85.09 x 5.33
78.0	98.5	8.1	RSV400780	86.00 x 7.00
80.0	**90.7**	**4.2**	**RSV200800**	**85.32 x 3.53**
80.0	**95.1**	**6.3**	**RSV300800**	**85.09 x 5.33**
80.0	**100.5**	**8.1**	**RSV400800**	**88.00 x 7.00**
82.5	97.6	6.3	RSV300825	88.27 x 5.33
83.0	93.7	4.2	RSV200830	88.49 x 3.53
85.0	95.7	4.2	RSV200850	88.49 x 3.53
85.0	100.1	6.3	RSV300850	91.44 x 5.33
85.0	105.5	8.1	RSV400850	93.00 x 7.00
89.0	104.1	6.3	RSV300890	94.62 x 5.33
90.0	**100.7**	**4.2**	**RSV200900**	**94.84 x 3.53**
90.0	**105.1**	**6.3**	**RSV300900**	**94.62 x 5.33**
90.0	**110.5**	**8.1**	**RSV400900**	**98.00 x 7.00**
92.0	102.7	4.2	RSV200920	98.02 x 3.53
92.0	107.1	6.3	RSV300920	97.79 x 5.33
95.0	105.7	4.2	RSV200950	101.19 x 3.53
95.0	110.1	6.3	RSV300950	100.97 x 5.33
95.0	115.5	8.1	RSV400950	103.00 x 7.00
100.0	**110.7**	**4.2**	**RSV201000**	**104.37 x 3.53**
100.0	**115.1**	**6.3**	**RSV301000**	**107.32 x 5.33**

Rod Dia. d_N f8/h9	Groove Dia. D_1 H9	Groove Width L_1 +0.2	TSS Part No.	O-Ring Size
100.0	**120.5**	**8.1**	**RSV401000**	**108.00 x 7.00**
101.6	116.7	6.3	RSV301016	107.32 x 5.33
105.0	120.1	6.3	RSV301050	110.49 x 5.33
105.0	125.5	8.1	RSV401050	113.67 x 7.00
110.0	120.7	4.2	RSV201100	113.89 x 3.53
110.0	**125.1**	**6.3**	**RSV301100**	**116.84 x 5.33**
110.0	**130.5**	**8.1**	**RSV401100**	**116.84 x 7.00**
115.0	130.1	6.3	RSV301150	120.02 x 5.33
120.0	135.1	6.3	RSV301200	126.37 x 5.33
120.0	140.5	8.1	RSV401200	129.54 x 7.00
125.0	**140.1**	**6.3**	**RSV301250**	**129.54 x 5.33**
125.0	**145.5**	**8.1**	**RSV401250**	**132.72 x 7.00**
125.4	140.5	6.3	RSV301254	132.72 x 5.33
127.0	142.1	6.3	RSV301270	132.72 x 5.33
130.0	145.1	6.3	RSV301300	135.89 x 5.33
130.0	150.5	8.1	RSV401300	139.07 x 7.00
132.0	147.1	6.3	RSV301320	139.07 x 5.33
135.0	145.7	4.2	RSV201350	139.29 x 3.53
135.0	150.1	6.3	RSV301350	142.24 x 5.33
137.0	152.1	6.3	RSV301370	142.24 x 5.33
138.0	153.1	6.3	RSV301380	142.24 x 5.33
140.0	**150.7**	**4.2**	**RSV201400**	**145.64 x 3.53**
140.0	**155.1**	**6.3**	**RSV301400**	**145.42 x 5.33**
140.0	**160.5**	**8.1**	**RSV401400**	**148.59 x 7.00**
140.5	155.6	6.3	RSV301405	145.42 x 5.33
145.0	160.1	6.3	RSV301450	151.77 x 5.33
145.0	165.5	8.1	RSV401450	151.77 x 7.00
150.0	165.1	6.3	RSV301500	158.12 x 5.33
150.0	170.5	8.1	RSV401500	158.12 x 7.00
153.0	168.1	6.3	RSV301530	158.12 x 5.33
155.0	170.1	6.3	RSV301550	158.12 x 5.33
160.0	**175.1**	**6.3**	**RSV301600**	**164.47 x 5.33**
160.0	**180.5**	**8.1**	**RSV401600**	**170.82 x 7.00**
165.0	180.1	6.3	RSV301650	170.82 x 5.33
170.0	185.1	6.3	RSV301700	177.17 x 5.33
170.0	190.5	8.1	RSV401700	177.17 x 7.00
173.0	188.1	6.3	RSV301730	177.17 x 5.33
175.0	190.1	6.3	RSV301750	183.52 x 5.33
180.0	**195.1**	**6.3**	**RSV301800**	**183.52 x 5.33**

Rod Dia. d_N f8/h9	Groove Dia. D_1 H9	Groove Width L_1 +0.2	TSS Part No.	O-Ring Size
180.0	**200.5**	**8.1**	**RSV401800**	**189.87 x 7.00**
185.0	200.1	6.3	RSV301850	189.87 x 5.33
185.0	205.5	8.1	RSV401850	196.22 x 7.00
190.0	205.1	6.3	RSV301900	196.22 x 5.33
190.0	210.5	8.1	RSV401900	196.22 x 7.00
195.0	210.1	6.3	RSV301950	202.57 x 5.33
200.0	**215.1**	**6.3**	**RSV302000**	**208.92 x 5.33**
200.0	**220.5**	**8.1**	**RSV402000**	**208.90 x 7.00**
205.0	225.5	8.1	RSV402050	215.27 x 7.00
210.0	230.5	8.1	RSV402100	215.27 x 7.00
211.0	231.5	8.1	RSV402110	215.27 x 7.00
212.0	232.5	8.1	RSV402120	227.97 x 7.00
215.0	235.5	8.1	RSV402150	227.97 x 7.00
220.0	**240.5**	**8.1**	**RSV402200**	**227.97 x 7.00**
225.0	**245.5**	**8.1**	**RSV402250**	**240.67 x 7.00**
230.0	245.1	6.3	RSV302300	234.32 x 5.33
230.0	250.5	8.1	RSV402300	240.67 x 7.00
235.0	255.5	8.1	RSV402350	240.67 x 7.00
240.0	260.5	8.1	RSV402400	253.37 x 7.00
245.0	265.5	8.1	RSV402450	253.37 x 7.00
250.0	**270.5**	**8.1**	**RSV402500**	**266.07 x 7.00**
260.0	284.0	8.1	RSV802600	266.07 x 7.00
265.0	289.0	8.1	RSV802650	278.77 x 7.00
270.0	290.5	8.1	RSV402700	278.77 x 7.00
270.0	294.0	8.1	RSV802700	278.77 x 7.00
275.0	299.0	8.1	RSV802750	291.47 x 7.00
280.0	**304.0**	**8.1**	**RSV802800**	**291.47 x 7.00**
285.0	309.0	8.1	RSV802850	291.47 x 7.00
290.0	314.0	8.1	RSV802900	304.17 x 7.00
295.0	319.0	8.1	RSV802950	304.17 x 7.00
300.0	320.5	8.1	RSV403000	304.17 x 7.00
300.0	324.0	8.1	RSV803000	316.87 x 7.00
310.0	334.0	8.1	RSV803100	316.87 x 7.00
320.0	**344.0**	**8.1**	**RSV803200**	**329.57 x 7.00**
330.0	354.0	8.1	RSV803300	342.27 x 7.00
340.0	364.0	8.1	RSV803400	354.97 x 7.00
350.0	370.5	8.1	RSV403500	354.97 x 7.00
350.0	374.0	8.1	RSV803500	367.67 x 7.00
360.0	**384.0**	**8.1**	**RSV803600**	**367.67 x 7.00**

Rod Dia. d_N f8/h9	Groove Dia. D_1 H9	Groove Width L_1 +0.2	TSS Part No.	O-Ring Size
365.0	389.0	8.1	RSV803650	380.37 x 7.00
370.0	394.0	8.1	RSV803700	380.37 x 7.00
375.0	399.0	8.1	RSV803750	393.07 x 7.00
380.0	404.0	8.1	RSV803800	393.07 x 7.00
390.0	414.0	8.1	RSV803900	405.26 x 7.00
400.0	424.0	8.1	RSV804000	417.96 x 7.00
410.0	434.0	8.1	RSV804100	417.96 x 7.00
420.0	444.0	8.1	RSV804200	430.66 x 7.00
430.0	454.0	8.1	RSV804300	443.36 x 7.00
435.0	459.0	8.1	RSV804350	443.36 x 7.00
440.0	464.0	8.1	RSV804400	456.06 x 7.00
450.0	474.0	8.1	RSV804500	468.76 x 7.00
460.0	484.0	8.1	RSV804600	468.76 x 7.00
470.0	494.0	8.1	RSV804700	481.38 x 7.00
480.0	504.0	8.1	RSV804800	494.16 x 7.00
485.0	509.0	8.1	RSV804850	494.16 x 7.00
490.0	514.0	8.1	RSV804900	506.86 x 7.00
500.0	524.0	8.1	RSV805000	506.86 x 7.00
510.0	534.0	8.1	RSV805100	532.26 x 7.00
520.0	544.0	8.1	RSV805200	532.26 x 7.00
525.0	549.0	8.1	RSV805250	532.26 x 7.00
530.0	554.0	8.1	RSV805300	557.66 x 7.00
540.0	564.0	8.1	RSV805400	557.66 x 7.00
550.0	574.0	8.1	RSV805500	557.66 x 7.00
560.0	584.0	8.1	RSV805600	582.68 x 7.00
570.0	594.0	8.1	RSV805700	582.68 x 7.00
580.0	604.0	8.1	RSV805800	608.08 x 7.00
585.0	609.0	8.1	RSV805850	608.08 x 7.00
590.0	614.0	8.1	RSV805900	608.08 x 7.00
600.0	624.0	8.1	RSV806000	608.08 x 7.00
610.0	634.0	8.1	RSV806100	633.48 x 7.00
620.0	644.0	8.1	RSV806200	633.48 x 7.00
630.0	654.0	8.1	RSV806300	658.88 x 7.00
640.0	664.0	8.1	RSV806400	658.88 x 7.00
650.0	677.3	9.5	RSV506500	663.00 x 8.40
656.0	683.3	9.5	RSV506560	669.00 x 8.40
660.0	687.3	9.5	RSV506600	673.00 x 8.40
680.0	707.3	9.5	RSV506800	693.00 x 8.40
685.0	712.3	9.5	RSV506850	698.00 x 8.40
700.0	724.0	8.1	RSV807000	713.00 x 7.00
700.0	727.3	9.5	RSV507000	713.00 x 8.40

Rod Dia. d_N f8/h9	Groove Dia. D_1 H9	Groove Width L_1 +0.2	TSS Part No.	O-Ring Size
710.0	737.3	9.5	RSV507100	723.00 x 8.40
730.0	757.3	9.5	RSV507300	743.00 x 8.40
760.0	787.3	9.5	RSV507600	773.00 x 8.40
765.0	792.3	9.5	RSV507650	778.00 x 8.40
780.0	807.3	9.5	RSV507800	793.00 x 8.40
790.0	817.3	9.5	RSV507900	803.00 x 8.40
800.0	827.3	9.5	RSV508000	813.00 x 8.40
810.0	837.3	9.5	RSV508100	823.00 x 8.40
820.0	847.3	9.5	RSV508200	833.00 x 8.40
830.0	857.3	9.5	RSV508300	843.00 x 8.40
850.0	877.3	9.5	RSV508500	863.00 x 8.40
870.0	897.3	9.5	RSV508700	883.00 x 8.40
880.0	907.3	9.5	RSV508800	893.00 x 8.40
885.0	912.3	9.5	RSV508850	898.00 x 8.40
890.0	917.3	9.5	RSV508900	903.00 x 8.40
930.0	957.3	9.5	RSV509300	943.00 x 8.40
955.0	982.3	9.5	RSV509550	968.00 x 8.40
1,000.0	1,038.0	13.8	RSV6X1000	1,017.00 x 12.0
1,035.0	1,073.0	13.8	RSV6X1035	1,052.00 x 12.0
1,040.0	1,067.3	9.5	RSV5X1040	1,053.00 x 8.40
1,040.0	1,078.0	13.8	RSV6X1040	1,057.00 x 12.0
1,050.0	1,077.3	9.5	RSV5X1050	1,063.00 x 8.40
1,050.0	1,088.0	13.8	RSV6X1050	1,067.00 x 12.0
1,100.0	1,138.0	13.8	RSV6X1100	1,117.00 x 12.0
1,120.0	1,147.3	9.5	RSV5X1120	1,133.00 x 8.40
1,120.0	1,158.0	13.8	RSV6X1120	1,137.00 x 12.0
1,200.0	1,227.3	9.5	RSV5X1200	1,213.00 x 8.40
1,200.0	1,238.0	13.8	RSV6X1200	1,217.00 x 12.0
1,330.0	1,368.0	13.8	RSV6X1330	1,347.00 x 12.0
1,500.0	1,538.0	13.8	RSV6X1500	1,517.00 x 12.0
1,600.0	1,638.0	13.8	RSV6X1600	1,617.00 x 12.0
2,000.0	2,038.0	13.8	RSV6X2000	2,017.00 x 12.0
2,600.0	2,638.0	13.8	RSV6X2600	2,617.00 x 12.0

The rod diameters in **bold** type are in accordance with the recommendations of ISO 3320.

Other dimensions and all intermediate sizes up to 2,600 mm diameter including imperial (inch) sizes can be supplied.

All O-Rings with 12 mm cross section are delivered as special profile ring.