Rod Seals

Selection criteria for Rod seals

Seal	Application				Standard	Size range	Technical Data*			Recommended Seal Material
Type	Field of Application						Temp. range**	Speed	Pressure	
		Light	Medium	Heavy	ISO/DIN	mm	°C	m/s	MPa max.	
Turcon® Stepseal® 2K 	이동식 유압 장비	•	•	•	7425/2	3–2600	–45/+200	15	50	M12
	유압 실린더	•	•	•						
	기계 장비	•	•	•						
	사출 성형기	•	•	•					50	T46
	프레스	•	•	•					20	T05
	자동차 산업	•	•	•						
	유압 햄머	•	•	•		3–2200	–45/+110	2	60	Z53
	서버 유압 실린더	•	•	•						
Turcon® Stepseal® V 	이동식 유압 장비	•	•	•	7425/2	19–2600	–45/+200	15	50	M12
	건설 장비	•	•	•						
	프레스	•	•	•					50	T46
	사출 성형기	•	•	•						
Zurcon® Rimseal 	이동식 유압 장비	•	•	•	7425/2	8–2200	–45/+110	In tandem with Turcon® Step–seal® 2K 5 m/s	In tandem 60MPa As single seal 25 MPa	Z54
	유압 실린더	•	•	•						
	기계장비	•	•	•						
	사출 성형기	•	•	•						
	프레스	•	•	•						
Turcon® Glyd Ring® 	유압 실린더	•	•	•	7425/2	3–2600	–45/+200	15	50	M12
	밸브	•	•	•					50	T46
	기계 장비	•	•	•					20	T05
	서버 유압 실린더	•	•	•		3–2200	–45/+110	2	60	Z53
Turcon® Glyd Ring® T 	유압 실린더	•	•	•	7425/2	3–2600	–45/+200	15	50	M12
	밸브	•	•	•						
	기계 장비	•	•	•					50	T46
	로봇 컴포넌트	•	•	•						
	프레스	•	•	•		3–2200	–45/+110	2	60	Z53
Turcon® Glyd Ring® Hz 	공작기계	•	•		7425/2	8–999	–45/+200	15	30	M12
	유압 실린더	•	•						25	T40
	서버 유압 실린더	•	•				–45/+80	2	30	Z80

Rod Seals

Selection criteria for Rod seals

Seal	Application				Standard	Size range	Technical Data*			Recommended Seal Material
Type	Field of Application						Temp. range**	Speed	Pressure	
		Light	Medium	Heavy	ISO/DIN	mm	°C	m/s	MPa max.	
Zurcon® U-Cup RU2 	유압 실린더	•	•		5597/1	6–185	–35/+110	0.5	40	Z20
	다단 유압 실린더	•	•							
	이동식 유압 장비	•	•							
Zurcon® U-Cup RU6 	유압 실린더	•	•		7425/2	12–350	–35/+110	0.5	25	Z20
	산업용 유압 장비	•	•							
	이동식 유압 장비	•	•							
Zurcon® U-Cup RU9 	유압 실린더	•	•		5597/1	6–140	–35/+110	0.5	40	Z20
	산업용 유압 장비	•	•							
	이동식 유압 장비	•	•							
Turcon® Variseal® M2 	극저온 시스템	•	•		AS4716	3–2600	–70/+260	15	40	T40
	화학 분야	•	•						20	T05
	식품 분야	•	•							
Turcon® VL Seal® 	자동화 분야	•	•	•	–	3–2600	–45/+200	15	50	M12
	다단 유압 실린더	•	•	•					50	T46
	공조 시스템	•	•	•		3–2200	–45/+110	2	25	Z54
	물 홀더	•	•	•						
Turcon® AQ Seal® with Bean Seal 	유압 실린더	•	•		7425/2	18–2200	–45/+200	2	40	M12
	공작기계	•	•							
	유체가스 분리 시스템	•	•						40	T46
	제로 누유 실린더	•	•							
Turcon® AQ Seal® 5 with Bean Seal 	유압 실린더		•	•	–	32–2203	–45/+110	2	50	M12
	유체가스 분리 시스템		•	•						
	이동식 유압 장비		•	•					50	T46
	제로 누유 실린더		•	•						
Zurcon® Wynseal M 	산업용 유압 장비	•	•		7425/2	3–2600	–45/+200	10	35	M12
	산업용 실린더	•	•			3–2200	–45/+110	0.5	25	Z54
	농기계용 실린더	•	•						45	Z53

Rod Seals

Selection criteria for Rod seals

Seal	Application				Standard	Size range	Technical Data*			Recommended Seal Material
Type	Field of Application						Temp. range**	Speed	Pressure	
		Light	Medium	Heavy	ISO/DIN	mm	°C	m/s	MPa max.	
Turcon® Double Delta® Seal 	공조 시스템	•	•		–	3–2600	–45/+200	15	20	T05
	소형 유압 장비	•	•						35	M12
	유압 공구	•	•						35	T46
POLYPAC® Balsele 	유압 실린더	•	•		5597/1	10–1200	–40/+130	0.5	25 With Back–up 40	Rubber Fabric reinforced NBR
	프레스	•	•							
	트럭 크레인	•	•							
Zurcon® L-Cup® 	유압 실린더	•	•		5597/1	6–250	–30/+130	0.5	40	Z20
	리프트 실린더	•	•							
	조향 실린더	•	•							
Zurcon® Buffer Seal 	유압 어태치먼트		•	•	7425/2	40–140	–35/+110	1	40 60 (peak)	Z20
	이동식 유압 장비		•	•						
	건설 장비		•	•						

* The data below are maximum values, and cannot be used at the same time.
The max. pressure depends on temperature, and gap dimension.

**Temperature range is depending on choice of Elastomer material & media.

Turcon® Glyd Ring® T



Double-Acting
Rubber Energized Plastic Faced Seal

Materials: Turcon®, Zurcon® & Elastomer

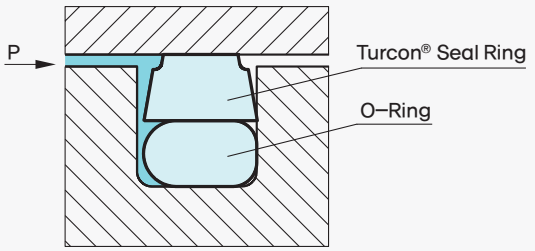


개요

Turcon® Glyd Ring® T는 모든 저/고압 시스템 및 다양한 속도와 미세한 정밀 분야에서 확실한 작동을 하는 제품이다.

새로운 형태의 Turcon® Glyd Ring® T는 특허 등록(Patent No.40833)이 되어 있으며, 단순하고 간결하게 구성되어 있다.

Sealing이 매우 우수하고, Piston과 실린더 내경과의 틈새를 좀 더 쉽고, 효율적으로 관리 가능하며 Turcon® Glyd Ring®에 비해 기술적으로 개발, 향상된 제품이다.



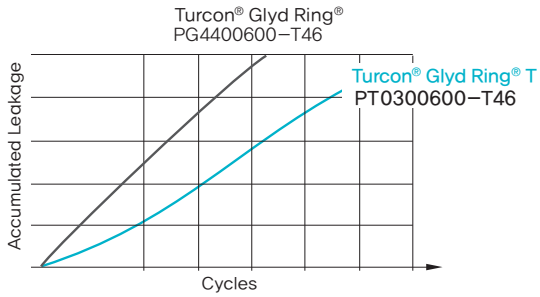
Turcon® Glyd Ring® T

적용 분야

- 사출 성형기 (인젝션 몰딩기계)
- 공작기계
- 프레스
- 중장비
- 건설 장비
- 서보 장치
- 압력 증가 장치
- 잭 (Jack)
- 농기계

〈Single-Acting Hydraulic Cylinder〉

테스트 조건 : HLP 46, 80°C, Pressure Cycle 0/30 MPa,
Piston moving in Pressure direction.



단동형 유압 실린더에서의 G/R, G/R T의 Dynamic Leakage.

장점

- 뛰어난 내마모성.
- 마찰이 적고, Stick-Slip 현상이 없다.
- 수명이 길고, 내구성이 뛰어나다.
- 높은 압력하에서 뛰어난 성능을 발휘한다.
- 복동형 Sealing이 가능하기 때문에 피스톤의 폭을 조정할 수 있다.
- Groove 규격이 DIN / ISO 7425/1과 동일하다.
- 다양한 작동유에 사용 가능하다.
  (O-Ring 재질에 따라서)
- (최대 2,700까지) 작동환경에 따라 다양한 규격을 선택할 수 있다.

적용 범위

- 압력 : 최대 60 MPa (600 bar)
- 속도 : 최대 15 m/s
- 온도 : −45 ℃ ~ +200 ℃*
  (O-Ring 재질에 따라서)
- 매체 : 광물 베이스의 유압 작동유,
  난연성 유압유,
  친환경 유압유 (Bio-oils),
  인산 에스테르.

※ 주의사항

- 위에 제시된 최대 수치는 같은 동작 시간대에 동시에 유효할 수는 없다.
- 최대 속도는 재질, 타입, 압력, 온도, 틈새 크기에 따라 좌우된다.
- 온도 범위 또한, 매체 조건에 따라 영향을 받는다.

*0°C 이하의 가압이 되지 않는 적용에서는 반드시 엔지니어와 상의한다.

Turcon® Glyd Ring® T

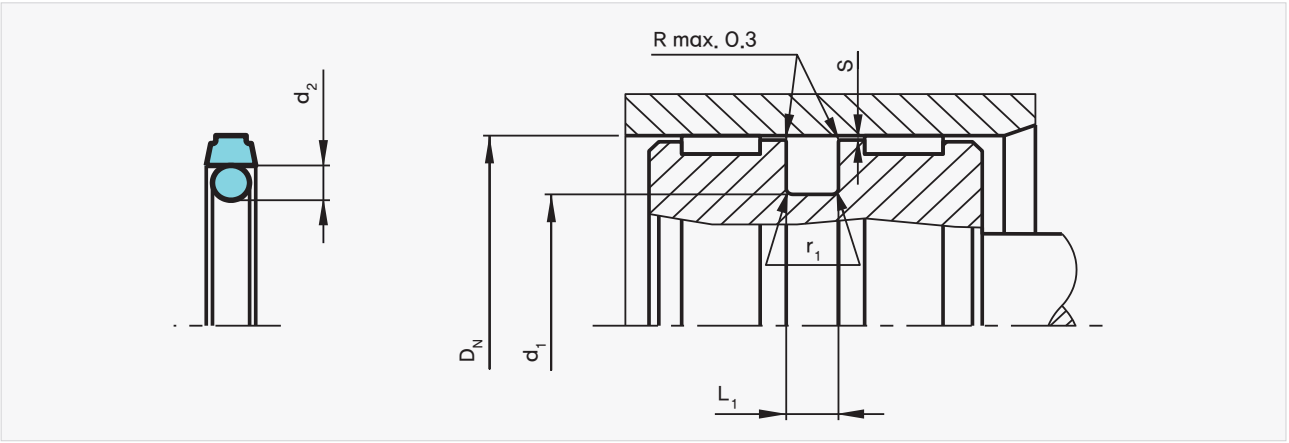
재질 / Materials for Turcon® Glyd Ring® T

Material, Application Properties	Code	O-Ring Material Shore A	Code	O-Ring Operating Temp. °C*	Mating Surface Material	Mpa max. Dynamic
Turcon® M12 • **First material choice** for Seals to Linear Motion. • Overall improved properties. • For new constructions and updating. • For all commonly applied Hydraulic Fluids, including Fluids with Low Lubrication performance. • Lowest Friction & best Sliding properties. • Lowest Wear on seals. • Improved Absorption of abrasive contaminants. • No wear, or abrasion of counter surface. • Mineral Fiber & Additives filled. Colour : **Dark grey.**	M12	NBR–70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Steel plated (Rod) Cast iron Stainless Steel Titanium	50
		NBR–70 Low Temp.	T	–45 ~ +80		
		FKM–70	V	–10 ~ +200		
Turcon® T40 • For Lubricating & Non–Lubricating Fluids. • High Frequency & Short Strokes. • **Water Hydraulics.** • Surface texture is NOT suitable for Gas sealing. • Carbon Fiber filled. Colour : **Grey.**	T40	NBR–70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Cast iron Stainless Steel Aluminium	25
		NBR–70 Low Temp.	T	–45 ~ +80		
		FKM–70	V	–10 ~ +200		
		EPDM–70	E**	–45 ~ +145		
Turcon® T46 • For Lubricated Hydraulics in Linear Motion. • High Compressive strength. • High Extrusion Resistance. • Very good Sliding & Wear properties. • BAM Tested. • Bronze filled. Colour : **Light to Dark brown,** (which may have variations in shading.)	T46	NBR–70	N	–30 ~ +100	Steel hardened Steel Chrome–plated (Rod) Cast iron	50
		NBR–70 Low Temp.	T	–45 ~ +80		
		FKM–70	V	–10 ~ +200		
Zurcon® Z53 • For Mineral Oil based Fluids. • **Very High Abrasion Resistance.** • **Very High Extrusion Resistance.** • For counter surface with rougher surface finish. • Limited Chemical Resistance. • Max. working Temperature 110 ℃. • Cast Polyurethane. Colour : **Yellow to Light brown.**	Z53	NBR–70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Cast iron Stainless Steel Ceramic coating	60
		NBR–70 Low Temp.	T	–45 ~ +80		
Zurcon® Z80 • For Lubricating & Non–Lubricating Fluids. • Water based Fluids, Air & Gases. • Dry air pneumatics. • High Abrasion & Extrusion Resistance. • For service in Abrasive conditions & media with particles. • Good Chemical Resistance. • Limited Temperature capability. (–60 ℃ ~ +80 ℃) • UHMWPE (Ultra High Molecular Weight Polyethylene) Colour : **White to Off–white.**	Z80	NBR–70	N	–30 ~ (+100)	Steel Steel hardened Steel Chrome–plated (Rod) Stainless Steel Aluminium Ceramic coating	35
		NBR–70 Low Temp.	T	–45 ~ +80		
		EPDM–70	E**	–45 ~ (+145)		

* The O–Ring Operating Temperature is only valid in Mineral Hydraulic Oil. (except EPDM)
** Material NOT suitable for Mineral oils.
BAM : Tested by "Bundesantalt Materialprufung, Germany."

Highlighted Materials are standard.

Installation Recommendation



Installation drawing

Installation Dimensions – Standard Recommendations

Series No.	Bore Diameter D_N 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	10MPa	20MPa	40MPa	d_2
PT00	8 – 15.9	16 – 39.9	–	D_N – 4.9	2.2	0.4	0.40	0.30	0.20	1.78
PT01	16 – 39.9	40 – 79.9	–	D_N – 7.5	3.2	0.6	0.60	0.50	0.30	2.62
PT02	40 – 79.9	80 – 132.9	16 – 39.9	D_N – 11.0	4.2	1.0	0.70	0.50	0.30	3.53
PT03	80 – 132.9	133 – 329.9	40 – 79.9	D_N – 15.5	6.3	1.3	0.80	0.60	0.40	5.33
PT04	133 – 329.9	330 – 669.9	80 – 132.9	D_N – 21.0	8.1	1.8	0.80	0.60	0.40	7.00
PT08	330 – 669.9	670 – 999.9	133 – 329.9	D_N – 24.5	8.1	1.8	0.90	0.70	0.50	7.00
PT05	670 – 999.9	–	310 – 669.9	D_N – 28.0	9.5	2.5	1.00	0.80	0.60	8.40
PT05X	–	1000 – 1200	–	D_N – 28.0	9.5	2.5	1.00	0.80	0.60	8.40
PT06**	–	–	670 – 999.9	D_N – 38.0	13.8	3.0	1.20	0.90	0.70	12.00
PT06X**	1000 – 2700	–	–	D_N – 38.0	13.8	3.0	1.20	0.90	0.70	12.00

*At Pressures **>40MPa**, Use Diameter Tolerance H8/f8 (Bore/Piston) in area of seal, or consult **HANSUNG** for alternative material, or profiles. TSS Slydring®/Wear Rings are NOT applicable at very small Radial Clearance S.

**O-Rings with 12mm Cross-section are delivered as special profile ring.

- **Standard Application** : 허용된 적용범위를 벗어나지 않는 일반적인 경우.
- **Light Application** : 저마찰이 요구되거나 작은 홈 규격이 요구되는 경우.
- **Heavy-duty Application** : 높은 압력, Peak 압력과 같은 일반적인 범위를 벗어나는 경우.

주문 예

Turcon® Glyd Ring® T와 함께 적용되는 O-Ring 규격과 재질 선택은, 표를 참고하시기 바랍니다.

- **Bore diameter** : D_N = 80.0mm
- **TSS Part No.** PT0300800

TSS Article No. PT03 0 0800 – M12 N

- PT03 — TSS Series No.
- 0 — Type (Standard)
- 0800 — Bore diameter x 10***
- M12 — Quality Index (Standard)
- N — Material Code (Seal Ring)
- Material Code (O-Ring)

Installation Dimensions / TSS Part No.

Bore Dia. D_N H9	Groove Dia. d_1 h9	Groove Width L_1+0.2	TSS Part No.	O-Ring Dimensions
8.0	3.1	2.2	PT0000080	2.57 × 1.78
10.0	5.1	2.2	PT0000100	4.47 × 1.78
12.0	7.1	2.2	PT0000120	6.70 × 1.80
14.0	9.1	2.2	PT0000140	8.75 × 1.80
15.0	7.5	3.2	PT0100150	6.98 × 2.62
16.0	11.1	2.2	PT0000160	10.60 × 1.80
16.0	8.5	3.2	PT0100160	7.59 × 2.62
18.0	13.1	2.2	PT0000180	12.42 × 1.78
18.0	10.5	3.2	PT0100180	9.19 × 2.62
19.05	11.55	3.2	PT0100190	10.77 × 2.62
20.0	15.1	2.2	PT0000200	14.00 × 1.78
20.0	12.5	3.2	PT0100200	12.37 × 2.62
21.0	13.5	3.2	PT0100210	12.37 × 2.62
22.0	17.1	2.2	PT0000220	17.17 × 1.78
22.0	14.5	3.2	PT0100220	13.94 × 2.62
24.0	16.5	3.2	PT0100240	15.54 × 2.62
25.0	20.1	2.2	PT0000250	19.00 × 1.80
25.0	17.5	3.2	PT0100250	17.12 × 2.62
25.0	14.0	4.2	PT0200250	13.87 × 3.53
25.4	20.5	2.2	PT0000254	20.35 × 1.78
28.0	20.5	3.2	PT0100280	20.29 × 2.62
30.0	22.5	3.2	PT0100300	21.89 × 2.62
32.0	27.1	2.2	PT0000320	26.70 × 1.78
32.0	24.5	3.2	PT0100320	23.47 × 2.62
32.0	21.0	4.2	PT0200320	20.22 × 3.53
35.0	27.5	3.2	PT0100350	26.64 × 2.62
35.0	24.0	4.2	PT0200350	23.40 × 3.53
36.0	28.5	3.2	PT0100360	28.24 × 2.62
38.0	30.5	3.2	PT0100380	29.82 × 2.62
40.0	32.5	3.2	PT0100400	31.42 × 2.62
40.0	29.0	4.2	PT0200400	28.17 × 3.53
42.0	31.0	4.2	PT0200420	29.75 × 3.53
44.45	36.95	3.2	PT0100444	36.17 × 2.62
45.0	34.0	4.2	PT0200450	32.92 × 3.53
48.0	37.0	4.2	PT0200480	36.09 × 3.53
50.0	42.5	3.2	PT0100500	40.94 × 2.62
50.0	39.0	4.2	PT0200500	37.69 × 3.53
50.0	34.5	6.3	PT0300500	32.69 × 5.33
50.8	43.3	3.2	PT0100508	45.52 × 2.62

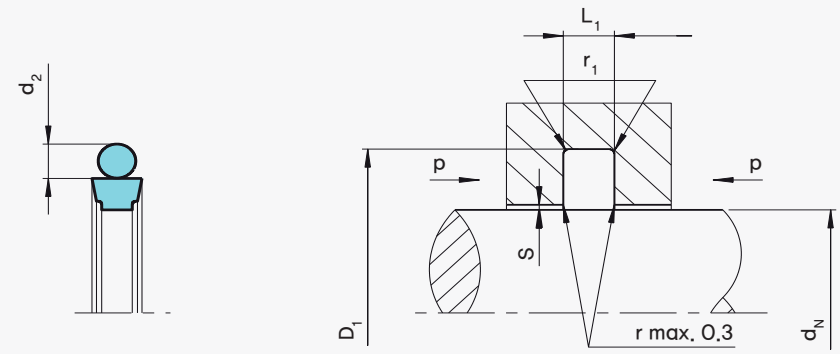
Bore Dia. D_N H9	Groove Dia. d_1 h9	Groove Width L_1+0.2	TSS Part No.	O-Ring Dimensions
50.8	39.8	4.2	PT0200508	37.69 × 3.53
52.0	41.0	4.2	PT0200520	40.87 × 3.53
53.0	42.0	4.2	PT0200530	40.87 × 3.53
55.0	44.0	4.2	PT0200550	44.04 × 3.53
57.0	46.0	4.2	PT0200570	44.04 × 3.53
58.0	47.0	4.2	PT0200580	47.22 × 3.53
60.0	49.0	4.2	PT0200600	47.22 × 3.53
62.0	51.0	4.2	PT0200620	50.39 × 3.53
63.0	52.0	4.2	PT0200630	50.39 × 3.53
63.0	47.5	6.3	PT0300630	46.99 × 5.33
65.0	54.0	4.2	PT0200650	53.57 × 3.53
68.0	57.0	4.2	PT0200680	56.74 × 3.53
70.0	59.0	4.2	PT0200700	56.74 × 3.53
70.0	54.5	6.3	PT0300700	53.34 × 5.33
75.0	64.0	4.2	PT0200750	63.09 × 3.53
75.0	59.5	6.3	PT0300750	56.52 × 5.33
80.0	69.0	4.2	PT0200800	66.27 × 3.53
80.0	64.5	6.3	PT0300800	62.87 × 5.33
80.0	59.0	8.1	PT0400800	58.00 × 7.00
82.5	67.0	6.3	PT0300825	66.04 × 5.33
85.0	69.5	6.3	PT0300850	69.22 × 5.33
85.0	64.0	8.1	PT0400850	63.00 × 7.00
90.0	79.0	4.2	PT0200900	78.97 × 3.53
90.0	74.5	6.3	PT0300900	72.39 × 5.33
90.0	69.0	8.1	PT0400900	68.00 × 7.00
95.0	84.0	4.2	PT0200950	82.14 × 3.53
95.0	79.5	6.3	PT0300950	78.74 × 5.33
95.0	74.0	8.1	PT0400950	73.00 × 7.00
100.0	89.0	4.2	PT0201000	88.49 × 3.53
100.0	84.5	6.3	PT0301000	81.92 × 5.33
100.0	79.0	8.1	PT0401000	78.00 × 7.00
101.6	86.1	6.3	PT0301016	85.09 × 5.33
105.0	94.0	4.2	PT0201050	91.67 × 3.53
105.0	89.5	6.3	PT0301050	88.27 × 5.33
108.0	92.5	6.3	PT0301080	91.44 × 5.33
110.0	99.0	4.2	PT0201100	98.02 × 3.53
110.0	94.5	6.3	PT0301100	91.44 × 5.33
110.0	89.0	8.1	PT0401100	88.00 × 7.00
115.0	99.5	6.3	PT0301150	97.79 × 5.33

Installation Dimensions / TSS Part No.

Bore Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
D_N H9	d_1 h9	L_1 +0.2		
120.0	109.0	4.2	PT0201200	107.54 × 3.53
120.0	104.5	6.3	PT0301200	100.97 × 5.33
120.0	99.0	8.1	PT0401200	98.00 × 7.00
125.0	114.0	4.2	PT0201250	113.89 × 3.53
125.0	109.5	6.3	PT0301250	107.32 × 5.33
125.0	104.0	8.1	PT0401250	103.00 × 7.00
127.0	111.5	6.3	PT0301270	110.49 × 5.33
130.0	114.5	6.3	PT0301300	113.67 × 5.33
130.0	109.0	8.1	PT0401300	108.00 × 7.00
132.0	121.0	4.2	PT0201320	120.24 × 3.53
135.0	114.0	8.1	PT0401350	113.67 × 7.00
140.0	124.5	6.3	PT0301400	123.19 × 5.33
140.0	119.0	8.1	PT0401400	116.84 × 7.00
145.0	129.5	6.3	PT0301450	126.37 × 5.33
145.0	124.0	8.1	PT0401450	123.19 × 7.00
150.0	134.5	6.3	PT0301500	132.72 × 5.33
150.0	129.0	8.1	PT0401500	126.37 × 7.00
155.0	134.0	8.1	PT0401550	132.72 × 7.00
160.0	144.5	6.3	PT0301600	142.24 × 5.33
160.0	139.0	8.1	PT0401600	135.89 × 7.00
165.0	144.0	8.1	PT0401650	142.24 × 7.00
170.0	149.0	8.1	PT0401700	145.42 × 7.00
175.0	154.0	8.1	PT0401750	151.77 × 7.00
180.0	164.5	6.3	PT0301800	164.47 × 5.33
180.0	159.0	8.1	PT0401800	158.12 × 7.00
190.0	169.0	8.1	PT0401900	164.47 × 7.00
194.0	178.5	6.3	PT0301940	177.17 × 5.33
200.0	184.5	6.3	PT0302000	183.52 × 5.33
200.0	179.0	8.1	PT0402000	177.17 × 7.00
205.0	184.0	8.1	PT0402050	183.52 × 7.00
210.0	189.0	8.1	PT0402100	183.52 × 7.00
215.0	194.0	8.1	PT0402150	189.87 × 7.00
220.0	199.0	8.1	PT0402200	196.22 × 7.00
230.0	214.5	6.3	PT0302300	208.92 × 5.33
230.0	209.0	8.1	PT0402300	202.57 × 7.00
240.0	219.0	8.1	PT0402400	215.27 × 7.00
250.0	229.0	8.1	PT0402500	227.97 × 7.00
250.0	225.5	8.1	PT0802500	215.27 × 7.00
250.0	234.5	6.3	PT0302500	234.32 × 5.33

Bore Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
D_N H9	d_1 h9	L_1 +0.2		
254.0	233.0	8.1	PT0402540	227.97 × 7.00
260.0	239.0	8.1	PT0402600	240.67 × 7.00
265.0	244.0	8.1	PT0402650	240.67 × 7.00
268.0	247.0	8.1	PT0402680	240.67 × 7.00
270.0	249.0	8.1	PT0402700	240.67 × 7.00
280.0	259.0	8.1	PT0402800	253.37 × 7.00
290.0	269.0	8.1	PT0402900	266.07 × 7.00
300.0	279.0	8.1	PT0403000	278.77 × 7.00
300.0	275.5	8.1	PT0803000	266.07 × 7.00
304.8	283.8	8.1	PT0403048	278.77 × 7.00
310.0	289.0	8.1	PT0403100	278.77 × 7.00
320.0	299.0	8.1	PT0403200	291.47 × 7.00
320.0	295.5	8.1	PT0803200	291.47 × 7.00
330.0	305.5	8.1	PT0803300	304.17 × 7.00
340.0	315.5	8.1	PT0803400	316.87 × 7.00
350.0	325.5	8.1	PT0803500	316.87 × 7.00
360.0	335.5	8.1	PT0803600	329.57 × 7.00
370.0	345.5	8.1	PT0803700	342.27 × 7.00
380.0	355.5	8.1	PT0803800	354.97 × 7.00
400.0	375.5	8.1	PT0804000	367.67 × 7.00
420.0	395.5	8.1	PT0804200	393.07 × 7.00
430.0	405.5	8.1	PT0804300	405.26 × 7.00
440.0	415.5	8.1	PT0804400	405.26 × 7.00
450.0	425.5	8.1	PT0804500	417.96 × 7.00
460.0	435.5	8.1	PT0804600	430.66 × 7.00
480.0	455.5	8.1	PT0804800	456.06 × 7.00
500.0	475.5	8.1	PT0805000	468.76 × 7.00
555.0	530.5	8.1	PT0805550	532.26 × 7.00
600.0	575.5	8.1	PT0806000	557.66 × 7.00
640.0	615.5	8.1	PT0806400	608.08 × 7.00
660.0	635.5	8.1	PT0806600	633.48 × 7.00
700.0	672.0	9.5	PT0507000	670.00 × 8.40
710.0	682.0	9.5	PT0507100	680.00 × 8.40
740.0	712.0	9.5	PT0507400	710.00 × 8.40
780.0	752.0	9.5	PT0507800	750.00 × 8.40
800.0	772.0	9.5	PT0508000	770.00 × 8.40
900.0	872.0	9.5	PT0509000	870.00 × 8.40
1000.0	972.0	9.5	PT05X1000	970.00 × 8.40
1000.0	962.0	13.8	PT06X1000	960.00 × 12.00

Installation Recommendation



Installation drawing

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	10MPa	20MPa	40MPa	d_2
RT00	3 – 7.9	8 – 18.9	–	d_N + 4.9	2.2	0.4	0.40	0.30	0.20	1.78
RT01	8 – 18.9	19 – 37.9	–	d_N + 7.3	3.2	0.6	0.60	0.50	0.30	2.62
RT02	19 – 37.9	38 – 199.9	8 – 18.9	d_N + 10.7	4.2	1.0	0.70	0.50	0.30	3.53
RT03	38 – 199.9	200 – 255.9	19 – 37.9	d_N + 15.1	6.3	1.3	0.80	0.60	0.40	5.33
RT04	200 – 255.9	256 – 649.9	38 – 199.9	d_N + 20.5	8.1	1.8	0.80	0.60	0.40	7.00
RT08	256 – 649.9	650 – 999.9	200 – 255.9	d_N + 24.0	8.1	1.8	0.90	0.70	0.50	7.00
RT05	650 – 999.9	–	256 – 649.9	d_N + 27.3	9.5	2.5	1.00	0.80	0.60	8.40
RT05X	–	1000 – 1200	–	d_N + 27.3	9.5	2.5	1.00	0.80	0.60	8.40
RT06***	–	–	650 – 999.9	d_N + 38.0	13.8	3.0	1.20	0.90	0.70	12.00
RT06X***	1000 – 2600	–	–	d_N + 38.0	13.8	3.0	1.20	0.90	0.70	12.00

* Installation with Groove dimensions to ISO 7425/2 is also recommendable.

** At Pressures **> 40 MPa**, Use Diameter Tolerance H8/f8 (Bore/Rod) in area of seal, or consult **HANSUNG** for alternative material, or profiles. TSS Slydring®/Wear Rings are NOT applicable at very small Radial Clearance S.

*** O-Rings with 12 mm Cross-section are delivered as special profile ring.

- **Standard Application** : 허용된 적용범위를 벗어나지 않는 일반적인 경우.
- **Light Application** : 저마찰이 요구되거나 작은 홈 규격이 요구되는 경우.
- **Heavy-duty Application** : 높은 압력, Peak 압력과 같은 일반적인 범위를 벗어나는 경우.

주문 예

Turcon® Glyd Ring® T와 함께 적용되는 O-Ring 규격과 재질 선택은, 표를 참고하시기 바랍니다.

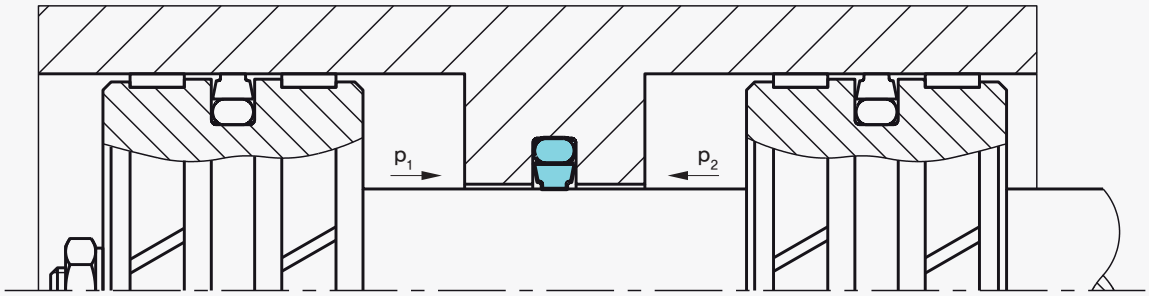
- **Rod diameter** : d_N = 80.0 mm
- **TSS Part No.** RT0300800

TSS Article No. RT03 0 0800 – M12 N

- RT03 — TSS Series No.
- 0 — Type (Standard)
- 0800 — Rod diameter x 10***
- – — Quality Index (Standard)
- M12 — Material Code (Seal Ring)
- N — Material Code (O-Ring)

*** For diameters ≥ 1000.0 mm multiply only by factor 1.
Example : RT06 for diameter 12 00.0 mm
TSS Article No. : RT06**X1200** – M12N.

Installation Recommendation



Installation drawing

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
3.0	7.9	2.2	RT0000030	4.80 × 1.80
4.0	8.9	2.2	RT0000040	5.60 × 1.80
5.0	9.9	2.2	RT0000050	6.70 × 1.80
6.0	10.9	2.2	RT0000060	7.65 × 1.78
7.0	11.9	2.2	RT0000070	8.75 × 1.80
8.0	12.9	2.2	RT0000080	9.50 × 1.80
8.0	15.3	3.2	RT0100080	10.77 × 2.62
10.0	14.9	2.2	RT0000100	11.80 × 1.80
10.0	17.3	3.2	RT0100100	12.37 × 2.62
12.0	16.9	2.2	RT0000120	14.00 × 1.78
12.0	19.3	3.2	RT0100120	14.50 × 2.65
14.0	18.9	2.2	RT0000140	15.60 × 1.78
14.0	21.3	3.2	RT0100140	17.12 × 2.62
15.0	19.9	2.2	RT0000150	17.17 × 1.78
15.0	22.3	3.2	RT0100150	18.00 × 2.65
16.0	20.9	2.2	RT0000160	17.17 × 1.78
16.0	23.3	3.2	RT0100160	18.72 × 2.62
18.0	22.9	2.2	RT0000180	20.35 × 1.78
18.0	25.3	3.2	RT0100180	20.29 × 2.62
19.0	29.7	4.2	RT0200190	23.40 × 3.53
20.0	27.3	3.2	RT0100200	21.89 × 2.62
20.0	30.7	4.2	RT0200200	25.00 × 3.53
22.0	29.3	3.2	RT0100220	25.07 × 2.62
22.0	32.7	4.2	RT0200220	26.58 × 3.53
24.0	31.3	3.2	RT0100240	26.64 × 2.62
25.0	32.3	3.2	RT0100250	28.24 × 2.62
25.0	35.7	4.2	RT0200250	29.75 × 3.53

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
25.4	32.7	3.2	RT0100254	28.24 × 2.62
25.4	36.1	4.2	RT0200254	29.75 × 3.53
26.0	33.3	3.2	RT0100260	28.24 × 2.62
26.0	36.7	4.2	RT0200260	29.75 × 3.53
27.0	34.3	3.2	RT0100270	29.82 × 2.62
28.0	35.3	3.2	RT0100280	29.82 × 2.62
28.0	38.7	4.2	RT0200280	32.92 × 3.53
28.575	35.875	3.2	RT0100286	31.42 × 2.62
29.0	36.3	3.2	RT0100290	31.42 × 2.62
30.0	37.3	3.2	RT0100300	32.99 × 2.62
30.0	40.7	4.2	RT0200300	34.52 × 3.53
32.0	39.3	3.2	RT0100320	34.59 × 2.62
32.0	42.7	4.2	RT0200320	36.09 × 3.53
35.0	42.3	3.2	RT0100350	37.77 × 2.62
35.0	45.7	4.2	RT0200350	37.69 × 3.53
36.0	43.3	3.2	RT0100360	39.34 × 2.62
36.0	46.7	4.2	RT0200360	40.87 × 3.53
38.0	48.7	4.2	RT0200380	40.87 × 3.53
38.0	53.1	6.3	RT0300380	43.82 × 5.33
39.0	49.7	4.2	RT0200390	44.04 × 3.53
40.0	50.7	4.2	RT0200400	44.04 × 3.53
40.0	55.1	6.3	RT0300400	43.82 × 5.33
42.0	52.7	4.2	RT0200420	47.22 × 3.53
42.0	57.1	6.3	RT0300420	46.99 × 5.33
44.0	54.7	4.2	RT0200440	47.22 × 3.53
44.4	59.5	6.3	RT0300444	50.17 × 5.33
45.0	55.7	4.2	RT0200450	50.39 × 3.53

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
45.0	60.1	6.3	RT0300450	50.17 × 5.33
48.0	58.7	4.2	RT0200480	53.57 × 3.53
48.0	63.1	6.3	RT0300480	53.34 × 5.33
50.0	60.7	4.2	RT0200500	53.57 × 3.53
50.0	65.1	6.3	RT0300500	56.52 × 5.33
50.8	61.5	4.2	RT0200508	53.57 × 3.53
50.8	65.9	6.3	RT0300508	56.52 × 5.33
52.0	62.7	4.2	RT0200520	56.74 × 3.53
52.0	67.1	6.3	RT0300520	56.52 × 5.33
54.0	69.1	6.3	RT0300540	59.69 × 5.33
55.0	65.7	4.2	RT0200550	59.92 × 3.53
55.0	70.1	6.3	RT0300550	59.69 × 5.33
56.0	66.7	4.2	RT0200560	59.92 × 3.53
56.0	71.1	6.3	RT0300560	62.87 × 5.33
58.0	73.1	6.3	RT0300580	62.87 × 5.33
60.0	70.7	4.2	RT0200600	63.09 × 3.53
60.0	75.1	6.3	RT0300600	66.04 × 5.33
63.0	73.7	4.2	RT0200630	66.27 × 3.53
63.0	78.1	6.3	RT0300630	69.22 × 5.33
65.0	80.1	6.3	RT0300650	69.22 × 5.33
67.0	77.7	4.2	RT0200670	72.62 × 3.53
70.0	80.7	4.2	RT0200700	75.79 × 3.53
70.0	85.1	6.3	RT0300700	75.57 × 5.33
72.0	82.7	4.2	RT0200720	75.79 × 3.53
75.0	85.7	4.2	RT0200750	78.97 × 3.53
75.0	90.1	6.3	RT0300750	81.92 × 5.33
80.0	90.7	4.2	RT0200800	85.32 × 3.53
80.0	95.1	6.3	RT0300800	85.09 × 5.33
83.0	93.7	4.2	RT0200830	88.49 × 3.53
85.0	100.1	6.3	RT0300850	91.44 × 5.33
86.0	96.7	4.2	RT0200860	91.67 × 3.53
90.0	100.7	4.2	RT0200900	94.84 × 3.53
90.0	105.1	6.3	RT0300900	94.62 × 5.33
92.0	102.7	4.2	RT0200920	98.02 × 3.53
95.0	105.7	4.2	RT0200950	101.19 × 3.53
95.0	110.1	6.3	RT0300950	100.97 × 5.33
100.0	110.7	4.2	RT0201000	104.37 × 3.53
100.0	115.1	6.3	RT0301000	107.32 × 5.33
101.6	112.3	4.2	RT0201016	107.54 × 3.53

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
101.6	116.7	6.3	RT0301016	107.32 × 5.33
104.7	119.8	6.3	RT0301047	110.49 × 5.33
105.0	115.7	4.2	RT0201050	110.72 × 3.53
105.0	120.1	6.3	RT0301050	110.49 × 5.33
110.0	120.7	4.2	RT0201100	113.89 × 3.53
110.0	125.1	6.3	RT0301100	116.84 × 5.33
110.0	130.5	8.1	RT0401100	120.02 × 7.00
112.0	127.1	6.3	RT0301120	116.84 × 5.33
115.0	125.7	4.2	RT0201150	120.24 × 3.53
115.0	130.1	6.3	RT0301150	120.02 × 5.33
118.0	133.1	6.3	RT0301180	123.19 × 5.33
120.0	130.7	4.2	RT0201200	123.42 × 3.53
120.0	135.1	6.3	RT0301200	126.37 × 5.33
125.0	135.7	4.2	RT0201250	129.77 × 3.53
125.0	140.1	6.3	RT0301250	129.54 × 5.33
129.0	139.7	4.2	RT0201290	132.94 × 3.53
130.0	140.7	4.2	RT0201300	136.12 × 3.53
130.0	145.1	6.3	RT0301300	135.89 × 5.33
135.0	145.7	4.2	RT0201350	139.29 × 3.53
135.0	150.1	6.3	RT0301350	142.24 × 5.33
140.0	150.7	4.2	RT0201400	145.64 × 3.53
140.0	155.1	6.3	RT0301400	145.42 × 5.33
145.0	155.7	4.2	RT0201450	148.82 × 3.53
145.0	160.1	6.3	RT0301450	151.77 × 5.33
150.0	165.1	6.3	RT0301500	158.12 × 5.33
160.0	175.1	6.3	RT0301600	164.47 × 5.33
160.0	180.5	8.1	RT0401600	170.82 × 7.00
165.0	180.1	6.3	RT0301650	170.82 × 5.33
170.0	180.7	4.2	RT0201700	177.39 × 3.53
170.0	185.1	6.3	RT0301700	177.17 × 5.33
175.0	190.1	6.3	RT0301750	183.52 × 5.33
180.0	190.7	4.2	RT0201800	183.74 × 3.53
180.0	195.1	6.3	RT0301800	183.52 × 5.33
180.0	200.5	8.1	RT0401800	189.87 × 7.00
190.0	200.7	4.2	RT0201900	196.44 × 3.53
190.0	205.1	6.3	RT0301900	196.22 × 5.33
200.0	215.1	6.3	RT0302000	208.92 × 5.33
200.0	220.5	8.1	RT0402000	208.90 × 7.00
205.0	220.1	6.3	RT0302050	208.92 × 5.33

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
210.0	225.1	6.3	RT0302100	215.27 × 5.33
220.0	235.1	6.3	RT0302200	227.97 × 5.33
220.0	240.5	8.1	RT0402200	227.97 × 7.00
230.0	245.1	6.3	RT0302300	234.32 × 5.33
230.0	250.5	8.1	RT0402300	240.67 × 7.00
240.0	255.1	6.3	RT0302400	247.02 × 5.33
240.0	260.5	8.1	RT0402400	253.37 × 7.00
250.0	270.5	8.1	RT0402500	266.07 × 7.00
260.0	284.0	8.1	RT0802600	266.07 × 7.00
270.0	290.5	8.1	RT0402700	278.77 × 7.00
270.0	294.0	8.1	RT0802700	278.77 × 7.00
275.0	299.0	8.1	RT0802750	291.47 × 7.00
280.0	300.5	8.1	RT0402800	291.47 × 7.00
280.0	304.0	8.1	RT0802800	291.47 × 7.00
290.0	310.5	8.1	RT0402900	304.17 × 7.00
290.0	314.0	8.1	RT0802900	304.17 × 7.00
300.0	324.0	8.1	RT0803000	316.87 × 7.00
310.0	330.5	8.1	RT0403100	316.87 × 7.00
310.0	334.0	8.1	RT0803100	316.87 × 7.00
320.0	344.0	8.1	RT0803200	329.57 × 7.00
330.0	354.0	8.1	RT0803300	342.27 × 7.00
340.0	364.0	8.1	RT0803400	354.97 × 7.00
350.0	370.5	8.1	RT0403500	354.97 × 7.00
350.0	374.0	8.1	RT0803500	367.67 × 7.00
360.0	384.0	8.1	RT0803600	367.67 × 7.00
370.0	390.5	8.1	RT0403700	380.37 × 7.00
370.0	394.0	8.1	RT0803700	380.37 × 7.00
380.0	404.0	8.1	RT0803800	393.07 × 7.00
390.0	414.0	8.1	RT0803900	405.26 × 7.00
400.0	420.5	8.1	RT0404000	405.26 × 7.00
400.0	424.0	8.1	RT0804000	417.96 × 7.00
410.0	434.0	8.1	RT0804100	417.96 × 7.00
420.0	444.0	8.1	RT0804200	430.66 × 7.00
430.0	454.0	8.1	RT0804300	443.36 × 7.00
440.0	464.0	8.1	RT0804400	456.06 × 7.00
450.0	474.0	8.1	RT0804500	468.76 × 7.00
460.0	484.0	8.1	RT0804600	468.76 × 7.00
470.0	494.0	8.1	RT0804700	481.38 × 7.00
480.0	504.0	8.1	RT0804800	494.16 × 7.00

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
490.0	514.0	8.1	RT0804900	506.86 × 7.00
500.0	524.0	8.1	RT0805000	506.86 × 7.00
510.0	534.0	8.1	RT0805100	532.26 × 7.00
520.0	544.0	8.1	RT0805200	532.26 × 7.00
530.0	554.0	8.1	RT0805300	557.66 × 7.00
540.0	564.0	8.1	RT0805400	557.66 × 7.00
550.0	574.0	8.1	RT0805500	557.66 × 7.00
560.0	584.0	8.1	RT0805600	582.68 × 7.00
570.0	594.0	8.1	RT0805700	582.68 × 7.00
580.0	604.0	8.1	RT0805800	608.08 × 7.00
590.0	614.0	8.1	RT0805900	608.08 × 7.00
600.0	624.0	8.1	RT0806000	608.08 × 7.00
610.0	634.0	8.1	RT0806100	633.48 × 7.00
620.0	644.0	8.1	RT0806200	633.48 × 7.00
630.0	654.0	8.1	RT0806300	658.88 × 7.00
640.0	664.0	8.1	RT0806400	658.88 × 7.00
650.0	677.3	9.5	RT0506500	663.00 × 8.40
660.0	687.3	9.5	RT0506600	673.00 × 8.40
670.0	697.3	9.5	RT0506700	683.00 × 8.40
680.0	707.3	9.5	RT0506800	693.00 × 8.40
688.0	715.3	9.5	RT0506880	701.00 × 8.40
690.0	717.3	9.5	RT0506900	703.00 × 8.40
700.0	724.0	8.1	RT0807000	712.00 × 7.00
710.0	737.3	9.5	RT0507100	723.00 × 8.40
740.0	767.3	9.5	RT0507400	753.00 × 8.40
760.0	784.0	8.1	RT0807600	772.00 × 7.00
770.0	797.3	9.5	RT0507700	783.00 × 8.40
800.0	827.3	9.5	RT0508000	813.00 × 8.40
850.0	877.3	9.5	RT0508500	863.00 × 8.40
870.0	897.3	9.5	RT0508700	883.00 × 8.40
900.0	927.3	9.5	RT0509000	913.00 × 8.40
910.0	937.3	9.5	RT0509100	923.00 × 8.40
950.0	977.3	9.5	RT0509500	963.00 × 8.40
960.0	987.3	9.5	RT0509600	973.00 × 8.40
1000.0	1027.3	9.5	RT05X1000	1013.00 × 8.40
1000.0	1038.0	13.8	RT06X1000	1016.00×12.00
1200.0	1227.3	9.5	RT05X1200	1213.00 × 8.40
1600.0	1638.0	13.8	RT06X1600	1616.00 × 12.00
2600.0	2638.0	13.8	RT06X2600	2616.00×12.00

Turcon® Stepseal® 2K



Single-Acting
Rubber Energized Plastic Faced Seal

Materials: Turcon®, Zurcon® & Elastomer

Turcon® Stepseal® 2K

개요

로드 씰(Rod Seal)은 어떠한 조건에서도 지속적인 외부 누유가 있어서는 안된다. 특히, 시스템이 정지했을 때도 누유가 있어서는 안된다. Rod Seal은 저-마찰을 통한 시스템 고효율이 요구되며, 좁은 홈에서의 적용이 쉬워야 한다. 비용과 Seal의 수명은 사용자의 높은 기대에 충족해야만 한다.

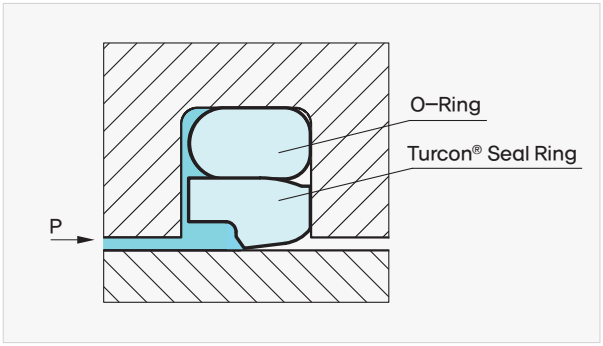
Rod Seal Turcon® Stepseal® 2K는 위의 이상적인 요구에 만족하는 가장 가까운 제품이다. 1972년 시장에 특허받고 소개된 첫 Stepseal® 이후로 Trelleborg Seal-ing Solutions은 디자인 개발, Turcon®과 Zurcon® 재질의 지속적인 개발로 혁신을 이뤘으며 기술적으로 중요한 Seal 조합이 되도록 유지했다. Turcon® Step-seal® 2K는 지속적인 개발을 계속 진행하고 있다.

Stepseal®의 소개로 하나의 Seal 뒤로, 또 하나의 Seal을 적용하는 배열이 가능하게 되었고, 직렬로 Seal을 배치함에 있어서 이중 Sealing을 통하여 문제가 되었던 Seal과 Seal 사이에 압력이 증가하는 현상을 해결할 수 있게 되었다.

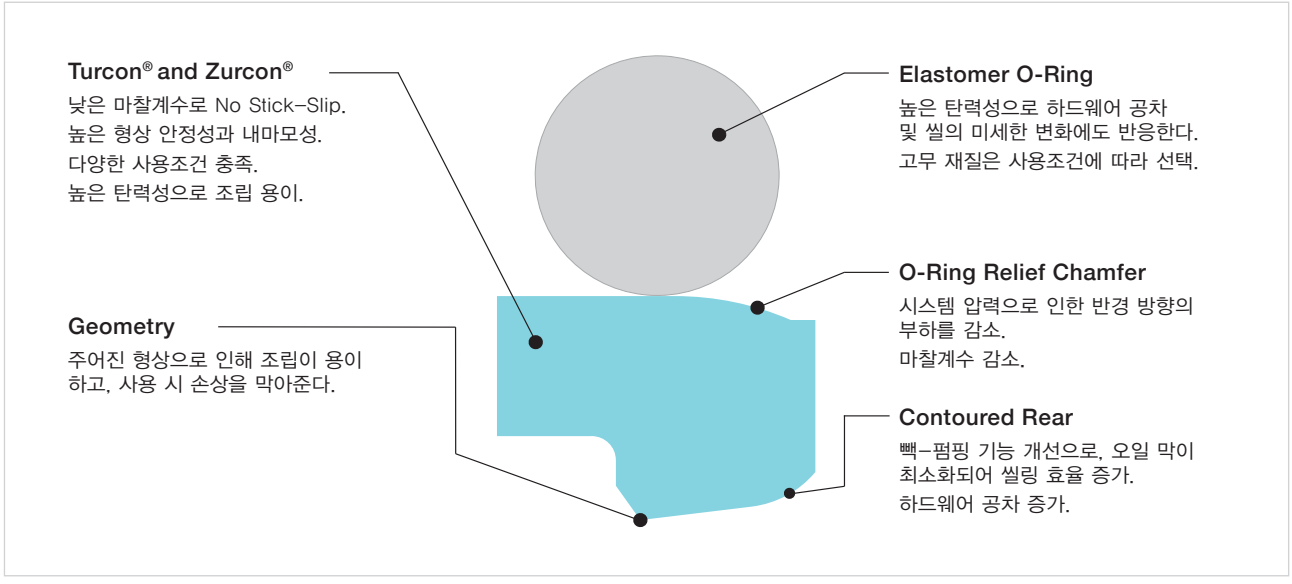
Turcon® Stepseal® 2K는 마찰성과 내마모성이 우수한 고품질의 Turcon®과 Zurcon® 재질로 만들어진다. Step-seal®은 ISO 7425/2와 Trelleborg Sealing Solu-tions 홈 기준으로 생산되며, 탄성체인 O-Ring과 함께 사용한다.

장점

- 정적-동적 Sealing 효과가 우수하다.
- 하드웨어 틈새가 큰 경우에도, 내압출성이 우수하다.
- 낮은 마찰과 높은 Sealing 효율을 지닌다.
- Stick-Slip 현상이 없다.
- 우수한 내마모성.
- 온도 및 내화학성이 요구되는 다양한 적용이 가능하다. (O-Ring 재질에 따라)
- 로드 경 2,600mm까지 공급 가능하다.



Turcon® Stepseal® 2K



Turcon® Stepseal® 2K의 형상

Turcon® Stepseal® 2K

작동 원리

Turcon® Stepseal® 2K의 Sealing 성능은 Seal의 유체역학 특성으로부터 나온 결과다.

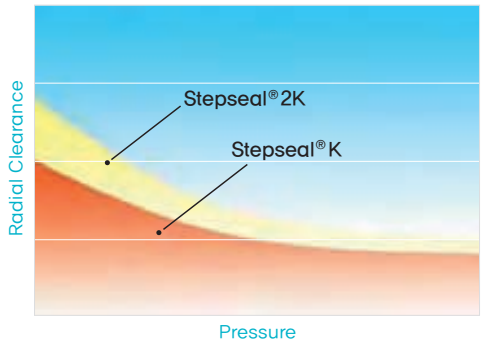
전형적인 Stepseal®의 Seal 각도는 높은 압력 쪽에서는 반경 방향 압력 경사도는 깊게 접촉되고, 낮은 압력 쪽에서의 압력 경사도는 얕게 접촉된다. 이러한 특별한 압력 경사도로 인해 피스톤과 로드가 반복적인 왕복 운동을 할 때, 로드 상의 잔유 유막이 시스템 내부로 들어올 수 있도록 해준다.

이러한 특성은 이미 특허된 형상에 악조건하에서도 사용 가능하도록 개발된 Stepseal® 2K를 존재하게 했다.

O-Ring Relief Chamfer는 Seal 본체에 가해지는 부하를 감소시키며, 이로 인한 로드와의 안정된 접촉을 통해 높은 압력하에서의 Seal의 성능이 개선되었다. 특별히 높게 올라간 뒤쪽 경사로 인해 저압 측의 반경 방향의 틈새와 하드웨어 공차 관리가 용이해졌다.

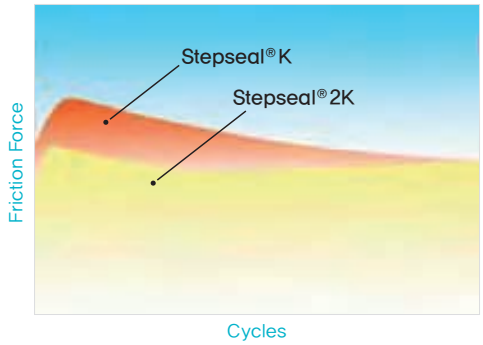
Stepseal® 2K는 우수한 정적-동적 Sealing 특성을 가지며, Seal 2개를 나란히 배열하는 구조에서 자주 발생되는 Seal과 Seal 사이의 압력이 높아지는 현상을 억제한다.

〈틈새 증가〉
Increased Clearance



Turcon® Stepseal® 2K는 모든 사용 조건에 대해 아주 우수한 내압출성을 가지고 있으며, 상당한 하드웨어 틈새를 허용하고 있다.

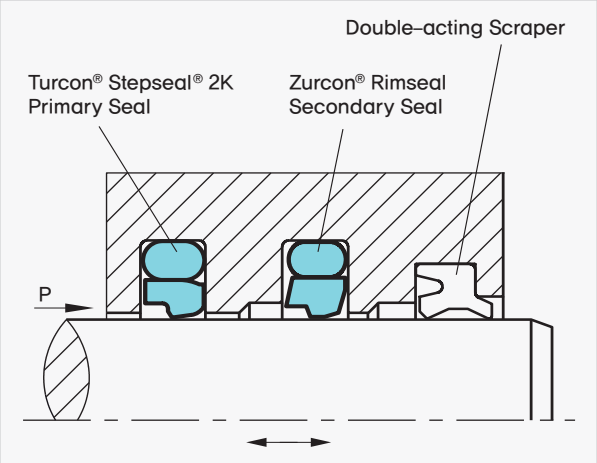
〈마찰 성능 향상〉
Improved Friction Performance



Turcon® Stepseal® 2K는 작동 기간 동안, 균일한 낮은 마찰 특성을 제공한다.

병렬 씰링 시스템

그동안 많은 Sealing 시스템에서는 2차 Seal이 필요했다. 아래 그림은 Stepseal® 2K와 함께 Seal의 병렬 배열을 보여준다.



Turcon® Stepseal® 2K와 Zurcon® Rimseal의 병렬 구조

이 배열에서는 반드시 주의할 점이 있는데, 위 그림에서 보여지는 것처럼 Seal과 Seal 사이에는 충분한 공간을 형성시켜 작동유에 의한 배압 현상이 발생하는 것을 방지해야 한다.

적용 분야와 작동 조건, 그리고 서로 다른 재질의 배열은 시스템의 Sealing 효율 및 수명 향상을 제공한다.

높은 부하와 거친 작동조건을 가진 유압 실린더에는 1차 씰로 Turcon® 재질을, 2차 Seal로 Zurcon® 재질을 추천한다.

적용 범위

- 압력 : 최대 60 MPa (600 bar)
- 속도 : 최대 15 m/s
  (직선운동, 진동 최대 5Hz)
- 온도 : −45°C ~ +200°C
  (O-Ring 재질에 따라)
- 유체 : 광물 베이스의 유압 작동유,
  내화학성 유압 작동유
  친환경 유압 작동유 (Bio-oils)
  인산 에스테르, 물 등.

적용 분야

- 모바일 유압 장치
- 광산 설비
- 공작기계
- 프레스
- 풍력 터빈
- 충격 흡수 장치
- Servo 실린더
- 건설 장비
- 산업용 실린더
- 사출 성형기
- Clamp 실린더
- 자동차 산업
- 유압 햄머

재질 / Materials for Turcon® Stepseal® 2K

Meterial, Application Properties	Code	O-Ring Material Shore A	Code	O-Ring Operating Temp. °C*	Mating Surface Material	MPa max. Dynamic
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 & best sliding properties. • Lowest Wear on seals. • Improved Absorption of abrasive contaminants. • No wear, or abrasion of counter surface. • Mineral Fiber & Additives filled. Colour : Dark grey.	M12	NBR – 70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Steel plated (Rod) Cast iron Stainless Steel Titanium	50
		NBR – 70 Low Temp.	T	–45 ~ +80		
		FKM – 70	V	–10 ~ +200		
Turcon® T05 • For Lubricating Fluids. • Also for Gas service. • Very Low Friction. • Very good Sliding & Sealing properties. Colour : Turquoise.	T05	NBR – 70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod)	20
		NBR – 70 Low Temp.	T	–45 ~ +80		
		FKM – 70	V	–10 ~ +200		
Turcon® T10 • For Hydraulic & Pneumatic. • For Lubricating & Non–Lubricating Fluids. • High Extrusion Resistance. • Good Chemical Resistance. • NOT for Electrically conducting Fluids. • BAM Tested. • Carbon, Graphite filled. Colour : Black.	T10	NBR – 70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Stainless Steel	40
		NBR – 70 Low Temp.	T	–45 ~ +80		
		FKM – 70	V	–10 ~ +200		
		EPDM – 70	E**	–45 ~ +145		
Turcon® T29 • For Lubricating & Non–Lubricating Fluids. • Good Extrusion Resistance. • Surface texture is NOT suitable for Gas sealing. • NOT for Electrically conducting Fluids. • Carbon Fiber filled. Colour : Grey.	T29	NBR–70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Cast iron Stainless Steel	30
		NBR – 70 Low Temp.	T	–45 ~ +80		
		FKM – 70	V	–10 ~ +200		
		EPDM – 70	E**	–45 ~ +145		
Turcon® T40 • For Lubricating & Non–Lubricating Fluids. • High Frequency & Short Strokes. • **Water Hydraulics.** • Surface texture is NOT suitable for Gas sealing. • Carbon Fiber filled. Colour : Grey.	T40	NBR – 70	N	–30 ~ +100	Steel Steel hardened Steel Chrome–plated (Rod) Cast iron Stainless steel Aluminium	25
		NBR – 70 Low Temp.	T	–45 ~ +80		
		FKM – 70	V	–10 ~ +200		
		EPDM – 70	E**	–45 to 145		
Turcon® T46 • For Lubricated Hydraulics in Linear Motion. • High Compressive strength. • High Extrusion Resistance. • Very good Sliding & Wear properties. • BAM Tested. • Bronze filled. Colour : Light to Dark brown, (which may have variations in shading.)	T46	NBR – 70	N	–30 ~ +100	Steel hardned Steel Chrome–plated (Rod) Cast iron	50
		NBR – 70 Low Temp.	T	–45 ~ +80		
		FKM – 70	V	–10 ~ +200		

* The O–Ring Operating Temperature is only valid in Mineral Hydraulic Oil. (except EPDM)
** Material NOT suitable for Mineral oils.
BAM : Tested by "Bundesantalt Materialprufung, Germany."

Highlighted Materials are standard.

Turcon® Stepseal® 2K

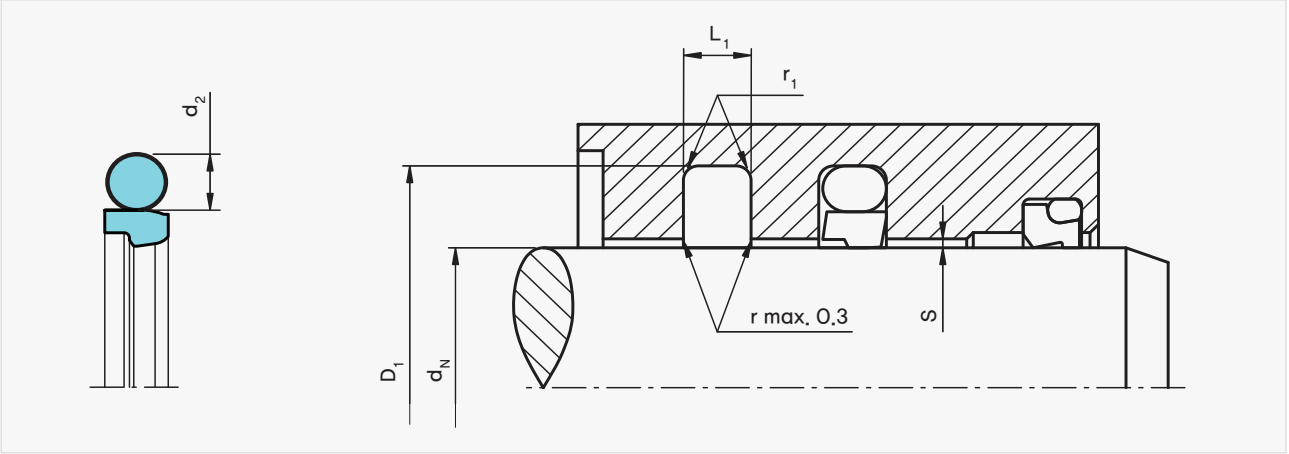
재질 / Materials for Turcon® Stepseal® 2K

Meterial, Application Properties	Code	O-Ring Material Shore A	Code	O-Ring Operating Temp. °C*	Mating Surface Material	MPa max. Dynamic
Zurcon® Z53 • For Mineral Oil based Fluids. • **Very High Abrasion Resistance.** • **Very High Extrusion Resistance.** • For counter surface with rougher surface finish. • Limited Chemical Resistance. • Max. working Temperature 110℃. • Cast Polyurethane. Colour : **Yellow to Light brown.**	Z53	NBR−70	N	−30 ~ +100	Steel Steel hardened Steel Chrome−plated (Rod) Cast iron Stainless Steel Ceramic coating	60
		NBR−70 Low Temp.	T	−45 ~ +80		
Zurcon® Z80 • For Lubricating & Non−Lubricating Fluids. • Water based fluids, air & gases. • Dry air pneumatics. • High Abrasion & Extrusion Resistance. • For service in Abrasive conditions and media with particles. • Good Chemical Resistance. • Limited Temperature capability. (−60℃ ~ +80℃) • UHMWPE (Ultra High Molecular Weight Polyethylene) Colour : **White to Off−white.**	Z80	NBR−70	N	−30 ~ (+100)	Steel Steel hardened Steel Chrome−plated (Rod) Stainless Steel Alumimium Ceramic coating	35
		NBR−70 Low Temp.	T	−45 ~ +80		
		EPDM−70	E**	−45 ~ (+145)		

* The O−Ring Operating Temperature is only valid in Mineral Hydraulic Oil. (except EPDM)
** Material NOT suitable for Mineral oils.
BAM : Tested by "Bundesantalt Materialprufung, Germany."

Highlighted Materials are standard.

Installation Recommendation



Installation drawing

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 1) Application	Heavy-duty Application	D_1 H9	L_1 +0.2	r_1	10MPa	20MPa	40MPa	d_2
RSK0	3 – 7.9	8 – 18.9	–	d_N + 4.9	2.2	0.4	0.30	0.20	0.15	1.78
RSK1	8 – 18.9	19 – 37.9	–	d_N + 7.3	3.2	0.6	0.40	0.25	0.15	2.62
RSK2	19 – 37.9	38 – 199.9	8 – 18.9	d_N + 10.7	4.2	1.0	0.50	0.30	0.20	3.53
RSK3	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
RSK4	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
RSK8	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
RSK5	650 – 999.9	–	256 – 649.9	d_N + 27.3	9.5	2.5	1.00	0.80	0.50	8.40
RSK5X	–	1000 – 1200	–	d_N + 27.3	9.5	2.5	1.00	0.80	0.50	8.40
RSK6**	–	–	650 – 999.9	d_N + 38.0	13.8	3.0	1.20	0.90	0.60	12.00
RSK6X**	1000 – 2600	–	–	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 area of seal, or consult **HANSUNG** for alternative material, or profiles. TSS Slydring®/Wear Rings are NOT applicable at very small Radial Clearance S.

**O-Rings with 12 mm Cross-section are delivered as special Profile ring.

1) For easier installation in Closed Grooves with Rod diameters. (< 40 mm)

- **Standard Application** : 허용된 적용범위를 벗어나지 않는 일반적인 경우.
- **Light Application** : 저마찰이 요구되거나 작은 홈 규격이 요구되는 경우.
- **Heavy-duty Application** : 높은 압력, Peak 압력과 같은 일반적인 범위를 벗어나는 경우.

Turcon® Stepseal® 2K

주문 예

Turcon® Stepseal® 2K와 함께 적용되는 O-Ring 규격과 재질 선택은, 표를 참고하시기 바랍니다.

- Rod diameter : d_N = 250.0mm
- TSS Part No. RSK402500

TSS Article No. RSK4 0 2500 – M12 N

- TSS Series No.
- Type (Standard)
- Rod diameter x 10**
- Quality Index (Standard)
- Material Code (Seal Ring)
- Material Code (O-Ring)

** For diameters ≥1000.0mm multiply only by factor 1.
Example : RSK6 for diameter 1200.0mm
TSS Article No. : RSK6**X1200** – M12N.

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
3.0	7.9	2.2	RSK000030	4.80 × 1.80
4.0	8.9	2.2	RSK000040	5.60 × 1.80
5.0	9.9	2.2	RSK000050	6.70 × 1.80
6.0	10.9	2.2	RSK000060	7.65 × 1.78
7.0	11.9	2.2	RSK000070	8.75 × 1.80
8.0	12.9	2.2	RSK000080	9.50 × 1.80
8.0	15.3	3.2	RSK100080	10.77 × 2.62
9.0	13.9	2.2	RSK000090	10.82 × 1.78
9.0	16.3	3.2	RSK100090	10.77 × 2.62
10.0	14.9	2.2	RSK000100	11.80 × 1.80
10.0	17.3	3.2	RSK100100	12.37 × 2.62
12.0	16.9	2.2	RSK000120	14.00 × 1.78
12.0	19.3	3.2	RSK100120	14.50 × 2.65
12.7	17.6	2.2	RSK000127	14.00 × 1.78
12.7	20.0	3.2	RSK100127	15.54 × 2.62
14.0	18.9	2.2	RSK000140	15.60 × 1.78
14.0	21.3	3.2	RSK100140	17.12 × 2.62
15.0	19.9	2.2	RSK000150	17.17 × 1.78
15.0	22.3	3.2	RSK100150	18.00 × 2.65
16.0	20.9	2.2	RSK000160	17.17 × 1.78
16.0	23.3	3.2	RSK100160	18.72 × 2.62
17.0	21.9	2.2	RSK000170	18.77 × 1.78
18.0	22.9	2.2	RSK000180	20.35 × 1.78
18.0	25.3	3.2	RSK100180	20.29 × 2.62
19.0	29.7	4.2	RSK200190	23.40 × 3.53
20.0	27.3	3.2	RSK100200	21.89 × 2.62
20.0	30.7	4.2	RSK200200	25.00 × 3.53

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
22.0	29.3	3.2	RKS100220	25.07 × 2.62
22.0	32.7	4.2	RSK200220	26.58 × 3.53
24.0	31.3	3.2	RSK100240	26.64 × 2.62
25.0	32.3	3.2	RSK100250	28.24 × 2.62
25.0	35.7	4.2	RSK200250	29.75 × 3.53
25.4	32.7	3.2	RSK100254	28.24 × 2.62
25.4	36.1	4.2	RSK200254	29.75 × 3.53
26.0	33.3	3.2	RSK100260	28.24 × 2.62
26.0	36.7	4.2	RSK200260	29.75 × 3.53
28.0	35.3	3.2	RSK100280	29.82 × 2.62
28.0	38.7	4.2	RSK200280	32.92 × 3.53
28.575	35.875	3.2	RSK100286	31.42 × 2.62
30.0	37.3	3.2	RSK100300	32.99 × 2.62
30.0	40.7	4.2	RSK200300	34.52 × 3.53
32.0	39.3	3.2	RSK100320	34.59 × 2.62
32.0	42.7	4.2	RSK200320	36.09 × 3.53
35.0	42.3	3.2	RSK100350	37.77 × 2.62
35.0	45.7	4.2	RSK200350	37.69 × 3.53
36.0	43.3	3.2	RSK100360	39.34 × 2.62
36.0	46.7	4.2	RSK200360	40.87 × 3.53
37.0	44.3	3.2	RSK100370	39.34 × 2.62
37.0	47.7	4.2	RSK200370	40.87 × 3.53
38.0	48.7	4.2	RSK200380	40.87 × 3.53
38.0	53.1	6.3	RSK300380	43.82 × 5.33
40.0	50.7	4.2	RSK200400	44.04 × 3.53
40.0	55.1	6.3	RSK300400	43.82 × 5.33
42.0	52.7	4.2	RSK200420	47.22 × 3.53

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
42.0	57.1	6.3	RSK300420	46.99 × 5.33
43.0	53.7	4.2	RSK200430	47.22 × 3.53
44.45	59.55	6.3	RSK300444	50.17 × 5.33
45.0	55.7	4.2	RSK200450	50.39 × 3.53
45.0	60.1	6.3	RSK300450	50.17 × 5.33
48.0	58.7	4.2	RSK200480	53.57 × 3.53
48.0	63.1	6.3	RSK300480	53.34 × 5.33
50.0	60.7	4.2	RSK200500	53.57 × 3.53
50.0	65.1	6.3	RSK300500	56.52 × 5.33
50.8	61.5	4.2	RSK200508	53.57 × 3.53
50.8	65.9	6.3	RSK300508	56.52 × 5.33
52.0	62.7	4.2	RSK200520	56.74 × 3.53
52.0	67.1	6.3	RSK300520	56.52 × 5.33
54.0	69.1	6.3	RSK300540	59.69 × 5.33
55.0	65.7	4.2	RSK200550	59.92 × 3.53
55.0	70.1	6.3	RSK300550	59.69 × 5.33
56.0	66.7	4.2	RSK200560	59.92 × 3.53
56.0	71.1	6.3	RSK300560	62.87 × 5.33
56.0	76.5	8.1	RSK400560	64.00 × 7.00
57.0	72.1	6.3	RSK300570	62.87 × 5.33
59.0	69.7	4.2	RSK200590	63.09 × 3.53
60.0	70.7	4.2	RSK200600	63.09 × 3.53
60.0	75.1	6.3	RSK300600	66.04 × 5.33
63.0	73.7	4.2	RSK200630	66.27 × 3.53
63.0	78.1	6.3	RSK300630	69.22 × 5.33
63.5	78.6	6.3	RSK300635	69.22 × 5.33
65.0	75.7	4.2	RSK200650	69.44 × 3.53
65.0	80.1	6.3	RSK300650	69.22 × 5.33
67.0	77.7	4.2	RSK200670	72.62 × 3.53
69.0	84.1	6.3	RSK300690	75.57 × 5.33
70.0	80.7	4.2	RSK200700	75.79 × 3.53
70.0	85.1	6.3	RSK300700	75.57 × 5.33
70.0	90.5	8.1	RSK400700	78.00 × 7.00
72.0	82.7	4.2	RSK200720	75.79 × 3.53
73.0	88.1	6.3	RSK300730	78.74 × 5.33
75.0	85.7	4.2	RSK200750	78.97 × 3.53
75.0	90.1	6.3	RSK300750	81.92 × 5.33
76.2	91.3	6.3	RSK300762	81.92 × 5.33
78.0	93.1	6.3	RSK300780	85.09 × 5.33

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
80.0	90.7	4.2	RSK200800	85.32 × 3.53
80.0	95.1	6.3	RSK300800	85.09 × 5.33
80.0	100.5	8.1	RSK400800	88.00 × 7.00
82.5	97.6	6.3	RSK300825	88.27 × 5.33
83.0	93.7	4.2	RSK200830	88.49 × 3.53
85.0	95.7	4.2	RSK200850	88.49 × 3.53
85.0	100.1	6.3	RSK300850	91.44 × 5.33
85.0	105.5	8.1	RSK400850	93.00 × 7.00
89.0	104.1	6.3	RSK300890	94.62 × 5.33
90.0	100.7	4.2	RSK200900	94.84 × 3.53
90.0	105.1	6.3	RSK300900	94.62 × 5.33
90.0	110.5	8.1	RSK400900	98.00 × 7.00
92.0	102.7	4.2	RSK200920	98.02 × 3.53
92.0	107.1	6.3	RSK300920	97.79 × 5.33
95.0	105.7	4.2	RSK200950	101.19 × 3.53
95.0	110.1	6.3	RSK300950	100.97 × 5.33
100.0	110.7	4.2	RSK201000	104.37 × 3.53
100.0	115.1	6.3	RSK301000	107.32 × 5.33
100.0	120.5	8.1	RSK401000	108.00 × 7.00
101.6	116.7	6.3	RSK301016	107.32 × 5.33
104.7	119.8	6.3	RSK301047	110.49 × 5.33
105.0	120.1	6.3	RSK301050	110.49 × 5.33
105.0	125.5	8.1	RSK401050	113.67 × 7.00
110.0	120.7	4.2	RSK201100	113.89 × 3.53
110.0	125.1	6.3	RSK301100	116.84 × 5.33
110.0	130.5	8.1	RSK401100	116.84 × 7.00
115.0	130.1	6.3	RSK301150	120.02 × 5.33
120.0	135.1	6.3	RSK301200	126.37 × 5.33
120.0	140.5	8.1	RSK401200	129.54 × 7.00
125.0	140.1	6.3	RSK301250	129.54 × 5.33
125.0	145.5	8.1	RSK401250	132.72 × 7.00
125.4	140.5	6.3	RSK301254	132.72 × 5.33
127.0	142.1	6.3	RSK301270	132.72 × 5.33
130.0	145.1	6.3	RSK301300	135.89 × 5.33
130.0	150.5	8.1	RSK401300	139.07 × 7.00
132.0	147.1	6.3	RSK301320	139.07 × 5.33
135.0	145.7	4.2	RSK201350	139.29 × 3.53
135.0	150.1	6.3	RSK301350	142.24 × 5.33
137.0	152.1	6.3	RSK301370	142.24 × 5.33

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
138.0	153.1	6.3	RSK301380	142.24 × 5.33
140.0	150.7	4.2	RSK201400	145.64 × 3.53
140.0	155.1	6.3	RSK301400	145.42 × 5.33
140.0	160.5	8.1	RSK401400	148.59 × 7.00
140.5	155.6	6.3	RSK301405	145.42 × 5.33
145.0	160.1	6.3	RSK301450	151.77 × 5.33
145.0	165.5	8.1	RSK401450	151.77 × 7.00
150.0	165.1	6.3	RSK301500	158.12 × 5.33
150.0	170.5	8.1	RSK401500	158.12 × 7.00
153.0	168.1	6.3	RSK301530	158.12 × 5.33
155.0	170.1	6.3	RSK301550	158.12 × 5.33
160.0	175.1	6.3	RSK301600	164.47 × 5.33
160.0	180.5	8.1	RSK401600	170.82 × 7.00
165.0	180.1	6.3	RSK301650	170.82 × 5.33
170.0	185.1	6.3	RSK301700	177.17 × 5.33
170.0	190.5	8.1	RSK401700	177.17 × 7.00
173.0	188.1	6.3	RSK301730	177.17 × 5.33
175.0	190.1	6.3	RSK301750	183.52 × 5.33
180.0	195.1	6.3	RSK301800	183.52 × 5.33
180.0	200.5	8.1	RSK401800	189.87 × 7.00
185.0	200.1	6.3	RSK301850	189.87 × 5.33
185.0	205.5	8.1	RSK401850	196.22 × 7.00
190.0	205.1	6.3	RSK301900	196.22 × 5.33
190.0	210.5	8.1	RSK401900	196.22 × 7.00
195.0	210.1	6.3	RSK301950	202.57 × 5.33
200.0	215.1	6.3	RSK302000	208.92 × 5.33
200.0	220.5	8.1	RSK402000	208.90 × 7.00
205.0	225.5	8.1	RSK402050	215.27 × 7.00
210.0	230.5	8.1	RSK402100	215.27 × 7.00
211.0	231.5	8.1	RSK402110	215.27 × 7.00
212.0	232.5	8.1	RSK402120	227.97 × 7.00
215.0	235.5	8.1	RSK402150	227.97 × 7.00
220.0	240.5	8.1	RSK402200	227.97 × 7.00
225.0	245.5	8.1	RSK402250	240.67 × 7.00
230.0	245.1	6.3	RSK302300	234.32 × 5.33
230.0	250.5	8.1	RSK402300	240.67 × 7.00
235.0	255.5	8.1	RSK402350	240.67 × 7.00
240.0	260.5	8.1	RSK402400	253.37 × 7.00
245.0	265.5	8.1	RSK402450	253.37 × 7.00

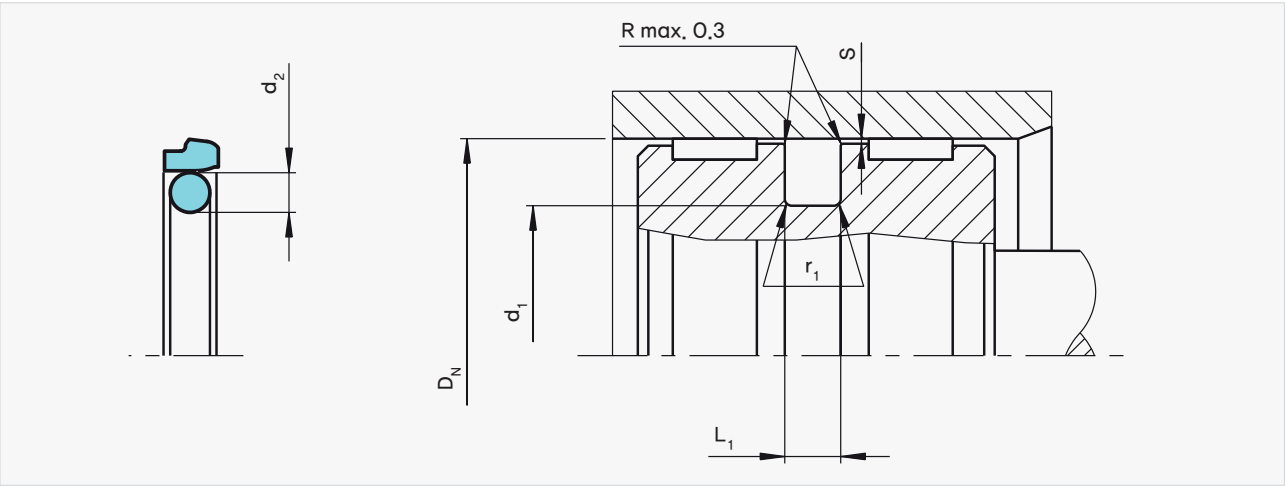
Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
250.0	270.5	8.1	RSK402500	266.07 × 7.00
260.0	284.0	8.1	RSK802600	266.07 × 7.00
265.0	289.0	8.1	RSK802650	278.77 × 7.00
270.0	290.5	8.1	RSK402700	278.77 × 7.00
270.0	294.0	8.1	RSK802700	278.77 × 7.00
275.0	299.0	8.1	RSK802750	291.47 × 7.00
280.0	304.0	8.1	RSK802800	291.47 × 7.00
285.0	309.0	8.1	RSK802850	291.47 × 7.00
290.0	314.0	8.1	RSK802900	304.17 × 7.00
295.0	319.0	8.1	RSK802950	304.17 × 7.00
300.0	320.5	8.1	RSK403000	304.17 × 7.00
300.0	324.0	8.1	RSK803000	316.87 × 7.00
310.0	334.0	8.1	RSK803100	316.87 × 7.00
320.0	344.0	8.1	RSK803200	329.57 × 7.00
330.0	354.0	8.1	RSK803300	342.27 × 7.00
340.0	364.0	8.1	RSK803400	354.97 × 7.00
350.0	370.5	8.1	RSK403500	354.97 × 7.00
350.0	374.0	8.1	RSK803500	367.67 × 7.00
360.0	384.0	8.1	RSK803600	367.67 × 7.00
365.0	389.0	8.1	RSK803650	380.37 × 7.00
370.0	394.0	8.1	RSK803700	380.37 × 7.00
375.0	399.0	8.1	RSK803750	393.07 × 7.00
380.0	404.0	8.1	RSK803800	393.07 × 7.00
390.0	414.0	8.1	RSK803900	405.26 × 7.00
400.0	424.0	8.1	RSK804000	417.96 × 7.00
410.0	434.0	8.1	RSK804100	417.96 × 7.00
420.0	444.0	8.1	RSK804200	430.66 × 7.00
430.0	454.0	8.1	RSK804300	443.36 × 7.00
435.0	459.0	8.1	RSK804350	443.36 × 7.00
440.0	464.0	8.1	RSK804400	456.06 × 7.00
450.0	474.0	8.1	RSK804500	468.76 × 7.00
460.0	484.0	8.1	RSK804600	468.76 × 7.00
470.0	494.0	8.1	RSK804700	481.46 × 7.00
480.0	504.0	8.1	RSK804800	494.16 × 7.00
485.0	509.0	8.1	RSK804850	494.16 × 7.00
490.0	514.0	8.1	RSK804900	506.86 × 7.00
500.0	524.0	8.1	RSK805000	506.86 × 7.00
510.0	534.0	8.1	RSK805100	532.26 × 7.00
520.0	544.0	8.1	RSK805200	532.26 × 7.00

Installation Dimensions / TSS Part No.

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
525.0	549.0	8.1	RSK805250	532.26 × 7.00
530.0	554.0	8.1	RSK805300	557.66 × 7.00
540.0	564.0	8.1	RSK805400	557.66 × 7.00
550.0	574.0	8.1	RSK805500	557.66 × 7.00
560.0	584.0	8.1	RSK805600	582.68 × 7.00
570.0	594.0	8.1	RSK805700	582.68 × 7.00
580.0	604.0	8.1	RSK805800	608.08 × 7.00
585.0	609.0	8.1	RSK805850	608.08 × 7.00
590.0	614.0	8.1	RSK805900	608.08 × 7.00
600.0	624.0	8.1	RSK806000	608.08 × 7.00
610.0	634.0	8.1	RSK806100	633.48 × 7.00
620.0	644.0	8.1	RSK806200	633.48 × 7.00
630.0	654.0	8.1	RSK806300	658.88 × 7.00
640.0	664.0	8.1	RSK806400	658.88 × 7.00
650.0	677.3	9.5	RSK506500	663.00 × 8.40
656.0	683.3	9.5	RSK506560	669.00 × 8.40
660.0	687.3	9.5	RSK506600	673.00 × 8.40
680.0	707.3	9.5	RSK506800	693.00 × 8.40
685.0	712.3	9.5	RSK506850	698.00 × 8.40
700.0	724.0	8.1	RSK807000	712.00 × 7.00
700.0	727.3	9.5	RSK507000	713.00 × 8.40
710.0	737.3	9.5	RSK507100	723.00 × 8.40
730.0	757.3	9.5	RSK507300	743.00 × 8.40
760.0	787.3	9.5	RSK507600	773.00 × 8.40
765.0	792.3	9.5	RSK507650	778.00 × 8.40
780.0	807.3	9.5	RSK507800	793.00 × 8.40
790.0	817.3	9.5	RSK507900	803.00 × 8.40
800.0	827.3	9.5	RSK508000	813.00 × 8.40
810.0	837.3	9.5	RSK508100	823.00 × 8.40
820.0	847.3	9.5	RSK508200	833.00 × 8.40
830.0	857.3	9.5	RSK508300	843.00 × 8.40
850.0	877.3	9.5	RSK508500	863.00 × 8.40
870.0	897.3	9.5	RSK508700	883.00 × 8.40
880.0	907.3	9.5	RSK508800	893.00 × 8.40
885.0	912.3	9.5	RSK508850	898.00 × 8.40
890.0	917.3	9.5	RSK508900	903.00 × 8.40
930.0	957.3	9.5	RSK509300	943.00 × 8.40
955.0	982.3	9.5	RSK509550	968.00 × 8.40
1000.0	1038.0	13.8	RSK6X1000	1016.00×12.00

Rod Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
d_N f8/h9	D_1 H9	L_1 +0.2		
1035.0	1073.0	13.8	RSK6X1035	1051.00×12.00
1040.0	1067.3	9.5	RSK5X1040	1052.00× 8.40
1040.0	1078.0	13.8	RSK6X1040	1056.00×12.00
1050.0	1077.3	9.5	RSK5X1050	1062.00× 8.40
1050.0	1088.0	13.8	RSK6X1050	1066.00×12.00
1100.0	1138.0	13.8	RSK6X1100	1116.00 × 12.00
1120.0	1147.3	9.5	RSK5X1120	1132.00 × 8.40
1120.0	1158.0	13.8	RSK6X1120	1136.00 × 12.00
1200.0	1227.3	9.5	RSK5X1200	1212.00 × 8.40
1200.0	1238.0	13.8	RSK6X1200	1216.00 × 12.00
1330.0	1368.0	13.8	RSK6X1330	1346.00×12.00
1500.0	1538.0	13.8	RSK6X1500	1516.00×12.00
1600.0	1638.0	13.8	RSK6X1600	1616.00×12.00
2000.0	2038.0	13.8	RSK6X2000	2016.00×12.00
2600.0	2638.0	13.8	RSK6X2600	2616.00×12.00

Installation Recommendation



Installation drawing

Installation Dimensions – Standard Recommendations

Series No.	Bore Diameter D_N 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	10 MPa	20 MPa	40 MPa	d_2
PSK0	8 – 16.9	17 – 26.9	–	D_N – 4.9	2.2	0.4	0.30	0.20	0.15	1.78
PSK1	17 – 26.9	27 – 59.9	–	D_N – 7.3	3.2	0.6	0.40	0.25	0.15	2.62
PSK2	27 – 59.9	60 – 199.9	17 – 24.9	D_N – 10.7	4.2	1.0	0.50	0.30	0.20	3.53
PSK3	60 – 199.9	200 – 255.9	27 – 59.9	D_N – 15.1	6.3	1.3	0.70	0.40	0.25	5.33
PSK4	200 – 255.9	256 – 669.9	60 – 199.9	D_N – 20.5	8.1	1.8	0.80	0.60	0.35	7.00
PSK8	256 – 669.9	670 – 999.9	200 – 255.9	D_N – 24.0	8.1	1.8	0.90	0.70	0.40	7.00
PSK5	670 – 999.9	–	256 – 669.9	D_N – 27.3	9.5	2.5	1.00	0.80	0.60	8.40
PSK5X	–	1000 – 1200	–	D_N – 27.3	9.5	2.5	1.00	0.80	0.60	8.40
PSK6**	–	–	670 – 999.9	D_N – 38.0	13.8	3.0	1.20	0.90	0.60	12.00
PSK6X**	1000 – 2700	–	–	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/Piston) in area of seal, or consult **HANSUNG** for alternative material, or profiles. TSS Slydring®/Wear Rings are NOT applicable at very small Radial Clearance S.

**O-Rings with 12 mm Cross-section are delivered as special profile ring.

- **Standard Application** : 허용된 적용범위를 벗어나지 않는 일반적인 경우.
- **Light Application** : 저마찰이 요구되거나 작은 홈 규격이 요구되는 경우.
- **Heavy-duty Application** : 높은 압력, Peak 압력과 같은 일반적인 범위를 벗어나는 경우.

주문 예

Turcon® Stepseal® 2K와 함께 적용되는 O-Ring 규격과 재질 선택은, 표를 참고하시기 바랍니다.

- Bore diameter : D_N = 80.0mm
- TSS Part No. PSK300800

TSS Article No. PSK3 0 0800 – M12 N

- PSK3 — TSS Series No.
- 0 — Type (Standard)
- 0800 — Bore diameter x 10***
- M12 — Quality Index (Standard)
- N — Material Code (Seal Ring)
- Material Code (O-Ring)

*** For diameters ≥ 1000.0mm multiply only by factor 1.
Example : PSK6 for diameter 1200.0mm
TSS Article No. : PSK6**X1200** – M12N.

Installation Dimensions / TSS Part No.

Bore Dia. D_N H9	Groove Dia. d_1 h9	Groove Width L_1+0.2	TSS Part No.	O-Ring Dimensions
9.0	4.1	2.2	PSK000090	3.68 × 1.78
10.0	5.1	2.2	PSK000100	4.47 × 1.78
12.0	7.1	2.2	PSK000120	6.70 × 1.80
14.0	9.1	2.2	PSK000140	8.75 × 1.80
15.0	10.1	2.2	PSK000150	9.50 × 1.80
16.0	11.1	2.2	PSK000160	10.60 × 1.80
18.0	10.7	3.2	PSK100180	9.19 × 2.62
20.0	15.1	2.2	PSK000200	14.00 × 1.78
20.0	12.7	3.2	PSK100200	12.37 × 2.62
22.0	14.7	3.2	PSK100220	13.94 × 2.62
25.0	17.7	3.2	PSK100250	17.12 × 2.62
25.0	14.3	4.2	PSK200250	13.87 × 3.53
28.0	17.3	4.2	PSK200280	15.47 × 3.53
30.0	22.7	3.2	PSK100300	21.89 × 2.62
30.0	19.3	4.2	PSK200300	18.66 × 3.53
32.0	24.7	3.2	PSK100320	23.47 × 2.62
32.0	21.3	4.2	PSK200320	20.22 × 3.53
35.0	24.3	4.2	PSK200350	23.40 × 3.53
40.0	32.7	3.2	PSK100400	31.42 × 2.62
40.0	29.3	4.2	PSK200400	28.17 × 3.53
42.0	31.3	4.2	PSK200420	29.75 × 3.53
45.0	34.3	4.2	PSK200450	32.92 × 3.53
48.0	37.3	4.2	PSK200480	36.09 × 3.53
50.0	39.3	4.2	PSK200500	37.69 × 3.53
50.0	34.9	6.3	PSK300500	32.69 × 5.33
52.0	41.3	4.2	PSK200520	40.87 × 3.53
55.0	44.3	4.2	PSK200550	44.04 × 3.53

Bore Dia. D_N H9	Groove Dia. d_1 h9	Groove Width L_1+0.2	TSS Part No.	O-Ring Dimensions
60.0	44.9	6.3	PSK300600	43.82 × 5.33
63.0	52.3	4.2	PSK200630	50.39 × 3.53
63.0	47.9	6.3	PSK300630	46.99 × 5.33
65.0	49.9	6.3	PSK300650	46.99 × 5.33
70.0	59.3	4.2	PSK200700	56.74 × 3.53
70.0	54.9	6.3	PSK300700	53.34 × 5.33
75.0	59.9	6.3	PSK300750	56.52 × 5.33
80.0	64.9	6.3	PSK300800	62.87 × 5.33
80.0	59.5	8.1	PSK400800	58.00 × 7.00
85.0	69.9	6.3	PSK300850	69.22 × 5.33
85.0	64.5	8.1	PSK400850	63.00 × 7.00
90.0	74.9	6.3	PSK300900	72.39 × 5.33
90.0	69.5	8.1	PSK400900	68.00 × 7.00
95.0	79.9	6.3	PSK300950	78.74 × 5.33
95.0	74.5	8.1	PSK400950	73.00 × 7.00
100.0	84.9	6.3	PSK301000	81.92 × 5.33
100.0	79.5	8.1	PSK401000	78.00 × 7.00
105.0	89.9	6.3	PSK301050	88.27 × 5.33
105.0	84.5	8.1	PSK401050	83.00 × 7.00
106.0	90.9	6.3	PSK301060	88.27 × 5.33
110.0	94.9	6.3	PSK301100	91.44 × 5.33
110.0	89.5	8.1	PSK401100	88.00 × 7.00
115.0	99.9	6.3	PSK301150	97.79 × 5.33
115.0	94.5	8.1	PSK401150	93.00 × 7.00
120.0	104.9	6.3	PSK301200	104.14 × 5.33
120.0	99.5	8.1	PSK401200	98.00 × 7.00
125.0	109.9	6.3	PSK301250	107.32 × 5.33

Installation Dimensions / TSS Part No.

Bore Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
D_N H9	d_1 h9	L_1 +0.2		
125.0	104.5	8.1	PSK401250	103.00 × 7.00
130.0	114.9	6.3	PSK301300	113.67 × 5.33
130.0	109.5	8.1	PSK401300	108.00 × 7.00
135.0	114.5	8.1	PSK401350	113.67 × 7.00
140.0	119.5	8.1	PSK401400	116.84 × 7.00
145.0	124.5	8.1	PSK401450	123.19 × 7.00
150.0	129.5	8.1	PSK401500	126.37 × 7.00
155.0	139.9	6.3	PSK301550	135.89 × 5.33
160.0	144.9	6.3	PSK301600	142.24 × 5.33
160.0	139.5	8.1	PSK401600	135.89 × 7.00
165.0	149.9	6.3	PSK301650	148.49 × 5.33
165.0	144.5	8.1	PSK401650	142.24 × 7.00
170.0	149.5	8.1	PSK401700	145.42 × 7.00
175.0	159.9	6.3	PSK301750	158.12 × 5.33
180.0	164.9	6.3	PSK301800	164.47 × 5.33
180.0	159.5	8.1	PSK401800	158.12 × 7.00
190.0	174.9	6.3	PSK301900	170.82 × 5.33
190.0	169.5	8.1	PSK401900	164.47 × 7.00
200.0	184.9	6.3	PSK302000	183.52 × 5.33
200.0	179.5	8.1	PSK402000	177.17 × 7.00
205.0	184.5	8.1	PSK402050	183.52 × 7.00
210.0	189.5	8.1	PSK402100	183.52 × 7.00
220.0	204.9	6.3	PSK302200	202.57 × 5.33
220.0	199.5	8.1	PSK402200	196.22 × 7.00
230.0	209.5	8.1	PSK402300	208.92 × 7.00
240.0	219.5	8.1	PSK402400	215.27 × 7.00
250.0	229.5	8.1	PSK402500	227.97 × 7.00
250.0	226.0	8.1	PSK802500	227.97 × 7.00
260.0	236.0	8.1	PSK802600	227.97 × 7.00
270.0	246.0	8.1	PSK802700	240.67 × 7.00
280.0	256.0	8.1	PSK802800	253.37 × 7.00
300.0	276.0	8.1	PSK803000	266.07 × 7.00
306.0	285.5	8.1	PSK403060	278.77 × 7.00

Bore Dia.	Groove Dia.	Groove Width	TSS Part No.	O-Ring Dimensions
D_N H9	d_1 h9	L_1 +0.2		
310.0	286.0	8.1	PSK803100	278.77 × 7.00
320.0	299.5	8.1	PSK403200	291.47 × 7.00
320.0	296.0	8.1	PSK803200	291.47 × 7.00
330.0	306.0	8.1	PSK803300	304.17 × 7.00
340.0	316.0	8.1	PSK803400	316.87 × 7.00
345.0	324.5	8.1	PSK403450	316.87 × 7.00
350.0	326.0	8.1	PSK803500	316.87 × 7.00
360.0	336.0	8.1	PSK803600	329.57 × 7.00
370.0	346.0	8.1	PSK803700	342.27 × 7.00
380.0	356.0	8.1	PSK803800	354.97 × 7.00
400.0	376.0	8.1	PSK804000	367.67 × 7.00
420.0	396.0	8.1	PSK804200	393.07 × 7.00
430.0	406.0	8.1	PSK804300	405.26 × 7.00
440.0	416.0	8.1	PSK804400	405.26 × 7.00
450.0	426.0	8.1	PSK804500	417.96 × 7.00
480.0	456.0	8.1	PSK804800	456.06 × 7.00
500.0	476.0	8.1	PSK805000	468.76 × 7.00
520.0	499.5	8.1	PSK405200	494.16 × 7.00
540.0	516.0	8.1	PSK805400	506.86 × 7.00
600.0	576.0	8.1	PSK806000	557.66 × 7.00
650.0	626.0	8.1	PSK806500	608.08 × 7.00
700.0	672.7	9.5	PSK507000	670.00 × 8.40
800.0	772.7	9.5	PSK508000	770.00 × 8.40
860.0	832.7	9.5	PSK508600	830.00 × 8.40
900.0	872.7	9.5	PSK509000	870.00 × 8.40
920.0	892.7	9.5	PSK509200	890.00 × 8.40
1000.0	972.7	9.5	PSK5X1000	970.00 × 8.40
1000.0	962.0	13.8	PSK6X1000	960.00 × 12.00
1200.0	1172.7	9.5	PSK5X1200	1170.00 × 8.40
1200.0	1162.0	13.8	PSK6X1200	1160.00 × 12.00
1500.0	1462.0	13.8	PSK6X1500	1460.00 × 12.00
2000.0	1962.0	13.8	PSK6X2000	1960.00 × 12.00
2700.0	2662.0	13.8	PSK6X2700	2660.00 × 12.00

Turcon® Variseal®



Single-Acting
Spring Energized Plastic U-Cup

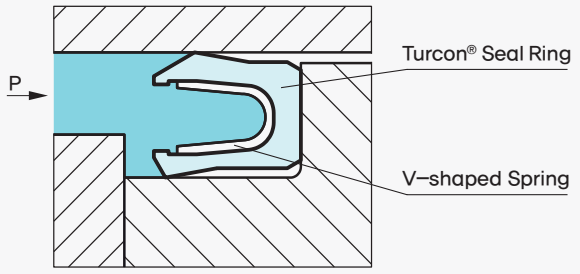
Materials: Turcon®, Zurcon®



Turcon® Variseal®

개요

Turcon® Variseal®은 U-형태의 Seal Jacket과 부식에 저항성이 있는 V-형태의 SUS 스프링으로 구성되어 있는 단동형 Seal이다.



Turcon® Variseal®

특징

Turcon® Variseal®은 새롭게 개발된 비대칭 형상의 제품이다. 운동용 Lip은 마찰이 적고, 수명이 길며 길이를 최소화하여 짧고 중량감 있게 설계되었다.

저압, 또는 압력이 없는 경우, 금속 스프링은 기본적인 밀폐력을 유지시킨다. 시스템 압력이 증가할 때, 밀폐력(Sealing Force)은 시스템의 압력에 의해서 이루어지며 무기압(0 bar)에서 고압으로 될 때, 빈틈이 없이 밀폐도를 확실하게 한다.

Seal과 Spring의 여러 가지 재질 조화로 인하여 유.공압 분야 이외의 화학, 제약 및 식품산업 등, 폭넓은 분야에 응용된다.

특히, 이러한 분야에 응용될 때는 살균이 가능하며, Seal의 스프링 홈에 오염 물질이 침투되는 것을 방지하기 위해 실리콘겔로 채운 Hi-Clean으로 특수 처리된다. Hi-Clean으로 처리된 것은 Compound Code에 “D"로 표기된다. 예) T40SD

진흙, 슬러리(현탁액), 접착제 및 모래와 같은 거친 가루 등이 있는 응용 분야에서 스프링 역할을 유지시켜 작동이 원활하도록 설계되어 있다.

Variseal®의 홈은 MIL 5514F와 ISO 3771과 동일하게 되어있다.

장점

- 내 화학성이 뛰어나다.
- 마찰계수가 낮다.
- 내 마모성과 치수 안정성이 뛰어나다.
- 급격한 온도 변화 조건에서 사용 가능하다.
- 식품원료, 제약 및 의약 매체와 접촉 시, 오염되지 않는다.
- 보관 수명이 영구적이다.
- 살균 가능이다.
- Stick-Slip 현상이 없어, 정밀기계에 사용 가능하다.

적용 분야

- 밸브
- 펌프
- 분리기
- 발동기
- 약품 주입장치

적용 범위

- 압력 : for Static loads 40 MPa (400 bar)
  for Dynamic loads 20 MPa (200 bar)
- 속도 : 왕복 최대 15 m/s
- 온도 : −70 ℃ ~ +260 ℃
  (특별히 낮은 온도일 경우, 문의 바람.)
- 유체 : 거의 모든 유체,
  화학약품,
  Gas,
  진공.

※ 주의사항

- 위에 제시된 최대 수치는 같은 동작 시간대에 동시에 유효할 수는 없다.
- 최대 속도는 재질, 타입, 압력, 온도, 틈새 크기에 따라 좌우된다.
- 온도 범위 또한, 매체 조건에 따라 영향을 받는다.

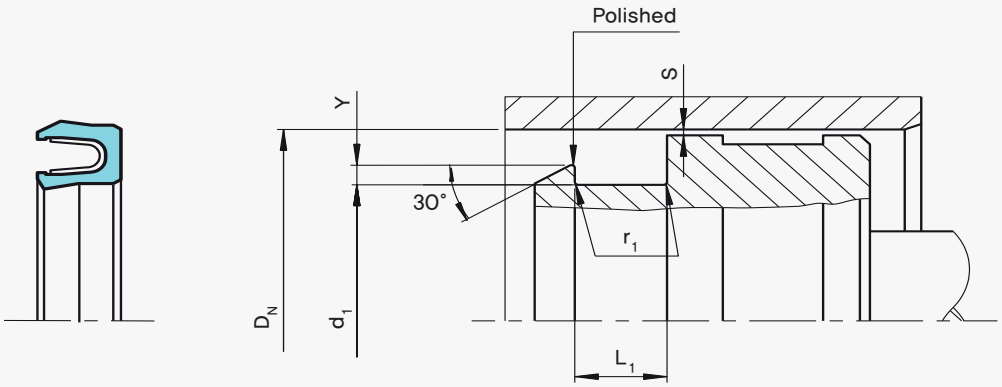
재질 / Materials for Turcon® Variseal®

Material, Application Properties	Code	Spring Material	Code	Operating Temp. °C*	Mating Surface Material	Mpa max.
Turcon® T40 • For all Lubricating & Non-Lubricating Hydraulic Fluids. • Hydraulic oils without Zinc. • **Water Hydraulic.** • **Hard Mating Surfaces.** • Surface texture is NOT suitable for Gases. • Carbon Fiber filled. Colour : **Grey.**	T40	AISI 301	S	−70 ~ +260	Steel hardened Steel Chrome-plated	40
Turcon® T05 • For all Lubricating Hydraulic Fluids. • Soft mating surfaces. • **Very good Sliding properties.** • **Low Friction.** Colour : **Turquoise**	T05	AISI 301	S	−70 ~ +260	Steel Steel Chrome-plated Cast iron Stainless Steel Aluminium Bronze Alloys	20
Zurcon® Z80 • For Lubricating & Non-Lubricating Hydraulic Fluids. • High Abrasion Resistance. • Very good Chemical Resistance. • Limited Temperature Resistance. • **FDA Compliance.** • UHMWPE (Ultra High Molecular Weight Polyethylene) Colour : **White to Off-white.**	Z80	AISI 301	S	−70 ~ +80	Steel Steel Chrome-plated Stainless Steel Aluminium Bronze Ceramic coating	40

*Depending on Media.

Highlighted Materials are standard.

Installation Recommendation



Installation drawing

Installation Dimensions

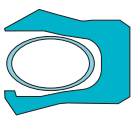
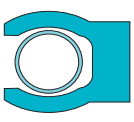
Series No.	Bore Diameter D_N H9		Groove Diameter	Groove Width	Radius	Step[2] Height	Radial Clearance S max.*			
	Standard Range	Extended[1] Range	d_1 h9	L_1+0.2	r_1	Y min.	< 2 MPa	< 10 MPa	< 20 MPa	< 40 MPa
PVA0	6.0 – 13.9	6.0 – 40.0	D_N – 2.9	2.4	0.4	0.4	0.20	0.10	0.08	0.05
PVA1	14.0 – 24.9	10.0 – 200.0	D_N – 4.5	3.6	0.4	0.6	0.25	0.15	0.10	0.07
PVA2	25.0 – 45.9	16.0 – 400.0	D_N – 6.2	4.8	0.6	0.7	0.35	0.20	0.15	0.08
PVA3	46.0 – 124.9	28.0 – 700.0	D_N – 9.4	7.1	0.8	0.8	0.50	0.25	0.20	0.10
PVA4	125.0 – 1600.0	45.0 – 1600.0	D_N – 12.2	9.5	0.8	0.9	0.60	0.30	0.25	0.12
PVA5	1000.0 – 2500.0	100.0 – 2500.0	D_N – 19.0	15.0	0.8	1.5	0.90	0.50	0.40	0.20

*At Pressures **> 40 MPa**, Use Diameter Tolerance H8/f8 (Bore/Piston) in area of seal, or consult **HANSUNG** for alternative material, or profiles.

1) Available on request.

2) Maximum Y = 0.035 x D_N

종류 / Types

Type	M2	M2S	W	H
Profile-Form				
Series No.	PVA	PVC	PVW	PVE

주문 예

Turcon® Variseal® M2

- TSS Series No. PVA3
- Bore diameter : D_N = 80.0mm
- TSS Part No. PVA300800

TSS Article No. PVA3 0 0800 – T40 S (D)

- TSS Series No.
- Type (Standard)
- Bore diameter x 10**
- Quality Index (Standard)
- Material Code (Seal Ring)
- Material Code (Spring)
- Hi Clean-option

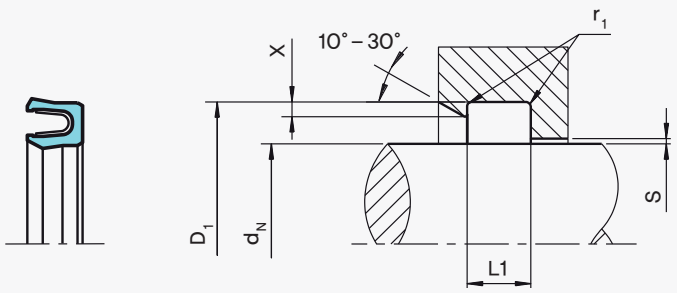
** For diameters ≥1000.0mm multiply only by factor 1.
Example : PVA5 for diameter 1200.0mm
TSS Article No. : PVA5 **X1200** – T40S

Installation Dimensions / TSS Part No.

Bore Diameter	Groove Diameter	Groove Width	TSS Part No.
D_N H9	d_1 h9	L_1+0.2	
6.0	3.1	2.4	PVA000060
8.0	5.1	2.4	PVA000080
10.0	7.1	2.4	PVA000100
12.0	9.1	2.4	PVA000120
14.0	9.5	3.6	PVA100140
15.0	10.5	3.6	PVA100150
16.0	11.5	3.6	PVA100160
18.0	13.5	3.6	PVA100180
20.0	15.5	3.6	PVA100200
22.0	17.5	3.6	PVA100220
25.0	18.8	4.8	PVA200250
28.0	21.8	4.8	PVA200280
30.0	23.8	4.8	PVA200300
32.0	25.8	4.8	PVA200320
35.0	28.8	4.8	PVA200350
40.0	33.8	4.8	PVA200400
42.0	35.8	4.8	PVA200420
45.0	38.8	4.8	PVA200450
48.0	38.6	7.1	PVA300480
50.0	40.6	7.1	PVA300500
52.0	42.6	7.1	PVA300520
55.0	45.6	7.1	PVA300550
56.0	46.6	7.1	PVA300560
60.0	50.6	7.1	PVA300600
63.0	53.6	7.1	PVA300630
65.0	55.6	7.1	PVA300650
70.0	60.6	7.1	PVA300700
75.0	65.6	7.1	PVA300750
80.0	70.6	7.1	PVA300800
85.0	75.6	7.1	PVA300850
90.0	80.6	7.1	PVA300900
95.0	85.6	7.1	PVA300950
100.0	90.6	7.1	PVA301000

Bore Diameter	Groove Diameter	Groove Width	TSS Part No.
D_N H9	d_1 h9	L_1+0.2	
110.0	100.6	7.1	PVA301100
115.0	105.6	7.1	PVA301150
120.0	110.6	7.1	PVA301200
125.0	112.8	9.5	PVA401250
130.0	117.8	9.5	PVA401300
135.0	122.8	9.5	PVA401350
140.0	127.8	9.5	PVA401400
150.0	137.8	9.5	PVA401500
160.0	147.8	9.5	PVA401600
170.0	157.8	9.5	PVA401700
180.0	167.8	9.5	PVA401800
190.0	177.8	9.5	PVA401900
200.0	187.8	9.5	PVA402000
210.0	197.8	9.5	PVA402100
220.0	207.8	9.5	PVA402200
230.0	217.8	9.5	PVA402300
240.0	227.8	9.5	PVA402400
250.0	237.8	9.5	PVA402500
280.0	267.8	9.5	PVA402800
300.0	287.8	9.5	PVA403000
320.0	307.8	9.5	PVA403200
350.0	337.8	9.5	PVA403500
400.0	387.8	9.5	PVA404000
420.0	407.8	9.5	PVA404200
450.0	437.8	9.5	PVA404500
480.0	467.8	9.5	PVA404800
500.0	487.8	9.5	PVA405000

Installation Recommendation



Installation drawing

Installation Dimensions

Series No.	Rod Diameter d_N h9		Groove Diameter	Groove Width	Radius	Step [2] Height	Radial Clearance S max.*			
	Recommended Range	Extended [1] Range	D_1 H9	L1 +0.2	r_1	X min.	< 2 MPa	< 10 MPa	< 20 MPa	< 40 MPa
RVA0	3.0 – 9.9	3.0 – 40.0	d_N + 2.9	2.4	0.4	0.4	0.20	0.10	0.08	0.05
RVA1	10.0 – 19.9	6.0 – 200.0 [3]	d_N + 4.5	3.6	0.4	0.6	0.25	0.15	0.10	0.07
RVA2	20.0 – 39.9	10.0 – 400.0 [3]	d_N + 6.2	4.8	0.6	0.7	0.35	0.20	0.15	0.08
RVA3	40.0 – 119.9	20.0 – 700.0 [3]	d_N + 9.4	7.1	0.8	0.8	0.50	0.25	0.20	0.10
RVA4	120.0 – 999.0	35.0 – 1600.0 [3]	d_N + 12.2	9.5	0.8	0.9	0.60	0.30	0.25	0.12
RVA5	1000.0 – 2600.0	80.0 – 2500.0 [3]	d_N + 19.0	15.0	0.8	1.5	0.90	0.50	0.40	0.20

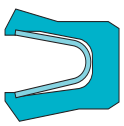
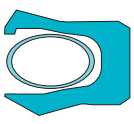
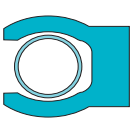
*At Pressures **> 40 MPa**, Use Diameter Tolerance H8/f8 (Bore/Rod) in area of seal, or consult **HANSUNG** for alternative material, or profiles.

1) Available on request.

2) Maximum X = 0.02 x d_N
Note : Recommended Step Height is NOT always obtainable.

3) By diameters larger than "Recommended Range" : the Tolerance on d_N and D_1 is changed to h8/H8.
By pressure above 40 MPa, please contact **HANSUNG**.

종류 / Types

Type	M2	M2S	W	H
Profile-Form				
Series No.	RVA	RVC	RVW	RVE

주문 예

Turcon® Variseal® M2

- TSS Series No. RVA3
- Rod diameter : d_N = 80.0mm
- TSS Part No. RVA300800

TSS Article No. RVA3 0 0800 – T40 S (D)

- TSS Series No.
- Type (Standard)
- Rod diameter x 10**
- Quality Index (Standard)
- Material Code (Seal Ring)
- Material Code (Spring)
- Hi Clean-option

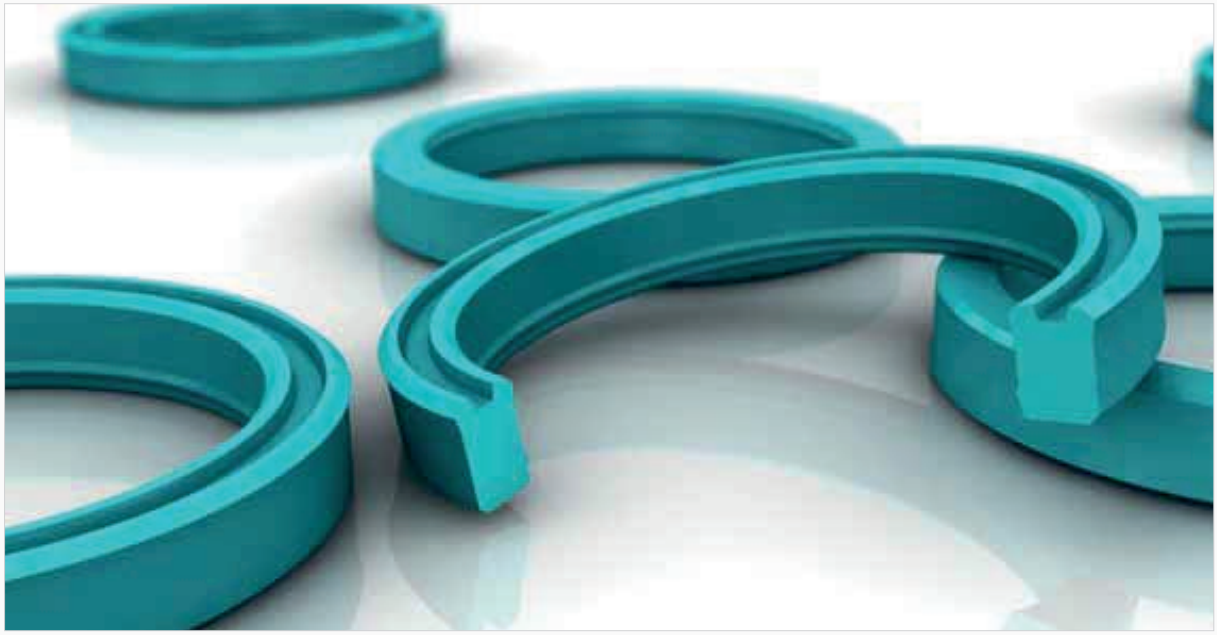
** For diameters ≥1000.0mm multiply only by factor 1.
Example : RVA5 for diameter 1200.0mm
TSS Article No. : RVA5 **X1200** – T40S

Installation Dimensions / TSS Part No.

Rod Diameter	Groove Diameter	Groove Width	TSS Part No.
d_N h9	D_1 H9	L1+0.2	
3.0	5.9	2.4	RVA000030
4.0	6.9	2.4	RVA000040
5.0	7.9	2.4	RVA000050
6.0	8.9	2.4	RVA000060
8.0	10.9	2.4	RVA000080
10.0	14.5	3.6	RVA100100
12.0	16.5	3.6	RVA100120
14.0	18.5	3.6	RVA100140
15.0	19.5	3.6	RVA100150
16.0	20.5	3.6	RVA100160
18.0	22.5	3.6	RVA100180
20.0	26.2	4.8	RVA200200
22.0	28.2	4.8	RVA200220
25.0	31.2	4.8	RVA200250
28.0	34.2	4.8	RVA200280
30.0	36.2	4.8	RVA200300
32.0	38.2	4.8	RVA200320
35.0	41.2	4.8	RVA200350
36.0	42.2	4.8	RVA200360
40.0	49.4	7.1	RVA300400
42.0	51.4	7.1	RVA300420
45.0	54.4	7.1	RVA300450
48.0	57.4	7.1	RVA300480
50.0	59.4	7.1	RVA300500
52.0	61.4	7.1	RVA300520
55.0	64.4	7.1	RVA300550
56.0	65.4	7.1	RVA300560
60.0	69.4	7.1	RVA300600
63.0	72.4	7.1	RVA300630
65.0	74.4	7.1	RVA300650
70.0	79.4	7.1	RVA300700
75.0	84.4	7.1	RVA300750
80.0	89.4	7.1	RVA300800

Rod Diameter	Groove Diameter	Groove Width	TSS Part No.
d_N h9	D_1 H9	L1+0.2	
85.0	94.4	7.1	RVA300850
90.0	99.4	7.1	RVA300900
95.0	104.4	7.1	RVA300950
100.0	109.4	7.1	RVA301000
105.0	114.4	7.1	RVA301050
110.0	119.4	7.1	RVA301100
115.0	124.4	7.1	RVA301150
120.0	132.2	9.5	RVA401200
125.0	137.2	9.5	RVA401250
130.0	142.2	9.5	RVA401300
135.0	147.2	9.5	RVA401350
140.0	152.2	9.5	RVA401400
150.0	162.2	9.5	RVA401500
160.0	172.2	9.5	RVA401600
170.0	182.2	9.5	RVA401700
180.0	192.2	9.5	RVA401800
190.0	202.2	9.5	RVA401900
200.0	212.2	9.5	RVA402000
210.0	222.2	9.5	RVA402100
220.0	232.2	9.5	RVA402200
230.0	242.2	9.5	RVA402300
240.0	252.2	9.5	RVA402400
250.0	262.2	9.5	RVA402500
280.0	292.2	9.5	RVA402800
300.0	312.2	9.5	RVA403000
320.0	332.2	9.5	RVA403200
350.0	362.2	9.5	RVA403500
360.0	372.2	9.5	RVA403600
400.0	412.2	9.5	RVA404000

Zurcon® U-Cup



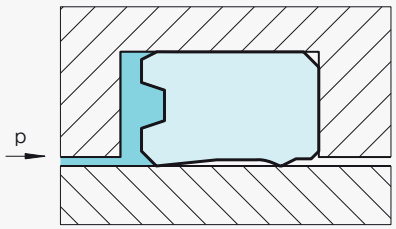
Single-Acting U-Cup
Asymmetric, Double Lip, Compact

Materials: Zurcon®



개요

U-Cup은 유압 실린더에서 로드에 대한 Seal로서 우선적으로 사용된다. U-Cup은 기계적 성질이 우수한 고분자 우레탄으로서 일반 실린더 구조에 알맞은 재질로 되어있다.



Zurcon® U-Cup

특징

U-Cup은 단동용으로서 각종 유압 시스템의 운동용으로 적용할 수 있다. 특히, Turcon® Stepseal® K와 함께 Heavy-Duty 쪽에 적용하여 매우 좋은 효과를 낼 수 있다.

U-Cup은 열가소성 고분자 우레탄으로서 내 마모성이 매우 강하며 압축 영구 줄음율이 낮고, 틈새로 밀리는 것에 대한 뛰어난 저항성을 갖고 있다. 특히, 인장과 인열이 높기 때문에 매우 쉽게 조립할 수 있다.

장점

- 내마모성과 내구성이 우수하다.
- 윤활 작용이 우수하다.
- 로드의 편향과 높은 부하에 영향을 받지 않는다.
- 갑작스러운 부하에 영향을 받지 않는다.
- 저압에서 마찰이 적어, Sealing 효과가 뛰어나다.
- 간결한 형상으로서 조립이 용이하다.
- 저렴한 가격.

적용 범위

- 압력 : 최대 40 MPa
- 속도 : 최대 0.5 m/s
- 온도 : −30℃ ~ +100℃
  (Use in Mineral oils.)
- 매체 : 광물 베이스의 유압 작동유,
  난연성 유압유.

※ 주의사항

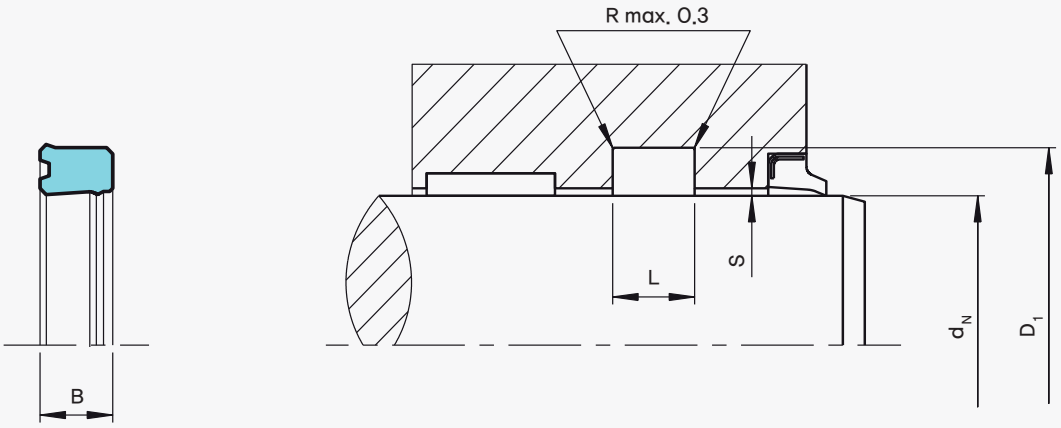
- 위에 제시된 최대 수치는 같은 동작 시간대에 동시에 유효할 수는 없다.
- 최대 속도는 재질, 타입, 압력, 온도, 틈새 크기에 따라 좌우된다.
- 온도 범위 또한, 매체 조건에 따라 영향을 받는다.

재질

- Standard Zurcon® : Z20
- Special Polyurethane : 93 Shore A
- Colour : Turquoise

Zurcon® U-Cup

Installation Recommendation



Installation drawing

주문 예

Zurcon® U-Cup

- TSS Series No. Type RU2
- Rod diameter : d_N = 45.0mm
- Groove diameter : D_1 = 53.0mm
- Groove Width : L = 6.3mm
- TSS Part No. RU2000450

TSS Article No. RU20 0 0450 – Z20

- RU20 — TSS Series No.
- 0 — Type (Standard)
- 0450 — Rod diameter x 10
- Z20 — Quality Index (Standard)
- Material Code (Seal Ring)

틈새 / Radial Clearance

Operating max. Pressure MPa	Radial Clearance S max.	
	d_N < 60mm	d_N > 60mm
5	0.40	0.50
10	0.30	0.40
20	0.20	0.30
30	0.15	0.20
40	0.10	0.15

Installation Dimensions / TSS Part No.

Note	Rod Diameter	Groove Diameter	Groove Width	Seal Width	TSS Part No.
	d_N f8/h9	D_1 H10	L +0.2	B	
*	**6.0**	**14.0**	**6.3**	**5.8**	**RU2000060**
*	**8.0**	**16.0**	**6.3**	**5.8**	**RU2200080**
*	**10.0**	**18.0**	**6.3**	**5.8**	**RU2000100**
*	**12.0**	**20.0**	**6.3**	**5.8**	**RU2100120**
*	**14.0**	**22.0**	**6.3**	**5.8**	**RU2100140**
*	**16.0**	**24.0**	**6.3**	**5.8**	**RU2000160**
*	**18.0**	**26.0**	**6.3**	**5.8**	**RU2100180**
*	**20.0**	**28.0**	**6.3**	**5.8**	**RU2100200**
*	**20.0**	**30.0**	**8.0**	**7.0**	**RU2300200**
*	**22.0**	**30.0**	**6.3**	**5.8**	**RU2300220**
*	24.0	32.0	6.3	5.7	RU2000240
*	**25.0**	**33.0**	**6.3**	**5.7**	**RU2000250**
*	**25.0**	**35.0**	**8.0**	**7.0**	**RU2400250**
*	25.0	35.0	9.0	8.0	RU2500250
*	28.0	36.0	6.3	5.8	RU2000280
*	**28.0**	**38.0**	**6.3**	**5.8**	**RU2300280**
*	**28.0**	**38.0**	**8.0**	**7.0**	**RU2400280**
	32.0	**42.0**	**8.0**	**7.0**	**RU2100320**
	36.0	44.0	6.3	5.8	RU2000360
	36.0	**46.0**	**8.0**	**7.3**	**RU2300360**
	40.0	**50.0**	**8.0**	**7.0**	**RU2500400**
	45.0	53.0	6.3	5.8	RU2000450
	45.0	**55.0**	**6.3**	**5.7**	**RU2300450**
	45.0	**55.0**	**8.0**	**7.0**	**RU2500450**
	50.0	**60.0**	**8.0**	**7.0**	**RU2400500**
	56.0	66.0	7.5	6.5	RU2100560
	56.0	**71.0**	**12.5**	**11.5**	**RU2200560**
	63.0	**78.0**	**12.5**	**11.5**	**RU2100630**
	70.0	80.0	7.5	6.5	RU2200700
	80.0	**95.0**	**12.5**	**11.5**	**RU2100800**
	90.0	100.0	7.5	6.5	RU2000900
	90.0	**105.0**	**12.5**	**11.4**	**RU2400900**
	110.0	125.0	10.5	9.5	RU2001100
	110.0	**130.0**	**16.0**	**15.0**	**RU2101100**
	140.0	**160.0**	**16.0**	**15.0**	**RU2201400**

*Split Groove.

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